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# SUMMARY REPORT Gustavus Airport 2021 PFAS Site Characterization GUSTAVUS, ALASKA







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Submitted To: Alaska Department of Transportation & Public Facilities

2301 Peger Road

Fairbanks, Alaska 99709

Attn: Mr. Marcus Zimmerman and Ms. Sammy Cummings

Subject: REV 2 SUMMARY REPORT, GUSTAVUS AIRPORT 2021 PFAS SITE

CHARACTERIZATION, GUSTAVUS, ALASKA

Shannon & Wilson, Inc. (S&W) prepared this revised report and participated in this project as a consultant to Alaska Department of Transportation and Public Facilities (DOT&PF). S&W's services were authorized by Professional Services Agreement Number 25 19 1-013, issued by the DOT&PF on December 19, 2018, via Amendment 40, NTP 5-7d and NTP 5-13 dated October 4, 2021. This revised report supersedes the previous version.

This report presents a summary of S&W's 2021 per- and polyfluoroalkyl substance (PFAS) site characterization effort at and near the Gustavus Airport (GST). Ongoing water-supply and monitoring well sampling activities are reported separately.

S&W appreciates the opportunity to be of service to you on this project. If you have questions concerning this report, or S&W may be of further service, please contact us.

Sincerely,

SHANNON & WILSON, INC.

(Kristen Freiburger for Veselina Yakimova) Veselina Yakimova Geologist Role: Primary Author

Kristen Freiburger, Associate Senior Chemist Role: Project Manager

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**Important Information** 

AAC Alaska Administrative Code

Addendum GWP Addendum 006-GST-02 Revision 1
ADONA 4,8-dioxa-3H-perfluorononanoic acid

AFFF aqueous film forming foam bgs below ground surface

BTEX benzene, toluene, ethylbenzene and xylene

°C degrees Celsius
COC chain of custody
CSM conceptual site model

DEC Alaska Department of Environmental Conservation

Discovery Drilling Inc.
DO dissolved oxygen

DOT&PF Alaska Department of Transportation & Public Facilities

DQO data quality objective DRO diesel range organics

DRM Alaska Department of Administration Division of Risk Management

EPA U.S. Environmental Protection Agency FAA Federal Aviation Administration

GAC granular activated carbon
GRO gasoline range organics
GST Gustavus Airport
GWP General Work Plan

HFDO-PA hexafluoropropylene oxide dimer acid

IDA isotope dilution analysis

LCS/LCSD laboratory control sample/laboratory control sample duplicate

LDRC laboratory data review checklist

LHA Lifetime Health Advisory

LOD limits of detection
LOQ limits of quantification

MB method blank

μg/kg micrograms per kilogram μg/L micrograms per liter

μS microSiemens

mg/kg milligrams per kilogram mg/L milligrams per liter

mV millivolts

MS/MSD matrix spike/matrix spike duplicate

MW monitoring well ng/L nanograms per liter

N-EtFOSAA N-ethyl perfluorooctane sulfonamidoacetic acid N-MeFOSAA N-methyl perfluorooctane sulfonamidoacetic acid

NPS	National Park Service

PAH polycyclic aromatic hydrocarbons PFAS per- and polyfluoroalkyl substances

PFBS perfluorobutanesulfonic acid

PFDA perfluorodecanoic acid
PFDoA perfluorododecanoic acid
PFHpA perfluoroheptanoic acid
PFHxA perfluorohexanoic acid
PFHxS perfluorohexanesulfonic acid
PFNA perfluorononanoic acid
PFOA perfluorooctanoic acid

PFOA perfluorooctanoic acid
PFOS perfluorooctanesulfonic acid
PFTeA perfluorotetradecanoic acid
PFTrDA perfluorotridecanoic acid
PFUnA perfluoroundecanoic acid
PID photoionization detector

QA/QC quality assurance/quality control

RL reporting limit

RPD relative percent difference
RRO residual range organics
S&W Shannon & Wilson, Inc.
TB temperature blank
TWP temporary well point

YSI multiprobe water quality meter

11Cl-PF3OUdS 11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid 9Cl-PF3ONS 9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid

### 1 INTRODUCTION

This report documents the initial per- and polyfluoroalkyl substances (PFAS) site characterization activities at and near the Gustavus Airport (GST). These activities were conducted in late fall of 2021. The GST is an active, Alaska Department of Environmental Conservation (DEC) listed contaminated site due to the presence of PFAS in groundwater and surface water (File Number 1507.38.017, Hazard ID 26904). The geographic coordinates of the GST terminal are latitude 58.4216, longitude -135.7020.

Shannon & Wilson, Inc. (S&W) has prepared this report on behalf of the Alaska Department of Transportation & Public Facilities (DOT&PF) Southcoast Region in accordance with the terms and conditions of S&W's contract. The field effort described herein was conducted in general accordance with:

- DOT&PF Statewide PFAS General Work Plan Revision 1 (GWP), submitted July 2020;
- GWP Addendum 006-GST-02 Revision 1 (Addendum), submitted August 2021;
- DEC's Addendum approval letter, dated September 22, 2021;
- 18 Alaska Administrative Code (AAC) 75.335; and
- relevant regulatory guidance documents.

# 1.1 Purpose and Objectives

The purpose of the services described in this report was to evaluate the fate and transport of PFAS resulting from the use of aqueous film forming foam (AFFF). The project objectives also included evaluating changes to groundwater PFAS concentrations in the area of the GST, including surface water impacts to groundwater near the GST, and investigating transport of PFAS near areas where high-level detections were reported in samples collected from runway asphalt in March and April 2021.

The 2021 PFAS site characterization effort included:

- collecting analytical surface and subsurface soil samples from near the GST runways and potential AFFF releases areas;
- installing and sampling temporary well points (TWPs) to evaluate PFAS concentrations
  just below the surface of groundwater;
- constructing, developing, and sampling monitoring wells (MWs) at 14 locations at or near GST; and

 collecting analytical surface water and sediment samples from GST drainage ditches, ponds, and creeks.

### 1.2 Background

General background information relating to sites covered under the GWP is included in Section 1.1 of the GWP. Background information specific to the GST is detailed below.

The GST terminal is located at 1 Airport Way in Gustavus, Alaska. The property is owned by the DOT&PF, who also own multiple adjacent parcels.

The DOT&PF Crash and Fire Rescue program used AFFF for training, systems testing, and emergency response at the GST for many years. Areas of known and potential use are shown as AFFF sites on Figure 1. The precise timeline and locations of AFFF use at the GST are unknown. Please note, several additional AFFF use locations have been added to Figure 1 based on asphalt-sample PFAS results and information received in a document produced by the public (Howell, 2019).

#### 1.2.1 Previous Investigations

On May 4, 2018, DEC informed DOT&PF the airport terminal well and the National Park Service (NPS) Water System well serving the school were at risk for PFAS contamination. On June 27, 2018, DOT&PF sampled both drinking-water supply wells for the presence of PFAS. The analytical results were received on July 30, 2018. The airport terminal well contained levels of PFAS exceeding the U.S. Environmental Protection Agency (EPA) Lifetime Health Advisory (LHA). The NPS well sample contained detections of several PFAS, with concentrations of perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) less than the EPA's LHA. DOT&PF and the Alaska Department of Administration Division of Risk Management (DRM) contacted S&W regarding the Gustavus results. S&W began water supply well search and sampling efforts in August 2018.

Water supply well sample concentrations for the sum of PFOS and PFOA range from not detected to 6,110 nanograms per liter (ng/L) in locations associated with the GST PFAS plume. Sampling areas were expanded until PFAS concentrations along the edges of the sampling areas were found to be below DEC regulatory levels. Water supply well depths are generally between 15 to 25 feet below ground surface (bgs), based on information provided by the residents and the former local driller. S&W was not able to obtain well-drilling or construction logs to confirm these depths.

S&W has been in regular communication with the public in response to resident concerns, participated in State of Alaska public-outreach meetings, and prepared communication materials for distribution to Gustavus residents. Since August 2018, S&W has collected samples from 121 water supply wells in Gustavus. As part of the initial site characterization efforts completed in October 2019, S&W collected samples from 15 MWs, 8 TWPs, 29 surface-soil locations, 13 sediment locations, and 10 surface water locations. S&W also calculated hydraulic gradient using groundwater elevation survey and field data. The results of the October 2019 site characterization are discussed in detail in our *Gustavus 2019 Summary Report*, *Revision 1*, dated April 8, 2020.

MW and TWP sample concentrations for the sum of PFOS and PFOA collected since October 2019 ranged from not detected offsite to 6,192 ng/L on GST property. The 2019 MWs were installed at 15, 20, 30 and 40 feet bgs; in some locations multiple monitoring wells were installed at varying depths. The 2019 TWPs were drilled to groundwater table; ranging from 0.33 feet to 13.80 feet bgs. Subsequent samples collected on a quarterly basis from MWs have shown similar PFOS and PFOA concentrations, with some exceptions following the December 2020 flooding.

Surface water PFOS and PFOA concentrations in samples collected in 2019 ranged from not detected at a location north of the GST to 379 ng/L downgradient of reported AFFF use areas. The surface water sample collected from the "duck pond" also showed concentrations of PFOS and PFOA over 100 ng/L. The "duck pond" may be a source area for PFAS detections in water supply wells southwest of the surface water body.

The 2019 surface soil and sediment sample concentrations of PFOS and PFOA ranged from not detected in upgradient locations at the north edges of the runways to 520 micrograms per kilogram ( $\mu g/kg$ ) PFOS in sediment taken from an onsite culvert and 4.5  $\mu g/kg$  PFOA in surface soil taken onsite near the DOT&PF facilities building. The 2019 soil boring concentrations ranged from not detected to 14  $\mu g/kg$  PFOS and 1.9  $\mu g/kg$  PFOA for samples collected during onsite MW installation.

### 1.3 Geology and Hydrology

The GST sampling area lies in a glacial outwash plain. The plain is bounded by the Chilkat Mountain Range to the northeast, Glacier Bay to the northwest and the Icy Strait to the south. Fluvial deposits are found with increasing frequency near the shoreline. Their high concentration of sand and gravel creates preferential pathways for the groundwater flow. Due to a high rate of glacial isostatic rebound, high silt concentrations are also observed closer to the shoreline.

Our knowledge of subsurface geology and hydrology in the investigation area is based on observations S&W made during drilling and information relayed to us by a local resident (Howell, 2019). Our 2019 and 2021 investigations noted the sampling area is mostly comprised of fluvial and marine sediments. The soil profile generally consists of water-bearing, interbedded sand and silt underlain by a silt or silty clay layer. The silt and clay layers were observed at varying depths from approximately 10 to 45 feet bgs. Three of the 50-foot-deep borings did not encounter silt or clay. Where clay was encountered during the 2021 event, it was described as "fat" or "wet" indicating the groundwater above and below the clay are communicating. Consequently, S&W does not consider the observed clay layer to be a confining layer.

The depth to the water table ranged from 0.62 feet bgs to 11.49 feet bgs. At the well cluster near the western end of Faraway Rd, the water table ranged from 6.33 feet bgs at the shallow well to 8.22 feet bgs at the deeper well where saltwater was encountered. Saltwater was also encountered in the deep well of the following monitoring well clusters: MW-13, MW-14, MW-15, MW-17, MW-21, and MW-23.

Table 1 presents the well-survey information, depth-to-water measurements, and calculated water-table elevations.

### 1.4 Contaminants of Concern and Action Levels

The primary contaminants of concern are PFAS compounds PFOS and PFOA. The DEC migration-to-groundwater soil cleanup levels for PFOS and PFOA are 3.0  $\mu$ g/kg and 1.7  $\mu$ g/kg, respectively. The DEC groundwater cleanup level for PFOS or PFOA is 400 ng/L for the individual compounds. The soil and groundwater cleanup levels were promulgated in 18 AAC 75.345 in 2016. There are no cleanup levels for other PFAS compounds.

The groundwater MWs installed for PFAS site characterization are located near residential and commercial water supply wells. Therefore, in this report S&W will also compare groundwater results to the current DEC action level for drinking water, which aligns with the EPA's LHA level of 70 ng/L for the sum of PFOS and PFOA. This action level was published in an April 2019 update to DEC's *Technical Memorandum: Action Levels for PFAS in Water and Guidance on Sampling Groundwater and Drinking Water*. From August 2018 to April 2019 the State of Alaska used a different action level for drinking water. The former 'sum of 5' action level for this period was 70 ng/L for the sum of PFOS, PFOA, perfluorohexanesulfonic acid (PFHxS), perfluoroheptanoic acid (PFHpA), and perfluorononanoic acid (PFNA).

DEC's Field Sampling Guidance also identifies benzene, toluene, ethylbenzene, and total xylenes (BTEX), gasoline range organics (GRO), diesel range organics (DRO), residual range

organics (RRO), and polycyclic aromatic hydrocarbons (PAHs) as contaminants of potential concern at AFFF training areas.

To evaluate the analytical data, groundwater samples are compared to 18 AAC 75.341 *Table C, Groundwater Human Health Cleanup Level* and the EPA LHA (for PFAS). Soil samples are compared to AAC 75.341 Tables B1, *Method Two – Migration to Groundwater*, and B2, *Method Two – Over 40-Inch Zone – Migration to Groundwater*.

The current regulatory and action levels, as well as the analytical reporting limits (RLs) for these contaminants are summarized in Exhibit 1-1. The water limits are reported in ng/L for the PFAS analytes and in micrograms per liter ( $\mu$ g/L) for the remaining project analytes. The soil limits are reported in  $\mu$ g/kg for the PFAS analytes and in milligrams per kilogram (mg/kg) for the remaining project analytes.

Exhibit 1-1: COPCs, Regulatory and Laboratory Reporting Limits

Madhad	Analista	Regulatory	Regulatory	Laboratory	LODs/RLs <sup>c</sup>
Method	Analyte	Soil Limita	Water Limit <sup>b</sup>	Soil	Water
PFAS Analyt	tes	(µg/kg)	(ng/L)	(µg/kg)	(ng/L)
537.1 or	PFOS	3.0	400	0.5	2.0
537.1 oi	PFOA	1.7	400	0.2	2.0
337.11VI <sup>cc</sup>	PFOS+PFOA (drinking)	-	70	-	-
Petroleum A	nalytes	(mg/kg)	(µg/L)	(mg/kg)	(µg/L)
AK101	GRO	260	2,200	1.25	50
AK102	DRO	230	1,500	10	300
AK103	RRO	9,700	1,100	50	250
	Benzene	0.022	4.6	0.00625	0.2
EPA 8260	Toluene	6.7	1,100	0.0125	0.5
(BTEX)	Ethylbenzene	0.13	15	0.0125	0.5
	Xylenes Total	1.5	190	0.0375	1.5
PAH Analyte	es	(mg/kg)	(µg/L)	(mg/kg)	(µg/L)
	1-Methylnaphthalene	0.41	11	0.0125	0.025
	2-Methylnaphthalene	1.3	36	0.0125	0.025
	Acenaphthene	37	530	0.0125	0.025
	Acenaphthylene	18	260	0.0125	0.025
	Anthracene	390	43	0.0125	0.025
	Benzo(a)anthracene	0.70	0.30	0.0125	0.025
	Benzo[a]pyrene	1.9	0.25	0.0125	0.01
ED.	Benzo[b]fluoranthene	20	2.5	0.0125	0.025
EPA 8270D-SIM	Benzo[g,h,i]perylene	15,000	0.26	0.0125	0.025
(PAH)	Benzo[k]fluoranthene	190	0.80	0.0125	0.025
(1 / 11 1)	Chrysene	600	2.0	0.0125	0.025
	Dibenzo[a,h]anthracene	6.3	0.25	0.0125	0.01
	Fluoranthene	590	260	0.0125	0.025
	Fluorene	36	290	0.0125	0.025
	Indeno [1,2,3-c,d] pyrene	65	0.19	0.0125	0.025
	Naphthalene	0.38	1.7	0.0100	0.05
	Phenanthrene	39	170	0.0125	0.025
	Pyrene	87	120	0.0125	0.025

#### Notes:

- a. 18 AAC 75 Table B2. Method Two Petroleum Hydrocarbon Soil Cleanup Levels Over 40-Inch Zone Migration to Groundwater or Table B1. Method Two Soil Cleanup Levels Table Migration to Groundwater.
- b. 18 AAC 75 Table C. Groundwater Cleanup Levels.
- c. May 2021 LODs from SGS North America, Inc. for petroleum and PAH analyses. May 2021 RLs from Eurofins TestAmerica, Sacramento for PFAS analyses.
- d. All available PFAS analytes with Alaska certification were requested for analytical reports. However, only PFOS and PFOA have a DEC drinking water action level or cleanup levels and are reported in this table.

BTEX = benzene, toluene, ethylbenzene, and total xylenes; DRO = diesel range organics; EPA = U.S. Environmental Protection Agency; GRO = gasoline range organics; LOD = limit of detection; mg/kg = milligram per kilogram; µg/L = microgram per liter; PAH = polynuclear aromatic hydrocarbons; PFAS = per- and polyfluoroalkyl substances; PFOA = perfluorooctanoic acid; PFOS = perfluorooctanesulfonic acid; RL = reporting limit; RRO = residual range organics; SIM = selective ion monitoring

### 1.5 Scope of Services

The scope of services summarized in this report includes site access and permitting; targeted soil field screening; analytical soil, groundwater, surface water, and sediment sampling; data analysis; and preparation of this summary report. Soil sampling included collection of surface soil and subsurface soil from borings.

This report was prepared for the exclusive use of the DOT&PF and its representatives. This work presents S&W's professional judgment as to the conditions of the site. Information presented here is based on the sampling and analyses field staff performed. This report should not be used for other purposes without S&W's approval or if any of the following occurs:

- Project details change, or new information becomes available, such as revised regulatory levels or the discovery of additional source areas.
- Conditions change due to natural forces or human activity at, under, or adjacent to the project site.
- Assumptions stated in this report have changed.
- If the site ownership or land use has changed.
- Regulations, laws, or cleanup levels change.
- If the site's regulatory status has changed.

If any of these occur, S&W should be retained to review the applicability of recommendations. This report should not be used for other purposes without S&W's review. If a service is not specifically indicated in this report, do not assume it was performed.

# 2 FIELD ACTIVITIES

This section summarizes the site characterization field activities performed during October 2021, to implement the GWP Addendum. S&W staff members Adam Wyborny, Justin Risley, Mason Craker, Kristen Freiburger, and Veselina Yakimova conducted the initial site characterization effort described in this report. These individuals are State of Alaska Qualified Environmental Professionals as defined in 18 AAC 75.333[b].

S&W is aware of the potential for cross-contamination of PFAS from numerous everyday items. S&W took appropriate precautions to prevent cross-contamination, including discontinuing the use of personal protective equipment and field supplies known to contain PFAS, using liner bags to contain samples before and after sample collection, hand washing,

and donning a fresh pair of disposable nitrile gloves before sample collection. Additionally, samples were collected in laboratory-supplied, high-density polyethylene containers to prevent PFAS from adhering to the container.

### 2.1 Preparation and Permitting

S&W coordinated with the Federal Aviation Administration (FAA), The City of Gustavus, and multiple departments within DOT&PF to obtain the necessary permits and permissions to conduct the site characterization activities. Copies of these permits are included in Appendix A.

Due to the use of a drill rig to advance soil borings near the GST runway, an FAA 7460-1 airspace permit was required. S&W submitted the final 7460-1 permit application to the FAA on September 30, 2021. The 7460-1 determination letter was received October 25, 2021. Up to 25 soil boring locations were located within or near movement areas. S&W and the DOT&PF Airport Manager coordinated with the FAA to schedule an outage and brief runway closure to allow drilling near the intersection of the two runways. DOT&PF issued a Notice to Airmen for this time period.

S&W obtained a DOT&PF building permit for planned sampling activities conducted on airport property, and a City of Gustavus civil work permit for offsite MW installation occurring in road rights-of-way. DOT&PF building permit number ADA-50910 was issued October 8, 2021. The City of Gustavus civil work permit was issued on October 18, 2021. S&W subcontracted Northern Dame to produce the traffic control plan for drilling and sampling locations located on DOT&PF-maintained roads. The traffic control plan was submitted to and approved by DOT&PF prior to initiating work (Appendix A).

Utilities clearance was determined in coordination with the Alaska Digline, the GST Airport Manager, FAA, City of Gustavus, and other local applicable entities.

DOT&PF personnel escorted field staff within movement areas, and within all GST restricted areas. No badging was required.

# 2.2 Soil Sampling

Soil characterization activities for this project included sampling surface and subsurface soil. Surface soil sample locations are depicted in Figure 2, while soil borings are depicted in Figures 3 and 4. Soil boring logs are included in Appendix B. Copies of S&W 's field notes are included in Appendix C.

#### 2.2.1 Surface Soil

S&W field staff collected surface soil from the following locations:

- seven surface-soil samples around the former fire training pit (SS-023 through SS-029);
- 14 surface soil samples near and around the DOT&PF shop building (SS-005 through SS-013 and SS-030 through SS-034);
- one surface soil sample from the north corner of the intersection of Runways 2-20 and 11-29 (SS-016);
- four surface soil samples surrounding MW-11-15 to investigate known PFAS source areas (SS-014, SS-015, SS-017, and SS-018);
- four surface soil from Runway 2-20 near the location of the highest asphalt sample result from April 2021 (SS-001 through SS-004); and
- four surface soil samples near a high-level asphalt result location near the Alaska Airlines terminal building (SS-019 through SS-022).

Copies of our *Soil Sample Collection Logs* are included in Appendix C. The surface soil samples were analyzed for PFAS only. These samples were collected from immediately below the vegetation or historic asphalt, where present, within the uppermost four inches bgs. Most of the samples consisted of sand fill with some organics. Sample *21GST-SS-002* contained paint chips. S&W collected four field-duplicate sample pairs.

### 2.2.2 Soil Borings

On behalf of DOT&PF, S&W retained the services of Discovery Drilling, Inc. (Discovery) to advance soil borings and install TWPs and long-term groundwater MWs. They installed 15 TWPs and 14 MWs collocated with soil borings and advanced 14 soil borings unassociated with the monitoring wells. The borings extended from ground surface to up to 50 feet bgs.



Exhibit 2-1: Drilling at Runway near the ARFF building

Discovery used a Geoprobe Model

6712 DT track-mounted drill rig. This drill is equipped with Macro-Core tooling, a solid barrel (2-inch outside diameter) direct-push device for collecting continuous core samples of

unconsolidated material and to install the MWs. Discovery advanced direct push tooling to reach 50 feet bgs.

Discovery advanced soil borings without MWs in the following 14 locations:

- two soil borings at the southwestern end of Runway 2-20 (SB001 and SB002);
- four soil borings near the ARFF building (SB003, SB004, SB005 and SB007);
- two soil borings north of the taxiway between runways 2-20 and 11-29 (SB008 and SB006)
- one soil boring north of the intersection of Runways 2-20 and 11-29 (SB009);
- one soil boring south of the intersection of Runways 2-20 and 11-29 (SB010);
- one soil boring at the southeastern end of the taxiway near the Alaska Airlines terminal (SB011); and
- three soil borings at the former fire training, near the southeastern end of Runway 11-29 (SB012, SB013 and SB014).

A S&W engineer field-screened soil using a photoionization detector (PID), described recovered soil for the purpose of determining subsurface lithology, and collected analytical soil samples from each boring. Appendix B presents a descriptive log of soil conditions and an explanation of the symbols and terminology used. The highest PID reading for subsurface soil was 1.3 parts per million collected from 0 to 4.1 feet bgs in sample 21GST-SB007. Field staff did not encounter a petroleum sheen, odor, or other indicators of petroleum contamination while drilling. Copies of our *Soil Sample Collection Logs* are included in Appendix C.

S&W collected two to seven analytical samples per boring for PFAS analysis. Onsite, these samples were collected from just below vegetation or asphalt, within six inches of the soil-groundwater interface and from every 5 to 10 feet (depending on changes in soil lithology) thereafter to a maximum extent of the well or boring scope. Preference was given to more organic-rich material (e.g. peat or organic silt layer) and changes in soil type. Offsite, PFAS samples were collected only from the groundwater interface and screened interval. Petroleum soil samples were collected from 10 of the onsite soil borings. Two samples per boring were collected per boring, one from the top three inches and one from the range where the PID reading was the highest. S&W collected 10 subsurface soil duplicate sample pairs for PFAS analysis and three duplicate sample pair for analysis of petroleum analytes. The discreet sample intervals are shown in the field notes (Appendix C) and the analytical data tables.

### 2.3 Water Sampling

Water characterization activities for this project included sampling surface water and groundwater at and near the GST. Groundwater characterization was completed by sampling both TWPs and MWs.

#### 2.3.1 Monitoring Wells

Discovery installed 26 MWs consisting of 12 clusters of two wells each and two individual water table wells. Well locations are shown in Figures 5 and 6. For easy reference, the rounded depth of the MW is denoted in the well name (i.e. MW-15-15 was installed at approximately 15 feet bgs).

#### 2.3.1.1 Well Installation

Discovery advanced soil borings and installed MWs in the following 14 locations:

- one water table MW in the eastern shoulder of Wilson Rd approximately 685 feet north of the intersection with Gustavus Rd (MW-9-10);
- one MW nest on Faraway Road (MW-21-15/45), one MW nest on White Drive (MW-22-15/40), and one MW nest on Parker Drive (MW-24-10/30);
- one MW nest at the southern end of Runway 2-20 (MW-18-15/50);
- one water table MW near the DOT&PF shop (MW-16-15);
- three additional MW nests, between onsite well MW-11-15 and the Gustavus School/NPS housing (MW-14-15/31, MW-15-15/46, and MW-17-20/40);



Exhibit 2-2: Well installation at MW-22

- one MW nest between the community well, known as the Alaska Terminal Well, and the area of known AFFF use behind the Alaska Airlines Terminal building (MW-13-20/45);
- one MW nest at the northeast corner of Gustavus Road and Wilson Road (MW-20-15/40);
- one MW nest along Wilson Road, near Icy Drive (MW-25-15/47);
- one MW nest east of the Salmon River (MW-23-20/50); and
- one MW nest along Gustavus Road east of Wilson Road, focusing in an area that experienced flooding in 2020 (MW-19-15/50).

The well depths and screened interval lengths vary with each MW due to subsurface conditions (see Appendix B). Discovery completed the wells using flush-mount monuments. The wells were constructed using two-inch inside-diameter schedule 40 PVC material. The screens are pre-pack 0.010-inch slotted screen with 20/40 sand and threaded end caps. The filter pack within the annular space at and around the screened interval is 20/40 silica sand. A bentonite chip seal followed by small sections of pea gravel or natural slough fills the remaining annul space, depending on the well. Well construction details can be found in the individual boring logs in Appendix B and *Monitoring Well Construction Details* field forms can be found in Appendix C.

#### 2.3.1.2 Development and Sampling

The MWs were developed at least 24-hours after installation using an inertial pump and PFAS-free tubing with a foot value and surge block to agitate the water column and remove sediment. Development proceeded until there was a significant improvement in the clarity of the water. Copies of our *Well Development Logs* and *Monitoring Well Sampling Logs* are included in Appendix C.



Exhibit 2-3: Entrained silt in MW development water

Following development, a peristaltic pump was used to purge and sample the well. Samples were collected once water parameters stabilized or a total of three well volumes had been purged. Field staff measured parameters using a multiprobe water quality meter (YSI) and recorded pH, temperature in degrees Celsius (°C), conductivity in microSiemens (µS), dissolved oxygen (DO) in milligrams

per liter (mg/L), and redox potential in millivolts (mV) approximately once every three minutes until sample collection. The following values were used to indicate stability for a minimum of three consecutive readings:  $\pm 0.1$  pH,  $\pm 3$  percent °C,  $\pm 10$  percent DO,  $\pm 3$  percent conductivity, and  $\pm 10$  mV redox. Water clarity (visual) was also recorded.

The water samples were collected into laboratory-supplied containers immediately after each well was purged. Groundwater samples were submitted for PFAS analysis from each MW. Eleven field duplicate sample pairs were collected for PFAS analysis. Please note, a field-duplicate sample was not collected on days when the pump was only used to sample one MW, for budgetary reasons.

#### 2.3.2 Temporary Well Points

Discovery installed 1-inch diameter PVC points (TWPs) at 15 locations listed below and shown on Figure 7.

- one TWP south of MW-12-10 (TWP-2);
- one TWP northeast of a major drainage ditch downgradient from the former fire training pit (TWP-1);
- one TWP north of MW-12-10 and upgradient of the former fire training pit (TWP-3);
- two TWPs north of MW-11-15 (TWP-7 and TWP-8);
- three TWPs along the northwest side of Runway 2-20 (TWP-9, TWP-11 and TWP-12);
- one TWPs south of Runway 2-20 (TWP-15);
- one TWP at the west end of Runway 2-20 (TWP-14);
- one TWP to the northwest of the "duck pond" (TWP-13); and
- four TWPs onsite in areas where PFAS was detected in asphalt samples collected in April 2021 (TWP-6, TWP-5, TWP-4, and TWP-10).

The TWPs were purged using new, PFAS-free peristaltic pump tubing. Following parameter stabilization, PFAS groundwater samples were collected from each of the TWPs. Copies of *Monitoring Well Sampling Logs* used for TWP sampling are included in Appendix C.

The TWPs were removed from the ground after sampling, drained, and materials taken to the Gustavus Landfill. The bore holes were backfilled with bentonite clay to within approximately two feet bgs and with pea gravel to the surface.

Please note sample *PW-016* was collected from the water supply well at Glacier Bay Construction, instead of installing a TWP as indicated in the GWP Addendum. This was due to the owner's request.

#### 2.3.3 Surface Water and Sediment Sampling

S&W collected 30 surface-water analytical samples during the sampling event. Shannon & Wilson collected 27 sediment samples collocated with surface water samples. Samples were collected from drainage ditches and ponds around and near the airport. Surface water sample locations are listed below and shown in Figure 8. Sediment sample locations are listed below and shown in Figure 9.

Surface water samples were collected from the following locations:

• three samples from the gravel pits north of the airport, one from each of the southern gravel pits (*SW-001*, *SW-002*, and *SW-003*); and

• one sample near the MW-1 cluster, sample collected following discussion with local resident regarding groundwater flow in the area (*SW-031*).

Surface water and collocated sediment samples were collected from the following locations:

- two samples from the drainage ditch that runs adjacent to the north side of Gustavus Road, one between the airport and Moose Lane (*SW-014*) and one between the Gustavus School and Glen's Ditch Road (*SW-025*);
- one sample from the drainage ditch that runs adjacent to the south side of Gustavus Road near Glen's Ditch Road (*SW-027*);
- one location on Glen's ditch south of Same Old Road (SW-030);
- two samples from drainage ditches near MW-11-15 (SW-008 and SW-010);
- one sample from the drainage ditch adjacent (north) to Moose Lane (SW-015);
- two samples at different locations from drainages surrounding the northwest portion of Runway 11-29 (SW-005 and SW-007);
- one sample from the on-airport drainage south of the former fire training pit near the exit of the under-runway culvert (*SW-019*);
- one sample from a drainage pathway running along the northeast side of the airport fence (*SW*-006);
- one sample from the square pond east of the airport, collected from the northeastern edge near the stockpiles staged in this area from historic construction activities (*SW-012*);
- one sample from the drainage ditch on State Dock Road, south of Gustavus Road (SW-029);
- one sample from the drainage ditch adjacent to Wilson Road, north of Runway, between Harry Hall Drive and Parker Drive (*SW*-022);
- one sample from the drainage ditch behind NPS housing on Gustavus Road (SW-026);
- one sample from the drainage ditch that runs between the Alaska Airlines terminal and the southeast end of Runway 11-29 (*SW-016*);
- the drainage ditch adjacent to Airport Beach Road on south side of Runway 11-29 (SW-018); and
- a sample from the drainage ditch adjacent to the road to the DOT&PF Facilities Building from Gustavus Road (SW-013).

Surface water and collocated sediment samples in addition to "deep" sediment samples (2 to 3 feet below the sediment surface) were collected from the following locations:

 two samples from the drainage ditch running along the eastern side of the airport, outside of the fenced area (SW-021 and SW-020);

- two samples from the east side of Runway 11-29 along the airport fence (SW-011 and SW-017);
- two locations along Glen's ditch, one from where the "duck pond" and airport drainage meets Glen's ditch (SW-024), and one from Glen's ditch south of Gustavus road (SW-028); and
- two samples from the area known as the "duck pond" to the community (*SW-009* and *SW-023*).

The surface water samples were collected using a disposable plastic cup, or the laboratory-supplied sample container within an arm's reach from the edge of the water. No reusable equipment was employed to sample the surface water. The sediment samples were collected from the shore using a hand auger, collecting soil right beneath the vegetation layer. Copies of our *Surface Water Sample Logs* are included in Appendix C.

Surface water and sediment samples were submitted for PFAS analysis. S&W collected four collocated surface water and sediment field-duplicate pairs. S&W also collected two equipment blanks for PFAS analysis from reusable equipment used to collect the sediment samples.

### 2.4 Sample Custody, Storage, and Shipping

Field staff collected, handled, and stored samples in a manner consistent with the GWP and DEC *Field Sampling Guidance*. Immediately after collection, the samples were placed in a designated sample cooler maintained between 0 °C and 6 °C with ice substitute. The PFAS samples were stored in individual Ziploc bags. S&W maintained custody of the analytical samples until submitting them to the laboratory for analysis. The samples were stored in sample coolers at nighttime.

When shipping the analytical samples, chain-of-custody forms were placed in the hard-sided cooler with an adequate quantity of frozen ice substitute to maintain the proper temperature range. The samples were packaged as necessary to prevent bottle breakage and sealed with custody seals on the outside of each cooler. Samples submitted to SGS North America, Inc. (SGS) were shipped to the Ted Stevens Anchorage International Airport using Alaska Air Cargo's Goldstreak service and delivered to the laboratory by currier. Samples submitted to Eurofins TestAmerica Laboratories, Sacramento (Eurofins) were shipped to the Sacramento International Airport where they were collected by an Eurofins employee. Some of the samples arrived at the laboratory outside of the designated temperature range. Due to the chemical stability of PFAS, the data are considered unaffected by the minor temperature exceedance.

### 2.5 Hydraulic Gradient and Well Survey

Lounsbury and Associates, Inc. conducted a survey of the monitoring wells and TWPs from November 14 to November 15, 2021, measuring the well casing elevations and longitude/latitude of each location. S&W measured the depth to water from the well casing for each monitoring well and TWP on November 4, 2021. S&W calculated hydraulic gradient using the *U.S. Environmental Protection Agency Online Hydraulic Gradient Calculator* with well location coordinates, top-of-casing elevation, and depth-to-water values as inputs. The gradient for the TWPs and monitoring wells installed less than 20 feet bgs was calculated separately from the gradient for the monitoring wells installed deeper than 20 feet bgs. Results from the 2021 calculations indicate groundwater flow direction is generally south to southwest (Figures 10 and 11).

In the wells installed less than 20 feet bgs, the flow direction had a heading of 176 degrees from north and a slope of 0.002 vertical foot per horizontal foot (Figure 10). Data inputs for the survey are presented in Table 1.

### 2.6 Investigation-derived Waste



Exhibit 2-4: GAC system

Soil generated from borings were contained in seven labeled 55-gallon drums and temporarily stored behind the DOT&PF shop, adjacent to runway 2-20. Containerized soil with results below the regulatory level will be disposed of to the ground. Soil with results above the action level will be disposed of via shipment to a waste disposal facility, yet to be determined, or an equivalent alternative. DEC approval will be received prior to removing disposal materials from the site. This report does not address the final disposal of the drums.

Purge water generated during groundwater sampling activities was filtered through our portable granular activated carbon (GAC) system and disposed of to the ground surface. The GAC system consisted of a sediment filter and six, sealed 5-gallon buckets containing GAC.

The buckets were placed in series and fitted with a valve capable of adjusting the water flow

through the GAC bucket, providing additional resonance time, where needed. Water used to decontaminate the drill augers was also disposed of through the GAC system.

An effluent sample was collected following GAC disposal. Result presented in Section 3.7. This unit will continue to be used for purge water associated with the DOT&PF PFAS project and a sample collected following each event. Once breakthrough is shown in the effluent sample, the GAC will be containerized in a labeled 55-gallon drum awaiting DEC approval for offsite disposal.

Other investigation-derived waste included non-reusable equipment such as nitrile gloves and sample tubing and was disposed of in the Gustavus landfill.

#### 2.7 Deviations from the Work Plan

In general, S&W conducted our services in accordance with the approved GWP Addendum. The following are the deviations from our agreed-upon scope of services. These modifications do not impact the overall data quality or project aims.

- Our GWP Addendum called for collection of surface-water samples using a peristaltic pump and disposable tubing. Due to access issues at some of the locations, surface-water samples were collected with a new PFAS-free plastic sample container provided by the analytical lab. This method was used at each surface-water location for consistency.
- Analytical samples for subsurface soils collected from offsite wells (groundwater interface and screened interval) are used to determine if the soils need to be disposed of as PFAS-contaminated waste. Due to the limited volume of soil from each location, these samples are representative, and a separate analytical sample was not collected from the drum. Please note the limited volume was bagged separately from soils from other locations. The bags were placed in the drums and labeled for potential disposal at a later date.
- Soil borings SB7, SB8 and SB9 were relocated off of the new asphalt placed during the recent runway resurfacing. MW-20 was relocated east of the planned location due to unsuitable site conditions at the original location.
- A well depth tape was used to measure the depth to water in MW-13-45, MW-14-31, MW-15-45, MW-17-40, MW-21-45, and MW-23-50, where saltwater was observed, and the water sounder meter may have malfunctioned. There is evidence the deep and shallow subsurface groundwater zones are communicating; therefore, groundwater elevations with readings greater than 1.0 foot difference between the shallow and deep well have been removed for the purpose of calculating groundwater gradient in the deep zone (Figure 11). Please see Section 5.2 for additional information.
- Permission to install TWP-16 was not granted by the property owner. Instead, a sample from the existing water supply well was collected and subsequently named *PW-016*.

## 3 ANALYTICAL RESULTS

The soil, sediment, and water samples submitted for this project were analyzed for determination of the 18 PFAS compounds listed in EPA Method 537.1 or 537M, using the DEC compliant method defined in quality systems manual (QSM) 5.3, Table B-15. This list is based on the 18 PFAS compounds that are approved by the DEC for EPA Method 537.1 or 537M for the given laboratory. The PFAS samples were analyzed by Eurofins TestAmerica in West Sacramento, California.

S&W also submitted a subset of the soil samples for analysis of GRO, DRO, RRO, BTEX, and PAHs by Methods AK101, AK102, AK103, EPA 8260, and EPA 8270D SIM, respectively. These samples were analyzed by SGS North America, Inc. in Anchorage, Alaska.

The GST analytical results are summarized in Tables 2 through 9. Analytical sample quality assurance/quality control (QA/QC) is summarized in Appendix D. The laboratory reports and DEC Laboratory Data Review Checklists for each work order are also included in Appendix D.

#### 3.1 Surface Soil

Analytical sample results for the 51 surface soil samples are summarized in Table 2 (34 primary samples), Table 3 (14 shallow samples less than 1 foot bgs) and Table 4 (three shallow samples less than 1 foot bgs), and Figure 2. PFOS was detected at concentrations above the DEC migration-to-groundwater soil cleanup level of 3.0  $\mu$ g/kg in 15 surface soil samples, listed below from highest to lowest concentration of PFOS:

- 21GST-SS-022, collected from the taxiway behind the Alaska Airlines terminal 310 μg/kg;
- 21GST-SB011-0.4-0.6, collected from soil boring SB011 at the southeastern end of the taxiway near the Alaska Airlines terminal 79 μg/kg;
- 21GST-SS-009, collected outside of the DOT&PF facilities building 64 μg/kg;
- 21GST-SS-008, collected near the DOT&PF facilities building 33 μg/kg;
- 21GST-SS-006, collected along runway 02-20, near the DOT&PF facilities building 33 J\*
  µg/kg (estimated);
- 21GST-SS-021, collected at the southeastern end of the taxiway near the Alaska Airlines terminal 32 μg/kg;
- 21GST-SS-020, collected at the southeastern end of the taxiway near the Alaska Airlines terminal - 27 μg/kg;

- 21GST-SS-019, collected at the southeastern end of the taxiway near the Alaska Airlines terminal - 13 µg/kg;
- 21GST-SS-004, collected at the south end of runway 02-20 11 μg/kg;
- 21GST-SB003, collected from soil boring SB003 near the DOT&PF facilities building 10 μg/kg;
- 21GST-SS-003, collected at the south end of runway 02-20 9.9 μg/kg;
- 21GST-SS-005, collected along runway 02-20, near the DOT&PF facilities building 6.5 μg/kg;
- 21GST-MW16, collected from the MW16 soil boring along runway 02-20, near the DOT&PF facilities building – 6.5 μg/kg;
- 21GST-SS-002, collected at the south end of runway  $02-20 6.4 \mu g/kg$ ; and
- 21GST-SS-007, collected near the DOT&PF facilities building 5.8 μg/kg.

PFOA was also detected at a concentration above the DEC migration-to-groundwater soil cleanup level of 1.7  $\mu$ g/kg surface soil sample 21GST-SS-022 with a concentration of 1.8  $\mu$ g/kg.

PFOS and PFOA were detected below their respective cleanup levels in several other surface soil samples. PFHxS, perfluorohexanoic acid (PFHxA), PFHpA, PFNA, perfluorobutanesulfonic acid (PFBS), perfluorodecanoic acid (PFDA), perfluoroundecanoic acid (PFUnA), perfluorododecanoic acid (PFDoA), perfluorotetradecanoic acid (PFTeA), and N-methyl perfluoroctane sulfonamidoacetic acid (N-MeFOSAA) were also detected in concentrations above and below the laboratory RL in some of the surface soil samples. Cleanup levels do not exist for these analytes.

# 3.2 Soil Borings

Soil boring results for 72 samples collected greater than 1 foot bgs are summarized in Table 3 (31 samples) and Table 4 (41 samples), and Figures 2 and 3. Please note, surface samples collected from the soil borings are discussed in the section above.

The highest detections of PFAS analytes were in soil boring sample 21GST-SB011-7.4-7.6. PFOS was detected at an estimated 25  $\mu$ g/kg, over eight times the DEC migration-to-groundwater cleanup level. PFOA exceeded the soil cleanup level at a concentration of 4.9  $\mu$ g/kg. PFHxS was also reported at 20  $\mu$ g/kg.

PFOS was also present below the cleanup level and above the RL in the soil boring samples listed below from highest to lowest concentrations:

- 21GST-SB003-3.7-3.9, located near the DOT&PF facilities building 2.6 μg/kg;
- 21GST-MW16-9.4-9.6, located near the DOT&PF facilities building 1.8 µg/kg;

- 21GST-SB008-9.9-10.1, located north of the taxiway between runways 2-20 and 11-29 0.69 μg/kg;
- 21GST-SB005-8.9-9.1, located near the DOT&PF facilities building 0.66 μg/kg;
- 21GST-MW15-38.9-39.1, located at the north end of Moose Lane 0.60 J\* μg/kg (estimated);
- 21GST-SB001-7.9-8.1, located at the southwestern end of runway 2-20 0.31 µg/kg;
- 21GST-SB006-9.9-10.1, located near the DOT&PF facilities building– 0.31 μg/kg; and
- 21GST-SB004-8.9-9.1, located near the DOT&PF facilities building 0.25 μg/kg.

Soil samples from borings SB007, SB009, SB010, SB012, SB013, SB014, MW13, MW15, MW17, MW18, MW19, MW20, MW21, and MW24 had one or more PFAS analytes detected at an estimated concentration.

Samples collected from the surface and from the groundwater smear zone in soil borings SB001, SB002, SB003, SB004, SB005, SB007, SB009, SB011, SB012, and SB013 were also submitted for petroleum analysis (Figure 4). DRO and RRO were detected in the surface soil of borings SB003, SB005, SB007 and SB011. The highest concentrations of DRO (146 mg/kg) and RRO (2,380 mg/kg) were reported in sample *21GST-SB011-0.4-0.6*, at the southeastern end of the taxiway near the Alaska Airlines terminal. DRO were also detected in the smear zone sample for soil borings SB004 and SB007, and RRO were detected in the smear zone sample of soil boring SB011. GRO, BTEX, and PAHs were not detected above the laboratory limits of quantification (LOQ) in any of the other soil boring samples (Table 5).

# 3.3 Monitoring Wells

The analytical results from a total of 41 MW samples are shown in Figures 5 and 6, as well as summarized in Table 6. Results for MWs installed shallower than 20 feet bgs are shown in Figure 5. Results for wells installed deeper than 20 feet bgs are shown in Figure 6. Here S&W also briefly discusses the Q4 2021 results from the monitoring well network installed during the initial site characterization in 2019 (MW-1 through MW-12).

PFOS exceeded the EPA LHA level of 70 ng/L in four MWs installed shallower than 20 feet bgs, listed below from highest to lowest concentration:

- MW-11-15, located near the intersection of Runway 2-20 and the apron 820 ng/L;
- MW-2-20, located on the west side of the Salmon River near City Hall 360 ng/L (please note this area is being investigated by DEC and is likely the result of another source unrelated to the DOT&PF onsite use of AFFF);
- MW-17-20, located on Gustavus Rd, near the Alaska Power & Telephone office 130 ng/L;

MW-10-20, located on Wilson Rd, near the south end of Runway 2-20 - 81 ng/L;

The highest PFOS detection below the LHA was in MW-18-15, which also had elevated concentrations of PFHxS. PFOA, PFHxS, PFHxA, and PFNA were present in MW-2-20, MW-7-20, MW-9-10, MW-11-5, MW-12-10, MW-16-15, MW-17-20, and MW-23-20.

The monitoring wells installed above the clay layer but below 20 feet bgs had reported detections of PFOS, listed below from highest to lowest concentration:

- MW-9-30, located along the south end of Wilson Road -37 ng/L;
- MW-3-40, located near the Community Center on Gustavus Road–12 ng/L; and
- MW-18-50, located at the southern end of Runway 2-20 2.1 ng/L.

The monitoring wells installed below the observed clay layer with detections of PFOS are listed below from highest to lowest concentration:

- MW-22-40, located on White Drive 7.2 ng/L; and
- MW-19-50, located on Gustavus Road in an area that experienced flooding in 2020 1.3 J ng/L (estimated).

Wells installed below the clay layer are denoted on Table 1 with a "\*" next to the well name. Wells where brackish water was encountered are listed below:

- MW-13-45 PFAS not detected in the sample from this well
- MW-14-31- PFOS and PFOA detected at a combined estimated concentration of 39 J ng/L
- MW-15-45 PFAS not detected in the sample from this well
- MW-17-40 PFAS not detected in the sample from this well
- MW-21-45 PFAS not detected in the sample from this well
- MW-23-50 PFAS not detected in the sample from this well

# 3.4 Temporary Well Points

The results from 15 TWP samples and one water supply well sample are summarized in Figure 7 and Table 7. PFOS exceeded the EPA LHA level in five TWPs, listed below from the highest to lowest concentration:

- TWP-4, located on the taxiway behind the Alaska Airlines terminal 340 ng/L;
- TWP-5, located on the taxiway behind the Alaska Airlines terminal 170 ng/L;
- TWP-8, located at the north end of Runway 2-20 150 ng/L.
- TWP-15, located close to the south end of Runway 2-20 84 ng/L; and
- TWP-9, located at the north end of Runway 2-20 across from TWP-8 74 ng/L.

PFOA concentrations were below the LHA cleanup levels, with the highest one at 17 ng/L in TWP-4. This location also had elevated concentrations of PFHxS, PFHxA, and PFHpA. All TWPs had one or more PFAS analytes detected, except for TWP-1, TWP-3, and TWP-12, which had no detections.

#### 3.5 Surface Water

The results from 30 PFAS surface water samples are shown in Table 8 and Figure 8. PFOS exceeded the EPA LHA in five surface water samples, listed below from highest to lowest concentration:

- 21GST-SW-010, from a drainage ditch near MW-11-15 270 ng/L
- 21GST-SW-013, from a drainage ditch on the northwestern portion of Moose Lane 260 ng/L;
- 21GST-SW-015, from a drainage ditch adjacent to the southeastern portion of Moose Lane – 220 ng/L;
- 21GST-SW-016, from a drainage ditch that runs between the Alaska Airlines terminal and the southeast end of Runway 11-29 160 ng/L; and
- 21GST-SW-025, from a drainage ditch that runs adjacent to the north side of Gustavus Road – 130 ng/L.

The sum of PFOS and PFOA exceeded LHA in the drainage ditch running along the eastern side of the airport (sample 21GST-SW-011). PFOA, PFHxS, PFHxA, PFHpA, and PFBS were also detected at concentrations above and below the laboratory RL in some of the surface water samples.

#### 3.6 Sediment

The results from a total of 35 sediment analytical samples are summarized in Table 9 and Figure 9. PFOS was detected at 1.6  $\mu$ g/kg in the shallow sediment and at 2.5  $\mu$ g/kg in the deeper sediment of a drainage ditch near the former training pit and MW-12-10 (21GST-SED-017). PFOS was present at lower estimated concentrations in six other sediment samples.

PFOA was not detected in the analyzed sediment. PFHxS and N-methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA) were detected below the laboratory RL in some samples.

### 3.7 GAC Confirmation Samples

The GAC confirmation water sample was collected following the filtering of water from the development of the MWs and TWPs and drill rig decontamination. PFAS were not detected in the post-filtration water sample. GAC treatment of purge water and decontamination water is considered successful.

Analytical sample result for the GAC confirmation sample is presented in Table 6.

## 4 UPDATED CONCEPTUAL SITE MODEL

A draft conceptual site model (CSM) was included in the GWP Addendum describing planned site characterization activities. The enclosed CSM has been updated based on observed site conditions and the analytical results discussed in Section 3. This CSM should be reevaluated if regulatory standards change. The updated Human Health CSM Scoping Form and Graphic Form are presented in Appendix E.

### 4.1 Description of Potential Receptors

This sampling effort identified PFOS and PFOA above cleanup levels in analytical samples both inside and outside the GST fence. S&W considers residents, commercial/industrial workers, site visitors or trespassers, construction workers, subsistent harvesters, and farmers in the impacted areas to be current or future receptors for one or more exposure pathway. Previous water supply well sampling identified residential and commercial receptors on and off airport property. Additional potential receptors include DOT&PF personnel, airline and cargo employees, emergency responders, and private pilots.

### 4.2 Potential Exposure Pathways

Potential exposure pathways include:

- incidental ingestion of soil or groundwater, or groundwater under the influence of surface water;
- dermal adsorption of contaminants in soil, groundwater, or surface water;
- inhalation of fugitive dust;
- direct contact with sediment; and
- ingestion of wild or farmed foods.

#### 4.2.1 Soil Exposure

Surface soil and fill at the GST has a high sand content that is not likely to be wind-blown. PFOS and/or PFOA exceeds the soil-cleanup level in several onsite areas. Direct contact with PFOS- and PFOA-contaminated soil is possible for residents and visitors travelling by air, DOT&PF employees, commercial or industrial workers, site visitors, and construction workers. Members of the public could potentially come in contact with PFOS-contaminated soil near



Exhibit 4-1: Drilling near the Alaska Airlines terminal

the Alaska Airlines terminal (soil boring SB-011 and SS-022; Exhibit 4-1). The other soil-sample exceedances are not accessible by the public. Future runway repair or other construction projects could expose DOT&PF employees, construction workers, and other visitors to surface or subsurface soil contamination.

#### 4.2.2 Groundwater

Ingestion of groundwater is an exposure pathway, as several private wells near the GST have been found to have PFAS contamination that exceeds state regulatory levels. Privatewells near the GST are generally shallow, at about 15 – 25 feet bgs. S&W understands setting wells in a deeper, uncontaminated aquifer is not an option in Gustavus due to brackish water at depth.

Based on our current understanding of contaminant concentrations in private wells, residents may continue to use their well water for domestic purposes, including bathing and gardening. Commercial or industrial workers may use their water for vehicle washing or other activities resulting in dermal contact. Additionally, construction workers and DOT&PF staff members could be exposed to shallow contaminated groundwater during future excavation and construction projects.

DRM is working with each affected property (locations where results exceeded the LHA). They plan to construct rain catchment cisterns as a long-term alternate water source for these properties.

According to the Alaska Department of Health and Social Services, PFOS and PFOA are not appreciably absorbed through the skin. S&W therefore considers dermal exposure to these compounds to be insignificant for the purposes of this CSM.

#### 4.2.3 Surface Water and Sediment

Dermal contact with surface water, like dermal contact with groundwater, is considered an insignificant contaminant exposure pathway. However, residents, site visitors, commercial workers, and subsistence harvesters could come in contact with PFOS-impacted surface water bodies outside the GST fence. DOT&PF staff and construction workers could also be exposed to contaminated surface water during airport operations, or future excavation and construction projects.

Direct contact with sediment is unlikely at present. Future drainage repair or other construction activities could result in direct contact to DOT&PF employees and construction workers.

#### 4.2.4 Biota

Due to the bioaccumulative risk of PFAS, biota is considered a potential pathway for exposure. Our site assessment activities are not designed to assess the biota exposure pathway. However, S&W understands the State of Alaska is conducting sampling at various PFAS sites to investigate this pathway.

# 5 DISCUSSION AND RECOMMENDATIONS

This section presents our discussion of the 2021 PFAS site characterization results and observations.

#### 5.1 Distribution of PFAS Contamination

PFOS and PFOA were found above cleanup levels at multiple locations on airport property. The site characterization data suggests there are two primary PFAS sources at the GST.

- AFFF spills and/or releases near the DOT&PF Facilities building.
- 2. The former training and/or emergency response areas (Figure 1).

PFOS and/or PFOA exceeded the migration-to-groundwater soil-cleanup levels in surface soil at the edge of the paved taxiway near the Alaska Airlines terminal (Figure 2; samples 21GST-SS-019 through 21GST-SS-022), around the DOT&PF Facilities building (Figure 1), and along the asphalt edge of the approach area for Runway 02/20 (Figure 2). PFAS

concentrations in the subsurface soil at Alaska Airlines terminal were also reported above the DEC cleanup levels (Figure 3; sample 21GST-SB011-7.4-7.6). Subsurface soils had PFAS detections below the DEC cleanup levels for the other two areas. These results indicate PFAS compounds are migrating to the groundwater from these contamination source areas.

PFOS and PFOA exceeded cleanup levels in surface water sample 21GST-SW-010 collected from a drainage ditch south of the "New" AFFF Training Area (Figure 1 and Figure 8). PFAS concentrations were also observed above cleanup levels in the surface water samples collected from airport drainage ditches southeast of Runway 11-29, along the northern side of Gustavus Rd, and near the airport terminals and the ARFF building (Figure 8; samples 21GST-SW-013, 21GST-SW-015, 21GST-SW-016, and 21GST-SW-025). These results indicate the drainage ditches are a significant transport pathway for PFAS contamination leaving the DOT&PF property.

PFAS were not detected above DEC cleanup levels in the sediment samples collected during the 2021 site characterization activities. S&W understands DOT&PF is interested in dredging drainage ditches near the airport in order to handle high-water periods.

PFAS concentrations in the MWs varied widely, including between wells of the same well cluster screened within 10 to 20 vertical feet of one another. This is attributed to multiple confining layers or locally discontinuous portions of the aquifer that have impeded the movement of PFAS-contaminated groundwater.

The highest PFOS, PFOA, PFHxS, and PFHxA detections were observed in the MWs and TWPs installed above the clay layer (Figures 5 and 7). Onsite S&W observed the highest concentrations at MW-11-15, installed in the area of the most recent AFFF training. The groundwater sample collected from TWP-4 (21GST-TWP-4) installed near the Alaska Airlines terminal also had elevated PFAS concentrations above the DEC cleanup levels. These two areas also represent areas where significant surface soil contamination has been observed during the 2019 and 2021 site characterization activities.

Offsite, the highest concentrations of PFAS analytes were observed near City Hall, on the west side of the Salmon River. Previous investigations of the PFAS present in this well have indicated it is from a different source than the DOT&PF airport plume. This information has been presented to DEC who is investigating this area further.

Offsite MW concentrations in wells MW-10-20 and MW-17-20 also exceeded the DEC regulatory limits. The PFAS present in MW-10-20 is believed to be indicative of contaminated surface water in airport drainage ditches infiltrating to groundwater.

During the installation of MW-17-20, S&W spoke with a representative of R&M Consultants, Inc. (R&M) who was collecting concrete samples from the foundation pad of the former DOT&PF Maintenance building along Gustavus Road. DOT&PF provided S&W with a copy of the report titled *Phase 1 Environmental Site Assessment – Tract B, Lot 11*, dated December 17, 2021. The report indicated PFOS was detected in one of the concrete samples at 1.3  $\mu$ g/kg. PFAS compounds were not detected in two of the three samples. Further investigation of this area is needed to determine if PFAS contamination observed in MW-17-20 and the nearby NPS Well serving the school is related to activities at the former DOT&PF building, from airport operations, or a combination of the two.

PFOS and PFOA were not detected in monitoring wells installed below the clay layer, with the exception of well MW-14-31 where PFOS and PFOA were reported at a combined estimated concentration of 39 J ng/L. During drilling at this location, S&W observed the presence of fat clay, which is highly saturated with water and could allow for the mixing of contaminants into the deeper groundwater zone.

The biggest contributor to private-well contamination west of the airport, is likely the extensive drainage ditch network around the airport, creating the path of least resistance for contaminated surface water to infiltrate into the groundwater. Results for private wells sampled for the overall project are presented in a separate report.

#### 5.2 Groundwater Flow Direction

The water table elevations below the GST study area were measured in November 2021 and are shown in Figures 10 and 11. These figures were prepared using water level elevations above mean sea level calculated from depth-to-water measurements collected over a 12-hour period. Groundwater elevation was generally similar between wells installed in the shallow zone (less than 20 feet bgs) and deep zone (deeper than 20 feet bgs) in the same well cluster. Based on this, S&W believes the deep and shallow aquifers are interacting. Significant static water level differences were observed in the MW-18 well cluster. While the measurement from MW-18-15 matches the general groundwater gradient, the measurement from MW-18-50 had a headspace difference greater than 4 feet. This datum was not used to generate Figure 11, as S&W suspects field measurement uncertainty. Additionally, salt water interfered with the depth to water readings for wells MW-21-45 and MW-23-50; these values were not used to generate Figure 11.

The water table figures (Figures 10 and 11) were created in ArcGIS using a natural neighbor interpolation of the water table elevations recorded at each MW, with the exceptions noted above. The solid lines and the color changes represent half-foot contours. Groundwater flow is from areas of high (red and orange) to low (blue) elevations and is relatively consistent

with the slope of the land surface. Groundwater flow directions across most of the GST in early November 2021 were to the south, towards the Salmon River and the coastline. Our groundwater calculations indicate the gradient is generally shallow, at up to 17 feet per mile. This was observed in both the monitoring wells in the shallow and deep monitoring wells, showing that the aquifers are mutually influenced by topography.

Although groundwater flow in the study area is primarily towards the south, groundwater flows southwest between Wilson Road and the Salmon River. The gradient in this area is more than 22 feet per mile. This groundwater gradient regime appears to be influenced by the flow direction of the Salmon River (due south) and its basin morphology.

Ground surface elevations at the GST range between 19 and 33 feet above sea level, meaning the deepest MWs are screened below sea level. This is likely related to the presence of saltwater in a few of the monitoring wells installed below this depth. Tidal range can be up to 25 feet. Given the site's proximity to the coast and the large tidal range, S&W would expect the tidal influence on groundwater gradient to increase with proximity to the coast and the Salmon River. Under these conditions, the PFAS plume will likely be drawn downgradient towards the south and southwest. The subsurface hydraulic conditions are subject to change and our data represents conditions at the site at the time of sampling only.

### 5.3 Recommendations

Based on the results of this initial PFAS site characterization effort, S&W recommends the DOT&PF:

- begin quarterly monitoring of the newly installed MWs;
- develop environmental AFFF response procedures in the event of a future emergency incident where AFFF is required for safety reasons;
- implement a plan for proper waste handling for dredging ditches known to contain PFAS above cleanup levels; and
- conduct additional PFAS site characterization in localized areas prior to construction projects at and near the GST.

These recommendations are described as follows.

S&W recommends the DOT&PF monitor PFAS concentrations quarterly in the newly installed MWs where PFAS were detected, beginning in spring or summer 2022 (pending funding). S&W further recommends annual monitoring for the MWs where saltwater was observed and PFAS was not detected. S&W also recommends continuing the quarterly sampling regime for the MWs installed in 2019 based upon the proposed schedule presented in the fiscal year 2021 water supply and monitoring well report.

S&W recommends GST personnel continue to reserve AFFF for emergency response use only and to implement procedures to containerize response-related fluids to the extent practicable. This would include AFFF-water runoff from the response site, nearby surface water or snow, and water drained from the engine following the release. Spill response supplies such as sorbent pads and booms, sump pumps, hose, 55-gallon drums, and/or plastic tanks are likely already onsite. In the case of an emergency use of AFFF, discharge locations and runoff areas should be documented by the emergency response team as soon as practicable after the event. S&W recommends sampling containerized AFFF-water for characterization and disposal. Environmental response following an emergency will reduce the likelihood of future drinking water impacts, thereby saving DOT&PF money over the long term. S&W also recommends local DOT&PF staff members document the locations and volume where water is sprayed during annual and weekly ARFF operation readiness checks.

S&W further recommends DOT&PF continue the site characterization effort with an emphasis on the following actions:

- Coordinate with DEC to determine where petroleum analytes may be required for future samples collected from onsite wells MW-11, MW-12, MW-13, MW-14, MW-15, and MW-16. This is based on the recent changes to the required analytes documented on DEC Field Sampling Guidance Appendix F table.
- Prior to future runway and apron resurfacing, expose and sample soil underneath the asphalt to determine appropriate soil handling requirements.
- Further investigation on the tidal influence on the groundwater gradient and the PFAS plume.
- Develop a contaminated materials management plan for construction activities in contaminated areas of the GST.

#### These recommendations are based on:

- Groundwater conditions inferred through monitoring-well, temporary-well-point and surface-water samples collected from October 14, 2021, through November 6, 2021.
- Soil conditions observed on, near and downgradient of the GST.
- The results of testing performed on soil and water samples S&W collected from the monitoring wells, temporary well points and surface water on, near, and downgradient from the GST.
- S&W's previous experience at the GST.
- Information provided by DOT&PF staff related to site history.
- Publicly available literature and data reviewed for this project.

- S&W's understanding of the project and information provided by DOT&PF, DRM, and other members of the project team.
- The limitations of S&W's approved Professional Services Agreement Number 25-19-1-013.

The information included in this report is based on limited sampling and should be considered representative of the times and locations at which the sampling occurred. Regulatory agencies may reach different conclusions than S&W. S&W has prepared and included in, "Important Information about your Geotechnical/Environmental Report," to assist you and others in understanding the use and limitations of this report.

#### 6 REFERENCES

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- R&M Consultants, Inc. (R&M), 2021, Phase I Environmental Site Assessment, Tract B, Lot 11, Report prepared by R&M for the Alaska Department of Transportation & Public Facilities.
- EPA, (2016, February 23). *EPA On-Line Tools for Site Assessment Calculation*. Retrieved from <a href="https://www3.epa.gov/ceampubl/learn2model/part-two/onsite/gradient4plus-ns.html">https://www3.epa.gov/ceampubl/learn2model/part-two/onsite/gradient4plus-ns.html</a>

# GUSTAVUS AIRPORT 2021 SITE CHARACTERIZATION TABLE 1: GROUNDWATER ELEVATIONS

Well Name	Elevation of Ground Surface (ft)	Elevation of Casing (ft)	Elevation of Water (ft)	Depth to Water (ft)	Northing	Easting
MW-1-15	19.141	19.057	12.607	6.45	2407620.160	2289623.182
MW-1-40	19.074	19.010	12.59	6.42	2407622.156	2289617.490
MW-2-20	23.754	23.297	12.27	11.03	2409261.678	2288614.672
MW-2-30	23.779	23.573	12.54	11.03	2409258.116	2288614.601
MW-3-15	23.278	22.846	16.22	6.63	2408922.542	2289839.170
MW-3-40	23.200	22.822	16.18	6.64	2408922.122	2289835.513
MW-4-20	25.376	25.024	23.39	1.63	2410099.367	2294867.175
MW-5-20	23.558	23.077	16.54	6.54	2410646.483	2289471.700
MW-6-20	29.513	29.137	22.20	6.94	2409731.412	2293028.121
MW-7-20	29.643	29.150	22.57	6.58	2411453.499	2295289.403
MW-8-20	27.661	27.379	24.16	3.22	2411196.762	2290886.853
MW-9-10	25.423	25.019	22.12	2.90	2409610.625	2290908.322
MW-9-30	25.125	24.836	22.09	2.75	2409604.196	2290908.202
MW-10-20	25.844	25.679	23.37	2.31	2410131.750	2290923.268
MW-11-15	29.136	28.917	25.26	3.66	2413101.437	2294641.144
MW-12-10	19.359	19.260	18.74	0.52	2411546.773	2298074.265
MW-13-20	28.969	28.548	22.47	6.08	2411838.715	2295825.369
MW-13-45*	29.209	28.610	22.58	6.03	2411817.875	2295841.984
MW-14-15	29.668	29.404	24.59	4.81	2412584.139	2295080.322
MW-14-31*	29.717	29.300	25.30	4.00	2412584.909	2295070.566
MW-15-15	31.474	31.338	24.07	7.27	2411928.497	2294559.468
MW-15-45*	31.591	31.250	23.81	7.44	2411932.853	2294559.847
MW-16-15	29.601	29.105	25.07	4.04	2412284.282	2293541.642
MW-17-20	30.596	29.977	23.31	6.67	2411253.993	2294597.755
MW-17-40*	30.522	30.037	22.47	7.57	2411249.064	2294594.436
MW-18-15	28.276	27.988	23.69	4.30	2410390.267	2291600.412
MW-18-50	28.287	27.949	19.00	8.95	2410393.497	2291597.496
MW-19-15	25.912	25.704	22.37	3.33	2408894.968	2291561.515
MW-19-50	25.760	25.440	22.12	3.32	2408895.467	2291557.190
MW-20-15	26.097	25.780	20.08	5.70	2408933.514	2290582.397
MW-20-40	25.993	25.599	19.95	5.65	2408934.380	2290577.681
MW-21-15	25.186	24.623	18.29	6.33	2410150.065	2289970.590
MW-21-45*	25.104	24.664	16.44	8.22	2410145.262	2289963.251
MW-22-15	26.200	25.704	22.60	3.10	2410585.274	2290487.754
MW-22-40	25.812	25.368	22.94	2.43	2410584.678	2290498.900
MW-23-20	21.660	21.318	13.46	7.86	2409481.390	2289692.228
MW-23-50*	21.713	21.409	12.45	8.96	2409497.735	2289694.015

## GUSTAVUS AIRPORT 2021 SITE CHARACTERIZATION TABLE 1: GROUNDWATER ELEVATIONS

Well Name	Elevation of Ground Surface (ft)	Elevation of Casing (ft)	Elevation of Water (ft)	Depth to Water (ft)	Northing	Easting
MW-24-10	25.817	25.750	22.20	3.55	2411258.574	2290130.579
MW-24-30	26.449	26.005	22.23	3.78	2411258.259	2290135.911
MW-25-15	28.918	28.645	26.64	2.01	2413214.173	2290964.710
MW-25-47	29.473	28.263	26.59	1.67	2413218.361	2290965.381
TWP-1	25.773	28.287	19.25	9.04	2411390.790	2298581.684
TWP-2	20.719	24.169	19.45	4.72	2412010.564	2297559.032
TWP-3	20.735	23.679	18.67	5.01	2411408.562	2298219.646
TWP-4	29.579	32.885	22.08	10.81	2411846.847	2296049.088
TWP-5	28.603	31.303	23.37	7.93	2412313.641	2295978.587
TWP-6	26.861	30.280	24.74	5.54	2414350.005	2295072.118
TWP-7	29.438	32.889	25.25	7.64	2413700.340	2294927.545
TWP-8	29.396	32.464	25.23	7.23	2413239.366	2294827.168
TWP-9	29.561	33.737	24.96	8.78	2413348.252	2294049.541
TWP-10	30.676	33.397	25.08	8.32	2412682.428	2294500.459
TWP-11	29.197	32.924	24.63	8.29	2412285.535	2292867.820
TWP-12	27.724	30.868	24.32	6.55	2411174.729	2292083.381
TWP-13	27.130	30.230	24.02	6.21	2410888.893	2290895.117
TWP-14	27.010	29.379	24.03	5.35	2410388.240	2290938.986
TWP-15	25.455	29.024	23.95	5.07	2410172.529	2291425.933

NOTES: The coordinate system is NAD 83, Alaska State Plane, Zone 1
Depth to water is measured from top of well casing.

Elevation is relative to mean sea level.

<sup>\*</sup> Result for corresponding well is considered estimated due to salt water causing reading errors with the equipment.

ft feet

## GUSTAVUS AIRPORT 2021 SITE CHARACTERIZATION TABLE 2: SURFACE SOIL PFAS RESULTS

		Sample:	21GST-SS-001	21GST-SS-002	21GST	-SS-003	21GST-SS-004	21GST-SS-005	21GST-	SS-006	21GST-SS-007	21GST-SS-008	21GST-SS-009	21GST-SS-010
	Regulatory	Date:	11/1/2021	11/1/2021	11/1/2021	Duplicate	11/1/2021	10/29/2021	10/29/2021	Duplicate	10/29/2021	10/29/2021	10/31/2021	10/31/2021
Analyte	Limit	Units	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Perfluorohexanesulfonic acid (PFHxS)	_	μg/kg	0.20	0.64	0.97	1.1	1.3	0.74	1.6 J*	2.9 J*	0.17 J*	0.59	8.4	0.034 J*
Perfluorohexanoic acid (PFHxA)	_	μg/kg	<0.19	<0.22	0.094 J	0.094 J	<0.21	0.083 J	0.37 J*	0.92 J*	<0.29	<0.23	0.74	<0.21
Perfluoroheptanoic acid (PFHpA)	_	μg/kg	<0.19	<0.22	<0.22	0.056 J	<0.21	<0.20	0.12 J*	0.36 J*	<0.29	<0.23	0.25	<0.21
Perfluorononanoic acid (PFNA)	_	μg/kg	<0.19	0.039 J	0.027 J	<0.21	0.026 J	<0.20	0.087 J	0.13 J	<0.29	<0.23	<0.22	<0.21
Perfluorobutanesulfonic acid (PFBS)	_	μg/kg	<0.19	0.050 J	0.099 J	0.13 J	0.17 J	<0.20	0.24 J*	0.45 J*	<0.29	<0.23	1.3	<0.21
Perfluorodecanoic acid (PFDA)	_	μg/kg	<0.19	<0.22	<0.22	<0.21	0.066 J	<0.20	0.22 J	0.34	<0.29	<0.23	<0.22	<0.21
Perfluoroundecanoic acid (PFUnA)	_	μg/kg	<0.19	<0.22	<0.22	<0.21	0.065 J	<0.20	0.27	0.35	<0.29	<0.23	<0.22	<0.21
Perfluorododecanoic acid (PFDoA)	_	μg/kg	<0.19	<0.22	<0.22	<0.21	<0.21	<0.20	0.40	0.60	<0.29	<0.23	0.048 J	<0.21
Perfluorotridecanoic acid (PFTrDA)	_	μg/kg	<0.19	<0.22	<0.22	<0.21	<0.21	<0.20	0.25 J*	0.47 J*	<0.29	<0.23	<0.22	<0.21
Perfluorotetradecanoic acid (PFTeA)	_	μg/kg	<0.19	<0.22	<0.22	<0.21	<0.21	<0.20	0.34 J*	0.63 J*	<0.29	<0.23	<0.22	<0.21
N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	_	μg/kg	<0.19	<0.22	<0.22	<0.21	<0.21	<0.20	0.11 J*	0.38 J*	<0.29	<0.23	0.038 J*	<0.21
N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	_	μg/kg	<0.19	<0.22	<0.22	<0.21	<0.21	<0.20	<0.27	<0.26	<0.29	<0.23	<0.22	<0.21
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CI-PF3ONS)	_	μg/kg	<0.19	<0.22	<0.22	<0.21	<0.21	<0.20	<0.27	<0.26	<0.29	<0.23	<0.22	<0.21
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3OUdS)	_	μg/kg	<0.19	<0.22	<0.22	<0.21	<0.21	<0.20	<0.27	<0.26	<0.29	<0.23	<0.22	<0.21
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	_	μg/kg	<0.19	<0.22	<0.22	<0.21	<0.21	<0.20	<0.27	<0.26	<0.29	<0.23	<0.22	<0.21
Hexafluoropropylene oxide dimer acid (HFPO-DA)	_	μg/kg	<0.19	<0.22	<0.22	<0.21	<0.21	<0.20	<0.27	<0.26	<0.29	<0.23	<0.22	<0.21
Perfluorooctanesulfonic acid (PFOS)	3.0	μg/kg	2.4	6.4	9.8	9.9	11	6.5	17 J*	33 J*	5.8	33	64	0.69
Perfluorooctanoic acid (PFOA)	1.7	μg/kg	<0.19	0.086 J	0.076 J	0.12 J	0.16 J	<0.20	0.21 J*	0.45 J*	<0.29	<0.23	0.69	<0.21

NOTES: Results reported from Test America work order 320-81254-1.

Regulatory limits from 18 AAC 75.341 Table B1 Method Two - Soil Cleanup Levels Table (Migration to Groundwater).

- No applicable regulatory limit exists for the associated analyte.
- Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to quality-control (QC) failures.
- **Bold** The detected concentration exceeds the regulatory limit for the associated analyte.
  - Estimated concentration, detected greater than the method detection limit (MDL) and less than the RL.
  - Flag applied by the laboratory.
- $J^*$  Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc.  $\mu g/kg = micrograms$  per kilogram;

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## GUSTAVUS AIRPORT 2021 SITE CHARACTERIZATION TABLE 2: SURFACE SOIL PFAS RESULTS

		Sample: Date:	<b>21GST-SS-011</b> 10/31/2021	<b>21GST-SS-012</b> 10/31/2021	<b>21GST-SS-013</b> 10/31/2021	<b>21GST-SS-014</b> 10/29/2021	<b>21GST-SS-015</b> 10/29/2021	<b>21GST-SS-016</b> 10/29/2021	<b>21GST-SS-017</b> 10/29/2021	<b>21GST-SS-018</b> 10/29/2021	<b>21GST-SS-019</b> 10/29/2021	<b>21GST-SS-020</b> 10/29/2021	<b>21GST-SS-021</b> 10/29/2021	<b>21GST-SS-022</b> 10/29/2021	<b>21GST-SS-023</b> 10/29/2021
Analyte	Regulatory Limit	Units	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Perfluorohexanesulfonic acid (PFHxS)	_	μg/kg	<0.21	<0.19	<0.21	<0.27	<0.20	<0.22	0.036 J	<0.20	0.84	2.4	2.6	20 J	<0.21
Perfluorohexanoic acid (PFHxA)	_	μg/kg	<0.21	<0.19	<0.21	<0.27	<0.20	<0.22	<0.21	<0.20	0.10 J	0.25	0.65	2.1	<0.21
Perfluoroheptanoic acid (PFHpA)	_	μg/kg	<0.21	<0.19	<0.21	<0.27	<0.20	<0.22	<0.21	<0.20	<0.21	0.079 J	0.32	0.64	<0.21
Perfluorononanoic acid (PFNA)	_	μg/kg	<0.21	<0.19	<0.21	<0.27	<0.20	<0.22	<0.21	<0.20	0.047 J	0.10 J	0.45	0.38	0.033 J
Perfluorobutanesulfonic acid (PFBS)	_	μg/kg	<0.21	<0.19	<0.21	<0.27	<0.20	<0.22	<0.21	<0.20	0.044 J	0.36	0.35	4.0	<0.21
Perfluorodecanoic acid (PFDA)	_	μg/kg	<0.21	<0.19	<0.21	<0.27	<0.20	<0.22	<0.21	<0.20	0.17 J	0.37	2.6	2.1	<0.21
Perfluoroundecanoic acid (PFUnA)	_	μg/kg	<0.21	<0.19	<0.21	<0.27	<0.20	<0.22	<0.21	<0.20	0.96	1.0	15	7.6	<0.21
Perfluorododecanoic acid (PFDoA)	_	μg/kg	<0.21	<0.19	<0.21	<0.27	<0.20	<0.22	<0.21	<0.20	0.18 J	0.37	2.3	2.0	<0.21
Perfluorotridecanoic acid (PFTrDA)	_	μg/kg	<0.21	<0.19	<0.21	<0.27	<0.20	<0.22	<0.21	<0.20	0.046 J	0.052 J	0.30	0.53	<0.21
Perfluorotetradecanoic acid (PFTeA)	_	μg/kg	<0.21	<0.19	<0.21	<0.27	<0.20	<0.22	<0.21	<0.20	<0.21	0.092 J	0.41	0.74	<0.21
N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	_	μg/kg	<0.21	<0.19	<0.21	<0.27	<0.20	<0.22	<0.21	<0.20	0.034 J	<0.21	0.77	0.37	<0.21
N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	_	μg/kg	<0.21	<0.19	<0.21	<0.27	<0.20	<0.22	<0.21	<0.20	<0.21	<0.21	<0.22	<0.22	<0.21
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CI-PF3ONS)	_	μg/kg	<0.21	<0.19	<0.21	<0.27	<0.20	<0.22	<0.21	<0.20	<0.21	<0.21	<0.22	<0.22	<0.21
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	_	μg/kg	<0.21	<0.19	<0.21	<0.27	<0.20	<0.22	<0.21	<0.20	<0.21	<0.21	<0.22	<0.22	<0.21
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	_	μg/kg	<0.21	<0.19	<0.21	<0.27	<0.20	<0.22	<0.21	<0.20	<0.21	<0.21	<0.22	<0.22	<0.21
Hexafluoropropylene oxide dimer acid (HFPO-DA)	_	μg/kg	<0.21	<0.19	<0.21	<0.27	<0.20	<0.22	<0.21	<0.20	<0.21	<0.21	<0.22	<0.22	<0.21
Perfluorooctanesulfonic acid (PFOS)	3.0	μg/kg	0.15 J	0.23	1.2	0.23 J*	0.27 J*	0.14 J*	0.24 J*	<0.20	13	27	32	310	0.091 J*
Perfluorooctanoic acid (PFOA)	1.7	μg/kg	<0.21	<0.19	<0.21	<0.27	<0.20	<0.22	<0.21	<0.20	0.14 J	0.28	0.75	1.8	<0.21

NOTES: Results reported from Test America work order 320-81254-1.

- No applicable regulatory limit exists for the associated analyte.
- Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to quality-control (QC) failures.
- **Bold** The detected concentration exceeds the regulatory limit for the associated analyte.
  - Estimated concentration, detected greater than the method detection limit (MDL) and less than the RL. Flag applied by the laboratory.
- $J^*$  Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc.  $\mu g/kg = micrograms per kilogram;$

## GUSTAVUS AIRPORT 2021 SITE CHARACTERIZATION TABLE 2: SURFACE SOIL PFAS RESULTS

		Sample:	21GST-SS-024	21GST-SS-025	21GST-	SS-026	21GST-SS-027	21GST-SS-028	21GST-SS-029	21GST-SS-030	21GST-	SS-031	21GST-SS-032	21GST-SS-033	21GST-SS-034
	Regulatory	Date:	10/29/2021	10/29/2021	10/29/2021	Duplicate	10/29/2021	10/29/2021	10/29/2021	10/31/2021	10/31/2021	Duplicate	11/1/2021	11/1/2021	11/1/2021
Analyte	Limit	Units	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Perfluorohexanesulfonic acid (PFHxS)	_	μg/kg	<0.22	<0.20	<0.26	<0.25	<0.20	<0.21	<0.21	<0.29	<0.22	<0.25	0.040 J	0.049 J	<0.20
Perfluorohexanoic acid (PFHxA)	_	μg/kg	< 0.22	<0.20	<0.26	< 0.25	<0.20	<0.21	<0.21	0.083 J	0.051 J	< 0.25	<0.21	<0.20	<0.20
Perfluoroheptanoic acid (PFHpA)	_	μg/kg	<0.22	<0.20	<0.26	< 0.25	<0.20	<0.21	<0.21	0.20 J	0.093 J	0.066 J	<0.21	<0.20	<0.20
Perfluorononanoic acid (PFNA)	_	μg/kg	<0.22	<0.20	<0.26	0.033 J	<0.20	<0.21	0.063 J	0.18 J	0.12 J	0.11 J	<0.21	<0.20	<0.20
Perfluorobutanesulfonic acid (PFBS)	_	μg/kg	<0.22	<0.20	<0.26	< 0.25	<0.20	<0.21	<0.21	<0.29	<0.22	< 0.25	<0.21	<0.20	<0.20
Perfluorodecanoic acid (PFDA)	_	μg/kg	< 0.22	<0.20	<0.26	< 0.25	<0.20	<0.21	<0.21	<0.29	<0.22	< 0.25	<0.21	<0.20	<0.20
Perfluoroundecanoic acid (PFUnA)	_	μg/kg	<0.22	<0.20	<0.26	< 0.25	<0.20	<0.21	<0.21	<0.29	<0.22	< 0.25	<0.21	<0.20	<0.20
Perfluorododecanoic acid (PFDoA)	_	μg/kg	0.050 J	<0.20	<0.26	< 0.25	<0.20	<0.21	<0.21	<0.29	<0.22	<0.25	<0.21	<0.20	<0.20
Perfluorotridecanoic acid (PFTrDA)	_	μg/kg	<0.22	<0.20	0.085 J*	0.26 J*	<0.20	<0.21	<0.21	<0.29	<0.22	< 0.25	<0.21	<0.20	<0.20
Perfluorotetradecanoic acid (PFTeA)	_	μg/kg	<0.22	<0.20	<0.26	< 0.25	<0.20	<0.21	<0.21	<0.29	<0.22	<0.25	<0.21	<0.20	<0.20
N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	_	μg/kg	<0.22	<0.20	<0.26	< 0.25	<0.20	<0.21	<0.21	<0.29	<0.22	< 0.25	<0.21	<0.20	<0.20
N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	_	μg/kg	<0.22	<0.20	0.086 J	<0.25	<0.20	<0.21	<0.21	<0.29	<0.22	<0.25	<0.21	<0.20	<0.20
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CI-PF3ONS)	_	μg/kg	<0.22	<0.20	<0.26	< 0.25	<0.20	<0.21	<0.21	<0.29	<0.22	< 0.25	<0.21	<0.20	<0.20
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3OUdS)	_	μg/kg	<0.22	<0.20	<0.26	< 0.25	<0.20	<0.21	<0.21	<0.29	<0.22	< 0.25	<0.21	<0.20	<0.20
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	_	μg/kg	<0.22	<0.20	<0.26	<0.25	<0.20	<0.21	<0.21	<0.29	<0.22	< 0.25	<0.21	<0.20	<0.20
Hexafluoropropylene oxide dimer acid (HFPO-DA)	_	μg/kg	<0.22	<0.20	<0.26	< 0.25	<0.20	<0.21	<0.21	<0.29	<0.22	< 0.25	<0.21	<0.20	<0.20
Perfluorooctanesulfonic acid (PFOS)	3.0	μg/kg	0.12 J*	0.087 J	0.13 J*	0.23 J*	0.11 J*	<0.21	0.78 J*	0.27 J*	0.56 J*	0.60 J*	0.64	0.71	0.063 J
Perfluorooctanoic acid (PFOA)	1.7	μg/kg	<0.22	<0.20	<0.26	< 0.25	<0.20	<0.21	<0.21	< 0.29	0.088 J	0.070 J	<0.21	<0.20	<0.20

NOTES: Results reported from Test America work order 320-81254-1.

- No applicable regulatory limit exists for the associated analyte.
- Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to quality-control (QC) failures.
- **Bold** The detected concentration exceeds the regulatory limit for the associated analyte.
  - Estimated concentration, detected greater than the method detection limit (MDL) and less than the RL. Flag applied by the laboratory.
- $J^*$  Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc.  $\mu g/kg = micrograms per kilogram;$

		Location:		21GST-	SB001			21GST	-SB002			21GST-SB003			21GST-SB004	
	Regulatory	Sample: Depth: Date:	Sample 1 0.00'-0.25' 10/30/2021	Sample 2 3.9'-4.1' 10/30/2021	Sample 3 7.9'-8.1' 10/30/2021	Sample 4 13.9'-14.1' 10/30/2021	Sample 1 0.00'-0.25' 10/30/2021	Sample 2 4.4'-4.6' 10/30/2021	Sample 3 8.9'-9.1' 10/30/2021	Sample 4 13.4'-13.6' 10/30/2021	Sample 1 0.00'-0.25' 10/31/2021	Sample 2 3.7'-3.9' 10/31/2021	Sample 3 9.4'-9.6' 10/31/2021	Sample 1 0.00'-0.25' 10/31/2021	Sample 2 3.7'-3.9' 10/31/2021	Sample 3 8.9'-9.1' 10/31/2021
Analyte	Limit	Units	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Perfluorohexanesulfonic acid (PFHxS)	_	μg/kg	<0.20	<0.22	<0.23	<0.23	<0.20	<0.22	<0.23	<0.24	0.27 J*	0.072 J	0.033 J	0.055 J	<0.23	<0.24
Perfluorohexanoic acid (PFHxA)	_	μg/kg	<0.20	<0.22	< 0.23	<0.23	<0.20	<0.22	<0.23	<0.24	0.26 J	<0.21	<0.22	<0.22	<0.23	< 0.24
Perfluoroheptanoic acid (PFHpA)	_	μg/kg	<0.20	<0.22	< 0.23	<0.23	<0.20	<0.22	<0.23	<0.24	0.21 J	<0.21	<0.22	<0.22	<0.23	<0.24
Perfluorononanoic acid (PFNA)	_	μg/kg	<0.20	<0.22	< 0.23	< 0.23	<0.20	<0.22	<0.23	<0.24	0.061 J*	<0.21	<0.22	<0.22	<0.23	<0.24
Perfluorobutanesulfonic acid (PFBS)	_	μg/kg	<0.20	<0.22	< 0.23	<0.23	<0.20	<0.22	<0.23	<0.24	<0.28	<0.21	<0.22	<0.22	<0.23	<0.24
Perfluorodecanoic acid (PFDA)	_	μg/kg	<0.20	<0.22	< 0.23	<0.23	<0.20	<0.22	<0.23	<0.24	<0.28	<0.21	<0.22	<0.22	<0.23	<0.24
Perfluoroundecanoic acid (PFUnA)	_	μg/kg	<0.20	<0.22	< 0.23	<0.23	<0.20	<0.22	<0.23	<0.24	<0.28	<0.21	<0.22	<0.22	<0.23	<0.24
Perfluorododecanoic acid (PFDoA)	_	μg/kg	<0.20	<0.22	< 0.23	<0.23	<0.20	<0.22	<0.23	<0.24	<0.28	<0.21	<0.22	<0.22	<0.23	<0.24
Perfluorotridecanoic acid (PFTrDA)	_	μg/kg	<0.20	<0.22	< 0.23	<0.23	<0.20	<0.22	<0.23	<0.24	<0.28	<0.21	<0.22	<0.22	<0.23	<0.24
Perfluorotetradecanoic acid (PFTeA)	_	μg/kg	<0.20	<0.22	< 0.23	<0.23	<0.20	<0.22	<0.23	<0.24	<0.28	<0.21	<0.22	<0.22	<0.23	< 0.24
N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	_	μg/kg	<0.20	<0.22	< 0.23	<0.23	<0.20	<0.22	<0.23	<0.24	<0.28	<0.21	<0.22	<0.22	<0.23	< 0.24
N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	_	μg/kg	<0.20	<0.22	< 0.23	<0.23	<0.20	<0.22	<0.23	<0.24	<0.28	<0.21	<0.22	<0.22	<0.23	< 0.24
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CI-PF3ONS)	_	μg/kg	<0.20	<0.22	< 0.23	<0.23	<0.20	<0.22	<0.23	<0.24	<0.28	<0.21	<0.22	<0.22	<0.23	< 0.24
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	_	μg/kg	<0.20	<0.22	< 0.23	<0.23	<0.20	<0.22	<0.23	<0.24	<0.28	<0.21	<0.22	<0.22	<0.23	< 0.24
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	_	μg/kg	<0.20	<0.22	< 0.23	<0.23	<0.20	<0.22	<0.23	<0.24	<0.28	<0.21	<0.22	<0.22	<0.23	<0.24
Hexafluoropropylene oxide dimer acid (HFPO-DA)	_	μg/kg	<0.20	<0.22	< 0.23	<0.23	<0.20	<0.22	<0.23	<0.24	<0.28	<0.21	<0.22	<0.22	<0.23	< 0.24
Perfluorooctanesulfonic acid (PFOS)	3.0	μg/kg	0.21	0.075 J	0.31	0.15 J	0.40	0.20 J	<0.23	0.079 J	10	2.6	0.44	1.0	0.24	0.25
Perfluorooctanoic acid (PFOA)	1.7	μg/kg	<0.20	< 0.22	< 0.23	<0.23	<0.20	<0.22	< 0.23	<0.24	<0.28	<0.21	<0.22	<0.22	<0.23	<0.24

NOTES: Results reported from Test America work order 320-81254-1.

Regulatory limits from 18 AAC 75.341 Table B1 Method Two - Soil Cleanup Levels Table (Migration to Groundwater).

No applicable regulatory limit exists for the associated analyte.

Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to quality-control (QC) failures.

J Estimated concentration, detected greater than the method detection limit (MDL) and less than the RL. Flag applied by the laboratory.

J\* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc.

 ${\color{red}\textbf{Bold}} \qquad \text{The detected concentration exceeds the regulatory limit for the associated analyte}.$ 

μg/kg = micrograms per kilogram;

May 2022

		Location:		21GST-SB005			21GST-	SB006			21GST-	-SB007			21GST-SB008	
		Sample:	Sample 1	Sample 2	Sample 3	Sam	ple 1	Sample 2	Sample 3	Sam	ple 1	Sample 2	Sample 3	Sample 1	Sample 2	Sample 3
		Depth:	0.00'-0.25'	3.9'-4.1'	8.9'-9.1'	0.00'-0.25'	0.00'-0.25'	5.9'-6.1'	9.9'-10.1'	0.00'-0.25'	0.00'-0.25'	3.9'-4.1'	9.4'-9.6'	0.4'-0.6'	5.4'-5.6'	9.9'-10.1'
	Regulatory	Date:	10/30/2021	10/30/2021	10/30/2021	10/31/2021	Duplicate	10/31/2021	10/31/2021	10/30/2021	Duplicate	10/30/2021	10/30/2021	10/31/2021	10/31/2021	10/31/2021
Analyte	Limit	Units	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Perfluorohexanesulfonic acid (PFHxS)	_	μg/kg	<0.20	0.038 J	0.30	<0.20	<0.22	<0.21	<0.22	0.038 J*	0.038 J*	<0.22	<0.23	0.047 J	<0.21	<0.22
Perfluorohexanoic acid (PFHxA)	_	μg/kg	<0.20	<0.22	<0.23	<0.20	<0.22	<0.21	<0.22	0.059 J	0.051 J	<0.22	<0.23	0.074 J	<0.21	<0.22
Perfluoroheptanoic acid (PFHpA)	_	μg/kg	<0.20	<0.22	<0.23	<0.20	<0.22	<0.21	<0.22	0.11 J*	0.056 J*	<0.22	<0.23	<0.23	<0.21	<0.22
Perfluorononanoic acid (PFNA)	_	μg/kg	<0.20	<0.22	<0.23	<0.20	<0.22	<0.21	<0.22	<0.21	<0.21	<0.22	<0.23	<0.23	<0.21	<0.22
Perfluorobutanesulfonic acid (PFBS)	_	μg/kg	<0.20	<0.22	<0.23	<0.20	<0.22	<0.21	<0.22	<0.21	<0.21	<0.22	<0.23	<0.23	<0.21	<0.22
Perfluorodecanoic acid (PFDA)	_	μg/kg	<0.20	<0.22	<0.23	<0.20	<0.22	<0.21	<0.22	<0.21	<0.21	<0.22	<0.23	<0.23	<0.21	<0.22
Perfluoroundecanoic acid (PFUnA)	_	μg/kg	<0.20	<0.22	<0.23	<0.20	<0.22	<0.21	<0.22	<0.21	<0.21	<0.22	<0.23	<0.23	<0.21	<0.22
Perfluorododecanoic acid (PFDoA)	_	μg/kg	<0.20	<0.22	<0.23	<0.20	<0.22	<0.21	<0.22	<0.21	<0.21	<0.22	<0.23	<0.23	<0.21	<0.22
Perfluorotridecanoic acid (PFTrDA)	_	μg/kg	<0.20	<0.22	<0.23	<0.20	<0.22	<0.21	<0.22	<0.21	<0.21	<0.22	<0.23	<0.23	<0.21	<0.22
Perfluorotetradecanoic acid (PFTeA)	_	μg/kg	<0.20	<0.22	<0.23	<0.20	<0.22	<0.21	<0.22	<0.21	<0.21	<0.22	<0.23	<0.23	<0.21	<0.22
N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	_	μg/kg	<0.20	<0.22	<0.23	<0.20	<0.22	<0.21	<0.22	<0.21	<0.21	<0.22	<0.23	<0.23	<0.21	<0.22
N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	_	μg/kg	<0.20	<0.22	<0.23	<0.20	<0.22	<0.21	<0.22	<0.21	<0.21	<0.22	<0.23	<0.23	<0.21	<0.22
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CI-PF3ONS)	_	μg/kg	<0.20	<0.22	<0.23	<0.20	<0.22	<0.21	<0.22	<0.21	<0.21	<0.22	<0.23	<0.23	<0.21	<0.22
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	_	μg/kg	<0.20	<0.22	<0.23	<0.20	<0.22	<0.21	<0.22	<0.21	<0.21	<0.22	<0.23	<0.23	<0.21	<0.22
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	_	μg/kg	<0.20	<0.22	<0.23	<0.20	<0.22	<0.21	<0.22	<0.21	<0.21	<0.22	<0.23	<0.23	<0.21	<0.22
Hexafluoropropylene oxide dimer acid (HFPO-DA)	_	μg/kg	<0.20	<0.22	<0.23	<0.20	<0.22	<0.21	<0.22	<0.21	<0.21	<0.22	<0.23	<0.23	<0.21	<0.22
Perfluorooctanesulfonic acid (PFOS)	3.0	μg/kg	1.4	0.60	0.66	0.15 J*	0.76 J*	0.078 J*	0.31	0.10 J*	0.27 J*	<0.22	<0.23	0.36 J*	<0.21	0.69
Perfluorooctanoic acid (PFOA)	1.7	μg/kg	<0.20	<0.22	< 0.23	<0.20	<0.22	< 0.21	< 0.22	<0.21	0.11 J	< 0.22	<0.23	<0.23	<0.21	<0.22

NOTES: Results reported from Test America work order 320-81254-1.

Regulatory limits from 18 AAC 75.341 Table B1 Method Two - Soil Cleanup Levels Table (Migration to Groundwater).

- No applicable regulatory limit exists for the associated analyte.
- Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to quality-control (QC) failures.
- Sestimated concentration, detected greater than the method detection limit (MDL) and less than the RL. Flag applied by the laboratory.
- J\* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc.

**Bold** The detected concentration exceeds the regulatory limit for the associated analyte.  $\mu g/kg = micrograms per kilogram;$ 

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		Location:			21GST-SB009				21GST	-SB010			21GST-	SB011	
		Sample:	Sam	ple 1	Sample 2	Sample 3	Sample 4	Sam	ple 1	Sample 2	Sample 3	Sample 1	Sam	ole 2	Sample 3
		Depth:	0.00'-0.25'	0.00'-0.25'	8.9'-9.1'	12.9'-13.1'	4.4'-4.6'	0.00'-0.25'	3.9'-4.1'	3.9'-4.1'	9.9'-10.1'	0.4'-0.6'	7.4'-7.6'	7.4'-7.6'	9.9'-10.1'
	Regulatory	Date:	10/30/2021	Duplicate	10/30/2021	10/30/2021	10/30/2021	10/30/2021	Duplicate	10/30/2021	10/30/2021	10/31/2021	10/31/2021	Duplicate	10/31/2021
Analyte	Limit	Units	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Perfluorohexanesulfonic acid (PFHxS)	_	μg/kg	<0.20	<0.20	<0.21	<0.23	<0.23	<0.22	<0.21	<0.22	<0.21	7.3	15	20	0.40
Perfluorohexanoic acid (PFHxA)	_	μg/kg	<0.20	< 0.20	<0.21	<0.23	< 0.23	<0.22	<0.21	<0.22	<0.21	0.68	0.36	0.24	0.085 J
Perfluoroheptanoic acid (PFHpA)	_	μg/kg	<0.20	< 0.20	<0.21	<0.23	< 0.23	<0.22	<0.21	<0.22	<0.21	0.21	0.18 J	0.26	<0.23
Perfluorononanoic acid (PFNA)	_	μg/kg	<0.20	< 0.20	<0.21	<0.23	< 0.23	<0.22	<0.21	<0.22	<0.21	0.16 J	<0.21	<0.20	<0.23
Perfluorobutanesulfonic acid (PFBS)	_	μg/kg	<0.20	< 0.20	<0.21	<0.23	< 0.23	<0.22	<0.21	<0.22	<0.21	1.2	<0.21	<0.20	<0.23
Perfluorodecanoic acid (PFDA)	_	μg/kg	<0.20	< 0.20	<0.21	<0.23	< 0.23	<0.22	<0.21	<0.22	<0.21	1.0	<0.21	<0.20	<0.23
Perfluoroundecanoic acid (PFUnA)	_	μg/kg	<0.20	<0.20	<0.21	<0.23	< 0.23	<0.22	<0.21	<0.22	<0.21	1.3	<0.21	<0.20	<0.23
Perfluorododecanoic acid (PFDoA)	_	μg/kg	<0.20	< 0.20	<0.21	<0.23	< 0.23	<0.22	<0.21	<0.22	<0.21	0.63	<0.21	<0.20	<0.23
Perfluorotridecanoic acid (PFTrDA)	_	μg/kg	<0.20	< 0.20	<0.21	<0.23	< 0.23	<0.22	<0.21	<0.22	<0.21	0.10 J	<0.21	<0.20	<0.23
Perfluorotetradecanoic acid (PFTeA)	_	μg/kg	<0.20	< 0.20	<0.21	<0.23	< 0.23	<0.22	<0.21	<0.22	<0.21	0.16 J	<0.21	<0.20	<0.23
N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	_	μg/kg	<0.20	<0.20	<0.21	<0.23	< 0.23	<0.22	<0.21	<0.22	<0.21	0.046 J	<0.21	<0.20	<0.23
N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	_	μg/kg	<0.20	< 0.20	<0.21	<0.23	< 0.23	<0.22	<0.21	<0.22	<0.21	<0.21	<0.21	<0.20	<0.23
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CI-PF3ONS)	_	μg/kg	<0.20	< 0.20	<0.21	<0.23	< 0.23	<0.22	<0.21	<0.22	<0.21	<0.21	<0.21	<0.20	<0.23
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	_	μg/kg	<0.20	<0.20	<0.21	<0.23	< 0.23	<0.22	<0.21	<0.22	<0.21	<0.21	<0.21	<0.20	<0.23
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	_	μg/kg	<0.20	<0.20	<0.21	<0.23	< 0.23	<0.22	<0.21	<0.22	<0.21	<0.21	<0.21	<0.20	<0.23
Hexafluoropropylene oxide dimer acid (HFPO-DA)	_	μg/kg	<0.20	<0.20	<0.21	< 0.23	< 0.23	<0.22	<0.21	<0.22	<0.21	<0.21	<0.21	<0.20	< 0.23
Perfluorooctanesulfonic acid (PFOS)	3.0	μg/kg	0.17 J*	0.068 J*	<0.21	<0.23	< 0.23	0.15 J	0.14 J	0.051 J	0.12 J	79	25 J*	0.67 J*	2.4
Perfluorooctanoic acid (PFOA)	1.7	μg/kg	<0.20	<0.20	<0.21	< 0.23	< 0.23	<0.22	<0.21	<0.22	<0.21	0.63	4.0	4.9	0.10 J

NOTES: Results reported from Test America work order 320-81254-1.

Regulatory limits from 18 AAC 75.341 Table B1 Method Two - Soil Cleanup Levels Table (Migration to Groundwater).

- No applicable regulatory limit exists for the associated analyte.
- Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to quality-
- Estimated concentration, detected greater than the method detection limit (MDL) and less than the RL. Flag applied by the laboratory.
- J\* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc.
- **Bold** The detected concentration exceeds the regulatory limit for the associated analyte. μg/kg = micrograms per kilogram;

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		Location:		21GST-SB012			21GST-SB013			21GST-SB014	
Analyte	Regulatory Limit	Sample: Depth: Date: Units	Sample 1 0.00'-0.25' 10/30/2021 Soil	Sample 2 2.9'-3.1' 10/30/2021 Soil	Sample 3 8.4'-8.6' 10/30/2021 Soil	Sample 1 0.00'-0.25' 10/30/2021 Soil	Sample 2 3.4'-3.6' 10/30/2021 Soil	Sample 3 9.9'-10.1' 10/30/2021 Soil	Sample 1 0.00'-0.25' 10/31/2021 Soil	Sample 2 3.4'-3.6' 10/31/2021 Soil	Sample 3 9.4'-9.6' 10/31/2021 Soil
Perfluorohexanesulfonic acid (PFHxS)	_	μg/kg	<0.22	<0.21	<0.23	<0.22	<0.23	<0.24	0.071 J	<0.21	<0.23
Perfluorohexanoic acid (PFHxA)	_	μg/kg	<0.22	<0.21	<0.23	<0.22	<0.23	<0.24	0.038 J	0.12 J	<0.23
Perfluoroheptanoic acid (PFHpA)	_	μg/kg	<0.22	<0.21	<0.23	0.046 J	< 0.23	< 0.24	0.058 J	<0.21	<0.23
Perfluorononanoic acid (PFNA)	_	μg/kg	<0.22	<0.21	<0.23	0.028 J	< 0.23	< 0.24	0.29	<0.21	<0.23
Perfluorobutanesulfonic acid (PFBS)	_	μg/kg	<0.22	<0.21	<0.23	<0.22	< 0.23	< 0.24	<0.21	<0.21	<0.23
Perfluorodecanoic acid (PFDA)	_	μg/kg	<0.22	<0.21	< 0.23	0.082 J	< 0.23	< 0.24	0.14 J	<0.21	< 0.23
Perfluoroundecanoic acid (PFUnA)	_	μg/kg	<0.22	<0.21	< 0.23	<0.22	< 0.23	< 0.24	0.095 J	<0.21	< 0.23
Perfluorododecanoic acid (PFDoA)	_	μg/kg	< 0.22	<0.21	< 0.23	<0.22	< 0.23	< 0.24	<0.21	<0.21	< 0.23
Perfluorotridecanoic acid (PFTrDA)	_	μg/kg	<0.22	<0.21	< 0.23	0.034 J	< 0.23	< 0.24	< 0.21	<0.21	< 0.23
Perfluorotetradecanoic acid (PFTeA)	_	μg/kg	0.051 J	<0.21	< 0.23	<0.22	< 0.23	< 0.24	<0.21	<0.21	< 0.23
N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	_	μg/kg	<0.22	<0.21	< 0.23	<0.22	< 0.23	< 0.24	<0.21	<0.21	< 0.23
N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	_	μg/kg	< 0.22	<0.21	< 0.23	<0.22	< 0.23	< 0.24	<0.21	<0.21	< 0.23
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CI-PF3ONS)	_	μg/kg	< 0.22	<0.21	< 0.23	< 0.22	< 0.23	< 0.24	<0.21	<0.21	< 0.23
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	_	μg/kg	<0.22	<0.21	< 0.23	<0.22	< 0.23	< 0.24	<0.21	<0.21	< 0.23
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	_	μg/kg	<0.22	<0.21	<0.23	<0.22	<0.23	< 0.24	<0.21	<0.21	<0.23
Hexafluoropropylene oxide dimer acid (HFPO-DA)	_	μg/kg	<0.22	<0.21	< 0.23	<0.22	< 0.23	< 0.24	<0.21	<0.21	<0.23
Perfluorooctanesulfonic acid (PFOS)	3.0	μg/kg	0.14 J	<0.21	< 0.23	0.14 J	0.090 J	< 0.24	1.2	0.053 J	0.13 J
Perfluorooctanoic acid (PFOA)	1.7	μg/kg	<0.22	<0.21	< 0.23	<0.22	< 0.23	< 0.24	0.12 J	<0.21	<0.23

NOTES: Results reported from Test America work order 320-81254-1.

Regulatory limits from 18 AAC 75.341 Table B1 Method Two - Soil Cleanup Levels Table (Migration to Groundwater).

- No applicable regulatory limit exists for the associated analyte.
- Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to quality-control (QC) failures.
- Estimated concentration, detected greater than the method detection limit (MDL) and less than the RL. Flag applied by the laboratory.
- J\* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc.

 $\label{eq:bold} \begin{array}{ll} \textbf{Bold} & \text{The detected concentration exceeds the regulatory limit for the associated analyte.} \\ & \mu g/kg = \text{micrograms per kilogram;} \end{array}$ 

		Location:				21GST-MW13							21GST-MW14			
		Sample:	Sample 1	Sam	ple 2	Sample 3	Sample 4	Sample 5	Sample 7	Sam	ole 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6
	Regulatory	Depth: Date:	1.9'-2.1' 10/19/2021	8.9'-9.1' 10/19/2021	8.9'-9.1' Duplicate	19.9'-20.1' 10/19/2021	24.9'-25.1' 10/19/2021	29.9'-30.1' 10/19/2021	42.9'-43.1' 10/19/2021	0.9'-1.1' 10/27/2021	0.9'-1.1' Duplicate	6.9'-7.1' 10/27/2021	16.9'-17.1' 10/27/2021	24.9'-25.1' 10/27/2021	33.9'-34.1' 10/27/2021	43.9'-44.1' 10/27/2021
Analyte	Limit	Units	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Perfluorohexanesulfonic acid (PFHxS)	_	μg/kg	<0.20	<0.24	<0.23	<0.21	0.047 J	<0.20	< 0.25	<0.20	<0.20	<0.25	<0.24	<0.27	<0.24	<0.25
Perfluorohexanoic acid (PFHxA)	_	μg/kg	<0.20	<0.24	<0.23	<0.21	<0.26	<0.20	< 0.25	<0.20	<0.20	< 0.25	<0.24	<0.27	<0.24	< 0.25
Perfluoroheptanoic acid (PFHpA)	_	μg/kg	<0.20	<0.24	<0.23	<0.21	<0.26	<0.20	< 0.25	<0.20	<0.20	< 0.25	<0.24	<0.27	<0.24	< 0.25
Perfluorononanoic acid (PFNA)	_	μg/kg	<0.20	<0.24	<0.23	<0.21	<0.26	<0.20	< 0.25	<0.20	<0.20	< 0.25	<0.24	<0.27	<0.24	< 0.25
Perfluorobutanesulfonic acid (PFBS)	_	μg/kg	<0.20	<0.24	< 0.23	<0.21	<0.26	<0.20	< 0.25	<0.20	<0.20	< 0.25	<0.24	<0.27	<0.24	< 0.25
Perfluorodecanoic acid (PFDA)	_	μg/kg	<0.20	<0.24	<0.23	<0.21	<0.26	<0.20	< 0.25	<0.20	<0.20	< 0.25	<0.24	<0.27	<0.24	< 0.25
Perfluoroundecanoic acid (PFUnA)	_	μg/kg	<0.20	<0.24	< 0.23	<0.21	<0.26	<0.20	< 0.25	<0.20	<0.20	< 0.25	<0.24	< 0.27	<0.24	< 0.25
Perfluorododecanoic acid (PFDoA)	_	μg/kg	<0.20	<0.24	< 0.23	<0.21	<0.26	<0.20	< 0.25	<0.20	<0.20	< 0.25	<0.24	<0.27	<0.24	< 0.25
Perfluorotridecanoic acid (PFTrDA)	_	μg/kg	<0.20	<0.24	<0.23	<0.21	<0.26	<0.20	< 0.25	<0.20	<0.20	< 0.25	<0.24	<0.27	<0.24	< 0.25
Perfluorotetradecanoic acid (PFTeA)	_	μg/kg	<0.20	<0.24	<0.23	<0.21	<0.26	<0.20	< 0.25	<0.20	<0.20	< 0.25	<0.24	<0.27	<0.24	< 0.25
N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	_	μg/kg	<0.20	<0.24	< 0.23	<0.21	<0.26	<0.20	< 0.25	<0.20	<0.20	< 0.25	<0.24	< 0.27	<0.24	< 0.25
N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	_	μg/kg	<0.20	< 0.24	< 0.23	<0.21	<0.26	<0.20	< 0.25	<0.20	<0.20	< 0.25	<0.24	<0.27	<0.24	< 0.25
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CI-PF3ONS)	_	μg/kg	<0.20	<0.24	<0.23	<0.21	<0.26	<0.20	< 0.25	<0.20	<0.20	< 0.25	<0.24	<0.27	<0.24	< 0.25
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	_	μg/kg	<0.20	<0.24	<0.23	<0.21	<0.26	<0.20	< 0.25	<0.20	<0.20	< 0.25	<0.24	<0.27	<0.24	<0.25
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	_	μg/kg	<0.20	<0.24	<0.23	<0.21	<0.26	<0.20	< 0.25	<0.20	<0.20	< 0.25	<0.24	<0.27	<0.24	< 0.25
Hexafluoropropylene oxide dimer acid (HFPO-DA)	_	μg/kg	<0.20	<0.24	<0.23	<0.21	<0.26	<0.20	< 0.25	<0.20	<0.20	<0.25	<0.24	<0.27	<0.24	< 0.25
Perfluorooctanesulfonic acid (PFOS)	3.0	μg/kg	<0.20	<0.24	<0.23	<0.21	0.093 J	0.10 J	< 0.25	<0.20	<0.20	< 0.25	<0.24	<0.27	<0.24	< 0.25
Perfluorooctanoic acid (PFOA)	1.7	μg/kg	< 0.20	< 0.24	< 0.23	<0.21	< 0.26	<0.20	< 0.25	<0.20	< 0.20	< 0.25	<0.24	< 0.27	< 0.24	< 0.25

NOTES: Results reported from Test America work orders 320-81254-1, 320-81504-1, and 320-80903-1.

Regulatory limits from 18 AAC 75.341 Table B1 Method Two - Soil Cleanup Levels Table (Migration to Groundwater).

No applicable regulatory limit exists for the associated analyte.

Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to quality-control (QC) failures.

Estimated concentration, detected greater than the method detection limit (MDL) and less than the RL. Flag applied by the laboratory.

J\* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc.

Bold The detected concentration exceeds the regulatory limit for the associated analyte. µg/kg = micrograms per kilogram;

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		Location:				21GST-MW15					21GST-	-MW16		21GST-	-MW17
	Regulatory	Sample: Depth: Date:	Sample 1 0.00'-0.25 10/29/2021	Sample 2 8.4'-8.6' 10/29/2021	Sample 3 17.9'-18.1' 10/29/2021	Sam 27.9'-28.1' 10/29/2021	ple 4 27.9'-28.1' Duplicate	Sample 5 38.9'-39.1' 10/29/2021	Sample 6 47.9'-48.1' 10/29/2021	Sample 1 0.00'-0.25' 10/31/2021	Sample 2 3.7'-3.9' 10/31/2021	Sample 3 9.4'-9.6' 10/31/2021	Sample 4 13.4'-13.6' 10/31/2021	Sample 1 11.9'-12.1' 10/22/2021	Sample 2 36.9'-37.1' 10/22/2021
Analyte	Limit	Units	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Perfluorohexanesulfonic acid (PFHxS)	_	μg/kg	0.047 J	0.038 J	<0.22	<0.24	<0.23	<0.23	<0.24	0.33	0.033 J	0.066 J	0.054 J	<0.24	<0.25
Perfluorohexanoic acid (PFHxA)	_	μg/kg	<0.21	< 0.23	<0.22	<0.24	<0.23	<0.23	<0.24	0.27	<0.21	0.053 J	< 0.25	<0.24	<0.25
Perfluoroheptanoic acid (PFHpA)	_	μg/kg	<0.21	< 0.23	<0.22	<0.24	<0.23	<0.23	<0.24	0.094 J	<0.21	< 0.25	< 0.25	<0.24	< 0.25
Perfluorononanoic acid (PFNA)	_	μg/kg	<0.21	< 0.23	<0.22	<0.24	<0.23	<0.23	<0.24	0.042 J	0.22	< 0.25	< 0.25	<0.24	<0.25
Perfluorobutanesulfonic acid (PFBS)	_	μg/kg	<0.21	<0.23	<0.22	<0.24	< 0.23	<0.23	<0.24	<0.21	<0.21	< 0.25	< 0.25	<0.24	<0.25
Perfluorodecanoic acid (PFDA)	_	μg/kg	<0.21	<0.23	<0.22	<0.24	< 0.23	<0.23	<0.24	0.24	0.16 J	< 0.25	< 0.25	<0.24	<0.25
Perfluoroundecanoic acid (PFUnA)	_	μg/kg	<0.21	< 0.23	<0.22	<0.24	< 0.23	<0.23	< 0.24	0.20 J	0.20 J	< 0.25	< 0.25	<0.24	<0.25
Perfluorododecanoic acid (PFDoA)	_	μg/kg	<0.21	<0.23	< 0.22	<0.24	< 0.23	< 0.23	<0.24	0.28	<0.21	< 0.25	< 0.25	<0.24	<0.25
Perfluorotridecanoic acid (PFTrDA)	_	μg/kg	<0.21	<0.23	< 0.22	<0.24	< 0.23	<0.23	<0.24	0.044 J	<0.21	< 0.25	< 0.25	<0.24	<0.25
Perfluorotetradecanoic acid (PFTeA)	_	μg/kg	<0.21	< 0.23	<0.22	<0.24	< 0.23	<0.23	<0.24	0.091 J	<0.21	< 0.25	< 0.25	<0.24	<0.25
N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	_	μg/kg	<0.21	< 0.23	<0.22	<0.24	< 0.23	<0.23	< 0.24	<0.21	<0.21	< 0.25	< 0.25	<0.24	<0.25
N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	_	μg/kg	<0.21	<0.23	<0.22	<0.24	< 0.23	<0.23	<0.24	<0.21	<0.21	< 0.25	< 0.25	<0.24	<0.25
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CI-PF3ONS)	_	μg/kg	<0.21	<0.23	<0.22	<0.24	< 0.23	<0.23	<0.24	<0.21	<0.21	< 0.25	< 0.25	<0.24	< 0.25
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3OUdS)	_	μg/kg	<0.21	<0.23	<0.22	<0.24	< 0.23	<0.23	<0.24	<0.21	<0.21	< 0.25	< 0.25	<0.24	< 0.25
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	_	μg/kg	<0.21	<0.23	<0.22	<0.24	< 0.23	<0.23	<0.24	<0.21	<0.21	< 0.25	< 0.25	<0.24	< 0.25
Hexafluoropropylene oxide dimer acid (HFPO-DA)	_	μg/kg	<0.21	<0.23	<0.22	<0.24 J*	< 0.23	<0.23	<0.24	<0.21	<0.21	< 0.25	< 0.25	<0.24	<0.25
Perfluorooctanesulfonic acid (PFOS)	3.0	μg/kg	0.39	0.18 J	<0.22	0.60 J*	0.26 J*	<0.23	<0.24	3.7	0.39	1.8	1.5	0.094 J	< 0.25
Perfluorooctanoic acid (PFOA)	1.7	μg/kg	<0.21	< 0.23	< 0.22	<0.24	< 0.23	< 0.23	<0.24	0.094 J	<0.21	< 0.25	< 0.25	<0.24	< 0.25

NOTES: Results reported from Test America work orders 320-81254-1, 320-81504-1, and 320-80903-1.

Regulatory limits from 18 AAC 75.341 Table B1 Method Two - Soil Cleanup Levels Table (Migration to Groundwater).

No applicable regulatory limit exists for the associated analyte.

Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to quality-control (QC) failures.

J Estimated concentration, detected greater than the method detection limit (MDL) and less than the RL. Flag applied by the laboratory.

J\* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc.

Bold The detected concentration exceeds the regulatory limit for the associated analyte. µg/kg = micrograms per kilogram;

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		Location:				21GST-MW18				21GST	-MW19		21GST-MW20	
		Sample:	Sample 1	Sam	ple 2	Sample 3	Sample 4	Sample 5	Sample 6	Sample 1	Sample 2	Sam	ple 1	Sample 2
Analyte	Regulatory Limit	Depth: Date: Units	0.4'-0.6' 10/28/2021 Soil	4.9'-5.1' 10/28/2021 Soil	4.9'-5.1' Duplicate Soil	16.9'-17.1' 10/28/2021 Soil	24.9'-25.1' 10/28/2021 Soil	34.9'-35.1' 10/28/2021 Soil	44.9'-45.1' 10/28/2021 Soil	2.9'-3.1' 10/31/2021 Soil	47.9'-48.1' 11/1/2021 Soil	4.9'-5.1' 11/1/2021 Soil	4.9'-5.1' Duplicate Soil	36.9'-37.1 11/1/2021 Soil
Perfluorohexanesulfonic acid (PFHxS)		μg/kg	<0.20	<0.23	<0.23	<0.26	<0.24	<0.25	<0.23	0.039 J	<0.22	<0.20	<0.21	<0.25
Perfluorohexanoic acid (PFHxA)	_	μg/kg	<0.20	<0.23	<0.23	<0.26	<0.24	< 0.25	<0.23	<0.26	<0.22	<0.20	<0.21	< 0.25
Perfluoroheptanoic acid (PFHpA)	_	μg/kg	<0.20	<0.23	< 0.23	<0.26	<0.24	<0.25	< 0.23	<0.26	<0.22	<0.20	<0.21	< 0.25
Perfluorononanoic acid (PFNA)	_	μg/kg	<0.20	<0.23	< 0.23	< 0.26	<0.24	<0.25	< 0.23	<0.26	<0.22	<0.20	<0.21	< 0.25
Perfluorobutanesulfonic acid (PFBS)	_	μg/kg	<0.20	<0.23	< 0.23	< 0.26	<0.24	< 0.25	< 0.23	<0.26	<0.22	<0.20	<0.21	< 0.25
Perfluorodecanoic acid (PFDA)	_	μg/kg	<0.20	< 0.23	< 0.23	< 0.26	<0.24	< 0.25	< 0.23	<0.26	<0.22	<0.20	<0.21	< 0.25
Perfluoroundecanoic acid (PFUnA)	_	μg/kg	<0.20	< 0.23	< 0.23	< 0.26	< 0.24	< 0.25	< 0.23	<0.26	<0.22	<0.20	<0.21	< 0.25
Perfluorododecanoic acid (PFDoA)	_	μg/kg	<0.20	< 0.23	< 0.23	< 0.26	< 0.24	< 0.25	< 0.23	<0.26	<0.22	<0.20	<0.21	< 0.25
Perfluorotridecanoic acid (PFTrDA)	_	μg/kg	<0.20	< 0.23	< 0.23	< 0.26	< 0.24	< 0.25	< 0.23	<0.26	<0.22	<0.20	<0.21	< 0.25
Perfluorotetradecanoic acid (PFTeA)	_	μg/kg	< 0.20	<0.23	< 0.23	<0.26	< 0.24	< 0.25	< 0.23	<0.26	<0.22	<0.20	<0.21	< 0.25
N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	_	μg/kg	<0.20	< 0.23	< 0.23	< 0.26	< 0.24	< 0.25	< 0.23	<0.26	<0.22	<0.20	0.035 J	< 0.25
N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	_	μg/kg	<0.20	< 0.23	< 0.23	< 0.26	< 0.24	< 0.25	< 0.23	<0.26	<0.22	<0.20	<0.21	< 0.25
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CI-PF3ONS)	_	μg/kg	< 0.20	<0.23	< 0.23	<0.26	< 0.24	< 0.25	< 0.23	<0.26	<0.22	<0.20	<0.21	< 0.25
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	_	μg/kg	<0.20	< 0.23	<0.23	<0.26	<0.24	<0.25	< 0.23	<0.26	<0.22	<0.20	<0.21	< 0.25
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	_	μg/kg	<0.20	< 0.23	<0.23	<0.26	<0.24	<0.25	< 0.23	<0.26	<0.22	<0.20	<0.21	< 0.25
Hexafluoropropylene oxide dimer acid (HFPO-DA)	_	μg/kg	< 0.20	< 0.23	<0.23	<0.26	<0.24	< 0.25	< 0.23	<0.26	<0.22	<0.20	<0.21	< 0.25
Perfluorooctanesulfonic acid (PFOS)	3.0	μg/kg	0.13 J	<0.23	< 0.23	<0.26	<0.24	< 0.25	<0.23	0.24 J	<0.22	<0.20	<0.21	< 0.25
Perfluorooctanoic acid (PFOA)	1.7	μg/kg	< 0.20	< 0.23	< 0.23	< 0.26	< 0.24	< 0.25	< 0.23	<0.26	<0.22	<0.20	<0.21	< 0.25

NOTES: Results reported from Test America work orders 320-81254-1, 320-81504-1, and 320-80903-1.

Regulatory limits from 18 AAC 75.341 Table B1 Method Two - Soil Cleanup Levels Table (Migration to Groundwater).

No applicable regulatory limit exists for the associated analyte.

Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to quality-control (QC) failures.

J Estimated concentration, detected greater than the method detection limit (MDL) and less than the RL. Flag applied by the laboratory.

J\* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc.

**Bold** The detected concentration exceeds the regulatory limit for the associated analyte.  $\mu g/kg = micrograms per kilogram;$ 

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		Location:	21GST	-MW21	21GST	-MW22	21GST	-MW23	21GST	-MW24	21GST	-MW25
	Regulatory	Sample: Depth: Date:	Sample 1 7.4'-7.6' 10/25/2021	Sample 2 41.9'-42.1' 10/25/2021	Sample 1 4.4'-4.6' 10/25/2021	Sample 2 39.9'-40.1' 10/25/2021	Sample 1 12.9'-13.1' 10/20/2021	Sample 2 41.9'-42.1' 10/20/2021	Sample 1 3.9'-4.1' 10/24/2021	Sample 2 27.9'-28.1' 10/24/2021	Sample 1 3.9'-4.1' 10/23/2021	Sample 2 46.9'-47.1 10/23/2021
Analyte	Limit	Units	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Perfluorohexanesulfonic acid (PFHxS)	_	μg/kg	< 0.24	<0.26	< 0.23	< 0.23	<0.24	< 0.25	<0.21	< 0.23	< 0.23	<0.23
Perfluorohexanoic acid (PFHxA)	_	μg/kg	<0.24	< 0.26	< 0.23	< 0.23	<0.24	< 0.25	<0.21	< 0.23	<0.23	< 0.23
Perfluoroheptanoic acid (PFHpA)	_	μg/kg	<0.24	<0.26	< 0.23	< 0.23	<0.24	< 0.25	<0.21	< 0.23	<0.23	<0.23
Perfluorononanoic acid (PFNA)	_	μg/kg	<0.24	<0.26	< 0.23	< 0.23	<0.24	< 0.25	<0.21	< 0.23	<0.23	<0.23
Perfluorobutanesulfonic acid (PFBS)	_	μg/kg	< 0.24	<0.26	<0.23	< 0.23	<0.24	< 0.25	<0.21	< 0.23	< 0.23	<0.23
Perfluorodecanoic acid (PFDA)	_	μg/kg	<0.24	<0.26	< 0.23	< 0.23	<0.24	< 0.25	<0.21	< 0.23	<0.23	<0.23
Perfluoroundecanoic acid (PFUnA)	_	μg/kg	<0.24	<0.26	< 0.23	< 0.23	<0.24	< 0.25	<0.21	< 0.23	<0.23	<0.23
Perfluorododecanoic acid (PFDoA)	_	μg/kg	<0.24	< 0.26	< 0.23	< 0.23	<0.24	< 0.25	<0.21	< 0.23	< 0.23	<0.23
Perfluorotridecanoic acid (PFTrDA)	_	μg/kg	<0.24	< 0.26	< 0.23	< 0.23	<0.24	< 0.25	<0.21	< 0.23	<0.23	< 0.23
Perfluorotetradecanoic acid (PFTeA)	_	μg/kg	0.046 J	< 0.26	< 0.23	< 0.23	<0.24	< 0.25	0.042 J	< 0.23	<0.23	< 0.23
N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	_	μg/kg	<0.24	<0.26	< 0.23	< 0.23	<0.24	< 0.25	<0.21	< 0.23	<0.23	<0.23
N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	_	μg/kg	<0.24	< 0.26	< 0.23	< 0.23	<0.24	< 0.25	<0.21	< 0.23	< 0.23	<0.23
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CI-PF3ONS)	_	μg/kg	<0.24	< 0.26	< 0.23	< 0.23	< 0.24	< 0.25	<0.21	< 0.23	<0.23	< 0.23
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	_	μg/kg	<0.24	< 0.26	< 0.23	< 0.23	<0.24	< 0.25	<0.21	< 0.23	< 0.23	<0.23
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	_	μg/kg	<0.24	< 0.26	< 0.23	< 0.23	<0.24	< 0.25	<0.21	< 0.23	<0.23	<0.23
Hexafluoropropylene oxide dimer acid (HFPO-DA)	_	μg/kg	<0.24	< 0.26	<0.23	< 0.23	<0.24	< 0.25	<0.21	< 0.23	<0.23	<0.23
Perfluorooctanesulfonic acid (PFOS)	3.0	μg/kg	<0.24	< 0.26	< 0.23	< 0.23	<0.24	< 0.25	<0.21	<0.23	<0.23	<0.23
Perfluorooctanoic acid (PFOA)	1.7	μg/kg	< 0.24	< 0.26	< 0.23	< 0.23	<0.24	< 0.25	<0.21	< 0.23	< 0.23	< 0.23

NOTES: Results reported from Test America work orders 320-81254-1, 320-81504-1, and 320-80903-1.

Regulatory limits from 18 AAC 75.341 Table B1 Method Two - Soil Cleanup Levels Table (Migration to Groundwater).

- No applicable regulatory limit exists for the associated analyte.
- Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to quality-control (QC) failures.
- Estimated concentration, detected greater than the method detection limit (MDL) and less than the RL. Flag applied by the laboratory.
- J\* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc.

**Bold** The detected concentration exceeds the regulatory limit for the associated analyte.

μg/kg = micrograms per kilogram;

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			Boring:	21GST	-SB001	21GST-	-SB002	21GST	-SB003	21GST-	SB004	21GST	-SB005		21GST-SB007	
			Sample:	Sample 1	Sample 2	Sam	ple 1	Sample 2								
			Depth:	0.00'-0.25'	3.9'-4.1'	0.00'-0.25'	4.4'-4.6'	0.00'-0.25'	3.7'-3.9'	0.00'-0.25'	3.7'-3.9'	0.00'-0.25'	3.9'-4.1'	0.00'-0.25'	0.00'-0.25'	3.9'-4.1'
Analytical			Date:	10/30/2021	10/30/2021	10/30/2021	10/30/2021	10/31/2021	10/31/2021	10/31/2021	10/31/2021	10/30/2021	10/30/2021	10/30/2021	Duplicate	10/30/2021
Method	Analyte	Regulatory Limit	Units	Soil	Soil	Soil										
AK101	Gasoline Range Organics	260	mg/kg	<1.78	<4.72 B*	<6.34 B*	<4.61 B*	<3.17	<2.42	<2.63	<2.48	<5.42 B*	<2.38	<6.05 B*	<5.07 B*	<5.20 B*
AK102	Diesel Range Organics	230	mg/kg	<10.6	<11.5	<10.9	<11.5	13.2 J	<11.8	<12.2	21.2 J	15.7 J	<11.9	26.3 J*	10.4 J*	13.0 J
AK103	Residual Range Organics	9,700	mg/kg	<53.0	<57.5	<54.0	<57.5	81.7 J	<59.0	<61.0	<58.0	201	<59.5	281 J*	<55.0 J*	<57.5
	1-Methylnaphthalene	0.41	mg/kg	< 0.0130	< 0.0143	< 0.0136	< 0.0144	< 0.0153	< 0.0147	< 0.0152	< 0.0146	< 0.135	< 0.0147	< 0.0141	<0.0138	< 0.0144
	2-Methylnaphthalene	1.3	mg/kg	< 0.0130	< 0.0143	< 0.0136	< 0.0144	< 0.0153	< 0.0147	< 0.0152	< 0.0146	< 0.135	< 0.0147	< 0.0141	<0.0138	< 0.0144
	Acenaphthene	37	mg/kg	< 0.0130	< 0.0143	< 0.0136	< 0.0144	< 0.0153	< 0.0147	< 0.0152	< 0.0146	< 0.135	< 0.0147	< 0.0141	<0.0138	< 0.0144
	Acenaphthylene	18	mg/kg	< 0.0130	< 0.0143	< 0.0136	< 0.0144	< 0.0153	< 0.0147	< 0.0152	< 0.0146	< 0.135	< 0.0147	< 0.0141	<0.0138	< 0.0144
	Anthracene	390	mg/kg	< 0.0130	< 0.0143	< 0.0136	< 0.0144	< 0.0153	< 0.0147	< 0.0152	< 0.0146	< 0.135	< 0.0147	< 0.0141	<0.0138	< 0.0144
	Benzo(a)anthracene	0.7	mg/kg	<0.0130	< 0.0143	< 0.0136	<0.0144	< 0.0153	< 0.0147	< 0.0152	<0.0146	< 0.135	< 0.0147	<0.0141	<0.0138	<0.0144
	Benzo(a)pyrene	1.9	mg/kg	<0.0130	< 0.0143	< 0.0136	<0.0144	< 0.0153	< 0.0147	< 0.0152	<0.0146	< 0.135	< 0.0147	<0.0141	<0.0138	<0.0144
	Benzo(b)fluoranthene	20	mg/kg	< 0.0130	< 0.0143	< 0.0136	< 0.0144	< 0.0153	< 0.0147	< 0.0152	< 0.0146	< 0.135	<0.0147	< 0.0141	<0.0138	< 0.0144
8270D SIM	Benzo(g,h,i)perylene	15,000	mg/kg	< 0.0130	< 0.0143	< 0.0136	< 0.0144	< 0.0153	< 0.0147	< 0.0152	< 0.0146	< 0.135	<0.0147	< 0.0141	<0.0138	< 0.0144
(PAH)	Benzo(k)fluoranthene	190	mg/kg	< 0.0130	< 0.0143	< 0.0136	< 0.0144	< 0.0153	< 0.0147	< 0.0152	< 0.0146	< 0.135	<0.0147	< 0.0141	<0.0138	< 0.0144
	Chrysene	600	mg/kg	< 0.0130	< 0.0143	< 0.0136	< 0.0144	< 0.0153	< 0.0147	< 0.0152	< 0.0146	< 0.135	< 0.0147	< 0.0141	<0.0138	< 0.0144
	Dibenzo(a,h)anthracene	6.3	mg/kg	< 0.0130	< 0.0143	< 0.0136	< 0.0144	< 0.0153	< 0.0147	< 0.0152	< 0.0146	< 0.135	< 0.0147	< 0.0141	<0.0138	< 0.0144
	Fluoranthene	590	mg/kg	< 0.0130	< 0.0143	< 0.0136	< 0.0144	< 0.0153	< 0.0147	< 0.0152	< 0.0146	< 0.135	< 0.0147	< 0.0141	<0.0138	< 0.0144
	Fluorene	36	mg/kg	< 0.0130	< 0.0143	< 0.0136	< 0.0144	< 0.0153	< 0.0147	< 0.0152	< 0.0146	< 0.135	< 0.0147	< 0.0141	<0.0138	< 0.0144
	Indeno(1,2,3-cd)pyrene	65	mg/kg	< 0.0130	< 0.0143	< 0.0136	< 0.0144	< 0.0153	< 0.0147	< 0.0152	< 0.0146	< 0.135	< 0.0147	< 0.0141	<0.0138	< 0.0144
	Naphthalene	0.038	mg/kg	<0.0104	< 0.0114	<0.0108	< 0.0115	<0.0122	<0.0118	<0.0121	< 0.0117	<0.108	<0.0118	< 0.0113	<0.0111	< 0.0116
	Phenanthrene	39	mg/kg	< 0.0130	< 0.0143	< 0.0136	< 0.0144	< 0.0153	< 0.0147	< 0.0152	< 0.0146	< 0.135	< 0.0147	<0.0141	<0.0138	< 0.0144
	Pyrene	87	mg/kg	< 0.0130	< 0.0143	< 0.0136	<0.0144	< 0.0153	< 0.0147	< 0.0152	< 0.0146	< 0.135	< 0.0147	<0.0141	<0.0138	< 0.0144
	Benzene	0.022	mg/kg	<0.00890	<0.0118	< 0.0159	< 0.0115	< 0.0159	< 0.0121	<0.0131	< 0.0124	<0.0136	< 0.0119	<0.0152	< 0.0127	< 0.0130
	Ethylbenzene	0.13	mg/kg	<0.0178	<0.0236	< 0.0317	< 0.0231	<0.0318	<0.0242	<0.0262	< 0.0249	<0.0271	<0.0238	<0.0302	<0.0254	<0.0260
SW8260D	m,p-xylenes	1.5	mg/kg	< 0.0356	<0.0471	<0.0635	<0.0461	<0.0635	<0.0483	<0.0525	< 0.0497	<0.0540	<0.0476	<0.0605	<0.0505	<0.0520
(BTEX)	o-Xylene	1.5	mg/kg	<0.0178	<0.0236	<0.0317	<0.0231	<0.0318	<0.0242	<0.0262	<0.0249	<0.0271	<0.0238	<0.0302	<0.0254	<0.0260
	Toluene	6.7	mg/kg	<0.0178	<0.0236	<0.0317	<0.0231	<0.0318	<0.0242	<0.0262	<0.0249	<0.0271	<0.0238	<0.0302	<0.0254	<0.0260
	Total Xylenes	1.5	mg/kg	< 0.0535	<0.0710	<0.0950	< 0.0690	< 0.0950	< 0.0725	<0.0785	< 0.0745	<0.0810	< 0.0715	<0.0910	<0.0760	<0.0780

NOTES: Results reported from SGS work order 1217257.

Regulatory limits from 18 AAC 75.341 Table B1 Method Two - Soil Cleanup Levels Table (Migration to Groundwater).

- No applicable regulatory limit exists for the associated analyte.
- < Analyte was not detected; reported as <LOD.
- Estimated concentration, detected greater than the detection limit (LOD) and less than the limit of quantitation (LOQ). Flag applied by the laboratory.
- J\* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (\*)
- B\* Result is included in the same preparatory batch as a blank detection for the associated analyte. Flag applied by Shannon & Wilson, Inc. (\*)
- <Bold The laboratory's limit of detection (LOD) is greater than the regulatory limit.

BTEX = benzene, toluene, ethylbenzene, and xylenes;

mg/kg = milligrams per kilogram; PAH = polynuclear aromatic hydrocarbons

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			Boring:		21GST-SB009			21GST-SB011		21GST-	-SB012	21GST	-SB013
			Sample:	Sam	ple 1	Sample 2	Sample 1	Sam	ple 2	Sample 1	Sample 2	Sample 1	Sample 2
			Depth:	0.00'-0.25'	0.00'-0.25'	4.4'-4.6'	0.4'-0.6'	7.4'-7.6'	7.4'-7.6'	0.00'-0.25'	2.9'-3.1'	0.00'-0.25'	3.4'-3.6'
Analytical			Date:	10/30/2021	Duplicate	10/30/2021	10/31/2021	10/31/2021	Duplicate	10/30/2021	10/30/2021	10/30/2021	10/30/2021
Method	Analyte	Regulatory Limit	Units	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
AK101	Gasoline Range Organics	260	mg/kg	<5.01 B*	<4.06 B*	<3.28 B*	<3.07	<2.72	<3.20	<4.41 B*	<2.43	<2.35	<4.36 B*
AK102	Diesel Range Organics	230	mg/kg	<10.7	<10.7	<10.7	146	<10.6	<11.1	<11.1	<11.8	<11.2	<11.4
AK103	Residual Range Organics	9,700	mg/kg	<53.5	<53.5	<53.0	2,380	53.3 J	<55.0	<55.5	<59.0	<55.5	<57.0
	1-Methylnaphthalene	0.41	mg/kg	< 0.0134	< 0.0133	< 0.0132	<0.136	< 0.0133	< 0.0138	<0.0138	< 0.0147	< 0.0138	< 0.0142
	2-Methylnaphthalene	1.3	mg/kg	< 0.0134	< 0.0133	< 0.0132	< 0.136	< 0.0133	< 0.0138	< 0.0138	< 0.0147	< 0.0138	< 0.0142
	Acenaphthene	37	mg/kg	< 0.0134	< 0.0133	< 0.0132	< 0.136	< 0.0133	< 0.0138	< 0.0138	< 0.0147	<0.0138	< 0.0142
	Acenaphthylene	18	mg/kg	< 0.0134	< 0.0133	< 0.0132	< 0.136	< 0.0133	< 0.0138	<0.0138	< 0.0147	<0.0138	< 0.0142
	Anthracene	390	mg/kg	< 0.0134	< 0.0133	< 0.0132	< 0.136	< 0.0133	< 0.0138	<0.0138	< 0.0147	<0.0138	< 0.0142
	Benzo(a)anthracene	0.7	mg/kg	< 0.0134	< 0.0133	< 0.0132	<0.136	< 0.0133	<0.0138	<0.0138	< 0.0147	<0.0138	< 0.0142
	Benzo(a)pyrene	1.9	mg/kg	< 0.0134	< 0.0133	< 0.0132	<0.136	< 0.0133	<0.0138	<0.0138	< 0.0147	<0.0138	< 0.0142
	Benzo(b)fluoranthene	20	mg/kg	< 0.0134	< 0.0133	<0.0132	<0.136	< 0.0133	<0.0138	<0.0138	< 0.0147	<0.0138	< 0.0142
8270D SIM	Benzo(g,h,i)perylene	15,000	mg/kg	< 0.0134	< 0.0133	<0.0132	<0.136	< 0.0133	<0.0138	<0.0138	< 0.0147	<0.0138	< 0.0142
(PAH)	Benzo(k)fluoranthene	190	mg/kg	< 0.0134	< 0.0133	<0.0132	<0.136	< 0.0133	<0.0138	<0.0138	< 0.0147	<0.0138	< 0.0142
	Chrysene	600	mg/kg	< 0.0134	< 0.0133	< 0.0132	< 0.136	< 0.0133	<0.0138	<0.0138	< 0.0147	<0.0138	< 0.0142
	Dibenzo(a,h)anthracene	6.3	mg/kg	< 0.0134	< 0.0133	< 0.0132	< 0.136	< 0.0133	<0.0138	<0.0138	< 0.0147	<0.0138	< 0.0142
	Fluoranthene	590	mg/kg	< 0.0134	< 0.0133	< 0.0132	< 0.136	< 0.0133	<0.0138	<0.0138	< 0.0147	<0.0138	< 0.0142
	Fluorene	36	mg/kg	< 0.0134	< 0.0133	< 0.0132	< 0.136	< 0.0133	<0.0138	<0.0138	< 0.0147	<0.0138	< 0.0142
	Indeno(1,2,3-cd)pyrene	65	mg/kg	< 0.0134	< 0.0133	< 0.0132	< 0.136	< 0.0133	<0.0138	<0.0138	< 0.0147	<0.0138	< 0.0142
	Naphthalene	0.038	mg/kg	< 0.0107	< 0.0106	< 0.0106	<0.109	< 0.0106	< 0.0111	< 0.0111	< 0.0117	<0.0111	< 0.0114
	Phenanthrene	39	mg/kg	< 0.0134	< 0.0133	< 0.0132	< 0.136	< 0.0133	<0.0138	<0.0138	< 0.0147	<0.0138	< 0.0142
	Pyrene	87	mg/kg	< 0.0134	< 0.0133	< 0.0132	< 0.136	< 0.0133	<0.0138	<0.0138	< 0.0147	<0.0138	< 0.0142
	Benzene	0.022	mg/kg	< 0.0125	< 0.0101	<0.00820	< 0.0154	< 0.0136	< 0.0160	<0.0110	< 0.0121	< 0.0117	< 0.0109
	Ethylbenzene	0.13	mg/kg	<0.0250	<0.0203	<0.0164	< 0.0307	<0.0272	<0.0320	<0.0221	<0.0243	<0.0234	<0.0218
SW8260D	m,p-xylenes	1.5	mg/kg	<0.0500	<0.0406	<0.0328	< 0.0615	<0.0545	<0.0640	<0.0441	<0.0486	<0.0469	< 0.0435
(BTEX)	o-Xylene	1.5	mg/kg	< 0.0250	<0.0203	<0.0164	< 0.0307	<0.0272	<0.0320	<0.0221	<0.0243	<0.0234	<0.0218
	Toluene	6.7	mg/kg	< 0.0250	<0.0203	<0.0164	< 0.0307	<0.0272	<0.0320	<0.0221	<0.0243	<0.0234	<0.0218
	Total Xylenes	1.5	mg/kg	< 0.0750	<0.0610	<0.0491	<0.0920	<0.0815	<0.0960	<0.0660	<0.0730	< 0.0705	< 0.0655

NOTES: Results reported from SGS work order 1217257.

Regulatory limits from 18 AAC 75.341 Table B1 Method Two - Soil Cleanup Levels Table (Migration to Groundwater).

No applicable regulatory limit exists for the associated analyte.

< Analyte was not detected; reported as <LOD.

Estimated concentration, detected greater than the detection limit (LOD) and less than the limit of quantitation (LOQ). Flag applied by the laboratory.

J\* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (\*)

Result is included in the same preparatory batch as a blank detection for the associated analyte. Flag applied by Shannon & Wilson, Inc. (\*)

<Bold The laboratory's limit of detection (LOD) is greater than the regulatory limit.

BTEX = benzene, toluene, ethylbenzene, and xylenes;

mg/kg = milligrams per kilogram; PAH = polynuclear aromatic hydrocarbons

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		Sample:	MW-1-15	MW-1-40	MW-	2-20	MW-2-30	MW-3-15	MW-3-40	MW-4-20	MW-5-20	MW-6-20	MW-7-20	MW-8-20	MW-	9-30	MW-10-20	MW-11-15	MW-	12-10
		Date:	10/26/2021	10/26/2021	10/26/2021	Duplicate	10/26/2021	10/26/2021	10/26/2021	10/25/2021	10/25/2021	10/26/2021	10/25/2021	10/25/2021	10/25/2021	Duplicate	10/25/2021	10/31/2021	10/31/2021	Duplicate
Analyte	EPA LHA	Units	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Perfluorohexanesulfonic acid (PFHxS)	-	ng/L	0.76 J	<1.8	39	40	<1.8	5.8	12	0.55 J	0.88 J	1.1 J	0.67 J	<1.8	9.9	10	8.4	60	11	10
Perfluorohexanoic acid (PFHxA)	-	ng/L	<1.8	<1.8	90	93	0.54 J*	0.61 J	1.8 J	<1.8	<1.8	<1.8	1.8 J	<1.8	7.5	7.7	6.4	16	2.9	2.4
Perfluoroheptanoic acid (PFHpA)	-	ng/L	<1.8	<1.8	44	49	<1.8	<1.9	<1.9	<1.8	<1.8	<1.8	0.61 J	<1.8	2.9	2.9	2.9	10	4.3	4.4
Perfluorononanoic acid (PFNA)	-	ng/L	<1.8	<1.8	6.5	7.0	<1.8	<1.9	<1.9	<1.8	<1.8	<1.8	<1.9	<1.8	<1.9	<1.8	<1.8	1.3 J	0.91 J*	0.58 J*
Perfluorobutanesulfonic acid (PFBS)	-	ng/L	<1.8	<1.8	2.7	2.6	1.1 J	0.45 J*	1.0 J	<1.8	0.41 J	<1.8	0.21 J	<1.8	0.78 J	0.65 J	0.38 J	4.7	0.23 J	0.35 J*
Perfluorodecanoic acid (PFDA)	-	ng/L	<1.8	<1.8	<1.8	0.72 J	<1.8	<1.9	<1.9	<1.8	<1.8	<1.8	<1.9	<1.8	<1.9	<1.8	<1.8	<1.8	<1.7	<1.7
Perfluoroundecanoic acid (PFUnA)	-	ng/L	<1.8	<1.8	<1.8	<1.8	<1.8	<1.9	<1.9	<1.8	<1.8	<1.8	<1.9	<1.8	<1.9	<1.8	<1.8	<1.8	<1.7	<1.7
Perfluorododecanoic acid (PFDoA)	-	ng/L	<1.8	<1.8	<1.8	<1.8	<1.8	<1.9	<1.9	<1.8	<1.8	<1.8	<1.9	<1.8	<1.9	<1.8	<1.8	0.72 J	<1.7	<1.7
Perfluorotridecanoic acid (PFTrDA)	-	ng/L	<1.8	<1.8	<1.8	<1.8	<1.8	<1.9	<1.9	<1.8	<1.8	<1.8	<1.9	<1.8	<1.9	<1.8	<1.8	<1.8	<1.7	<1.7
Perfluorotetradecanoic acid (PFTeA)	-	ng/L	<1.8	<1.8	<1.8	<1.8	<1.8	<1.9	<1.9	<1.8	<1.8	<1.8	<1.9	<1.8	<1.9	<1.8	<1.8	<1.8	<1.7	<1.7
N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	-	ng/L	<4.6	<4.5	<4.5	<4.5	<4.5	<4.6	<4.7	<4.5	<4.6	<4.6	<4.6	<4.6	<4.7	<4.6	<4.5	<4.5	<4.4	<4.3
N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	-	ng/L	<4.6	<4.5	<4.5	<4.5	<4.5	<4.6	<4.7	<4.5	<4.6	<4.6	<4.6	<4.6	<4.7	<4.6	<4.5	<4.5	<4.4	<4.3
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CI-PF3ONS)	-	ng/L	<1.8	<1.8	<1.8	<1.8	<1.8	<1.9	<1.9	<1.8	<1.8	<1.8	<1.9	<1.8	<1.9	<1.8	<1.8	<1.8	<1.7	<1.7
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	-	ng/L	<1.8	<1.8	<1.8	<1.8	<1.8	<1.9	<1.9	<1.8	<1.8	<1.8	<1.9	<1.8	<1.9	<1.8	<1.8	<1.8	<1.7	<1.7
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	-	ng/L	<1.8	<1.8	<1.8	<1.8	<1.8	<1.9	<1.9	<1.8	<1.8	<1.8	<1.9	<1.8	<1.9	<1.8	<1.8	<1.8	<1.7	<1.7
Hexafluoropropylene oxide dimer acid (HFPO-DA)	-	ng/L	<3.7	<3.6	<3.6	<3.6	<3.6	<3.7	<3.7	<3.6	<3.7	<3.7	<3.7	<3.7	<3.7	<3.7	<3.6	<3.6	<3.5	<3.4
Perfluorooctanesulfonic acid (PFOS)	70+	ng/L	<1.8	<1.8	330	360	0.51 J	2.7	12	<1.8	3.6	<1.8	14	2.3	37	37	81	820	30	27
Perfluorooctanoic acid (PFOA)		ng/L	<1.8	<1.8	24	24	<1.8	<1.9	1.1 J	<1.8	0.81 J	<1.8	2.6	<1.8	0.87 J	0.78 J	1.1 J	9.8	2.5	2.6
LHA Combined (PFOS + PFOA)	70†	ng/L	n/a	n/a	354	384	0.51 J‡	2.7 ‡	13 J	n/a	4.4 J	n/a	17	2.3 ‡	38 J	38 J	82 J	830	33	30

NOTES: Results reported from TestAmerica work orders 320-81258-1, 320-81504-1, and 320-81055-1.

- No applicable regulatory limit exists for the associated analyte.
- † EPA LHA level is 70 ppt for PFOS and PFOA combined.
- Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to quality-control (QC) failures.

#### **Bold** Concentration exceeds LHA level.

- Estimated concentration, detected greater than the method detection limit (MDL) and less than the RL.
- Flag applied by the laboratory.
- J\* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc.
- ‡ Minimum concentration, the LHA Combined oconcentration includes one or more result that is not detected greater than the MDL.
- n/a Not applicable. The LHA Combined concentration could not be calculated; PFOS and PFOA were not detected in the project sample.
  - EPA = Environmental Protection Agency; LHA = Lifetime Health Advisory;
  - ng/L = nanograms per liter, equivalent to parts per trillion

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		Sample:	MW-9-10	MW-13-20	MW-1	13-45	MW-14-15	MW-14-31	MW-15-15	MW-	15-45	MW-16-15	MW-17-20	MW-	17-40	MW-18-15	MW-1	8-50	MW-19-15
		Date:	10/25/2021	10/27/2021	10/27/2021	Duplicate	11/1/2021	11/1/2021	11/3/2021	11/3/2021	Duplicate	11/2/2021	10/26/2021	10/26/2021	Duplicate	11/4/2021	11/4/2021	Duplicate	11/5/2021
Analyte	EPA LHA	Units	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Perfluorohexanesulfonic acid (PFHxS)	-	ng/L	<2.0	7.6	<1.7	<1.8	1.8	6.2	10	<1.7	<1.7	14	16	<1.9	<1.9	21	1.3 J	1.2 J	0.84 J
Perfluorohexanoic acid (PFHxA)	-	ng/L	<2.0	4.2	<1.7	<1.8	1.0 J	8.6	2.6	<1.7	<1.7	56	11	<1.9 J*	<1.9	<1.8	<1.8	<1.8	<1.8
Perfluoroheptanoic acid (PFHpA)	-	ng/L	<2.0	1.4 J	<1.7	<1.8	1.1 J	2.3	<1.7	<1.7	<1.7	25	1.8 J	<1.9 J*	<1.9	<1.8	<1.8	<1.8	<1.8
Perfluorononanoic acid (PFNA)	-	ng/L	<2.0	<1.7	<1.7	<1.8	<1.8	0.25 J	<1.7	<1.7	<1.7	4.0	<2.0	<1.9 J*	<1.9	<1.8	<1.8	<1.8	<1.8
Perfluorobutanesulfonic acid (PFBS)	-	ng/L	<2.0	0.70 J	<1.7	<1.8	0.24 J	0.74 J	<1.7	<1.7	<1.7	<1.7	0.98 J	<1.9	<1.9	<1.8	<1.8	<1.8	<1.8
Perfluorodecanoic acid (PFDA)	-	ng/L	<2.0	<1.7	<1.7	<1.8	<1.8	<1.7	<1.7	<1.7	<1.7	13	<2.0	<1.9	<1.9	<1.8	<1.8	<1.8	<1.8
Perfluoroundecanoic acid (PFUnA)	-	ng/L	<2.0	<1.7	<1.7	<1.8	<1.8	<1.7	<1.7	<1.7	<1.7	<1.7	<2.0	<1.9	<1.9	<1.8	<1.8	<1.8	<1.8
Perfluorododecanoic acid (PFDoA)	-	ng/L	<2.0	<1.7	<1.7	<1.8	<1.8	<1.7	<1.7	<1.7	<1.7	<1.7	<2.0	<1.9	<1.9	<1.8	<1.8	<1.8	<1.8
Perfluorotridecanoic acid (PFTrDA)	-	ng/L	<2.0	<1.7	<1.7	<1.8	<1.8	<1.7	<1.7	<1.7	<1.7	<1.7	<2.0	<1.9	<1.9	<1.8	<1.8	<1.8	<1.8
Perfluorotetradecanoic acid (PFTeA)	-	ng/L	<2.0	<1.7	<1.7	<1.8	<1.8	<1.7	<1.7	<1.7	<1.7	<1.7	<2.0	<1.9	<1.9	<1.8	<1.8	<1.8	<1.8
N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	-	ng/L	<4.9	<4.3	<4.4	<4.4	<4.5	<4.3	<4.3	<4.3	<4.3	<4.3	<4.9	<4.8 J*	<4.7	<4.5	<4.6	<4.6	<4.5
N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	-	ng/L	<4.9	<4.3	<4.4	<4.4	<4.5	<4.3	<4.3	<4.3	<4.3	<4.3	<4.9	<4.8	<4.7	<4.5	<4.6	<4.6	<4.5
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CI-PF3ONS)	-	ng/L	<2.0	<1.7	<1.7	<1.8	<1.8	<1.7	<1.7	<1.7	<1.7	<1.7	<2.0	<1.9	<1.9	<1.8	<1.8	<1.8	<1.8
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	-	ng/L	<2.0	<1.7	<1.7	<1.8	<1.8	<1.7	<1.7	<1.7	<1.7	<1.7	<2.0	<1.9	<1.9	<1.8	<1.8	<1.8	<1.8
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	-	ng/L	<2.0	<1.7	<1.7	<1.8	<1.8	<1.7	<1.7	<1.7	<1.7	<1.7	<2.0	<1.9	<1.9	<1.8	<1.8	<1.8	<1.8
Hexafluoropropylene oxide dimer acid (HFPO-DA)	-	ng/L	<3.9	<3.4	<3.5	<3.5	<3.6	<3.5	<3.4	<3.5	<3.4	<3.5	<3.9	<3.9 J*	<3.7	<3.6	<3.7	<3.7	<3.6
Perfluorooctanesulfonic acid (PFOS)	704	ng/L	<2.0	6.2	<1.7	<1.8	5.3	38	22	<1.7	<1.7	49	130	<1.9	<1.9	51	1.9	2.1	1.4 J
Perfluorooctanoic acid (PFOA)	- /UT -	ng/L	<2.0	1.4 J	<1.7	<1.8	<1.8	1.3 J	1.3 J	<1.7	<1.7	8.6	1.6 J	<1.9	<1.9	<1.8	<1.8	<1.8	<1.8
LHA Combined (PFOS + PFOA)	70†	ng/L	n/a	7.6 J	n/a	n/a	5.3 ‡	39 J	23 J	n/a	n/a	58	132 J	n/a	n/a	51 ‡	1.9 ‡	2.1 ‡	1.4 J‡

NOTES: Results reported from TestAmerica work orders 320-81258-1, 320-81504-1, and 320-81055-1.

- No applicable regulatory limit exists for the associated analyte.
- † EPA LHA level is 70 ppt for PFOS and PFOA combined.
- Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to quality-control (QC) failures.

#### **Bold** Concentration exceeds LHA level.

- Estimated concentration, detected greater than the method detection limit (MDL) and less than the RL.
- Flag applied by the laboratory.
- J\* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc.
- Minimum concentration, the LHA Combined oconcentration includes one or more result that is not detected greater than the MDL.
- n/a Not applicable. The LHA Combined concentration could not be calculated; PFOS and PFOA were not detected in the project sample.
  - EPA = Environmental Protection Agency; LHA = Lifetime Health Advisory;
  - ng/L = nanograms per liter, equivalent to parts per trillion

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		Sample:	MW-1	19-50	MW-20-15	MW-20-40	MW-21-15	MW-	21-45	MW-22-15	MW-22-40	MW-23-20	MW-2	3-50	MW-24-10	MW-24-30	MW-25-15	MW-2	5-47	GAC 2021
		Date:	11/5/2021	Duplicate	11/4/2021	11/4/2021	11/1/2021	11/1/2021	Duplicate	10/30/2021	10/30/2021	10/24/2021	10/25/2021	Duplicate	10/29/2021	10/29/2021	10/28/2021	10/29/2021	Duplicate	11/5/2021
Analyte	EPA LHA	Units	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water							
Perfluorohexanesulfonic acid (PFHxS)	-	ng/L	1.8	1.8	5.5	<1.7	6.1	<1.8	<1.8	4.5	27	1.0 J	<1.9 J*	<1.9 J*	0.54 J	<1.7	0.56 J	<1.8	<1.8	<1.7
Perfluorohexanoic acid (PFHxA)	-	ng/L	1.5 J	1.8	1.5 J	<1.7	3.9	<1.8	<1.8	3.0	6.8	1.4 J	<1.9 J*	<1.9 J*	<1.7	<1.7	<1.8	<1.8	<1.8	<1.7
Perfluoroheptanoic acid (PFHpA)	-	ng/L	<1.8	<1.8	<1.7	<1.7	1.9	<1.8	<1.8	1.1 J	1.2 J	<1.9	<1.9 J*	<1.9 J*	<1.7	<1.7	<1.8	<1.8	<1.8	<1.7
Perfluorononanoic acid (PFNA)	-	ng/L	<1.8	<1.8	<1.7	<1.7	<1.8	<1.8	<1.8	<1.8	<1.8	0.65 J	<1.9 J*	<1.9 J*	<1.7	<1.7	<1.8	<1.8	<1.8	<1.7
Perfluorobutanesulfonic acid (PFBS)	-	ng/L	<1.8	<1.8	<1.7	<1.7	0.72 J	<1.8	<1.8	0.39 J*	4.0	<1.9	<1.9 J*	<1.9 J*	<1.7	<1.7	<1.8	<1.8	<1.8	<1.7
Perfluorodecanoic acid (PFDA)	-	ng/L	<1.8	<1.8	<1.7	<1.7	<1.8	<1.8	<1.8	<1.8	<1.8	1.2 J	<1.9 J*	<1.9 J*	<1.7	<1.7	<1.8	<1.8	<1.8	<1.7
Perfluoroundecanoic acid (PFUnA)	-	ng/L	<1.8	<1.8	<1.7	<1.7	<1.8	<1.8	<1.8	<1.8	<1.8	<1.9	<1.9 J*	<1.9 J*	<1.7	<1.7	<1.8	<1.8	<1.8	<1.7
Perfluorododecanoic acid (PFDoA)	-	ng/L	<1.8	<1.8	<1.7	<1.7	<1.8	<1.8	<1.8	<1.8	<1.8	<1.9	<1.9 J*	<1.9 J*	<1.7	<1.7	<1.8	<1.8	<1.8	<1.7
Perfluorotridecanoic acid (PFTrDA)	-	ng/L	<1.8	<1.8	<1.7	<1.7	<1.8	<1.8	<1.8	<1.8	<1.8	<1.9	<1.9 J*	<1.9 J*	<1.7	<1.7	<1.8	<1.8	<1.8	<1.7
Perfluorotetradecanoic acid (PFTeA)	-	ng/L	<1.8	<1.8	<1.7	<1.7	<1.8	<1.8	<1.8	<1.8	<1.8	<1.9	<1.9 J*	<1.9 J*	<1.7	<1.7	<1.8	<1.8	<1.8	<1.7
N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	-	ng/L	<4.5	<4.5	<4.2	<4.3	<4.4	<4.5	<4.4	<4.6	<4.5	<4.7	<4.8 J*	<4.8 J*	<4.2	<4.2	<4.4	<4.5	<4.6	<4.1
N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	-	ng/L	<4.5	<4.5	<4.2	<4.3	<4.4	<4.5	<4.4	<4.6	<4.5	<4.7	<4.8 J*	<4.8 J*	<4.2	<4.2	<4.4	<4.5	<4.6	<4.1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CI-PF3ONS)	-	ng/L	<1.8	<1.8	<1.7	<1.7	<1.8	<1.8	<1.8	<1.8	<1.8	<1.9	<1.9 J*	<1.9 J*	<1.7	<1.7	<1.8	<1.8	<1.8	<1.7
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3OUdS)	-	ng/L	<1.8	<1.8	<1.7	<1.7	<1.8	<1.8	<1.8	<1.8	<1.8	<1.9	<1.9 J*	<1.9 J*	<1.7	<1.7	<1.8	<1.8	<1.8	<1.7
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	-	ng/L	<1.8	<1.8	<1.7	<1.7	<1.8	<1.8	<1.8	<1.8	<1.8	<1.9	<1.9 J*	<1.9 J*	<1.7	<1.7	<1.8	<1.8	<1.8	<1.7
Hexafluoropropylene oxide dimer acid (HFPO-DA)	-	ng/L	<3.6	<3.6	<3.4	<3.5	<3.5	<3.6	<3.5	<3.7	<3.6	<3.8	<3.8 J*	<3.9 J*	<3.4	<3.4	<3.5	<3.6	<3.6	<3.3
Perfluorooctanesulfonic acid (PFOS)	704	ng/L	1.2 J	1.3 J	2.6	<1.7	49	<1.8	<1.8	22	7.2	11	<1.9 J*	<1.9 J*	1.4 J	<1.7	<1.8	<1.8	<1.8	<1.7
Perfluorooctanoic acid (PFOA)	<del>-</del> 70† -	ng/L	<1.8	<1.8	<1.7	<1.7	1.2 J	<1.8	<1.8	1.0 J	3.2	2.5	<1.9	<1.9 J*	<1.7	<1.7	<1.8	<1.8	<1.8	<1.7
LHA Combined (PFOS + PFOA)	70†	ng/L	1.2 J‡	1.3 J‡	2.6 ‡	n/a	50 J	n/a	n/a	23 J	10	14	n/a	n/a	1.4 J‡	n/a	n/a	n/a	n/a	n/a

NOTES: Results reported from TestAmerica work orders 320-81258-1, 320-81504-1, and 320-81055-1.

- No applicable regulatory limit exists for the associated analyte.
- † EPA LHA level is 70 ppt for PFOS and PFOA combined.
- Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to quality-control (QC) failures.

#### **Bold** Concentration exceeds LHA level.

- , Estimated concentration, detected greater than the method detection limit (MDL) and less than the RL.
- Flag applied by the laboratory.
- J\* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc.
- \$ Minimum concentration, the LHA Combined oconcentration includes one or more result that is not detected greater than the MDL.
- n/a Not applicable. The LHA Combined concentration could not be calculated; PFOS and PFOA were not detected in the project sample.
  - EPA = Environmental Protection Agency; LHA = Lifetime Health Advisory;
  - ng/L = nanograms per liter, equivalent to parts per trillion

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#### GUSTAVUS AIRPORT 2021 SITE CHARACTERIZATION TABLE 7: TEMPORARY WELL POINTS PFAS RESULTS

		Sample:	21GST-TWP-1	21GST-TWP-2	21GST-	TWP-3	21GST-TWP-4	21GST-TWP-5	21GST-TWP-6	21GST-TWP-7	21GST-TWP-8	21GST-TWP-9	21GST-TWP-10
		Date:	10/27/2021	10/27/2021	10/28/2021	Duplicate	10/28/2021	10/28/2021	10/30/2021	10/30/2021	10/28/2021	10/30/2021	10/27/2021
Analyte	EPA LHA	Units	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Perfluorohexanesulfonic acid (PFHxS)	-	ng/L	<1.8	12	<1.8	<1.8	100	53	8.4	1.0 J	6.9	22	54
Perfluorohexanoic acid (PFHxA)	-	ng/L	<1.8	7.7	<1.8	<1.8	45	26	1.0 J	1.1 J	8.6	9.9	12
Perfluoroheptanoic acid (PFHpA)	-	ng/L	<1.8	1.8	<1.8	<1.8	17	16	0.61 J	1.2 J	8.4	2.2	4.3
Perfluorononanoic acid (PFNA)	-	ng/L	<1.8	<1.7	<1.8	<1.8	1.5 J	2.4	<1.7	0.52 J	<1.8	<1.7	<1.8
Perfluorobutanesulfonic acid (PFBS)	-	ng/L	<1.8	2.7	<1.8	<1.8	10	1.6 J	0.50 J	<1.7	<1.8	0.98 J	2.6
Perfluorodecanoic acid (PFDA)	-	ng/L	<1.8	<1.7	<1.8	<1.8	<1.7	2.9	<1.7	<1.7	<1.8	<1.7	<1.8
Perfluoroundecanoic acid (PFUnA)	-	ng/L	<1.8	<1.7	<1.8	<1.8	<1.7	<1.7	<1.7	<1.7	<1.8	<1.7	<1.8
Perfluorododecanoic acid (PFDoA)	-	ng/L	<1.8	<1.7	<1.8	<1.8	<1.7	<1.7	<1.7	<1.7	<1.8	<1.7	<1.8
Perfluorotridecanoic acid (PFTrDA)	-	ng/L	<1.8	<1.7	<1.8	<1.8	<1.7	<1.7	<1.7	<1.7	<1.8	<1.7	<1.8
Perfluorotetradecanoic acid (PFTeA)	-	ng/L	<1.8	<1.7	<1.8	<1.8	<1.7	<1.7	<1.7	<1.7	<1.8	<1.7	<1.8
N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	-	ng/L	<4.6	<4.3	<4.4	<4.5	<4.4	<4.2	<4.3	<4.3	<4.4	<4.3	<4.4
N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	-	ng/L	<4.6	<4.3	<4.4	<4.5	<4.4	<4.2	<4.3	<4.3	<4.4	<4.3	<4.4
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CI-PF3ONS)	-	ng/L	<1.8	<1.7	<1.8	<1.8	<1.7	<1.7	<1.7	<1.7	<1.8	<1.7	<1.8
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	-	ng/L	<1.8	<1.7	<1.8	<1.8	<1.7	<1.7	<1.7	<1.7	<1.8	<1.7	<1.8
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	-	ng/L	<1.8	<1.7	<1.8	<1.8	<1.7	<1.7	<1.7	<1.7	<1.8	<1.7	<1.8
Hexafluoropropylene oxide dimer acid (HFPO-DA)	-	ng/L	<3.6	<3.4	<3.5	<3.6	<3.5	<3.4	<3.4	<3.5	<3.5	<3.5	<3.5
Perfluorooctanesulfonic acid (PFOS)	70±	ng/L	<1.8	44	<1.8	<1.8	340	170	8.0	19	150	74	63
Perfluorooctanoic acid (PFOA)	· 70† <del>-</del>	ng/L	<1.8	1.4 J	<1.8	<1.8	17	11	<1.7	2.7	2.9	2.7	3.0
LHA Combined (PFOS + PFOA)	70†	ng/L	n/a	45 J	n/a	n/a	357	181	8.0 ‡	22	153	77	66

NOTES: Results reported from TestAmerica work orders 320-81258-1 and 320-81055-1.

- No applicable regulatory limit exists for the associated analyte.
- † EPA LHA level is 70 ppt for PFOS and PFOA combined.
- Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to qualitycontrol (QC) failures.

#### **Bold** Concentration exceeds LHA level.

- Estimated concentration, detected greater than the method detection limit (MDL) and less than the RL. Flag applied by the laboratory.
- J\* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc.
  - Minimum concentration, the LHA Combined oconcentration includes one or more result that is not detected greater than the MDL.
- Not applicable. The LHA Combined concentration could not be calculated; PFOS and PFOA were not detected in the project sample.
  - EPA = Environmental Protection Agency; LHA = Lifetime Health Advisory;
  - ng/L = nanograms per liter, equivalent to parts per trillion

#### GUSTAVUS AIRPORT 2021 SITE CHARACTERIZATION TABLE 7: TEMPORARY WELL POINTS PFAS RESULTS

		Sample:	21GST-	TWP-11	21GST-TWP-12	21GST-TWP-13	21GST-	TWP-14	21GST-	TWP-15	PW-016
		Date:	10/30/2021	Duplicate	10/30/2021	10/24/2021	10/24/2021	Duplicate	10/27/2021	Duplicate	10/26/2021
Analyte	EPA LHA	Units	Water	Water	Water	Water	Water	Water	Water	Water	Water
Perfluorohexanesulfonic acid (PFHxS)	-	ng/L	6.4	5.9	0.57 J	14	3.9	3.8	11	11	1.5 J
Perfluorohexanoic acid (PFHxA)	-	ng/L	1.1 J	1.4 J	<1.7	11	3.1	2.9	6.3	6.8	3.8
Perfluoroheptanoic acid (PFHpA)	-	ng/L	1.1 J	1.1 J	<1.7	5.0	1.1 J	<2.0	3.0	3.1	1.9 J*
Perfluorononanoic acid (PFNA)	-	ng/L	<1.7	0.29 J	<1.7	<1.9	<2.0	<2.0 J*	<1.7	0.30 J	<1.9
Perfluorobutanesulfonic acid (PFBS)	-	ng/L	0.26 J	0.21 J	<1.7	0.61 J	<2.0	<2.0	0.53 J	0.51 J	<1.9
Perfluorodecanoic acid (PFDA)	-	ng/L	<1.7	<1.8	<1.7	<1.9	<2.0	<2.0	<1.7	<1.8	<1.9
Perfluoroundecanoic acid (PFUnA)	-	ng/L	<1.7	<1.8	<1.7	<1.9	<2.0	<2.0	<1.7	<1.8	<1.9
Perfluorododecanoic acid (PFDoA)	-	ng/L	<1.7	<1.8	<1.7	<1.9	<2.0	<2.0	<1.7	<1.8	<1.9
Perfluorotridecanoic acid (PFTrDA)	-	ng/L	<1.7	<1.8	<1.7	<1.9	<2.0	<2.0	<1.7	<1.8	<1.9
Perfluorotetradecanoic acid (PFTeA)	-	ng/L	<1.7	<1.8	<1.7	<1.9	<2.0	<2.0	<1.7	<1.8	<1.9
N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	-	ng/L	<4.3	<4.5	<4.3	<4.8	<5.0	<5.0	<4.2	<4.6	<4.8 J*
N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	-	ng/L	<4.3	<4.5	<4.3	<4.8	<5.0	<5.0	<4.2	<4.6	<4.8 J*
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CI-PF3ONS)	-	ng/L	<1.7	<1.8	<1.7	<1.9	<2.0	<2.0	<1.7	<1.8	<1.9
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3OUdS)	-	ng/L	<1.7	<1.8	<1.7	<1.9	<2.0	<2.0	<1.7	<1.8	<1.9
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	-	ng/L	<1.7	<1.8	<1.7	<1.9	<2.0	<2.0	<1.7	<1.8	<1.9
Hexafluoropropylene oxide dimer acid (HFPO-DA)	-	ng/L	<3.5	<3.6	<3.5	<3.8	<4.0	<4.0 J*	<3.4	<3.7	<3.9
Perfluorooctanesulfonic acid (PFOS)	70+	ng/L	29	28	<1.7	41	23	26	80	84	<1.9
Perfluorooctanoic acid (PFOA)	70† -	ng/L	1.3 J	1.0 J	<1.7	1.3 J	<2.0	<2.0	1.4 J	1.3 J	4.2
LHA Combined (PFOS + PFOA)	70†	ng/L	30 J	29 J	n/a	42 J	23 ‡	26‡	81 J	85 J	4.2 ‡

NOTES: Results reported from TestAmerica work orders 320-81258-1 and 320-81055-1.

- No applicable regulatory limit exists for the associated analyte.
- † EPA LHA level is 70 ppt for PFOS and PFOA combined.
- Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to quality-control (QC) failures.

#### **Bold** Concentration exceeds LHA level.

- Estimated concentration, detected greater than the method detection limit (MDL) and less than the RL.
- Flag applied by the laboratory.
- J\* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc.
- † Minimum concentration, the LHA Combined oconcentration includes one or more result that is not detected greater than the MDL.
- n/a Not applicable. The LHA Combined concentration could not be calculated; PFOS and PFOA were not detected in the project sample.
  - EPA = Environmental Protection Agency; LHA = Lifetime Health Advisory;
  - ng/L = nanograms per liter, equivalent to parts per trillion

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## GUSTAVUS AIRPORT 2021 SITE CHARACTERIZATION TABLE 8: SURFACE WATER PFAS RESULTS

		Sample: Date:	<b>21GST-SW-001</b> 10/18/2021	<b>21GST-SW-002</b> 10/18/2021	<b>21GST-SW-003</b> 10/18/2021	<b>21GST-SW-005</b> 10/17/2021	<b>21GST-SW-006</b> 10/17/2021	<b>21GST-SW-007</b> 10/17/2021	<b>21GST-SW-008</b> 10/17/2021	<b>21GST-SW-009</b> 10/18/2021	<b>21GST-SW-010</b> 10/17/2021	<b>21GST-SW-011</b> 10/17/2021	<b>21GST-SW-012</b> 10/17/2021
Analyte	EPA LHA	Units	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Perfluorohexanesulfonic acid (PFHxS)	-	ng/L	<1.9	<1.9	<2.0	1.4 J	6.3	<1.9 J*	0.67 J*	7.7	40	48	<1.9
Perfluorohexanoic acid (PFHxA)	-	ng/L	<1.9	<1.9	<2.0	<1.9	<1.9	<1.9 J*	<1.9 J*	1.7 J	28	5.9	<1.9
Perfluoroheptanoic acid (PFHpA)	-	ng/L	0.31 J	<1.9	<2.0	<1.9	<1.9	<1.9 J*	<1.9 J*	1.1 J	9.8	0.59 J	<1.9
Perfluorononanoic acid (PFNA)	-	ng/L	<1.9	<1.9	<2.0	<1.9	<1.9	<1.9 J*	<1.9 J*	<1.9	<1.9	<1.9	<1.9
Perfluorobutanesulfonic acid (PFBS)	-	ng/L	<1.9	<1.9	<2.0	<1.9	<1.9	<1.9 J*	<1.9 J*	0.31 J	1.4 J	1.2 J	<1.9
Perfluorodecanoic acid (PFDA)	-	ng/L	<1.9	<1.9	<2.0	<1.9	<1.9	<1.9 J*	<1.9 J*	<1.9	<1.9	<1.9	<1.9
Perfluoroundecanoic acid (PFUnA)	-	ng/L	<1.9	<1.9	<2.0	<1.9 J*	<1.9	<1.9 J*	<1.9 J*	<1.9	<1.9	<1.9	<1.9
Perfluorododecanoic acid (PFDoA)	-	ng/L	<1.9	<1.9	<2.0	<1.9 J*	<1.9	<1.9 J*	<1.9 J*	<1.9	<1.9	<1.9	<1.9
Perfluorotridecanoic acid (PFTrDA)	-	ng/L	<1.9	<1.9	<2.0	<1.9 J*	<1.9	<1.9 J*	<1.9 J*	<1.9	<1.9	<1.9	<1.9
Perfluorotetradecanoic acid (PFTeA)	-	ng/L	<1.9 J*	<1.9	<2.0	<1.9 J*	<1.9	<1.9 J*	<1.9 J*	<1.9	<1.9	<1.9	<1.9
N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	-	ng/L	<4.8	<4.8	<4.9	<4.8	<4.7	<4.8 J*	<4.8 J*	<4.8	<4.9	<4.8	<4.8
N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	-	ng/L	<4.8	<4.8	<4.9	<4.8	<4.7	<4.8 J*	<4.8 J*	<4.8	<4.9	<4.8	<4.8
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CI-PF3ONS)	-	ng/L	<1.9	<1.9	<2.0	<1.9	<1.9	<1.9 J*	<1.9 J*	<1.9	<1.9	<1.9	<1.9
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	-	ng/L	<1.9	<1.9	<2.0	<1.9	<1.9	<1.9 J*	<1.9 J*	<1.9	<1.9	<1.9	<1.9
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	-	ng/L	<1.9	<1.9	<2.0	<1.9	<1.9	<1.9 J*	<1.9 J*	<1.9	<1.9	<1.9	<1.9
Hexafluoropropylene oxide dimer acid (HFPO-DA)	-	ng/L	<3.9	<3.9	<3.9	<3.8 J*	<3.8	<3.8 J*	<3.8 J*	<3.9	<3.9	<3.9	<3.8
Perfluorooctanesulfonic acid (PFOS)	70+	ng/L	<1.9	<1.9	<2.0	<1.9	8.6	<1.9 J*	<1.9 J*	6.7	270	67	<1.9
Perfluorooctanoic acid (PFOA)	70† -	ng/L	<1.9	<1.9	<2.0	<1.9	<1.9	<1.9 J*	<1.9 J*	1.1 J	5.2	3.7	<1.9
LHA Combined (PFOS + PFOA)	70†	ng/L	n/a	n/a	n/a	n/a	8.6 ‡	n/a	n/a	7.8 J	275	71	n/a

NOTES: Results reported from TestAmerica work orders 320-81258-1 and 320-80911-1.

- No applicable regulatory limit exists for the associated analyte.
- † EPA LHA level is 70 ppt for PFOS and PFOA combined.
- Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to quality-control (QC) failures.

#### **Bold** Concentration exceeds LHA level.

- Estimated concentration, detected greater than the method detection limit (MDL) and less than the RL. Flag applied by the laboratory.
- J\* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc.
- Minimum concentration, the LHA Combined oconcentration includes one or more result that is not
- detected greater than the MDL.
- n/a detected in the project sample.
  - EPA = Environmental Protection Agency; LHA = Lifetime Health Advisory;
  - ng/L = nanograms per liter, equivalent to parts per trillion

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## GUSTAVUS AIRPORT 2021 SITE CHARACTERIZATION TABLE 8: SURFACE WATER PFAS RESULTS

		Sample:	21GST-SW-013	21GST-SW-014	21GST-SW-015	21GST-SW-016	21GST-SW-017	21GST-	SW-018	21GST-SW-019	21GST-SW-020	21GST-SW-021	21GST-SW-022	21GST-SW-023
		Date:	10/17/2021	10/17/2021	10/17/2021	10/17/2021	10/17/2021	10/17/2021	Duplicate	10/17/2021	10/17/2021	10/17/2021	10/18/2021	10/18/2021
Analyte	EPA LHA	Units	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Perfluorohexanesulfonic acid (PFHxS)	-	ng/L	79	5.2	25	31	47	<1.9	<2.0	1.2 J	5.8	5.2	<1.9	7.0
Perfluorohexanoic acid (PFHxA)	-	ng/L	30	2.5	11	15	32	<1.9	<2.0	<1.9	2.4	2.3	<1.9	7.9
Perfluoroheptanoic acid (PFHpA)	-	ng/L	9.0	1.3 J	2.8	4.7	44	<1.9	<2.0	<1.9	1.0 J	0.79 J	<1.9	1.8 J
Perfluorononanoic acid (PFNA)	-	ng/L	<1.9	<2.0	<1.9	<2.0	9.2	<1.9	<2.0	<1.9	<2.0	<1.9	<1.9	<2.0
Perfluorobutanesulfonic acid (PFBS)	-	ng/L	4.5	0.39 J	2.4	2.5	2.1	<1.9	<2.0	<1.9	<2.0	0.37 J	<1.9	0.41 J
Perfluorodecanoic acid (PFDA)	-	ng/L	<1.9	<2.0	<1.9	<2.0	2.4	<1.9	<2.0	<1.9	<2.0	<1.9	<1.9	<2.0
Perfluoroundecanoic acid (PFUnA)	-	ng/L	<1.9	<2.0	<1.9	<2.0	<2.0	<1.9	<2.0	<1.9	<2.0	<1.9	<1.9	<2.0
Perfluorododecanoic acid (PFDoA)	-	ng/L	<1.9	<2.0	<1.9	<2.0	<2.0	<1.9	<2.0	<1.9	<2.0	<1.9	<1.9	<2.0
Perfluorotridecanoic acid (PFTrDA)	=	ng/L	<1.9	<2.0	<1.9	<2.0	<2.0	<1.9	<2.0	<1.9	<2.0	<1.9	<1.9	<2.0
Perfluorotetradecanoic acid (PFTeA)	-	ng/L	<1.9	<2.0	<1.9 J*	<2.0	<2.0	<1.9	<2.0	<1.9	<2.0	<1.9	<1.9	<2.0
N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	-	ng/L	<4.8	<4.9	<4.9	<5.0	<5.0	<4.8	<4.9	<4.8	<4.9	<4.9	<4.8	<5.0
N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	-	ng/L	<4.8	<4.9	<4.9	<5.0	<5.0	<4.8	<4.9	<4.8	<4.9	<4.9	<4.8	<5.0
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CI-PF3ONS)	-	ng/L	<1.9	<2.0	<1.9	<2.0	<2.0	<1.9	<2.0	<1.9	<2.0	<1.9	<1.9	<2.0
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	-	ng/L	<1.9	<2.0	<1.9	<2.0	<2.0	<1.9	<2.0	<1.9	<2.0	<1.9	<1.9	<2.0
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	-	ng/L	<1.9	<2.0	<1.9	<2.0	<2.0	<1.9	<2.0	<1.9	<2.0	<1.9	<1.9	<2.0
Hexafluoropropylene oxide dimer acid (HFPO-DA)	-	ng/L	<3.8	<3.9	<3.9	<4.0	<4.0	<3.9	<3.9	<3.8	<3.9	<3.9	<3.8	<4.0
Perfluorooctanesulfonic acid (PFOS)	70+	ng/L	260	42	220	160	14	<1.9	<2.0	4.2	27	24	<1.9	16
Perfluorooctanoic acid (PFOA)	70† -	ng/L	8.5	0.96 J	3.3	3.8	27	<1.9	<2.0	<1.9	<2.0	0.85 J	<1.9	0.90 J
LHA Combined (PFOS + PFOA)	70†	ng/L	269	43 J	223	164	41	n/a	n/a	4.2 ‡	27 ‡	25 J	n/a	17 J

NOTES: Results reported from TestAmerica work orders 320-81258-1 and 320-80911-1.

- No applicable regulatory limit exists for the associated analyte.
- † EPA LHA level is 70 ppt for PFOS and PFOA combined.
- Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to quality-control (QC) failures.

#### **Bold** Concentration exceeds LHA level.

- Estimated concentration, detected greater than the method detection limit (MDL) and less than the RL. Flag applied by the laboratory.
- J\* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc.
- Minimum concentration, the LHA Combined oconcentration includes one or more result that is not
- detected greater than the MDL.
- n/a detected in the project sample.
  - EPA = Environmental Protection Agency; LHA = Lifetime Health Advisory;
  - ng/L = nanograms per liter, equivalent to parts per trillion

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## GUSTAVUS AIRPORT 2021 SITE CHARACTERIZATION TABLE 8: SURFACE WATER PFAS RESULTS

		Sample:	21GST-S	SW-024	21GST-SW-025	21GST-SW-026	21GST-	SW-027	21GST-SW-028	21GST-SW-029	21GST-SW-030	21GST-S	SW-031
		Date:	10/17/2021	Duplicate	10/18/2021	10/18/2021	10/18/2021	Duplicate	10/18/2021	10/18/2021	10/18/2021	10/31/2021	Duplicate
Analyte	EPA LHA	Units	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Perfluorohexanesulfonic acid (PFHxS)	-	ng/L	9.2	9.5	33	7.0	3.8	4.1	11	<1.9	<1.9	0.63 J	0.64 J
Perfluorohexanoic acid (PFHxA)	-	ng/L	7.4	7.3	37	4.0	2.1 J*	3.5 J*	8.8	<1.9	<1.9	<1.9	<1.9
Perfluoroheptanoic acid (PFHpA)	-	ng/L	2.1	2.1	8.2	1.3 J	1.3 J*	2.1 J*	2.5	0.41 J	0.48 J	0.25 J	<1.9
Perfluorononanoic acid (PFNA)	-	ng/L	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<2.0	<1.9	<1.9	<1.9	<1.9
Perfluorobutanesulfonic acid (PFBS)	-	ng/L	0.52 J	0.57 J	2.5	0.85 J	0.28 J	0.30 J	0.69 J	<1.9	<1.9	<1.9	<1.9
Perfluorodecanoic acid (PFDA)	-	ng/L	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<2.0	<1.9	<1.9	<1.9	<1.9
Perfluoroundecanoic acid (PFUnA)	-	ng/L	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<2.0	<1.9	<1.9	<1.9	<1.9
Perfluorododecanoic acid (PFDoA)	-	ng/L	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<2.0	<1.9	<1.9	<1.9	<1.9
Perfluorotridecanoic acid (PFTrDA)	-	ng/L	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<2.0	<1.9	<1.9	<1.9	<1.9
Perfluorotetradecanoic acid (PFTeA)	=	ng/L	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<2.0	<1.9	<1.9	<1.9	<1.9
N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	=	ng/L	<4.8	<4.9	<4.7	<4.8	<4.8	<4.8	<5.0	<4.8	<4.8	<4.7	<4.7
N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	-	ng/L	<4.8	<4.9	<4.7	<4.8	<4.8	<4.8	<5.0	<4.8	<4.8	<4.7	<4.7
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CI-PF3ONS)	-	ng/L	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<2.0	<1.9	<1.9	<1.9	<1.9
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	-	ng/L	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<2.0	<1.9	<1.9	<1.9	<1.9
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	-	ng/L	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<2.0	<1.9	<1.9	<1.9	<1.9
Hexafluoropropylene oxide dimer acid (HFPO-DA)	-	ng/L	<3.8	<3.9	<3.8	<3.8	<3.8	<3.8	<4.0	<3.8	<3.8	<3.8	<3.7
Perfluorooctanesulfonic acid (PFOS)	70±	ng/L	43 J*	30 J*	130	15	41 J*	57 J*	33	0.55 J	<1.9	<1.9	<1.9
Perfluorooctanoic acid (PFOA)	- 70† <del>-</del>	ng/L	0.98 J	1.1 J	3.8	1.3 J	<1.9	<1.9	1.3 J	<1.9	<1.9	<1.9	<1.9
LHA Combined (PFOS + PFOA)	70†	ng/L	44 J*	31 J*	134	16 J	41 J*‡	57 J*‡	34 J	0.55 J‡	n/a	n/a	n/a

NOTES: Results reported from TestAmerica work orders 320-81258-1 and 320-80911-1.

- No applicable regulatory limit exists for the associated analyte.
- † EPA LHA level is 70 ppt for PFOS and PFOA combined.
- Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to quality-control (QC) failures.
- **Bold** Concentration exceeds LHA level.
- Estimated concentration, detected greater than the method detection limit (MDL) and less than the RL. Flag applied by the laboratory.
- J\* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc.
- Minimum concentration, the LHA Combined oconcentration includes one or more result that is not
- <sup>‡</sup> detected greater than the MDL.
- n/a detected in the project sample.
  - EPA = Environmental Protection Agency; LHA = Lifetime Health Advisory;
  - ng/L = nanograms per liter, equivalent to parts per trillion

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#### GUSTAVUS AIRPORT 2021 SITE CHARACTERIZATION TABLE 9: SEDIMENT SAMPLE PFAS RESULTS

		Sample:	21GST-SED-004	21GST-SED-005	21GST-SED-006	21GST-SED-007	21GST-SED-008	21GST-	SED-009	21GST-SED-010	21GST-S	SED-011	21GST-SED-012
		Depth:	0.0'-0.5'	0.0'-0.5'	0.0'-0.5'	0.0'-0.5'	0.0'-0.5'	0.0'-0.5'	2.0'-2.5'	0.0'-0.5'	0.0'-0.5'	2.0'-2.5'	0.0'-0.5'
	Regulatory	Date:	10/17/2021	10/17/2021	10/17/2021	10/17/2021	10/17/2021	10/18/2021	10/18/2021	10/17/2021	10/17/2021	10/17/2021	10/17/2021
Analyte	Limit	Units	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment
Perfluorohexanesulfonic acid (PFHxS)	_	μg/kg	<0.21	<0.23	0.052 J	<0.23	<0.24	<0.25	<0.25	<0.26	0.12 J	<0.22	<0.25
Perfluorohexanoic acid (PFHxA)	_	μg/kg	<0.21	<0.23	<0.21	<0.23	<0.24	<0.25	<0.25	<0.26	<0.25	<0.22	<0.25
Perfluoroheptanoic acid (PFHpA)	_	μg/kg	<0.21	<0.23	<0.21	<0.23	<0.24	<0.25	<0.25	<0.26	<0.25	<0.22	<0.25
Perfluorononanoic acid (PFNA)	_	μg/kg	<0.21	<0.23	<0.21	<0.23	<0.24	< 0.25	<0.25	<0.26	<0.25	<0.22	<0.25
Perfluorobutanesulfonic acid (PFBS)	_	μg/kg	<0.21	<0.23	<0.21	<0.23	<0.24	< 0.25	<0.25	<0.26	<0.25	<0.22	< 0.25
Perfluorodecanoic acid (PFDA)	_	μg/kg	<0.21	<0.23	<0.21	<0.23	<0.24	< 0.25	<0.25	<0.26	<0.25	<0.22	<0.25
Perfluoroundecanoic acid (PFUnA)	_	μg/kg	<0.21	<0.23	<0.21	<0.23	<0.24	< 0.25	<0.25	<0.26	<0.25	<0.22	<0.25
Perfluorododecanoic acid (PFDoA)	_	μg/kg	<0.21	<0.23	<0.21	<0.23	<0.24	< 0.25	<0.25	<0.26	<0.25	<0.22	<0.25
Perfluorotridecanoic acid (PFTrDA)	_	μg/kg	<0.21	<0.23	<0.21	<0.23	<0.24	< 0.25	<0.25	<0.26	<0.25	<0.22	<0.25
Perfluorotetradecanoic acid (PFTeA)	_	μg/kg	<0.21	<0.23	<0.21	<0.23	<0.24	<0.25	<0.25	<0.26	<0.25	<0.22	<0.25
N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	_	μg/kg	<0.21	<0.23	<0.21	< 0.23	<0.24	<0.25	<0.25	<0.26	<0.25	<0.22	<0.25
N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	_	μg/kg	<0.21	<0.23	<0.21	< 0.23	<0.24	< 0.25	< 0.25	<0.26	<0.25	<0.22	<0.25
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CI-PF3ONS)	_	μg/kg	<0.21	<0.23	<0.21	< 0.23	<0.24	< 0.25	< 0.25	<0.26	<0.25	<0.22	<0.25
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	_	μg/kg	<0.21	<0.23	<0.21	<0.23	<0.24	<0.25	<0.25	<0.26	<0.25	<0.22	<0.25
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	_	μg/kg	<0.21	<0.23	<0.21	<0.23	<0.24	<0.25	<0.25	<0.26	<0.25	<0.22	<0.25
Hexafluoropropylene oxide dimer acid (HFPO-DA)	_	μg/kg	<0.21	<0.23	<0.21	<0.23	<0.24	<0.25	<0.25	<0.26	<0.25	<0.22	<0.25
Perfluorooctanesulfonic acid (PFOS)	3.0	μg/kg	<0.21	<0.23	0.62 J*	<0.23	<0.24	<0.25	<0.25	0.82 J*	<0.25	<0.22	<0.25
Perfluorooctanoic acid (PFOA)	1.7	μg/kg	<0.21	<0.23	<0.21	<0.23	<0.24	< 0.25	<0.25	<0.26	<0.25	<0.22	<0.25

NOTES: Results reported from Test America work order 320-80903-1.

- No applicable regulatory limit exists for the associated analyte.
- Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to quality-control (QC) failures.
- Estimated concentration, detected greater than the method detection limit (MDL) and less than the RL. Flag applied by the laboratory.
- $J^*$  Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc.  $\mu g/kg = micrograms$  per kilogram;

#### GUSTAVUS AIRPORT 2021 SITE CHARACTERIZATION TABLE 9: SEDIMENT SAMPLE PFAS RESULTS

		Sample:	21GST-SED-013	21GST-SED-014 21GST-SED		15 21GST-SED-016	21GST-SED-017		21GST-SED-018		21GST-SED-019	21GST-SED-020	
Analyte	Regulatory Limit	Depth: Date: Units	0.0'-0.5' 10/17/2021 Sediment	0.0'-0.5' 10/17/2021 Sediment	0.0'-0.5' 10/17/2021 Sediment	0.0'-0.5' 10/17/2021 Sediment	0.0'-0.5' 10/17/2021 Sediment	2.0'-2.5' 10/17/2021 Sediment	0.0'-0.5' 10/17/2021 Sediment	0.0'-0.5' Duplicate Sediment	0.0'-0.5' 10/17/2021 Sediment	0.0'-0.5' 10/17/2021 Sediment	2.0'-2.5' 10/17/2021 Sediment
Perfluorohexanesulfonic acid (PFHxS)	_	μg/kg	<0.46	<0.26	<0.35	<0.26	0.31	0.18 J	<0.27	<0.26	<0.24	<0.22	<0.25
Perfluorohexanoic acid (PFHxA)	_	μg/kg	<0.46	<0.26	<0.35	<0.26	0.093 J	0.090 J	<0.27	<0.26	<0.24	<0.22	<0.25
Perfluoroheptanoic acid (PFHpA)	_	μg/kg	<0.46	<0.26	< 0.35	<0.26	<0.26	<0.23	<0.27	<0.26	<0.24	<0.22	<0.25
Perfluorononanoic acid (PFNA)	_	μg/kg	<0.46	<0.26	< 0.35	<0.26	< 0.26	< 0.23	<0.27	<0.26	<0.24	<0.22	<0.25
Perfluorobutanesulfonic acid (PFBS)	_	μg/kg	<0.46	<0.26	< 0.35	<0.26	< 0.26	< 0.23	<0.27	<0.26	<0.24	<0.22	<0.25
Perfluorodecanoic acid (PFDA)	_	μg/kg	<0.46	<0.26	< 0.35	<0.26	<0.26	< 0.23	<0.27	<0.26	<0.24	<0.22	<0.25
Perfluoroundecanoic acid (PFUnA)	_	μg/kg	< 0.46	<0.26	< 0.35	<0.26	< 0.26	< 0.23	<0.27	<0.26	<0.24	<0.22	<0.25
Perfluorododecanoic acid (PFDoA)	_	μg/kg	< 0.46	<0.26	< 0.35	<0.26	< 0.26	< 0.23	<0.27	<0.26	<0.24	<0.22	<0.25
Perfluorotridecanoic acid (PFTrDA)	_	μg/kg	< 0.46	<0.26	< 0.35	<0.26	< 0.26	< 0.23	<0.27	<0.26	<0.24	<0.22	< 0.25
Perfluorotetradecanoic acid (PFTeA)	_	μg/kg	< 0.46	<0.26	< 0.35	<0.26	< 0.26	< 0.23	<0.27	<0.26	<0.24	<0.22	<0.25
N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	_	μg/kg	< 0.46	<0.26	0.059 J	<0.26	< 0.26	< 0.23	<0.27	< 0.26	<0.24	<0.22	< 0.25
N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	_	μg/kg	< 0.46	<0.26	< 0.35	<0.26	<0.26	<0.23	<0.27	<0.26	<0.24	<0.22	<0.25
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CI-PF3ONS)	_	μg/kg	< 0.46	<0.26	< 0.35	<0.26	<0.26	<0.23	<0.27	<0.26	<0.24	<0.22	<0.25
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	_	μg/kg	<0.46	<0.26	< 0.35	<0.26	<0.26	<0.23	<0.27	<0.26	<0.24	<0.22	<0.25
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	_	μg/kg	<0.46	<0.26	< 0.35	<0.26	<0.26	<0.23	<0.27	<0.26	<0.24	<0.22	<0.25
Hexafluoropropylene oxide dimer acid (HFPO-DA)	_	μg/kg	< 0.46	<0.26	< 0.35	<0.26	<0.26	<0.23	<0.27	<0.26	<0.24	<0.22	< 0.25
Perfluorooctanesulfonic acid (PFOS)	3.0	μg/kg	<0.46	<0.26	0.92 J*	<0.26	2.5	1.6	<0.27	<0.26	<0.24	<0.22	<0.25
Perfluorooctanoic acid (PFOA)	1.7	μg/kg	< 0.46	< 0.26	< 0.35	< 0.26	< 0.26	< 0.23	< 0.27	< 0.26	<0.24	<0.22	< 0.25

NOTES: Results reported from Test America work order 320-80903-1.

- No applicable regulatory limit exists for the associated analyte.
- Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to quality-control (QC) failures.
- Estimated concentration, detected greater than the method detection limit (MDL) and less than the RL. Flag applied by the laboratory.
- $J^*$  Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc.  $\mu g/kg = micrograms$  per kilogram;

#### GUSTAVUS AIRPORT 2021 SITE CHARACTERIZATION TABLE 9: SEDIMENT SAMPLE PFAS RESULTS

		Sample:	21GST-SED-021		21GST-SED-022	21GST-SED-023		21GST-SED-024				21GST-SED-025	21GST-SED-026
Analyte	Regulatory Limit	Depth: Date: Units	0.0'-0.5' 10/17/2021 Sediment	2.0'-2.5' 10/17/2021 Sediment	0.0'-0.5' 10/18/2021 Sediment	0.0'-0.5' 10/18/2021 Sediment	2.0'-2.5' 10/18/2021 Sediment	0.0'-0.5' 10/17/2021 Sediment	0.0'-0.5' Duplicate Sediment	2.0'-2.5' 10/17/2021 Sediment	2.0'-2.5' Duplicate Sediment	0.0'-0.5' 10/18/2021 Sediment	0.0'-0.5' 10/18/2021 Sediment
Perfluorohexanesulfonic acid (PFHxS)	_	μg/kg	<0.25	<0.24	<0.24	<0.30	<0.25	<0.25	<0.23	<0.23	<0.25	<0.25	<0.25
Perfluorohexanoic acid (PFHxA)	_	μg/kg	<0.25	<0.24	<0.24	<0.30	<0.25	<0.25	<0.23	<0.23	<0.25	<0.25	<0.25
Perfluoroheptanoic acid (PFHpA)	_	μg/kg	<0.25	<0.24	<0.24	<0.30	<0.25	<0.25	<0.23	<0.23	<0.25	<0.25	<0.25
Perfluorononanoic acid (PFNA)	_	μg/kg	<0.25	<0.24	<0.24	<0.30	<0.25	<0.25	<0.23	<0.23	<0.25	<0.25	<0.25
Perfluorobutanesulfonic acid (PFBS)	_	μg/kg	< 0.25	<0.24	<0.24	< 0.30	< 0.25	<0.25	<0.23	<0.23	< 0.25	<0.25	<0.25
Perfluorodecanoic acid (PFDA)	_	μg/kg	< 0.25	<0.24	<0.24	< 0.30	< 0.25	<0.25	<0.23	<0.23	<0.25	<0.25	<0.25
Perfluoroundecanoic acid (PFUnA)	_	μg/kg	<0.25	<0.24	< 0.24	< 0.30	< 0.25	< 0.25	< 0.23	< 0.23	< 0.25	<0.25	<0.25
Perfluorododecanoic acid (PFDoA)	_	μg/kg	< 0.25	<0.24	<0.24	< 0.30	< 0.25	< 0.25	< 0.23	<0.23	< 0.25	<0.25	<0.25
Perfluorotridecanoic acid (PFTrDA)	_	μg/kg	<0.25	< 0.24	<0.24	< 0.30	< 0.25	< 0.25	< 0.23	<0.23	< 0.25	<0.25	< 0.25
Perfluorotetradecanoic acid (PFTeA)	_	μg/kg	<0.25	<0.24	<0.24	< 0.30	< 0.25	<0.25	<0.23	<0.23	<0.25	<0.25	< 0.25
N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	_	μg/kg	<0.25	< 0.24	<0.24	< 0.30	< 0.25	< 0.25	<0.23	<0.23	<0.25	<0.25	<0.25
N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	_	μg/kg	<0.25	< 0.24	<0.24	< 0.30	< 0.25	< 0.25	<0.23	<0.23	<0.25	<0.25	<0.25
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CI-PF3ONS)	_	μg/kg	<0.25	< 0.24	<0.24	< 0.30	< 0.25	< 0.25	<0.23	<0.23	<0.25	<0.25	<0.25
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	_	μg/kg	<0.25	< 0.24	<0.24	< 0.30	< 0.25	<0.25	< 0.23	<0.23	<0.25	<0.25	< 0.25
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	_	μg/kg	<0.25	<0.24	<0.24	< 0.30	< 0.25	<0.25	<0.23	<0.23	< 0.25	<0.25	<0.25
Hexafluoropropylene oxide dimer acid (HFPO-DA)		μg/kg	<0.25	< 0.24	<0.24	< 0.30	< 0.25	<0.25	<0.23	<0.23	<0.25	<0.25	<0.25
Perfluorooctanesulfonic acid (PFOS)	3.0	μg/kg	<0.25	< 0.24	<0.24	< 0.30	<0.25	0.15 J*	1.0 J*	0.47 J*	< 0.25	<0.25	0.14 J*
Perfluorooctanoic acid (PFOA)	1.7	μg/kg	< 0.25	< 0.24	< 0.24	< 0.30	< 0.25	< 0.25	< 0.23	< 0.23	< 0.25	< 0.25	< 0.25

NOTES: Results reported from Test America work order 320-80903-1.

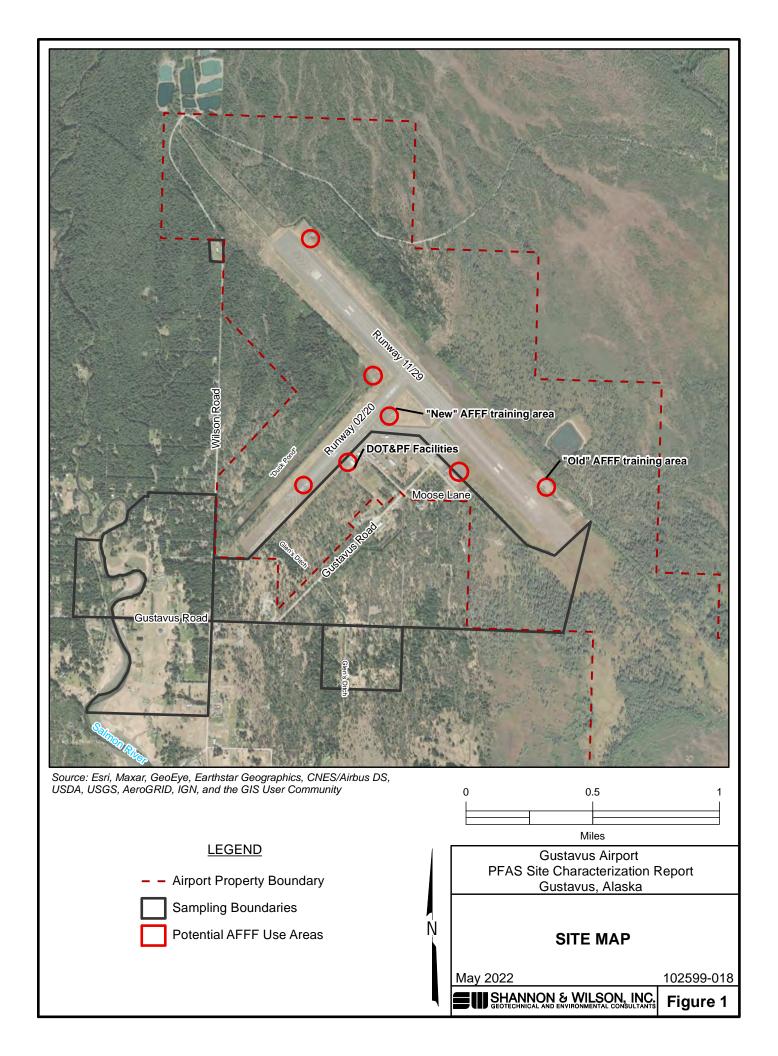
- No applicable regulatory limit exists for the associated analyte.
- Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to quality-control (QC) failures.
- Estimated concentration, detected greater than the method detection limit (MDL) and less than the RL. Flag applied by the laboratory.
- $J^*$  Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc.  $\mu g/kg = micrograms$  per kilogram;

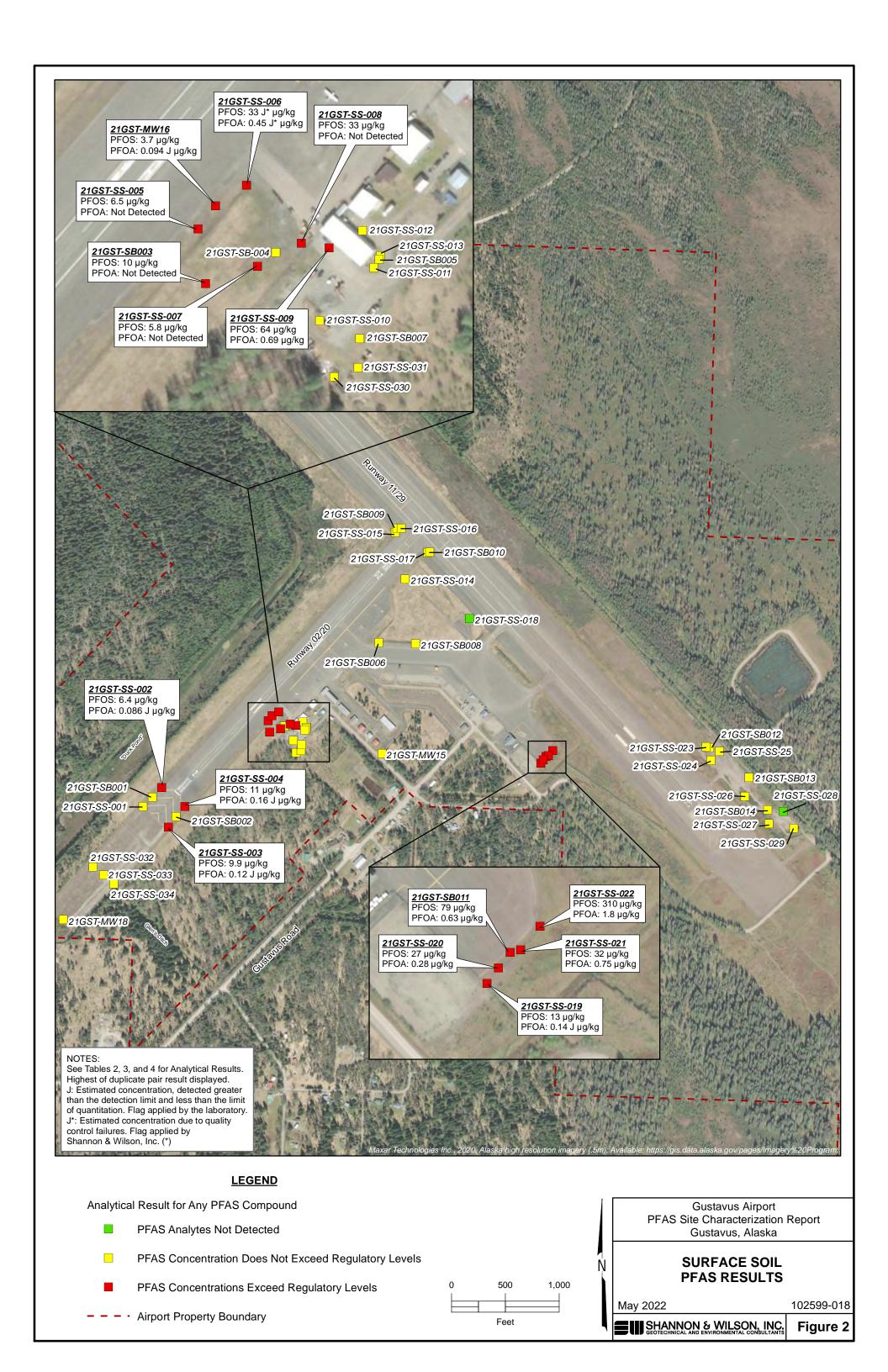
#### GUSTAVUS AIRPORT 2021 SITE CHARACTERIZATION TABLE 9: SEDIMENT SAMPLE PFAS RESULTS

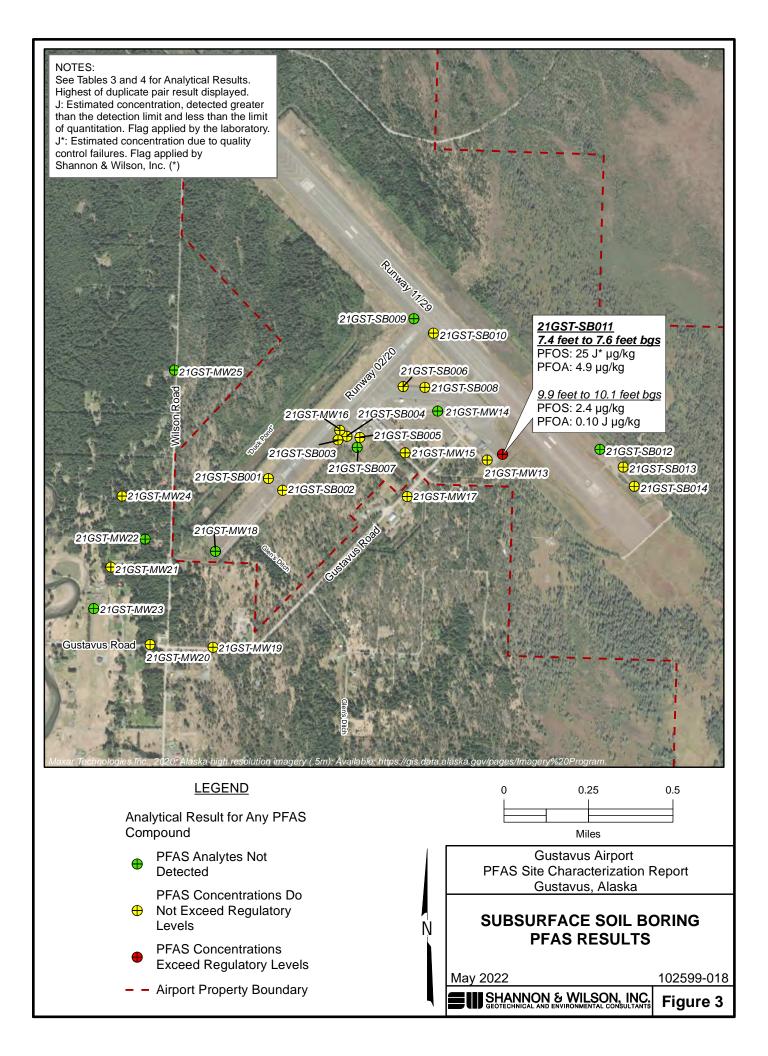
		Sample:	21GST-SED-027		21GST-5	SED-028	21GST-SED-029	21GST-SED-030	
Analyte	Regulatory Limit	Depth: Date: Units	0.0'-0.5' 10/18/2021 Sediment	0.0'-0.5' Duplicate Sediment	0.0'-0.5' 10/18/2021 Sediment	2.0'-2.5' 10/18/2021 Sediment	0.0'-0.5' 10/18/2021 Sediment	0.0'-0.5' 10/18/2021 Sediment	
Perfluorohexanesulfonic acid (PFHxS)	_	μg/kg	<0.27	<0.28	<0.90	<0.31	<0.28	<0.26	
Perfluorohexanoic acid (PFHxA)	_	μg/kg	<0.27	<0.28	< 0.90	< 0.31	<0.28	<0.26	
Perfluoroheptanoic acid (PFHpA)	_	μg/kg	<0.27	<0.28	< 0.90	< 0.31	<0.28	<0.26	
Perfluorononanoic acid (PFNA)	_	μg/kg	<0.27	<0.28	< 0.90	< 0.31	<0.28	<0.26	
Perfluorobutanesulfonic acid (PFBS)	_	μg/kg	<0.27	<0.28	< 0.90	< 0.31	<0.28	<0.26	
Perfluorodecanoic acid (PFDA)	_	μg/kg	<0.27	<0.28	< 0.90	< 0.31	<0.28	< 0.26	
Perfluoroundecanoic acid (PFUnA)	_	μg/kg	<0.27	<0.28	< 0.90	< 0.31	<0.28	<0.26	
Perfluorododecanoic acid (PFDoA)	_	μg/kg	<0.27	<0.28	< 0.90	< 0.31	<0.28	<0.26	
Perfluorotridecanoic acid (PFTrDA)	_	μg/kg	<0.27	<0.28	< 0.90	< 0.31	<0.28	<0.26	
Perfluorotetradecanoic acid (PFTeA)	_	μg/kg	<0.27	<0.28	< 0.90	< 0.31	<0.28	<0.26	
N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	_	μg/kg	<0.27	<0.28	< 0.90	< 0.31	<0.28	<0.26	
N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	_	μg/kg	<0.27	<0.28	< 0.90	< 0.31	<0.28	<0.26	
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CI-PF3ONS)	_	μg/kg	<0.27	<0.28	< 0.90	< 0.31	<0.28	<0.26	
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3OUdS)	_	μg/kg	<0.27	<0.28	< 0.90	< 0.31	<0.28	<0.26	
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	_	μg/kg	<0.27	<0.28	<0.90	<0.31	<0.28	<0.26	
Hexafluoropropylene oxide dimer acid (HFPO-DA)	_	μg/kg	<0.27	<0.28	< 0.90	<0.31	<0.28	<0.26	
Perfluorooctanesulfonic acid (PFOS)	3.0	μg/kg	0.26 J*	0.76 J*	< 0.90	<0.31	<0.28	<0.26	
Perfluorooctanoic acid (PFOA)	1.7	μg/kg	<0.27	<0.28	< 0.90	< 0.31	<0.28	< 0.26	

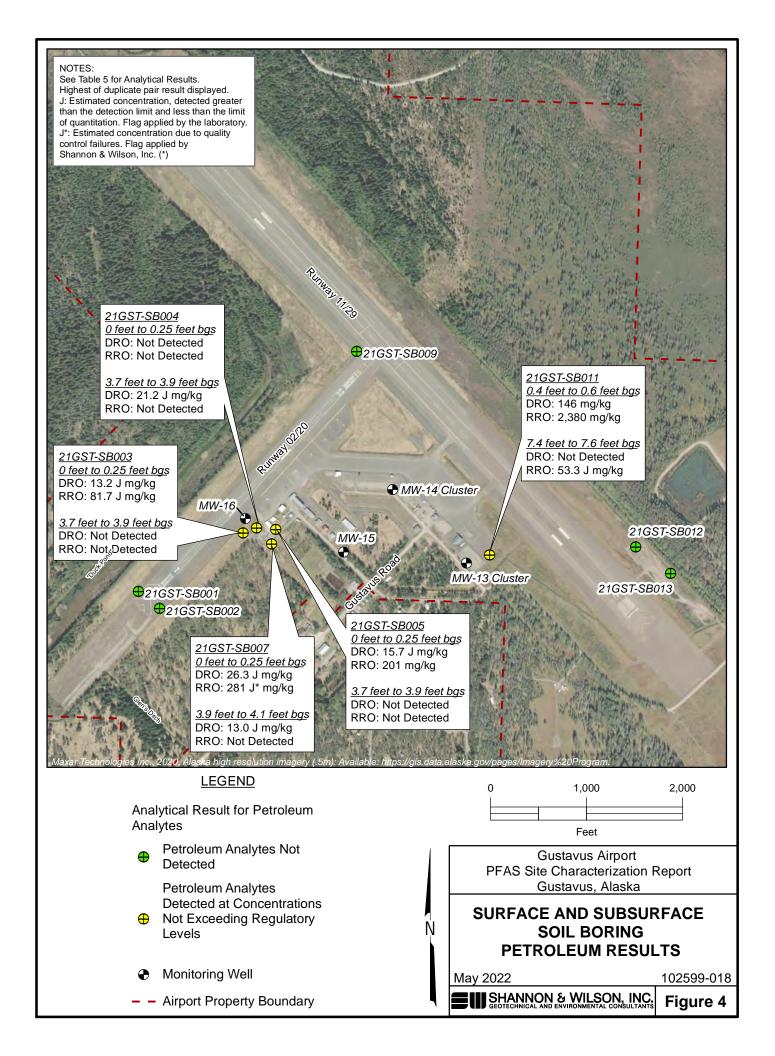
NOTES: Results reported from Test America work order 320-80903-1.

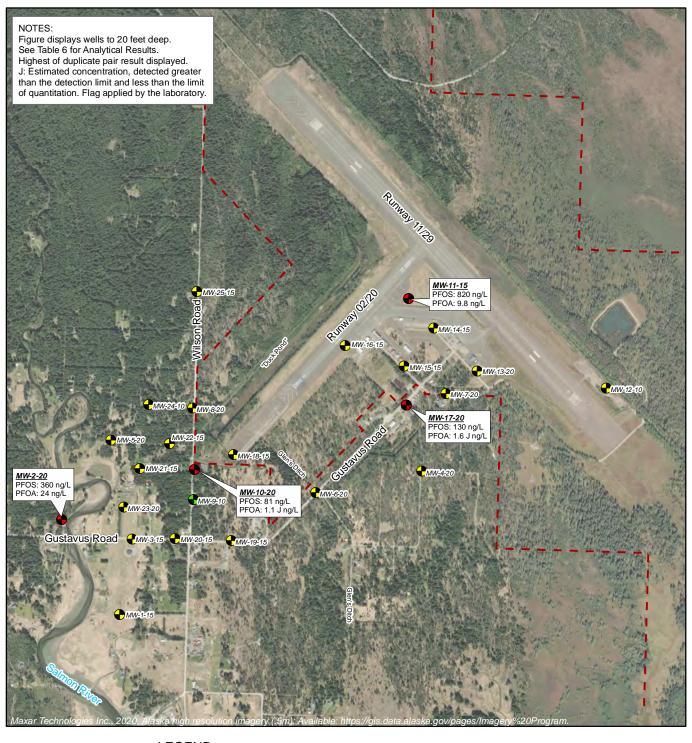
- No applicable regulatory limit exists for the associated analyte.
- Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to quality-control (QC) failures.
- Estimated concentration, detected greater than the method detection limit (MDL) and less than the RL. Flag applied by the laboratory.
- $J^*$  Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc.  $\mu g/kg = micrograms$  per kilogram;











#### **LEGEND**

Analytical Result for Any PFAS Compound

- PFAS Analytes Not Detected
- PFAS Concentrations Do
   Not Exceed Regulatory Levels
- PFAS Concentrations
   Exceed Regulatory Levels
- Airport Property Boundary



Gustavus Airport
PFAS Site Characterization Report
Gustavus, Alaska

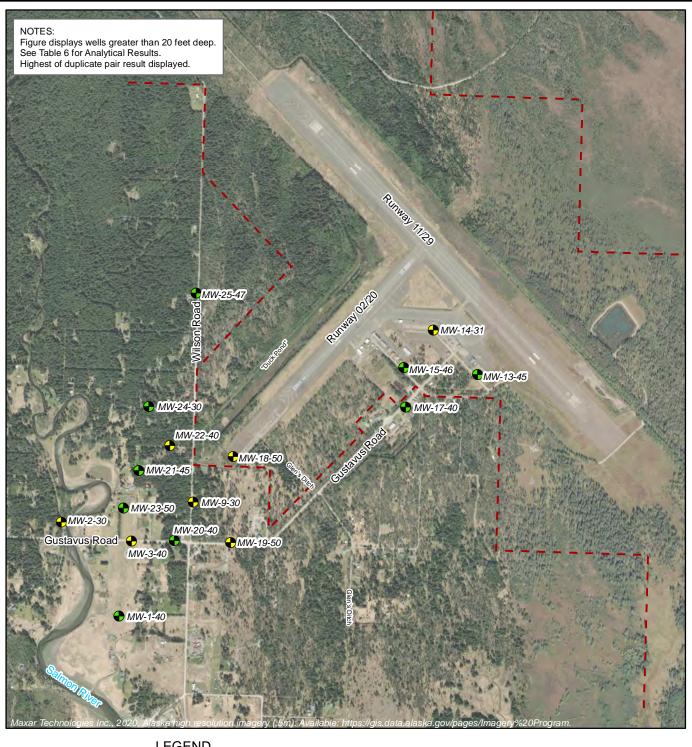
# MONITORING WELLS SHALLOWER THAN 20 FEET PFAS RESULTS

May 2022 102599-018

SHANNON & WILSON, INC.

GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

Figure 5



#### **LEGEND**

Analytical Result for Any PFAS Compound

- PFAS Analytes Not Detected
- PFAS Concentrations Do Not Exceed Regulatory Levels
- Airport Property Boundary



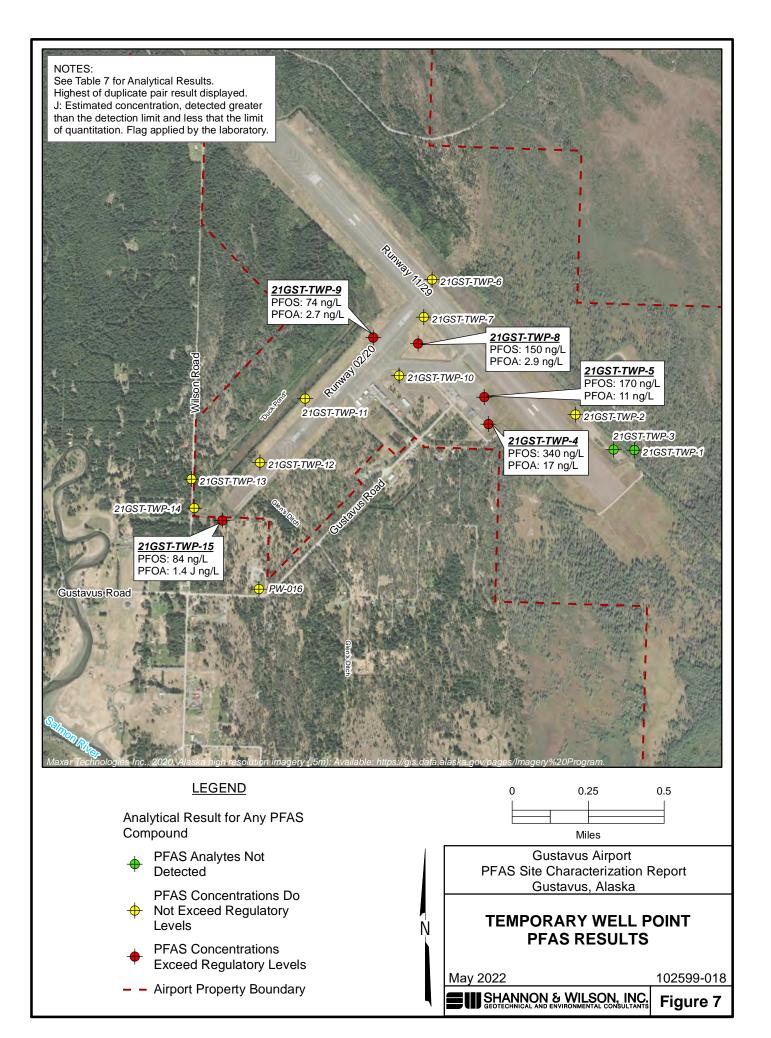
**Gustavus Airport** PFAS Site Characterization Report Gustavus, Alaska

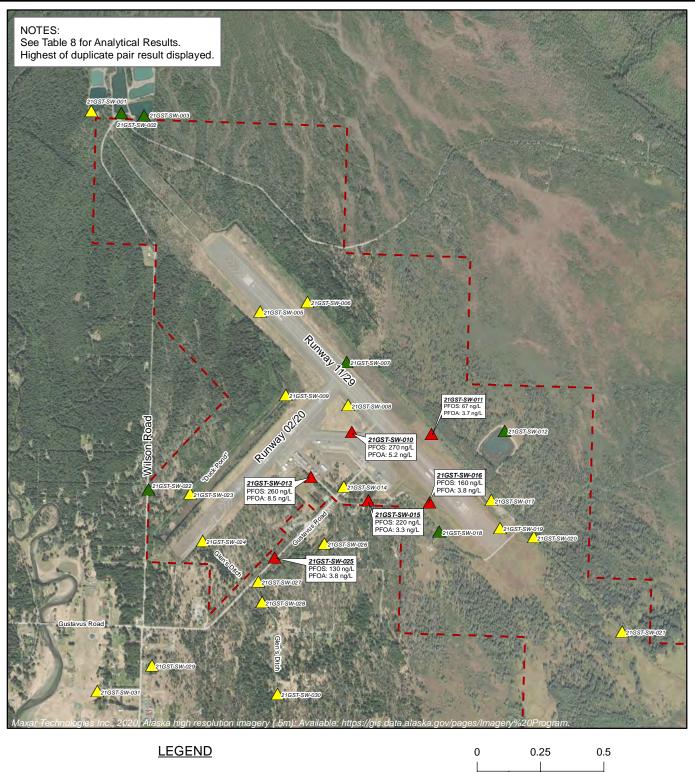
#### **MONITORING WELLS DEEPER THAN 20 FEET**

**PFAS RESULTS** May 2022 102599-018

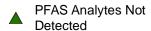
SHANNON & WILSON, INC.

Figure 6





Analyte Result for Any PFAS Compound



PFAS Concentrations Do Not Exceed Regulatory Levels

**PFAS Concentrations Exceed Regulatory Levels** 

Airport Property Boundary



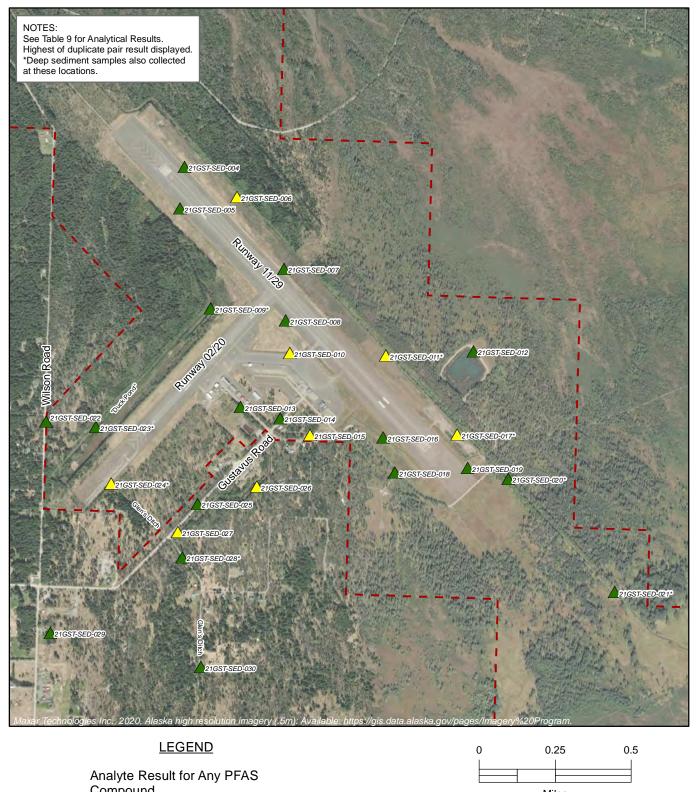
**Gustavus Airport** PFAS Site Characterization Report Gustavus, Alaska

### **SURFACE WATER PFAS SAMPLE RESULTS**

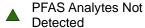
May 2022 102599-018



Figure 8

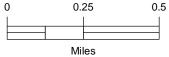


Compound



PFAS Concentrations Do ∧ Not Exceed Regulatory Levels

Airport Property Boundary



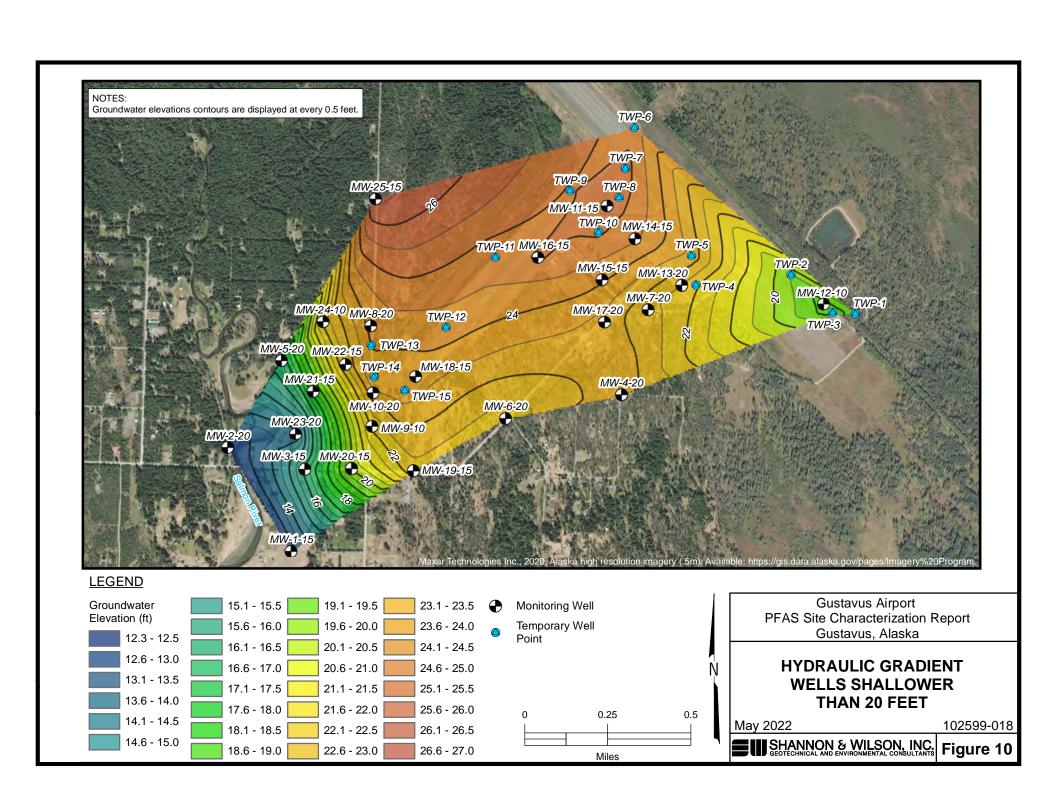
**Gustavus Airport** PFAS Site Characterization Report Gustavus, Alaska

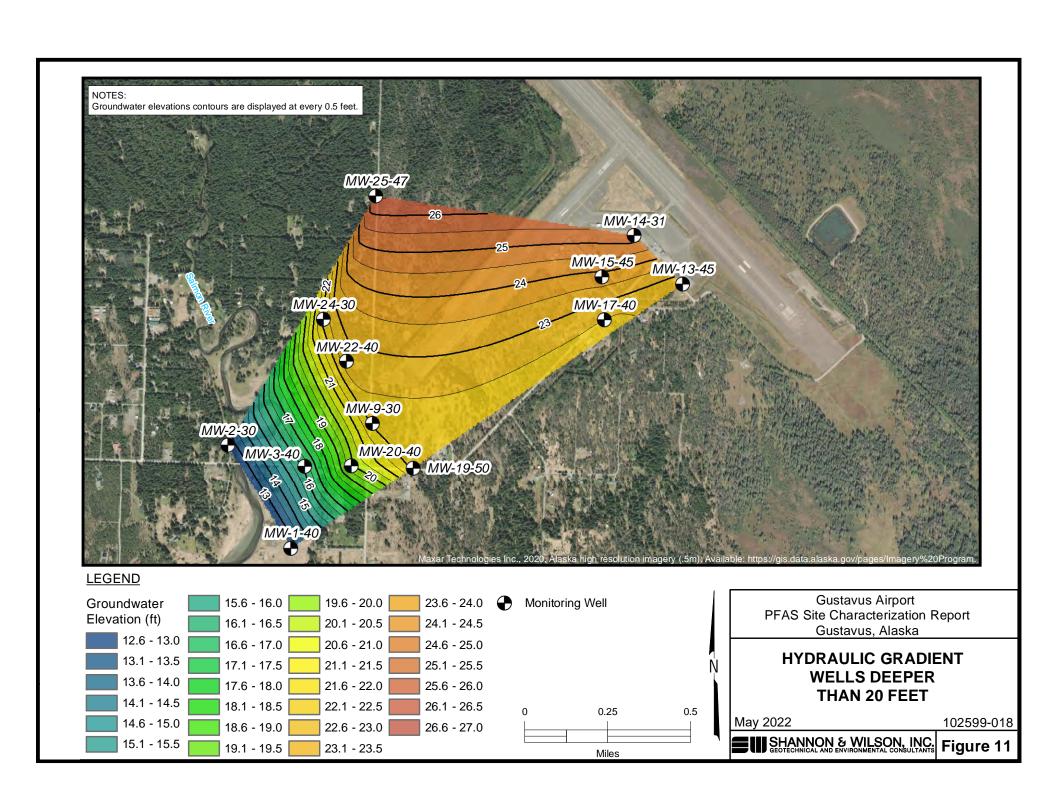
### **SEDIMENT PFAS SAMPLE RESULTS**

May 2022 102599-018



Figure 9



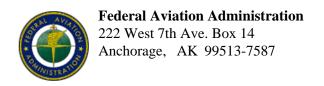


### Appendix A

## Permits and Approvals

### **CONTENTS**

- FAA 7460-1 Airspace Permit
- DEC Revised GWP Addendum Approval Letter
- DOT&PF Building Permit Certificate
- City of Gustavus Civil Work Permit
- Traffic Control Plan



October 25, 2021

TO:
Marcus Zimmerman
Attn: DOT&PF Southcoast Region
P.O. Box 112506
Juneau, AK 99811
marcus.zimmerman@alaska.gov

CC: Shannon & Wilson, Inc. Attn: Kristen Freiburger

2355 Hill Road Fairbanks, AK 99709

krf@shanwil.com

RE: (See attached Table 1 for referenced case(s))
\*\*FINAL DETERMINATION\*\*

Table 1 - Letter Referenced Case(s)

ASN	Prior ASN	Location	Latitude (NAD83)	Longitude (NAD83)	AGL (Feet)	AMSL (Feet)
2021-AAL-289-NRA		GUSTAVUS,AK	58-25-36.18N	135-42-29.49W	16	48

Description: There are multiple areas where this work will take place. Shannon & Wilson is contracted to DOT&PF to conduct an environmental site characterization for PFAS at and near the Gustavus Airport. This effort will require the use of a drill rig at 25 locations within the airport fence for up to one hour each (Figures 3 and 4, attached). We anticipate monitoring well installation on the GST will take 10 days or less between October 18 and November 5, 2021. The drill rig has a mast height of up to 16 feet above the ground surface during active drilling. Where permanent monitoring wells will be installed, they will be completed using flushmount monuments. No permanent height change.

We do not object with conditions to the construction described in this proposal provided:

You comply with the requirements set forth in FAA Advisory Circular 150/5370-2, "Operational Safety on Airports During Construction."

Runway closures are required if any equipment is on the Runway or in the Runway Safety Area.

Your proposal impacts the following National Airspace System (NAS) equipment:

This cases evaluates water sampling and test well drilling at various locations at Gustavus Airport. Drilling operations within the Runway Safety Area (RSA) may require closure of the associated runway depending on the drilling equipment location. Contact the Gustavus Airport Manager, Jeff Jarvis at 907-697-2251 to ascertain whether a runway closure schedule is required for each location. FAA policy requires shut down off all runway navigational and visual landing aids (i.e. navaids and visaids) when a runway is closed for construction. If closure of RW-11/29 for construction is necessary, contact the FAA Glacier System Support Center (GLC SSC) Manager, Mark Mahoney at 907-586-7470 (Office) / 907-209-9432 (Cell)

The Airport sponsor shall notify the FAA's Air Traffic Organization (ATO) Planning and Requirements (P&R) Service Area office a minimum of 45 days prior to the "physical construction start date" for this project. Submit

FAA Form entitled <u>Airport Sponsor Strategic Event Submission Form</u> including all date, time and/or duration changes via email to <u>9-AJV-SEC- WSA@faa.gov.</u>

A separate notice to the FAA is required for any construction equipment, such as temporary cranes, whose working limits would exceed the height and lateral dimensions of your proposal.

This determination does not constitute FAA approval or disapproval of the physical development involved in the proposal. It is a determination with respect to the safe and efficient use of navigable airspace by aircraft and with respect to the safety of persons and property on the ground.

In making this determination, the FAA has considered matters such as the effects the proposal would have on existing or planned traffic patterns of neighboring airports, the effects it would have on the existing airspace structure and projected programs of the FAA, the effects it would have on the safety of persons and property on the ground, and the effects that existing or proposed manmade objects (on file with the FAA), and known natural objects within the affected area would have on the airport proposal.

This determination expires on April 25, 2023 unless:

- (a) extended, revised or terminated by the issuing office.
- (b) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for the completion of construction, or the date the FCC denies the application.

NOTE: Request for extension of the effective period of this determination must be obtained at least 15 days prior to expiration date specified in this letter.

If you have any questions concerning this determination contact Tyson Price (907) 271-5025 tyson.price@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2021-AAL-289-NRA.

Tyson Price ADO

Signature Control No: 496267087-498682711



## Department of Environmental Conservation

DIVISION OF SPILL PREVENTION AND RESPONSE Contaminated Sites Program

> 555 Cordova Street Anchorage, AK 99501 Main: 907.269.7557 Fax: 907.269.7648

File No.: 1507.38.017

September 22<sup>nd</sup>, 2021

\*electronic transmittal only\*

Ms. Samantha Cummings

Alaska Department of Transportation and Public Facilities

sammy.cummings@alaska.gov

Re: ADOT &PF Gustavus Airport Site wide PFAS-Revised Work Plan Addendum

Dear Ms. Cummings:

The Alaska Department of Environmental Conservation (ADEC) contaminated sites program received the Revised *Work Plan Addendum* from Shannon and Wilson on September 8<sup>th</sup>, 2021. **ADEC has reviewed the revised work plan and it is now approved.** 

The contaminants of concerns present at the site may include more volatile organic compounds (VOC) than just BTEX (benzene, toluene, ethylbenzene, xylene). ADEC approves the soil and groundwater samples being analyzed for just BTEX, at this time. However, complete VOC analysis may be required in the future in order to delineate the nature and extent of VOC contamination at the site.

ADEC understands that temporary groundwater wells are small in diameter and thus cannot be sampled with a positive displacement pump. A peristaltic pump is approved for all sampling at the temporary groundwater monitoring wells. Please be aware, that peristaltic pumps can bias VOC concentrations low and as such data should be considered approximate. Please be sure to discuss the VOC concentration bias in your forthcoming report.

If you have any questions or need further assistance, please feel free to contact me at 907-451-2056 or via email at <a href="mailto:erin.gleason@alaska.gov">erin.gleason@alaska.gov</a>.

Erin Gleason

Tin Gleason

Environmental Program Specialist

Electronic cc:

Marcus Zimmerman, ADOT, <u>marcus.zimmerman@alaska.gov</u> Kristen Freiburger, Shannon and Wilson, <u>krf@shanwil.com</u>



## **Department of Transportation**and

STATEWIDE AVIATION LEASING Southeast Region

Main: (907) 465-1785 Fax: (907) 465-1395

October 08, 2021

Re: Gustavus

Lease ADA #

Building Permit Exp.: 10/08/2022

Transmittal of Building Permit Certificate

Shannon & Wilson, Inc. 2355 Hill Road Fairbanks AK 99709

Dear Shannon & Wilson, Inc.:

Enclosed is the approved Building Permit Certificate approving the conducting of environmental work using hand tools and a drill rig. Work to be conducted includes installing and sampling temporary and permanent monitoring wells (installed flush to ground surface), collecting surface soils and subsurface soils (using a drill rig), collecting surface water samples and sediment samples.

Please post the certificate and the enclosed addendum on your site in a conspicuous location at the work site, preferably under a clear plastic cover to protect it from damage, until work completion.

Be sure you or your contractor coordinates activities with the Airport Manager. Please call me if you have questions.

Sincerely,

Sharyn Augustine
Airport Leasing Chief
(907) 465-6893
email: sharyn.augustine@alaska.gov

Enc. Building Permit Certificate

cc.: Jeff Jarvis, Gustavus Airport Manager

# STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES AVIATION LEASING Southeast Region

### **Building Permit Certificate**

By this Permit, Shannon & Wilson, Inc. is authorized to perform the following work on , Various locations airport-wide at Gustavus Airport:

### **Authorized Activities**

Conducting environmental work using hand tools and a drill rig. Work to be conducted includes installing and sampling temporary and permanent monitoring wells (installed flush to ground surface), collecting surface soils and subsurface soils (using a drill rig), collecting surface water samples and sediment samples.

No construction or demolition other than that specifically stated above is authorized by this Permit. For construction changes or additions, contact the State of Alaska, Department of Transportation and Public Facilties.

These activities must comply with all provisions provided in the enclosed addendum and letter.

OF ALASKA

OF ALASKA

Signed: Shunday

Title:

Chief, Aviation Leasing

Date:

October 08, 2021

## DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES JUNEAU OFFICE OF AVIATION LEASING

October 08, 2021

### **BUILDING PERMIT ADDENDUM**

This addendum must be posted with the Building Permit certificate.

Shannon & Wilson, Inc. under Lease ADA # shall meet the following requirements during the work on , Various locations airport-wide at Gustavus. The associated certificate expires at MIDNIGHT on October 08, 2022.

This Building Permit is conditional on Permittee obtaining a favorable FAA 7460-1 Airspace Determination.

Only construction or demolition that is specifically stated on the Building Permit Certificate is authorized.

Prior to commencing work, coordinate your proposed access and activities on the Airport with the Airport Manager.

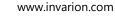
Utility locates are required prior to commencement of any trenching or excavation.

If fill material is required, use clean fill only (non-organic, non-frost susceptible material).

For construction changes or additions to your Building Permit application, please contact the State of Alaska, Department of Transportation & Public Facilities, Statewide Aviation Leasing office.

City of Gustavus
Civil Work Permit Application and Permit Form
Submit to Gustavus City Hall, in person or to PO Box 1, Gustavus, AK 99826, or email to <a href="mailto:administrator@gustavus-ak.gov">administrator@gustavus-ak.gov</a>

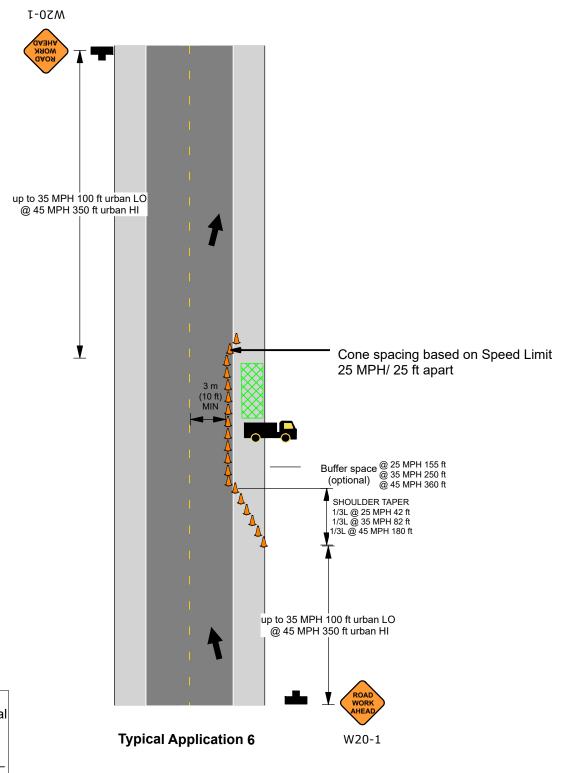
Requesting entity: Shannon & Wilson, on behalf of DOT&PF
Contact person: Kristen Freiburger
Address: 2355 Hill Road, Fairbanks AK 99709
Phone(s): 907-750-0679
Email: kristen.freiburger@shanwil.com
Permit Type: 1) Routine_X 2) Emergency 3) Blanket Work location(s): Along roadways, please see maps in the work plan attached to this email
Period work will occur (dates and times): October 14th through November 9th
Vork description (attach additional pages if needed. Include any design documents, equipment pecifications, or other details needed to meet the intent of the permit. If emergency, describe):  We will be conducting environmental work associated with our Gustavus Airport PFAS Site Characterization efforts, work plan is attached.
Equipment to be used on site:
Sampling equipment (pumps, gloves) and drilling rigs
Itilities location provisions:
lave contacted the Alaska Digline and someone will arrive in Gustavus on the 14th to finalize locations with utility locators
raffic Safety and flow provisions: Any residents affected by the permitted work must be notified 24 ours prior to commencement of activities. Coordination with any resident that may have gress/ingress blocked or impaired is mandatory to ensure availability for emergency vehicles or see by the occupant(s) is provided if necessary.
We will be working on the shoulders of the roadside and have a traffic control plan prepared for this work. We will use cones and signs to alert traffic.
ite restoration provisions:
fonitoring wells will be permanent, excess soil from the borings will be containerized and dealt within in the appropriate manner.
other provisions for compliance with permit requirements: per site vicits with Adam
pplicant Attests: In signing this permit application I understand that I may not begin site civil rork until the City of Gustavus has issued me an approved civil work permit for the covered work. agree to comply with the terms of the permit including amendments required by the city dministrator. I understand that work in the city maintained road/easement is subject to road rork done in the future and that any costs incurred to me including relocation of equipment, loss of ervice to customers, or repairs to the city roads will be at my own expense. I will notify the city dministrator in writing at the start and completion of the permitted work. I will notify the dministrator in writing in advance if there are any significant changes to the work plan that may affect the terms of the permit.
pplicant Signed Date of application: 10/5/2021 or official Use Only:
or official Use Only: ermit is Approved Not Approved City Administrator: inal inspection required Yes No roject is complete and accepted. City Administrator:  Date of application:  Date
2/10/2020







### Shoulder Work with Minor Encroachment (TA-6)



l certify TCP # 1 Conforms to Alaska Traffic Manual and Standard Specifications

Stacey Coy 10-8-2021
TCP Author Date

Date: 10-8-2021 Author: Stacey Coy, Cert # 244948, Exp. 12/09/2024

### Comments:

northern dame Contractor: Shannon & Wilson Project: Gustavus, Alaska

Contact: Kristen Freiburger (907) 750-0679 Kristen.Freiburger@shanwil.com

Location: Gustavus Rd. & Government Compound Rd.

Date(s) TBD ASAP Time/Duration: TBD

Traffic Control: Shannon and Wilson

### Notes:

- 1. Work, placing well monitors
- 2. Advanced warning signs are 48"x48"
- All signs & devices to conform to MUTCD
   & ATM and, be topped with high level
   warning devices
- Field adjustments may be required due to field conditions.

### Appendix B

### Boring Logs

### **CONTENTS**

- Boring logs for MWs
- Boring logs for soil borings

				LOG OF BORI	NG	ì						
Date	Started	10/24/21	Location	the eastern shoulder of Wilson Rd, 685	5	G	round	d Ele	evatior	: 25.423 fe	eet	
Date	e Comple	eted 10/24/21	fee Rd	et north of the intersection with Gustav !	us 	Ту	ypica	l Ru	n Leng	th 5 feet		
Tota	al Depth	(ft) 10.0	Drilling Con	npany: Discovery Drilling		Н	ole D	iam		2.25 incl	ies	
Depth (ft)	Probe Run	and probing r approximate	<b>Soil</b> port text for a pr nethods. The stee boundaries be	I Description oper understanding of the subsurface material tratification lines indicated below represent the tween soil types. Actual boundaries may be inside sample tubes during extraction.	's 4	Deptn, n.	Symbol	PID, ppm	Well Construction	Desc	Number, ription, Results	Depth (ft)
<u> </u>		Brown, Topso		/	<b>7</b> 0.1	1		ш	19/1 19	4		<b>-</b>
$\vdash$		Brown, Silt (M	<i>IL)</i> ; moist; non	plastic fines.	0.6	6			76.83			
-		Gray, Sandy S sand; nonplas		t, fine, subangular to subrounded	2.7	7	<u></u>					
 _ _ _ 5 _		feet bgs; trace	e subangular t	ed Sand with Silt (SP-SM); wet at 7.6 to subrounded gravel; fine to coarse, and; nonplastic fines.								5—
- - - - -									During Drilling IA			- - - -
— 10 - —			ВОТТ	TOM OF BORING	10	.0	<u> </u>					10-
-  -  -		Monitoring W	ell MW-09-10	completed 10/24/21								_ _ _
- 150 : ATV	5	Construction   Flush-mount   Top of casing 2-inch diamet 20/40 gradatio Screened inte	monument i is 0.5 feet bg er PVC riser p on silica sand erval: 4.87 to 9	oipe pre-pack 9.62 feet bgs								15—
Rev:		Total depth of Top of casing  *Soil boring lo MW-9-30, ins	elevation: 25	.019 feet from adjacent soil boring SB-09-50 /								20—
		WW-9-30, IIIS	talieu ili 2019.									- - - -
J 1/17/22												-   -   -
47.GP.			NOTE									
.GPJ 21-20	may have Groundw considere	e slid down in the tu	ube prior to remo ed above, was e	e upper part of the run, the soil sample val from the ground.  stimated during probing and should be of symbols.			202	1 S	ite Ch	avus Airport aracterizatio avus, Alaska	n Report	
11. 102599-0-	sample; (	GE = geotechnical s	sample; AR = ard <u>LEGEN</u>	<u>D</u>		L	og	0	F BC	ORING M	W-09-10	
3 H H H H H H H H H H H H H H H H H H H	2" Plas	stic Tube - No Soi stic Tube with Soil	•	☐☐☐ Piezometer Screen and Sand Filter  ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐	Jaı	nua	ary 20	)22			102599-0	18
EOPRC	— Run N	0.			SF Geo	IAN techr	NNO nical an	N 8	k WIL	SON, INC. al Consultants	Figure	1

								LC	OG O	F BOF	RIN	IG										
Date	Started	10/19/21	1	Locati	In	the v	vacant	lot imn	nediately	/ southeas	t of		Groui	nd E	lev	atior	า:	28.9	969 fe	et		
Date	Comple		1		th	ne Ala f Apro	ska Al on Acc	irlines te ess Rd.	erminal .	and northe	east	٦	Гуріс	al R	lun	Lenç	gth	5 fe	et			
Tota	l Depth (	(ft) 20.0	0	Drillin	ıg Co	mpar	ny: Disc	overy E	Drilling			ŀ	Hole I	Diar	nete	ər:		2 in	ches			
Depth (ft)	Probe Run	Refer to the and probing approxima	repo g me	ort text i ethods. bounda	So for a p The aries b	oil De proper stratific petwee	escrip unders cation li n soil ty	otion tanding o nes indic pes. Act	of the subs	w represent t laries may be	he	Depth, ft.	Symbol	Old Old	ind di	Well Construction		Saı	mple Descr	Numbeription,	•	Depth (ft)
<u>-</u>  -  -		Grey-brown														7/1						
- - - -5 - - - - - - - - - - - - - - -		Grey, Silt wi Brown to gre wet below.						Sand (SF	P); moist	to 9.5 feet,	'	2.4 3.1			During Drilling	<u> </u>						5—
135 / 177   1795 / 177   1795 / 177   1795 / 177   1795 / 179   1795												20.0										15—
L					вот	гтом	OF B	ORING				20.0										- -
1/17/22		Monitoring V Construction Flush-moun	n D	etails:	ent			10/22/2	21													-   -   -   -
GPJ				<u>JOINT IINC</u>	NOT		AGE															
29-018.GPJ 21-20 3. 4.	may have Groundwa considere Refer to k CT = corr	cases where reco e slid down in the ater level, if indicated approximate. KEY for definition rosion test sample GE = geotechnica	e tube cated ns ar le; Tl	e prior to d above, nd expla R = thei	ow in the to reme, was anationermal r	he upp noval fr estima n of sy	om the ated duri	ground. ing probir ble; EN =	ng and sho	ould be					Site	e Ch Gust	nara tavu	ıs, Ala	atior aska	n Repo		
T MELL 3		stic Tube - No S stic Tube with Se		Recove	•	ND ∷H∶ ∇			Screen an	d Sand Filte		Janu				ъ	JN	IING	J IVI		599-0	18
EOPROB	— Run No				•	¥	Gioul	ia vvalel	Feaci WIF	•	$\vdash$					<b>VIL</b>	SO tal Co	N, IN	C.	Fiç	gure 2	

ſ					LOG C	F BORIN	IG						
ſ	Date	Started	10/19/21	Location	In the vacant lot immediatel			Groun	d Ele	evation:	28.969 fe	et	
	Date	Compl	eted 10/19/21		the Alaska Airlines terminal of Apron Access Rd.	and northeast		Typica	ıl Ru	n Length	5 feet		
	Total	Depth	(ft) 20.0	Drilling	Company: Discovery Drilling			Hole D	Diame		2 inches		
-	Depth (ft)	Probe Run	and probing i approximat	port text for methods. T e boundarie	Soil Description  a proper understanding of the sub- he stratification lines indicated belo s between soil types. Actual bount ifted inside sample tubes during ex	w represent the daries may be	Depth, ft.	Symbol	PID, ppm	Well Construction	Desci	Number, ription, Results	Depth (ft)
GPJ 1/17/22 Log: APW Rev: Typ: VTY			Top of casing 2-inch diamet 20/40 gradati Screened inte Total depth o Top of casing	ter PVC ris on silica s erval: 9.75 f well: 20.0 g elevation	ser pipe and pre-pack to 19.48 feet bgs 04 feet bgs								30
102599-018.GPJ 21-20447.GPJ 1/17/22	2.	may hav Groundv consider	e slid down in the tu	ery was low ube prior to i ed above, w	in the upper part of the run, the soil emoval from the ground. as estimated during probing and sh			202	21 S	ite Cha	vus Airport racterizatior vus, Alaska	=	
	4.	CT = cor sample;	rosion test sample;	TR = therm sample; AR <u>LE</u> 0	al resistivity sample; EN = environm = archeological sample. <u>GEND</u>	nd Sand Filter				F BO	RING M	W-13-20	
GEOPROBE_WELL			stic Tube with Soi	•	∑ Ground Water Level ATI			uary 2				102599-0	
GEOPF			- *				SH/ Geote	ANNC chnical a	N 8	wironmental	ON, INC. Consultants	Figure 2 Sheet 2 of 2	<b>2</b>

								LC	OG OI	F BOR	IN(	G								
1	Date	Starte	d 10/19/21	ı	Locatio	In tl				southeast (			Ground				2	9.209 f	eet	
1	Date	Comp	leted 10/19/21			of A	pron Ac	cess Rd.		nd northea	st	1	Гуріса	Ru	ın Le	ngt	h 5	feet		
[	Total	Depth	(ft) 50.0	Ī	Drilling	Com	pany: <i>Di</i> s	covery D	Drilling			H	lole D	iam			2	? inches	;	
	Depth (ft)	Probe Run	and probing approxima	repo ı me ate b	ort text fo ethods. boundari	<b>Soil</b> or a pro The str ies bet	Descriper under atification ween soil to	ption standing of lines indica types. Acti	f the subsu ated below	urface materia represent the aries may be action.	ls	Depth, ft.	Symbol	PID, ppm	Well	Construction		Desc	e Number, cription, Results	Depth (ft)
- - - - - -	-	<u> </u>	Grey brown,  Grey, Silt win  Brown to gre wet below.	th S	Sand (M	<i>ILS</i> ); n	noist.					2.4 3.1				XX	21G	ST-MW1	3-01	- - - - - 5
-	- - - -10 - -														During Drilling ∤		21G	ST-MW1	3-02	10-
PJ 1/17/22 Log: APW Rev: Typ: VTY	-15 - - - 20 - -	<u> </u>	Grey, Silt wi		CONTINU	ED NEX	T PAGE				2	0.02					21G	ST-MW1	3-03	20-
447.G	1.	In some	cases where reco	very	, was low	NOTES in the	- upper part	t of the run	, the soil sa	ample <b>г</b>								Λ.		
102599-018.GPJ 21-20447.GPJ 1/17/22	2.	may hav Ground <sup>o</sup> conside	ve slid down in the water level, if indicared approximate.  KEY for definitions	tube ated	e prior to I above,	remov was es	al from the timated du	e ground. Iring probin					202	1 S	Site (	Cha	racte	Airport erizatio Alaska	n Report	
		sample;	rrosion test sample GE = geotechnica astic Tube - No S	l sar	mple; AF <u>LE</u>	R = arch EGENE	neological :	sample.		ntal Sand Filter		L	.OG	0	FE	30	RIN	IG M	W-13-45	5
OBE_W	řĦ	2" Pla	astic Tube with So					und Water I		Sand I IIIOI	J	anu	ary 20	)22					102599-	018
GEOPROBE_WELL		– Run I	WO.								S	HA eotecl	NNO hnical an	N &	& W	ILS nental	ON, Consu	INC. Itants	Figure Sheet 1 or	<b>3</b>

								LOG (	OF BOF	RIN	G							
Date	Starte	d 10/19	9/21	Lo					ly southeas		(	Groun	d Ele	vatio	n:	29.209 fe	eet	
Date	Comp	leted 10/19	9/21		ti o	he Alas f Apror	ka Airline 1 Access	es termina Rd.	l and northe		ī	Гуріса	l Rui	n Len	ngth	o 5 feet		
Total	Depth	ı (ft)	50.0	Dri	illing Co	ompany	r: Discove	ry Drilling			F	lole D	iame	eter:		2 inches		
Depth (ft)	Probe Run	Refer to and pro appro	the repobing m	port to netho	ext for a ods. The indaries is	proper un stratification	nderstanding ntion lines in soil types.	<b>n</b> ng of the sul ndicated bel	bsurface mater ow represent t ndaries may be	he	Depth, ft.	Symbol	PID, ppm	Well	Construction	Sample Desc	Number, ription, Results	Depth (ft)
- - - -		Dark gre	y, Poo	orly	Graded	Gravel	with Sand	d (GPS); w	et.	:	25.0					21GST-MW1	3-04	- - - -
- - -30 - -	<u> </u>	Grey, Sa	andy S	Silt (N	<i>MLS</i> ); w	et.				;	30.0					21GST-MW1	3-05	30-
 - - - - - -35	- - - -	Grey, Fa	ey, Silt	ty Sa	and (SM						33.0 34.0 35.0				W	21GST-MW1	3-06	35—
		Grey to o	dark g	grey,	Sandy	Silt (ML	S); wet.			;	38.0							40-
_ _ _ _ _ _ _ _45 _ _	<b>-5</b>	Grey, Sill Grey, Sill	andy S	Silt (S	S <i>M</i> ); we	t.				<u> </u>	43.5 44.0 45.0					21GST-MW1:	3-07	45—
- - - -				CON	<u>NON</u>		GE											-   -   -   -
2. 3.	may ha Ground conside Refer to	e cases where in we slid down in water level, if in ared approxima o KEY for defini	the tul ndicate ite. itions a	be pred abo	ior to ren ove, was xplanatio	noval from estimate n of sym	m the groured during probable.	nd. robing and sl	hould be			202	21 S	ite C	ha	vus Airport racterization vus, Alaska	=	
	sample; 2" Pla	orrosion test sa ; GE = geotech astic Tube - N	nnical s	ampl	e; AR = a <u>LEGE</u> covery	archeolog	gical sample	<b>e</b> .	nental and Sand Filte					F B	O	RING M		
10	2" Pla – Run	astic Tube wit <i>No</i> .	h Soil	Rec	overy	Ā	Ground Wa	ater Level A	ΓD	$\vdash$		ary 2 NNO		WIL	LS(	ON, INC.	Figure	

											LO	G O	)FB	ORI	N	G										
	ate	Started		10/19/21	I	Locat	In							heast o		G	rour	nd E	levati	on:	29	9.209	feet			
	ate	Comple	ted	10/19/21			O	f Apr	on A	ccess	Rd.		and no	ortheas	st	Т	ypica	al R	ın Le	ngth	5	feet				
T	otal	Depth (	ft)	50.0	ı	Drillin	g Co	mpa	ny: <i>Di</i> :	scove	ery Dri	illing				Н	lole [	Diam	eter:		2	inche	s			
	Depth (ft)	Probe Run	R	efer to the re and probing r approximate differe	epo me te b	ort text ethods. bounda	So for a p The ries b	oropei stratifi setwee	<b>escr</b> r unde icatior en soil	iptio erstande lines l types.	<b>n</b> ing of ti indicate Actua	the subs ed belo al bound	w repre	sent the nay be		Depth, ft.	Symbol	PID. ppm	Well	Construction		Des	e Nu cript Res			Depth (ft)
Rev: Typ: VTY	<b>66</b> 0	Pro	Co Flo To 2-i 20 So To		/ell De mog is eter ion erv	II MW- etails: nonume s 0.25 r PVC n silica val: 39 well: 4:	BOT 13-4: ent feet riser sand .75 to	bgs pipe d pre o 44. feet I	de sar d OF mplete e-pack 48 fe	BORII	NG	ıring exi			5	50.0	Sym	Glad	Mel	Con		anu	Res	unts		dag
Log: APW	70						NOT	·F.C																		70 —
GEOPROBE_WELL 102599-018.GPJ 21-20447.GPJ 1/17/22	2. ( 3. l 4. (	n some cases where recovery was low may have slid down in the tube prior to Groundwater level, if indicated above, v considered approximate. Refer to KEY for definitions and explana CT = corrosion test sample; TR = therm sample; GE = geotechnical sample; AR						estimates of systems o	rom thated during the same street of the same stree	ne grou uring p s. mple; E I sampl	nd. probing EN = en le. ter Scr	and sho	ould be nental and Sand	l Filter	J			60	Gu Gu <b>F E</b>	Char stav	acte /us, /	Alask	on R a ///	eport	45	18
3EOPRO		– Run Ne	<b>D</b> .					_						_	S	HA eotech	NNC nnical a	N o	& WI	LS(	ON, I	NC.		Figu	re 3	3

				LOG OF BO	RIN	G							
Date	Started	10/27/21		e northern shoulder of Apron Acc			Frounc	l Ele	evatio	n:	29.668 fe	et	
Date	Comple	eted 10/28/21		530 feet northwest of Alaska Seap	lanes.	T	ypical	Ru	n Ler	gth	5 feet		
Total	l Depth	(ft) 15.0	Drilling Comp	any: Discovery Drilling		F	łole Di	iame			2 inches		
Depth (ft)	Probe Run	and probing n approximate	Soil I port text for a prop nethods. The stra e boundaries betw	Description er understanding of the subsurface mate tification lines indicated below represent een soil types. Actual boundaries may b side sample tubes during extraction.	the	Depth, ft.	Symbol	PID, ppm	Well		Descr	Number, iption, esults	Depth (ft)
		Grey, Sandy S Light grey to g feet, wet below	ell Graded Sand Silt (MLS); moist grey-brown, Wel w.	(SW); moist.  I Graded Sand (SW); moist to 6.8		3.0 3.8 9.0 10.0	S	<u> </u>	During Drilling in				5
Log: APW Rev: Typ: VTY		Construction I Flush-mount r Top of casing 2-inch diamet 20/40 gradatio Screened inte Total depth of	ell MW-14-15 co Details:	re-pack 83 feet bgs t bgs		15.0							15
747.GPJ 1/17/22		cases where recove	NOTES ery was low in the u	pper part of the run, the soil sample							A:		-
102599-018.GPJ 21-20 3. 4.	may have Groundw considere Refer to I CT = corr sample; (	e slid down in the tu rater level, if indicate ed approximate. KEY for definitions a rosion test sample; GE = geotechnical s	be prior to removal and explanation of TR = thermal resistanple; AR = arche	from the ground. mated during probing and should be symbols. tivity sample; EN = environmental sological sample.					ite C Gus	hara tav	rus Airport acterization us, Alaska RING M\	Report <b>V-14-15</b>	
3 B M M		stic Tube - No Soil stic Tube with Soil	Danassami	☐ Piezometer Screen and Sand Filt ☐ Ground Water Level ATD		Janu	ary 20	)22				102599-0	18
GEOPROBE WELL	– Run N	lo.				SHA Seotech	NNO hnical an	N 8 d Env	k WII	_SC	ON, INC.	Figure	4

					LO	G OF BORIN	١G							
Da	te Starte	d 10/27/21	Lo	ocation <i>In the</i>	e northern should	er of Apron Access		Groun				29.717 fe	et	
	te Comp	10/27/21				of Alaska Seaplane	s.	Typica	l Ru	ın Ler	ngth	5 feet		
To	tal Depth	n (ft) 45.0	Dr	rilling Compa	any: Discovery Dri	lling		Hole D	iam			2 inches		
Depth (ft)	Probe Run	and probing approxima	report meth	Soil C text for a propo nods. The strate oundaries between	<b>Description</b> er understanding of th	ne subsurface materials ed below represent the I boundaries may be	Depth, ft.	Symbol	PID, ppm	Well	Construction	Desci	Number, iption, esults	Depth (ft)
- - - -	<b>TS</b>	Light grey, V					3.0			**************************************		21GST-MW14	-01	-
- - - 5 - - - - -		Grey, Sandy Light grey to feet, wet belo	grey		I Graded Sand (SVI	/); moist to 6.8	3.8			ring Drilling I⁄C	·	21GST-MW14	-02	5—
 1     	0 -	Grey, Poorly			P); wet. h Gravel (SPG); we	et.	9.0			Duri				10-
7 <i>yp: VTY</i>	5 -											21GST-MW14	-03	15—
Log: APW	0 =	Grey to dark					- 20.0				**************************************			20
GPJ 1	<u> </u>		100	NTINUED NEXT NOTES	PAGE		1		1	1 1.	1 1			
.018.GPJ 21-20	may have 2. Ground consider 3. Refer to	ve slid down in the water level, if indicated approximate.  O KEY for definitions	tube p ated al s and o	was low in the uprior to removal bove, was esting	mated during probing a	and should be		202	?1 S	ite C	har	vus Airport racterizatior /us, Alaska	Report	
	sample;	GE = geotechnical	l samp	ple; AR = arche <u>LEGEND</u> ecovery	- '	een and Sand Filter					OI	RING M		46
GEOPROBE_WELL	2" Pla — Run	astic Tube with So No.	oil Re	covery <u>z</u>	Ground Water Le	vel ATD		ary 2			0/	ON INC	102599-0	
GEOF							Geoted	AININU chnical ar	nd En	vironme	ntal	ON, INC. Consultants	Figure Sheet 1 of	ე 3

						LO	G OF BORI	NG							
Date	Star	ted	10/27/21	Lo	cation In the n	orthern shoulde	er of Apron Acces	s l	Grou	nd	Ele	vation:	29.717 f	eet	
Date	Con	nplete	d 10/27/21				of Alaska Seaplan	es.	Typic	cal I	Rur	n Lengt	า 5 feet		
Tota	l Dep	th (ft)	45.0	Dr	illing Compan	y: Discovery Dril	ling		Hole	Dia	me		2 inches	;	
Depth (ft)	Probe Run		and probing i approximat	eport metho te boo	Soil Det text for a proper of ods. The stratific undaries between	scription understanding of the eation lines indicated	e subsurface material d below represent the boundaries may be	Depth, ft.	Symbol		PID, ppm	Well	Desc and	Number, ription, Results	Depth (ft)
7.GPJ.11/17/22 Log: APW Rev: Typ: VTY 7.GPJ.11/17/22 Log: APW Rev: APW Rev: Typ: VTY 7.GPJ.11/17/22 Log: APW	In so	me cas	Grey, Silty Sal Grey, Fat Cla Dark grey, Sil Grey, Sandy S Grey, Sandy S Grey to dark g Grey to dark g Construction Flush-mount	and (Call Market)  /ell Market  Deta mon  con	SM); wet.  H); wet.  h Clay (CL-ML)  MLS); wet.  BOTTOM  MV-14-31 com  ails:  ument  NOTES	OF BORING pleted 10/27/21  GE er part of the run, th		26.3 - 33.0 - 33.8 - 35.0 - 38.8 - 40.0					21GST-MW1	4-05 4-06	30
2. 3. 4. 3. 4. 3. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4.	cons Refe CT = samp	dered to KE corros ble; GE	approximate. Y for definitions ion test sample;	and e ; TR = samp	explanation of syn thermal resistivitiole; AR = archeolo <u>LEGEND</u>	ty sample; EN = env ogical sample.	-	l				Gusta	racterizatio	=	
\(\bar{\bar{\bar{\bar{\bar{\bar{\bar{	2"	Plastic	Tube - No Soi		,	Ground Water Lev		Janı	uary	202	22			102599-0	018
GEOPROBE WELL	– Ru	n No.						SHA Geote	<b>NN</b> chnical	ON and	1 & Envi	WILS	ON, INC. Consultants	Figure Sheet 2 of	<b>5</b>

				LOG OF BOR	INC	3						
Date	Started	10/2	7/21	Location In the northern shoulder of Apron Acces	s	G	roun	d Ele	evation:	29.717 fe	et	
Date	Comple	ted 10/2	7/21	Rd. 530 feet northwest of Alaska Seapla	nes.	T	ypica	l Ru	n Lengtl	า <i>5 f</i> eet		
Tota	Depth (	ft)	45.0	Drilling Company: Discovery Drilling		Н	ole D	iame		2 inches		
Depth (ft)	Probe Run	and pro	bing n eximate	Soil Description  port text for a proper understanding of the subsurface materia methods. The stratification lines indicated below represent the boundaries between soil types. Actual boundaries may be ent if soil shifted inside sample tubes during extraction.	ls e	Depth, ft.	Symbol	PID, ppm	Well Construction	Desci	Number, ription, Results	Depth (ft)
99-018.GPJ 21-20 3. 4.	may have Groundw considere Refer to h CT = corr	2-inch di 20/40 gr Screene Total de Top of co asses where a slid down in ater level, if i di approxima (EY for defin osion test sa	recover the tundicate stimple; itinos a simple;	NOTES  Pry was low in the upper part of the run, the soil sample be prior to removal from the ground.  NOTES  Pry was low in the upper part of the run, the soil sample be prior to removal from the ground.  End above, was estimated during probing and should be and explanation of symbols.  TR = thermal resistivity sample; EN = environmental sample; AR = archeological sample.			202	21 S	Gusta ite Cha Gusta	vus Airport racterizatior vus, Alaska		55 —
		tic Tube - N		I Danas vami	ءا.		ary 20			IXIIAO IVI	102599-0	18
GEOPROBE WELL	_ 2" Plas – Run N		u1 <b>3</b> 0ll	Recovery ⊈ Ground Water Level ATD					WILS	ON, INC.	Figure Sheet 3 of 3	

						LOG	OF BORII	NG									
Date	Starte	d	10/29/21	ı		rental hangars			G	round	d Ele	evation:	31.	.474 fee	et		
Date	Comp	leted	10/29/21		the inter	section with Gu		f	Ty	ypical	Ru	n Lengt	h 5 f	eet			
Tota	l Depth	ı (ft)	15.0	١	Orilling Company	r: Discovery Drill	ing		Н	ole Di	iame	eter:	2 i	nches			
Depth (ft)	Probe Run	,	and probing rapproximate	epo me te l	Soil Des	scription  nderstanding of the ation lines indicated soil types. Actual I	subsurface materials below represent the coundaries may be	Denth #	Jebrui, II.	Symbol	PID, ppm	Well Construction	s	ample   Descri and R			Depth (ft)
Ľ		В			Soil (TOPSOIL);			0.5		<u>7,1%</u>		9/ 9/				<u>'</u>	
- - - - - - - - 5 - - -		_			ell Graded Sand (S			0.5	)							:	5—
- - - - -10		G	rey-brown, <i>I</i>	Po	orly Graded Sand	(SP); wet.		8.5				Drilling IA					   0
- - - - - - - - - 15		G	rey-brown to	0 6	ırey, <i>Poorly Grad</i> e	ed Sand with Gra	vel (SPG); wet.	- 15.				During I					- - - - - - - - -
7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		N	lonitoring W	/ell	BOTTOM (	OF BORING		13.	.0								- - - -
		F T 2- 20 S T	inch diamet 0/40 gradation creened inte otal depth of	mo ter ion erv		feet bgs s										2	   0   
					NOTES was low in the uppe		soil sample						ivus A	-			
	conside Refer to CT = co	ered ap KEY orrosio	proximate. for definitions a n test sample;	an ; TF	above, was estimated explanation of sym R = thermal resistivity nple; AR = archeolog <u>LEGEND</u>	bols. / sample; EN = envi	_		L			Gusta	vus, A	laska	Report <b>N-15-1</b>	5	
3 M M M M	2" Plastic Tube - No Soil Recovery  2" Plastic Tube with Soil Recovery  — Run No.  Piezometer Screen and Sand Figure 2  — Ground Water Level ATD								านส	ary 20	)22				102599	9-018	;
GEOPROBE WELL	-				, <u>*</u>	C. Gund Waler Leve		SH Geot	I <b>AI</b>	NNO nical an	N 8	WILS vironmenta	ON, II	NC.	Figui	e 6	

						L	OG OF	BORIN	١G							
Date	Starte	d	10/29/21	Lo	cation <i>Near</i>	the rental ha	ngars in the n	orthern		Ground	d Ele	evatio	n:	31.591 fe	et	
Date	Comp	leted	10/29/21		the i	ılder of FAA R ntersection w	ith Gustavus i		-	Гуріса	l Rui	n Len	gth	5 feet		
Tota	Depth	(ft)	50.0	Dr	illing Comp	oany: Discovery	y Drilling		ı	Hole D	iame			2 inches		
Depth (ft)	Probe Run	Re a	nd probing r approximat	eport t metho	Soil I text for a prop ods. The stra undaries betw	Description per understanding ter fines included in the soil types. A side sample tube	g of the subsurfa dicated below re <sub>l</sub> Actual boundarie	present the es may be	Depth, ft.	Symbol	PID, ppm	Well		Descr	Number, iption, esults	Depth (ft)
_		_			oil (TOPSO				0.5	71 1/2		27627	N. 4. 4. 1	21GST-MW15	j-01	_
1/17/22 Log: APW Rev: Typ: VTY  1		Gre	ey-brown, <i>l</i>	Poori o gre	ly Graded S			G); wet.	- 8.5 - 10.0			During Drilling   C		21GST-MW15		10
GPJ 21-20 2.	may hav Ground conside	/e slid d water lev red appi	own in the tu vel, if indicate oximate.	ery wa ube pr ed ab	NOTES as low in the urior to remova	upper part of the rall from the ground mated during pro	l.			202	1 S	ite Cl	har	vus Airport acterizatior vus, Alaska	ı Report	
	CT = co sample;	rrosion f GE = g	est sample;	TR = samp	thermal resis le; AR = arche	stivity sample; EN eological sample.	l = environmenta r Screen and Sa		L	.OG	OI	F B	OF	RING M	N-15-46	
	2" Pla	astic Tu	be with Soil				er Level ATD		Janu	ary 20	)22				102599-0	)18
GEOPROBE WELL	– Run I	VO.							SHA Geoted	NNO hnical an	N &	wironme	SC ntal (	ON, INC. Consultants	Figure Sheet 1 of	<b>7</b>

									LOC	3 OF	BOF	RIN	G									
Date	Starte	d	10/29/21	L	Locat	N					northern		(	Grour	nd E	Elev	/atic	n:	3	1.591 f	eet	
Date	Comp	leted	10/29/21			th	e inters	section	with Gu	ustavus	northwes s Rd.	t of	1	Гуріса	al F	≀un	Ler	ngth	າ 5	feet		
Tota	l Depth	ı (ft)	50.0	[	Drillin	g Co	mpany:	Discov	ery Drill	ling			ŀ	Hole [	Dia	met			2	inches	;	
Depth (ft)	Probe Run	R	efer to the re and probing r approximate differe	epoi mei te b	ort text ethods. bounda	<b>So</b> for a parties bearies be	il Des proper un stratificat etween s	cription derstand tion lines soil types	<b>on</b> ding of the s indicated	e subsur d below i boundar	represent ti ries may be	he	Depth, ft.	Symbol		PID, ppm	Well	Construction	;	Desc	Number, ription, Results	Depth (ft)
- - - - - - - - - 30	252		ey, <i>Well Gr</i> an						t.				30.0						21G\$	ST-MW1	5-04	30-
		Gr	rey to dark o rey, <i>Fat Cla</i> y ark grey to o	ay (	(CH); v	wet.				SP-SM)	); wet.		33.5 37.5 38.0						2405	ST-MW1	F 05	35— 
Rev: 1/49: VTY   -   -   -   -   -   -   -   -   -		Gr	ey, <i>Poorly</i> (	Gra	raded	Sand	with Sil	lt (SP-S	<i>SM)</i> ; wet.				45.0						2100	o i -ivivv i	5-05	40— 
0.1/17/22 Log: APW	<b>IS</b>			C	CONTINU	JED NI	EXT PAGI	Ε										<u> </u>	21G\$	ST-MW1	5-06	- - - - -
GPJ 21-20	may ha Ground conside	ve slid o water le ered app	where recove down in the tu evel, if indicate proximate. or definitions	ube ted	e prior t l above	o rem	ne upper oval from	n the gro d during	ound.		-			20	21	Sit	e C	ha	racte	Airport rizatio Alaska	n Report	
	CT = co sample;	orrosion ; GE = (	test sample; geotechnical s ube - No Soi	; TR san	R = the mple; A	rmal re R = al EGEI	esistivity rcheologi	sample; ical samp	ple.		ital Sand Filte						В	O	RIN	IG M	W-15-4	
GEOPROBE WELL		astic T	ube with Soil			•	∑ (	Ground V	Water Leve	el ATD		$\vdash$		ary 2							102599	
3EOPF													SHA Seotec	NNC hnical a	N and E	& Envir	onme	LS( ental	ON, Consul	INC. tants	Figure Sheet 2	<b>e 7</b> of 3

										LC	OG (	OF E	30R	NG	;								
Da	ate	Started	t	10/29/21	L	Locatio	Ne				ars in t				G	roun	d Ele	evation		31.59	1 fee	t	
Da	ate	Compl	eted	10/29/21			the	e inter	rsectio	n with	Gusta	ivus R	thwest o d.	of	Ty	ypica	l Ru	n Lengt	th	5 feet			
To	otal	Depth	(ft)	50.0	[	Drilling	Con	npany	/: Disco	overy E	Drilling				Н	ole D	iame			2 inch	ies		
(#) 4±000	Deptil (ii)	Probe Run	F	Refer to the re and probing r approximate differe	epo mei te b	rt text for thods. T	Soi r a pr he s es be	I Des roper u tratifica etween	script Indersta ation line soil typ	ion Inding o es indici es. Act	of the sub ated belitual bour	bsurface low repr	esent the may be	ls	Depth, ft.	Symbol	PID, ppm	Well Construction		De	scrip	lumber, otion, sults	Depth (ft)
									OF BO					50	0.0								-
- - -			Co	onitoring Websites	De	etails:		comp	oleted 1	10/29/2	21												-   -   -
- - - - - - -	55		To 2- 20 So To	op of casing inch diamet 0/40 gradation creened intestal depth of	g is ter ion erv of w	0.33 fe PVC ris silica s al: 41.4 ell: 46.7	eet b ser p and 7 to 78 fe	pipe pre-p 46.23 eet bg	3 feet b Is	ogs													55— - - - - -
- - - - - -	60		10	op of casing	g ei	levation	: 31	.25 fe	et														60-
	65																						- - - - - 65
:																							- - - - -
Log: APW Rev:	70																						70-
J 1/17/22																							
102599-018.GPJ 21-20447.GPJ 1/17/22	2. 0	may hav Groundv consider	e slid vater le ed app	where recove down in the tu evel, if indicate proximate. or definitions	ube ted	was low prior to r above, w	remo vas e	e uppe oval fror estimate	m the gi ed durin	round.		•	1			202	21 S		arac		tion	Report	
	4. (	CT = cor sample;	rosior GE =	n test sample; geotechnical s ube - No Soi	; TF san	R = therm nple; AR <u>LE</u> 0	al re = ard GEN	sistivity cheolog	y sample gical sar	mple.	environr Screen a		nd Filter		L	OG	Ol	F BC	RI	NG	ΜV	/-15-46	
GEOPROBE_WELL			stic T	ube with Soil		•					Level A					ary 2						102599-0	
GEOPF														SI Geo	HAI otech	NNO nical ar	N 8 nd Env	will S	SON al Con:	, INC sultants		Figure Sheet 3 of	<b>7</b> 3

									LOG	OF BOR	N	G								
Date	e S	Starte	t	10/31/21		Location	Near th	e ARFF	building s	outh of Runway	,	(	Gro	ounc	d Ele	evatio	n:	29.601 fe	et	
Date	e C	Compl	ete	d 10/31/21			2-20.			-		7	Ту	pical	Ru	n Len	gth	5 feet		
Tota	al C	Depth	(ft)	15.0	Ī	Drilling (	Compan	y: Discov	ery Drillin	q		ı	Но	le Di	iam	eter:		2 inches		
Depth (ft)		Probe Run		and probing rapproximate	epi me	ort text for ethods. The boundaries	Soil De a proper on ne stratific s between	scription understant cation lines of soil type	<b>ON</b> eding of the s s indicated b	ubsurface materia elow represent the undaries may be	ls	Depth, ft.		Symbol	PID, ppm	Well		Descr	Number, iption, esults	Depth (ft)
		В		Dark brown, 0	Oı	rganic Sa	ndy Soil	(TOPSC	DIL); moist.			_ <del>_</del> 0.5		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	_	12 N	XXX	21GST-MW16	i-01	_
- - - - -			t	ight grey, <i>W</i> erace silt pres	se	ent.	·	,		ning and		3.8	•			1 11				   
F		П	1	_ight grey, Po	00	orly Grade	ed Sand	<i>(SP)</i> ; we	t.			5.0				Hing 15		21GST-MW16	i-02	_
—5 –		П	-	Grey-brown, F	Po	oorly Gra	ded San	d with Si	It (SP-SM);	wet.		5.0				ng Dri				5-
-  -  -  -  -			(	Grey-brown, <i>I</i>	Po	oorly Grad	ded Grav	vel with S	Sand(GPS)	; wet.		5.8	10.50.50.50.50.50.50.50.50.50.50.50.50.50			Duri				     
F		8	(	Grey-brown, F	Po	oorly Gra	ded San	<i>d (SP)</i> ; w	vet.			9.1						21GST-MW16	i-03	_
— 10 - - -			(	Grey-brown, <i>I</i>	Po	oorly Gra	ded San	d with Gi	ravel (SPG <sub>)</sub>	); wet.		10.0		, D						10-
		181	I	_ight grey, <i>Po</i>	00	orly Grade	ed Sand	<i>(SP)</i> ; we	t.			11.8						21GST-MW16	. 04	   
_ - - 15	5		ı	_ight grey, <i>Po</i>	00	orly Grade	ed Grave	el with Sa	ind (GPS);	wet.		13.8 15.0	9.0	0,00				21631-100016	-04	15—
7yp: VTY						В	MOTTC	OF BOF	RING			10.0								- -
E			ı	Monitoring W	'el	II MW-16	-15 com	pleted 1	0/31/21											-
;  - ;			l	Construction																_
- 20				Flush-mount i Top of casing																-
-20	'			2-inch diamet			_													20 —
- A				20/40 gradatio																_
Log: APW			ı	Screened inte				_	3											
7				Total depth of Top of casing				-												_
-					, `															-
1/17/.																				_
.GPJ						Ν̈́	<u>OTES</u>									·				
GPJ 21-20	NOTES  1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.  2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.  3. Refer to KEY for definitions and explanation of symbols.  4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.  LEGEND  2" Plastic Tube - No Soil Recovery  Quantity Of Cround Water Level ATD.													202	1 S	ite Cl	nar	vus Airport acterizatior vus, Alaska	n Report	
													_C	G	0	F B	OI	RING M	W-16-15	
3   M		2" Pla	stic			•	Ā		eter Screen Water Level		·	Janu	ıar	y 20	)22				102599-0	)18
GEOPROBE WELL	_	Run I	Vo.									SHA Geotec	<b>N</b>	NO cal an	N 8 d En	k WIL	S(	ON, INC. Consultants	Figure	8

ſ			tarted Location				L	00	30	FE	30R	IN	G																				
Ī	Date	Started	10/22/2	 21	T	L	Lc	oca	tior	l In	the	sa	outi	hern	n sh	oulde	er of (	Gusta	avus R	d.	(	Gro	ound	Ele	evat	ion	:	30.5	596 f	eet			
İ	Date	Comple	eted 10/22/2	21	1					ne	ar t	the	: Ala	aska	a Po	ower a	& Tele		ne offi		Ī	Тур	oical	Ru	n Le	eng	th	5 fe	et				
Ì	Total	l Depth	(ft)	0.0	Ţ	D	Dr	rillir	ng (	Con	npa	any	/: Dis	sco	very	y Drill	ling				ı	Hol	le Di	am					ches	s			
	Depth (ft)	Probe Run	Refer to th and probi approxi	ing n imate	epo me te b	port neth	ort i	text nods. nunda	t for 5. Th	Soi a pr he s s be	I D	er ur ifica en s	scri Indel ation soil	ripti erstan n line l type	ion nding es ind es. A	g of the dicated Actual	e subs d belov	w repr daries	esent th may be	als e	Depth, ft.		Symbol	PID, ppm	Vell	Construction		Sa	mple Desc				Depth (ft)
ŀ	-	<u>r</u>	Grey-brow											<u> </u>						+		+	S	<u>α</u>	> × × × × × × × × × × × × × × × × × × ×								
-	- - -		Light grey,	, Po	oor	orly	Тy	Gr	ade	∍d S	Sand	d (S	SP)	; mc	oist.						1.5												-   -   -
Ì	_		Grey, Silt	with	h C	Cl	la	з <u>у</u> ((	CL-	ML)	); m	ois	st.								3.6 4.3	j											_
	- -5 - - - -		Grey-brow	n to	o g	gr	jre	∋у,	Poo	orly	Gra	ade	∍d S	Sand	d (SI	P); m	oist.				4.0	120120000000000000000000000000000000000				**************************************							5—
	 - - -  10 - -		Grey, Well	l Gra	rad	ide	led	d S	and	ī (S	<i>W</i> );	m	oist	t to v	wet.						8.0	• • • • • • • • • • • • • • • • • • • •			× · · · · · · · · · · · · · · · · · · ·	×							10-
	- - - - -		Grey, Poo	rly C	Gr	- ira	ac	ded	Sa	nd i	with	ı Gi	ravi	el (S	SPG,	;); wet	t.				12.5				During Drilling								- - - - -
Rev: Typ: VTY	— 15 - - - - - - - -		rly G	Gr	ìra	ас	ded	Gra	ave	l wi	th S	San	nd (G	GPS <u>,</u>	s); wet	t.				15.0												15	
×	—20 - —								В	ОТТ	TON	M C	OF E	BOF	RING	G					20.0					<u>F-1-</u>	1						20—
Log: APW	- - -		Monitoring	j We	/ell	ell l	ı N	ЛW	-17	-20	cor	mp	olete	ed 1	0/22	2/21																	-
J 1/17/22	- - -		Constructi Flush-mou	unt r	mo	nor	on		nent		XT F	<u>PAG</u>	<u>E</u>																				_
7.GF										OTE																							
EOPROBE WELL 102599-018.GPJ 21-20447.GPJ 1/17/22	2. (	may have Groundw considere	cases where red e slid down in the rater level, if ind ed approximate KEY for definition	he tul dicate e.	ube ted	be ped a	e pi l ab	orior bove	to re	emo as e	oval i	fron nate	m the	ne gro luring	ound	i.		•				į	202	1 S	Site	Cha	ara	ıs Air cteriz ıs, Ala	zatio	n Re	eport		
ELL 102599-01	4. (	CT = corr sample; 0	rosion test sam GE = geotechni	nple; <sup>-</sup> ical s	; TF sar	TR am	R = mp	= the ple; <i>I</i>	erma AR = <u>LEG</u>	al re = ard GEN	sisti chec	ivity olog	y sar gical	mple; I sam	nple.				ما ⊏ناخمه		L	_C	G	0	FE	3C	)R	ING	M	W-	17-2	20	
BE	<sup>3</sup>		stic Tube - No stic Tube with						-		<u>· П</u>						en and /el ATD		nd Filter		Janu	ıar	y 20	22						1	0259	9-01	18
EOPRO		– Run N	0.								-									-	SHA Geotec	NI	NOI cal and	<b>8</b> IV	<b>W</b> vironr	/ILS	3 <b>01</b>	N, IN	C.		Figu Sheet	re 9	, ,

ſ					LOG OF BOR	ING	ì						
Ī	Date	Started	10/22/21		he southern shoulder of Gustavus R		Gr	ound	d Ele	evation:	30.596 fe	et	
ĺ	Date	Compl	eted 10/22/21		r the Alaska Power & Telephone offi	ce.	Ту	pica	l Rui	n Length	5 feet		
	Total	Depth	(ft) 20.0	Drilling Com	pany: Discovery Drilling		Но	le D	iame		2 inches		
	Depth (ft)	Probe Run	and probing r approximate	<b>Soil</b> port text for a pronethods. The street boundaries between	Description  per understanding of the subsurface materia atification lines indicated below represent th ween soil types. Actual boundaries may be nside sample tubes during extraction.	als 4	Deptin, it.	Symbol	PID, ppm	Well Construction	Desci	Number, ription, Results	Depth (ft)
.GPJ 1/17/22			2-inch diamet 20/40 gradation Screened inte Total depth of	is 0.67 feet been PVC riser pion silica sand perval: 10.07 to 25 well: 20.36 fee elevation: 29.5	pe pre-pack 19.80 feet bgs et bgs 977 feet								30
102599-018.GPJ 21-20447.GPJ 1/17/22	2.	may hav Groundv consider	e slid down in the tu	be prior to removed above, was es	timated during probing and should be			202	21 S	ite Cha	vus Airport racterizatior vus, Alaska	=	
	4.	CT = cor sample;		TR = thermal resi sample; AR = arch <u>LEGENI</u>	stivity sample; EN = environmental neological sample.		LC	OG	Ol	F BO	RING M	W-17-20	
GEOPROBE_WELL	Ť		stic Tube with Soil	Danasiami	☐ Ground Water Level ATD			ry 20				102599-0	
SEOPR		rvuii l	···			SH Geo	IAN techni	INO ical an	N &	WILSO rironmental	ON, INC. Consultants	Figure Sheet 2 of 2	9

											L	OG	OF	BO	RIN	IG										
Date	Starte	ed	10/22/21		L	.oca								ustavus			Gr	ound	l El	evat	ion	:	30.522 fe	et		
Date	Comp	lete	10/22/21										-	ohone o	ffice.		Ту	pical	Ru	ın Le	eng	th	5 feet			
Tota	al Depti	h (ft)	45.0		D	Drilli	ng C	omp	any:	Disco	overy	Drillin	ng				Но	le Di	am				2 inches			
Depth (ft)	Probe Run		Refer to the re and probing n approximate differe	epc me ite l	pon netl	t text	<b>S</b> et for a s. The laries	oil [ a prop e stra betw	Desc per und tification reen so	cripti derstation line oil type	ion anding o es indio es. Ad	of the s icated b	subsun below r oundan	represent ries may l	the	Depth, ft.		Symbol	PID, ppm	Well	Construction		Desc	Number ription, Results	r,	Depth (ft)
		(	Grey-brown, <i>F</i>	Po	Poc	orly	Grad	led S	and v	vith C	Organi	ics (SF	<i>⊃</i> ); mo	oist.		4.5				X X X V //		4/,4/				_
E		I	ight grey, <i>Po</i>	001	orl	ly Gi	radeo	d Sar	nd (SI	<i>P)</i> ; m	oist.					1.5										_
F		_	Grey, <i>Silt with</i> Grey-brown to								nd (SP	 ን); moi:	ist.			3.6 4.3						×				_ 
5 - - - - -			·								, ,	<i>,,</i>				8.0										5
- - - 10 - -			Grey, <i>Well Gr</i>	rac	ade	ed S	Sand	(SW)	); moi	ist to	wet.					0.0										10-
- - - -	<u> </u>	(	Grey, <i>Poorly</i> (	Gr	3ra	aded	l San	d wit	th Gra	avel (	SPG);	; wet.				12.5	5			During Drilling			21GST-MW1	7-01		- - - -
~15 ~15 ~1 ~1 ~1 ~1 ~1 ~1 ~1 ~1 ~1 ~1 ~1 ~1 ~1	5	(	Grey, <i>Poorly</i> (	Gr	Gra	adea	l Gra	vel w	vith Sa	and (	GPS);	; wet.				15.0										15—
7/22 Log: APW Rev:	=		Grey, <i>Poorly</i> ( 22.5 and 23 fe				l San	id (Si	P); we	et. Cl	lay lay	yer pre	esent	between	n	20.0										20 —
PJ 1/1				С	CC	NITNC			PAGE									· · · · · ·				1				
GPJ 21-20	may ha . Ground conside	ive sli Iwater ered a	es where recoved down in the turn level, if indicate pproximate.	ube	be a	prior abov	low in to re e, wa	mova s estii	I from mated	the gr	round.							202	1 S	ite	Ch	ara	/us Airport acterization rus, Alaska	n Repor	t	
	sample	; GE :	on test sample; = geotechnical s Tube - No Soi	saı	am	nple;	AR = LEG	arche	eoloģic	cal san	mple.			tal Sand Filt	ter	I	LC	OG	0	FE	30	)F	RING M	W-17	-40	
GEOPROBE WELL	-	astic	Tube with Soil				•					r Level						ry 20							99-0	
3EOPF																SH/ Geote	<b>AN</b> chn	ical an	N 8 d En	k W vironr	ILS nenta	SC al C	ON, INC. Consultants	Figu Shee	Ire 1	0

													L	OG	OF	во	RII	١G										
ı	Date	Started	d 10/22/2	21	T	L	.oc	atio	n In t	the	sout	thern	shou	ulder (	of Gu	stavus	Rd.		Gı	roun	d El	evati	on	:	30.522 fe	et		
ı	Date	Compl	leted 10/22/2	21											-	hone c	office		Ту	/pica	ΙRυ	ın Le	ngt	th	5 feet			
ı	Total	Depth	(ft) 4:	5.0	7	D	)ril	ling	Con	npar	ny: Di	iscov	very [	Drilling	g				Н	ole D	iam				2 inches			
	Depth (ft)	Probe Run	Refer to th and probi approxi di	ing n imate	repo ı me ate b	port neth	rt te thod	ext for ds. T ndarie	Soil r a pro The st es be	l De roper tratifi etwee	escr r unde fication en soil	ription erstand on lines il types	<b>on</b> nding o s indic es. Act	of the su	ubsurfa elow re undarie	epresen es may	t the	Depth. ff.	, ceptil, it.	Symbol	PID, ppm	Well	Construction			Numbe iption, lesults	er,	Depth (ft)
3PJ 1/17/22 Log: APW Rev: Typ: VTY	- - - - - - - - - - - - - - - - - - -		Dark grey, Grey, Fat  Grey, Lear Grey to da  Monitoring Constructi Flush-mou Top of cas 2-inch dial 20/40 grad Screened Total dept Top of cas	g Wolion I unt resing met dation interest.	Olay (Clay Section Decision Decision Control Decision Con	ell Months and serva	MV etail onu i 0.5 PV sili eal:	B W-17 Ils: Immen 5 feee /C risica s 35.0 2 t 40.3	and a dy Si  BOTT 7-40  Interest bg: sear pseand 05 to 36 fear: 30.	and Silt (No. 100) and communication of the communi	A OF mplete se-pack 80 fe bogs	(CLS); wet.						- 31. - 32. - 35.	3 5 5					C C	21GST-MW17	-02		35
SEOPROBE_WELL 102599-018.GPJ 21-20447.GPJ 1/17/22	2. (	may hav Groundv consider	cases where review slid down in the water level, if indired approximate the KEY for definition	he tu dicate e.	tube ated	be ped a	prio abo	s low or to i	remo vas es	e upp oval fr estima	rom thated d	he gro during	ound.							202	<u>.</u> 1 S	Site (	Cha	ara	us Airport acterization us, Alaska	ı Repo	ort	
VELL 102599-01	4. (	CT = cor sample;	rrosion test sam GE = geotechni astic Tube - No	nple; ical s	e; TF I sar	TR :	R = t nple	therme; AR	nal res	sistiv cheol	vity sa ologica	ample; al samp	ıple.			al Sand Fil	Iter		L	ЭG	0	FE	3C	)R	RING MI	<b>N</b> -17	'-40	
OBE_W	Ť	2" Pla	astic Tube with					-		⊻				Level A		and i	L	Jan	ıua	ry 2	)22					1025	599-01	18
EOPRC		– Run N	10.															SH. Geote	<b>AN</b> echr	NO nical ar	N &	<b>W</b> vironn	ILS nenta	3 <b>0</b> al Cc	N, INC.	Fig:	ure 1	0

										LC	)G (	OF	BOF	RIN	G												
Date	Started	10/28/21	I	Lo	ocatio	A				exter	nt of t	the R	unway 2	-20	(	Gro	und	Ele	evati	ion		28.2	276 fe	et			
Date	Compl	eted 10/28/21					•	area							٦	Гур	ical	Rui	n Le	ngt	th	5 fe	et				
Tota	l Depth	(ft) 15.0	I	Dı	rilling	g Co	mpa	iny:	iscov	ery D	rilling				ŀ	Hol	e Di	ame				2 in	ches				
Depth (ft)	Probe Run	Refer to the re and probing approxima differ	repo me ate b	oort neth	text fo nods. nundari	So or a p The s ries b	il Do prope stratifi etwe	esci r unde ficatio en soi	riptic erstand on lines il types	<b>on</b> ding of s indica	f the su ated be ual bou	ubsurfa elow re undarie	epresent t es may be	he	Depth, ft.		Symbol	PID, ppm	Well	Construction		[	Desci	Num riptio Result	n, ·		Depth (ft)
- - - - - - - -		Light grey, W					,				n stair	nina.			3.5					1/2							- - - - -
- -5 - - - - - -		Grey to grey- present belov	-bro	rov	wn, <i>P</i> e	oorly							e gravel		5.0				During Drilling I								5—
- 10 - - - - - - -		Grey-brown, Light grey, Po								/el (SF	PG); w	vet.			9.5 10.0	a											- 10— - - - - - -
7 <i>yp: VTY</i> 12		Monitoring W	Vell	ell N					BOR		· 				15.0	) :::	э О										 15 - - - - -
Log: APW Rev:		Construction Flush-mount Top of casing 2-inch diame 20/40 gradati Screened inte Total depth of	t mo g is eter tion terv of w	nor is ( er F on s rva we	nume 0.5 fe PVC r silica s il: 5.19	et b iser sand 9 to	pipe d pre 14.9 feet	e-pac 92 fee bgs	et bgs	<b>;</b>																	20— - - 20— - - -
-20447.GPJ 1/17/22		cases where recov e slid down in the to			vas low		— he up				, the so	——— oil sam	nple						G	ust	avu	s Air	port				
102599-018.GPJ 3. 4.	consider Refer to CT = cor sample;	vater level, if indicated approximate.  KEY for definitions rosion test sample; GE = geotechnical	s and e; TF I sar	ind ( TR = amp	explan = therr ple; AF <u>LE</u>	natior mal re R = a EGE	n of steed	ymbol vity sa ologica	ls. ample; al samp	EN = e	environ	nmenta	al						Gu	ısta	avu	s, Ala	aska		oort 	5	
3 B B B B B	2" Pla	stic Tube - No So stic Tube with So ,				-	Ţ Ā			eter So Water L			Sand Filte		Janu	ary	/ 20	22						10	2599	-01	8
GEOPROBE WELL	— Run N	<i>10.</i>													SHA Geotec	NI hnic	<b>NOI</b>	<b>V</b> &	vironn	ILS nenta	SON al Cor	<b>I, IN</b> isultant	C.	Fi	gure	11	1

						L	OG OF BO	DRIN	IG							
Dat	e Sta	rted	10/28/21	Loca			tent of the Runwa	y 2-20	G	Fround	l Ele	evatio	on:	28.287 fe	et	
		nplet	10/28/21		-	/ area.			Т	ypical	Ru	n Lei	ngth	n 5 feet		
Tot	al De	pth (f	t) 50.0	Drill	ing Compa	any: <i>Discover</i> j	y Drilling		H	lole Di	iam			2 inches		
Depth (ft)	Drobo Diis	III PODE VAII	and probing n approximate	eport tex method te bound	Soil D  xt for a prope ls. The strate daries between	escription er understanding fication lines indeen soil types.		nt the	Depth, ft.	Symbol	PID, ppm	Well	Construction	Desci	Number, iption, lesults	Depth (ft)
- - - -	=	SI	Light grey, We	ell Gra	aded Sand	(SW); moist.						2000	11/4836	21GST-MW18	3-01	- - -
	_	BT	Light grey, Sill	ilty San	<i>nd (SM)</i> ; mo	oist. Banded i	ron staining.		3.5							   
-5 - - - - - - -			Grey to grey-k present below		-	aded Sand (S	<i>P)</i> ; wet. Trace grav	rel	5.0			During Drilling		21GST-MW18	J-02	5—
<u> </u>	0		Grey-brown, S	Sand v	with Silt (SN	//); wet.			9.5							10-
- - - - - - -			Light grey, Po	oorly G	Graded San	d with Gravel	(SPG); wet.									- - - - - -
7.77 :qyī	5 -	5	Light grey to g present at 20-		-		); wet. Trace silt		15.0	•.••,4,-0).				21GST-MW18	3-03	15 —   -   -     -     -
22	0															20-
1/17//	-			CONTI	INUED NEXT F	PAGE						👹				_
.GPJ 21-20	may 2. Grou cons	have s undwat sidered	slid down in the tu	ery was ube prio ted abov	NOTES slow in the upor to removal ve, was esting	oper part of the i from the ground nated during pro	run, the soil sample I. bing and should be			202	1 S	ite C	ha	vus Airport racterizatior vus, Alaska	n Report	
	4. CT = sam	= corro ple; GE	sion test sample; E = geotechnical s c Tube - No Soil	TR = th sample;	hermal resisti ; AR = archeo <u>LEGEND</u>	ivity sample; EN ological sample.	I = environmental r Screen and Sand F	ilter	L	.OG	0	FΒ	<b>O</b>	RING M	W-18-50	
	2"	Plasti	ic Tube with Soil		•		er Level ATD	L	Janu	ary 20	)22	_			102599-0	18
GEOPROBE_WELL	— Ri	un No.							SHA Geotech	NNO nnical an	N 8 d En	k WI vironme	LS(	ON, INC. Consultants	Figure 1	<b>12</b>

					LOG OF BOR	RING	;						
	Date	Started	10/28/21	Location At	the southern extent of the Runway 2	-20	Gr	round	d Ele	evation	: 28.287 fe	et	
	Date	Compl		sat	ety area.		Ту	/pica	l Ru	n Leng	th 5 feet		
	Total	Depth	(ft) 50.0	Drilling Con	npany: Discovery Drilling		Н	ole D	iame	eter:	2 inches		
	Depth (ft)	Probe Run	Refer to the re and probing approxima	Soil port text for a promethods. The st e boundaries be	Description oper understanding of the subsurface materiatification lines indicated below represent the tween soil types. Actual boundaries may be inside sample tubes during extraction.	ials ine	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Desc	Number, ription, Results	Depth (ft)
GPJ 1/17/22 Log: APW Rev: Typ: VTY		5.		CONTINUED NEX							21GST-MW1	3-05	30
3PJ 21-20447.	2.	may hav Groundv	e slid down in the to	ery was low in the	e upper part of the run, the soil sample eval from the ground. stimated during probing and should be			202	21 S	ite Ch	avus Airport aracterization avus, Alaska	-	
EOPROBE_WELL 102599-018.GPJ 21-20447.GPJ 1/17/22	4.	CT = co	KEY for definitions rrosion test sample; GE = geotechnical	TR = thermal res	sistivity sample; EN = environmental cheological sample.		L	og	OI		ORING M		
BE_WEL	3		stic Tube - No So stic Tube with So		Piezometer Screen and Sand Filter  Ground Water Level ATD		nua	ry 20	022			102599-0	)18
EOPRO		– Run I	Vo.			SH Geo	<b>IAN</b>	INO	N &	WILS	SON, INC. al Consultants	Figure '	12 3

								LOG O	F BORIN	NG							
	Date	Started	1	10/28/21	Location	on At the	e southern (	extent of the	Runway 2-20	,	Gro	und	Ele	vation:	28.287 fe	et	
	Date	Compl	eted 1	10/28/21	1	-	y area.		•		Тур	ical	Rur	n Length	ı 5 feet		
	Total	l Depth	(ft)	50.0	Drilling	Compa g	any: <i>Discov</i> e	ery Drilling			Hole	e Di	ame	ter:	2 inches		
	Depth (ft)	Probe Run	and	er to the rep d probing n approximate	port text fo methods. e boundar.	Soil D for a prope The strati ries betwe	Description er understandi ification lines i een soil types.	<b>n</b> ing of the subsi		Depth, ft.		Symbol	PID, ppm	Well Construction	Sample Desci	Number, ription, Results	Depth (ft)
	-  -  -						M OF BORII			50.0		S		>0			
	_  -  -  -			J		8-50 co	mpleted 10/	28/21							ľ		
	- - - 55 -		Flush Top o	struction [ h-mount r of casing ch diamete 0 gradatio	monume i is 0.5 fe ter PVC r	eet bgs riser pipe											55—
			Scree Total	•	erval: 45. f well: 50	.09 to 49 0.40 feet	9.84 feet bgs bgs	;									
	- -60 - - -																60-
ЛY	_ _ _ _ _ _65																65—
Typ: VTY	-  -  -  -  -																     
W Rev:	 _ 70 _ _																70-
17/22 Log: APW	-  -  -  -																- - - -
GPJ 1/		<u> </u>				NOTES											
EOPROBE_WELL 102599-018.GPJ 21-20447.GPJ 1/17/22	2.	may hav Groundy consider	ve slid dow water level red approx	wn in the tu el, if indicate	ery was low ube prior to ed above,	w in the up o removal was estim	from the groun	e run, the soil sand. orobing and sho			2	202 <sup>-</sup>		ite Char	vus Airport racterizatior vus, Alaska	n Report	
ELL 102599-0	4.	CT = col sample;	rrosion tes GE = geo	st sample; otechnical s	TR = therr sample; AF <u>LE</u>	mal resisti R = arched <u>EGEND</u>	tivity sample; E ological sample			I	LO	G	OF	= BOI	RING M	W-18-50	
BE_WE	3	4		e - No Soil e with Soil		-		ter Screen and ater Level ATD		Janı	uary	y 20	122			102599-0	)18
EOPRO		Run I	Vo.			-				SH/ Geote	<b>ANN</b> chnic	NOI al and	N & d Envi	WILS(	ON, INC.	Figure 1	<b>12</b>

										L	OG	i OF	F B(	DRIN	١G											
Date	e Starte	d	10/31/21	ļ	Lo	catio	In t				oulder					Gr	round	d Ele	evati	on:	2	25.912	? fee	t		
Date	e Comp	leted	11/1/21				Rd.						on witl	n Wilso	n	Ту	pica	l Ru	ın Le	ngt	h (	5 feet				
Tota	al Depth	ı (ft)	15.0	ı	Dr	illing	Com	pany	: Disc	overy	/ Drillii	ng				Н	ole D	iam				2 inch	es			
Depth (ft)	Probe Run	Re	efer to the re and probing r approximate differe	epa me te l	ort i ethi	text for ods. T undarie	Soil a pro he str es bet	Des oper ur ratificat ween s	cript ndersta tion lin soil typ	tion anding nes ind pes. A	g of the	subsui below boundai	represe iries ma	ent the	Depth, ft.		Symbol	PID, ppm	Well	Construction			scrip	lumbe otion, sults	er,	Depth (ft)
<u> </u>	<del>-</del>	Da	rk brwon, (												0.5		<u> </u>	_	16.	_ ※						T-
$\vdash$		Gre	ey-brown, I	We	/ell	Grade	ed Sa	and (S	SW); r	moist.					0.8		ΪΪ		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	\$\frac{1}{2}						_
E		Gre	ey, Silt (ML	_);	; m	oist.									3.0				\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\							_
F		Gre	ey-brown, <i>l</i>	Po	oor	ly Gra	ided :	Sand	(SP);	, wet.					3.0				During Drilling							-   -
5 - - - - - -		Gre we	ey-brown to t.	o I	ligh	nt gre	y, Po	orly G	Grade	d San	nd with	Grave	rel (SP	G);	5.0				Duri							5
- - - - 10 - - -		Gre	ey, <i>Poorly</i> (	Gr	rac	led Gi	ravel	with S	Sand	(GPS)	;); wet.				10.0	0			1 1 1							10-
- 15	5					В	ОТТ	ОМ С	OF BC	DRING	 G				- 15.0	- 1										15—
-  -  -  -		Мо	nitoring W	/ell	II IV	<b>1W-</b> 19	9-15 d	compl	leted	11/01	1/21															-   -
Log: APW Rev:		Flu To 2-ii 20/ Sc	nstruction sh-mount of of casing nch diamet 40 gradation reened intental	mo j is ter ion erv	non is 0 er P n si val	umen .33 fe VC ris ilica s : 5.01	eet boser plant and plant to 14	ipe pre-pa 4.74 f	eet b	ogs																20-
-			o of casing					_																		  -  -
.GPJ 21-20	may ha d. Ground conside	ve slid d water le ered app	where recove own in the tu vel, if indicate roximate. r definitions	ube ted	e p	as low rior to l	remov /as es	upper al fron timate	n the g d durir	ground.	l.		•				202	:1 S	ite (	Cha	racte	Airpo erizat Alasl	ion l	Repo	rt	
	. CT = co sample	orrosion ; GE = g	test sample; eotechnical s lbe - No Soi	; TF sar	R =	therm le; AR <u>LE</u>	al res = arcl <u>GENI</u>	istivity heologi	sampl ical sa	ample.	= envir			ilter	İ	L(	ЭG	0	FE	80	RIN	IG I	ΜV	<b>/</b> -19	-15	
	2" PI	astic Tu	be with Soi			•					er Leve		Janu I		Jan	ua	ry 20	)22						102	599-0	18
GEOPROBE WELL	— Run	No.													SH/ Geote	<b>AN</b> echn	INO nical an	N 8	<b>W</b> WI	LS ental	ON, Consi	INC.		Fig	ure ′	13

											LO	GΟ	F B	ORII	NG	<b>;</b>									
	ate	Starte	d	10/31/21	ı	Lo	cation	In the	e norti	hern s	shoulde	er of G	Gustav	us Rd,		G	round	d Ele	evati	on:	25.7	76 fee	t		
D	ate	Comp	leted	11/1/21				Rd.			the inte		ion wit	th Wilso	on	T	ypica	l Ru	ın Le	ngtl	1 5 fe	et			
T	otal	Depth	(ft)	50.0	Ī	Dr	illing	Comp	any:	iscov	ery Dril	lling				Н	ole D	iam	eter:		2 in	ches			
	Deptn (ft)	Probe Run	F	Refer to the re and probing r approximate differe	epo me te l	ort ethi	text for ods. Th undaries	Soil I a prop ne strat s betw	Descr er unde tification een soi	riptio erstand n lines il types	on ding of the indicate	he subs ed belov Il bound	w repres laries m	ent the	3	Deptn, rt.	Symbol	PID, ppm	Well	Construction		Descr	Numbe iption, esults	r,	Depth (ft)
F			Da	ark brwon, (	Or	rga	nic Sa	ndy S	oil (TC	PSOI	<i>IL)</i> ; moi	ist.			0.9		21 1 <sub>N</sub>	_	\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	% %					_
F			G	rey-brown, I	We	/ell	Grade	d Sar	nd (SW	/); moi	ist.				0.8										_
-		B		rey, Silt (ML											3.0	)			\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		21GST	NAVA/40	.01		-
-			G	rey-brown, <i>I</i>	Po	oor	ly Gra	ded S	and (S	: <i>P</i> ); we	et.					-			During Drilling		21631	-ivivv i s	-01		<u>-</u>
- - - - - -	5		Gi we	rey-brown to	o l	ligl	nt grey	, Poo	rly Gra	nded S	Sand wit	ith Gra	ivel (SF	PG);	5.0	0			Dur						5
-	10		Gi	rey, <i>Poorly</i> (	Gr	rac	led Gra	avel w	vith Sal	nd (GI	PS); we	et.			10	0.0			I I						10-
Typ: VTY	15		to	rey, <i>Poorly</i> ( 25 feet bgs esent from	s. I	Int	erbede	ed fat	clay a					20	15	5.0			I XX						15—
11/17/22	20				C	CON	NTINUEC	) NEXT	PAGE																20
7.GP.							N	<u>OTES</u>																	
102599-018.GPJ 21-20447.GPJ 1/17/22	2.	may hav Groundv conside	/e slid water le red ap	where recover down in the tu evel, if indicate proximate. or definitions	ube ted	e p	rior to re oove, wa	emova as estir	I from the	he grou during p	und.		•				202	1 S	Site C	Cha	vus Ai racteriz vus, Al	zation	Repo	rt	
		sample;	GE =	test sample; geotechnical s ube - No Soi	sar	amp	le; AR = <u>LEC</u>		eologica	al samp				Filter		L	OG	0	FB	80	RING	€ M\	<b>N</b> -19	-50	
)BE M		2" Pla	astic T	ube with Soil			•	Ž			Vater Lev				Ja	nua	ary 20	)22					1025	599-0°	18
GEOPROBE_WELL		- Run I	VO.												SF Geo	<b>IAI</b> tech	<b>VNO</b> nical an	N 8	<b>WI</b> vironm	LS ental	ON, IN Consultan	IC.	Figu	ure 1 et 1 of 3	<b>4</b>

						LOG OF BO	ORIN	G						
ſ	Date	Started		10/31/21		rthern shoulder of Gustavu			round	d Ele	vation:	25.76 fee	t	
	Date	Compl	eted	11/1/21	Rd.	east of the intersection with	n Wilson	Т	уріса	l Rui	n Length	5 feet		
ı	Total	Depth	(ft)	50.0	Drilling Company:	Discovery Drilling		Н	lole D	iame		2 inches		
	Depth (ft)	Probe Run	а	nd probing n approximate	Soil Desc port text for a proper un tethods. The stratificat be boundaries between s		ent the	Depth, ft.	Symbol	PID, ppm	Well Construction	Desci	Number, ription, lesults	Depth (ft)
0447.GPJ 1/17/22 Log: APW Rev: Typ: VTY			Ligi cases v	ht grey, Po	CONTINUED NEXT PAGE NOTES ry was low in the upper	part of the run, the soil sample		44.0 45.0				21GST-MW19	9-02	30 — 35 — 40 — 45 — — — — — — — — — — — — — — — — —
L 102599-018.GPJ 21-20447.GPJ 1/17/22	2. 3. 4.	Groundw consider Refer to CT = cor	rater leved appr KEY for rosion t	vel, if indicate oximate.  r definitions attest sample;	and explanation of symb	d during probing and should be ols. sample; EN = environmental		L			ite Cha Gusta	racterizatior vus, Alaska	N-19-50	
E WELL	3			be - No Soil be with Soil	Recovery III I	Piezometer Screen and Sand F Ground Water Level ATD		Janua	ary 20	)22			102599-0	18
GEOPROBE_WELL		– Run N			, <del>*</del> (	STOUTHE VYAIGE LEVELATE	-				WILSO ironmental	ON, INC.	Figure 1	<b>14</b>

											L	OG	OF	BO	RIN	IG										
	ate	Started	I	10/31/21	L	Lo	cation	In th	e no	rther	n sho	ulder	of Gu	stavus l	Rd,	- 1	Gre	oun	d Ele	vatior	1:	25.7	76 fee	t		
Ī	ate	Compl	eted	11/1/21				660 f Rd.	feet e	east o	of the	inters	sectio	n with V		n -	Туј	pica	l Ru	n Leng	jth	5 fe	et			
Ī	otal	Depth	(ft)	50.0	[	Dri	illing (	Comp	any:	Disco	overy	Drillir	ng				Но	le D	iame	eter:		2 in	ches			
	Depth (ft)	Probe Run	Re a	efer to the re nd probing r approximate differe	epo mei te b	ort t etho	ext for a cods. The cods and a code a	<b>oil [</b> a prop ne stra s betw	Des per un atificat veen s	cript ndersta tion lin soil typ	tion anding nes indi nes. A	of the s icated l ctual be	subsurf below r	epresent i ies may b	the	Depth, ft.		Symbol	PID, ppm	Well Construction			mple Desci and R	iptio	٦,	Depth (ft)
F	-						ВС	OTTC	о мо	F BC	RING	}				50.0										_
E	-		Мо	nitoring W	/ell	II M	IW-19-	-50 c	ompl	eted	11/01	/21														-
Log: APW Rev: Typ: VTY			Flu: Top 2-ir 20/ Scr Tot	nstruction of sh-mount of the sh-mount of the shift of th	mo ter ion erv	s 0 r P n si val: wel	ument .33 fee VC ris lica sa : 45.00 l: 50.3	et bgs er pip and pi to 4 1 fee	oe re-pa 9.75 et bgs	feet l	bgs															55 —
J 1/17/22	-																									-    -
GEOPROBE_WELL_102599-018.GPJ_21-20447.GPJ_1/17/22	2. ( 3. I 4. (	may hav Groundv consider Refer to CT = cor sample;	e slid do vater leved approvented approvented second to the second secon	where recove own in the tu yel, if indicate oximate. ox definitions a est sample; eotechnical s	ube ted and ; TF san	e pr d ab nd e R = imp	as low in rior to recove, was explanate thermale; AR =	emova as esti ion of al resis arche GEND	mated symbolistivity eologi	n the g d durin ools. sampl ical sa	round. ng prob le; EN : mple.	oing and	d should	d be						ite Ch Gust	ara avu	ıs, Al	atior aska		oort 9-50	)
BE_WEL	3	2" Pla	stic Tu	be - No Soi be with Soil			-					Screer er Level		Sand Filte	er	Janu	ıar	y 20	022					10	2599-	018
3EOPRO		- Run N	lo.													SHA Geoted	<b>\N</b>	NO cal ar	N &	WIL	SO tal Co	N, IN	C.	Fi	gure	<b>14</b> f 3

													L	00	<u>0</u>	FE	30RI	N	G												
Da	ate	Started	I	11/1/21		L	Lc	catio	n In	the	nor	ther	n sho	oulde	r of C	Gusta	vus Rd	,	0	Grou	und	Ele	evati	on:		26.0	97 fe	et			
Da	ate	Compl	eted	11/1/21					/ S	tate	Do	ck F	Rd.			tion v	with Wil	son	T	Гурі	cal	Ru	n Le	ngt	h	5 fee	et				
To	otal	Depth	(ft)	15.0		D	Dr	illing	Coi	npa	ny:	Disco	overv	y Drilli	ing				H	lole	Dia	amo	eter:			2 inc	ches				
		_											tion											tion							
(#)	neprii (ii)	Probe Run	ar	fer to the re nd probing i approximat differe	me te l	eti bo	th	text fo ods. undari	or a p The s ies be	rope tratif etwe	r und lication	dersta on lin oil typ	anding nes ind nes. A	g of the dicated	d belov bound	w repr daries	esent the may be	s	Depth, ft.			PID, ppm	Well	Construction			) Desc	Num riptio Resul	n,		Depth (ft)
F			Dar	k brown, (	Or	)rg	ga	nic S	andy	/ So	il (T	OPS	SOIL);	; mois	st.					1/2	1 <sub>2</sub>		N. N. N. V. V.	<b>火</b> 火							_
F			Gre	y-brown,	W	Ve	ell	Grac	ded S	Sano	l (SV	<i>N</i> ); r	noist.					$\overline{}$	I.0 I.3	7			\ \frac{\frac}\frac{\frac}\frac{\frac{\frac{\frac{\frac{\frac{\frac}\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\fir}}}}}}}{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac}\frac{\frac{\frac{\frac{\fir}}}}}}{\frac{\frac{\frac{\frac{\frac}\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac}\frac{\frac{\frac{\frac{\frac{\frac}\frac								_
-			Gre	y-brown, s	Sii	Silt	t (	ML);	mois	st to	wet																				
F			Ligh	nt grey, W	/el	e// (	G	rade	d Sa	nd (	SW)	); mc	oist.					7	1.0	• • •											_
	5		Ligh	nt grey, <i>Po</i>	00	orl	rly	Grad	ded S	Sand	d witi	h Gr	ravel	(SPG)	); wet	t.		5	5.0		Ů ()		During Drilling								5—
	10			nt grey, <i>Po</i>			_							 PS); w	 vet.				10.0 11.0		ر المنظمة										10-
	15																		15.0												    15—
Typ: VTY													RING																		_
F				nitoring W					0-15	cor	nple	eted	11/01	1/21																	_
Rev:				sh-mount					nt																						_
	20		2-in 20/ <sup>2</sup> Scre Tota	of casing ch diamet 40 gradation eened inter al depth of of casing	tei ior erv	er l on : rva we	r P val	VC r ilica s : 4.84 II: 15	iser sand 4 to .13 f	pipe pre 14.5 eet l	-pad 7 fe bgs	et b	gs																		20— — — — —
7/22																															
PJ 1/1																															
102599-018.GPJ 21-20447.GPJ 1/17/22	2. ( 3. I	may hav Groundw consider Refer to	e slid do /ater lev ed appro KEY for	definitions	ube ted	be ed a and	e p ala	as low rior to pove, v	remo	e up oval f estim	rom ated ymbo	the g durir ols.	iround ng prol	l. bing ar	nd sho	ould be	ł			2	02 <sup>-</sup>	1 S	ite (	Cha	ırac	s Air teriz s, Ala	ation	n Re	port		
		sample;	GE = ge	est sample; eotechnical s oe - No Soi	sa	am	mp	le; AF	R = ar <u>GEN</u>	cheo	ologic	al sa	mple.				d Filter		L	.0	G	O	FE	30	RI	NG	i M	W-2	20-1	5	
BE		2" Pla	stic Tub	pe - No Sol pe with Soi					,	<u></u>				er Leve				J	anu	ary	20	22						10	)2599	-01	8
GEOPROBE WELL		- Run N	lo.															S	HA eotecl	NN hnica	ION Il and	<b>8</b> I	k W	ILS nenta	ON I Con:	<b>I, IN</b> sultant	<b>C</b> .	F	igure	: 1:	5

								LOG	OF BOR	NG								
	Date	Starte	ed	11/1/21	Lo				of Gustavus Rd		Gı	round	l Ele	evatio	on:	25.993 fe	eet	
	Date	Com	oleted	11/1/21		/ 5	State Dock I	Rd.	section with Wil	son	Ту	/pical	Ru	n Ler	ngth	5 feet		
ľ	Γotal	Dept	h (ft)	45.0	Dr	illing Co	mpany: <i>Disc</i>	overy Drillin	ng		Н	ole Di	ame			2 inches		
	Depth (ft)	Probe Run		and probing r approximate	eport i metho te bou	<b>So</b> text for a p ods. The s undaries b	il Descrip proper underst stratification li etween soil ty	otion tanding of the s nes indicated b	subsurface materia pelow represent the pundaries may be	ls # theo	Jepuii, it.	Symbol	PID, ppm	Well	Construction	Desc	Number, ription, Results	Depth (ft)
E	_	Ī		Oark brown, C	Orga	nic Sand	y Soil (TOP	SOIL); moist.		+-	•	<u>x\ 1/x</u>			×			<del>                                     </del>
ŀ	-			Grey-brown, I	Well	Graded 3	Sand (SW);	moist.		1.0	ŀ	17. 31.1		\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\				-
	-			Grey-brown, S	Silt (i	ML); moi	st to wet.			1.3	5							   
þ	-	П	L	ight grey, W	'ell G	Graded Sa	and (SW); m	oist.		4.0	)	****						-
	-5 - - -	8	L	ight grey, <i>Pc</i>	oorly	Graded .	Sand with G	ravel (SPG);	wet.	5.0	)			During Drilling 1		21GST-MW2	0-01	5—
Ŀ	-10									10.	_	o. O						10-
ŀ	10		L	ight grey, Po	oorly	Graded	Sand (SP); v	wet.		11.								-
-	-		L	ight grey, <i>Pc</i>	oorly	Graded .	Sandy Grav	<i>el (GPS</i> ); wet	i.		.0							-   -   -   -
Typ: VTY	-15 - -		L	ight grey, <i>Po</i>	oorly	Graded	Sand with G	ravel (SPG);	wet.	<del></del> 15.	.0			d				15—
Log: APW Rev:	- -20 - -		L	ight grey, <i>Po</i>	oorly	Graded .	Sand (SP); v	wet.		20.	.0							20 —
22															X			-
1/17/2					CUr	NTINUED NE	EXT PAGE											_
7.GPJ					OUN	NOT!									IK XI			
102599-018.GPJ 21-20447.GPJ 1/17/22	2.	may ha Ground consid	ave slic dwater ered a	d down in the tu	ube pi ted ab	rior to remo	oval from the estimated duri	of the run, the s ground. ing probing and	•			202	1 S	ite C	har	vus Airport racterization vus, Alaska	n Report	
		sample	e; GE =	on test sample; geotechnical s Tube - No Soi	samp	ole; AR = a LEGE	rcheological sa		onmental n and Sand Filter					F B	OI	RING M	W-20-40	
OBE_V		2" P	lastic	Tube with Soil		•	∑ Grour	nd Water Level	ATD .	Jar	nua	ry 20	)22				102599-0	)18
GEOPROBE_WELL		– Run	IVO.							SH Geot	IAN techn	NOI nical and	N 8	k WII	LS(	ON, INC. Consultants	Figure '	16 3

ſ												LC	ЭG	OF	BC	RII	NG	1											
Ī	Date	Started	11	1/1/21	T	L	ocati	ion I	n the	nort	thern				ıstavus			_	round	J Ele	evati	on:		25.9	93 fe	et			
1	Date	Comple	eted	1/1/21				<b>2</b> .	230 fe State	eet we e Doc	est of	f the i l.	inters	ectio	on with			Ту	/pical	Ru	n Le	ngt	h	5 fee	et				
	Total	l Depth	(ft)	45.0	I	D	rillin	ıg Cc	ompa	iny:	iscov	very E	Drilling	g				Н	ole Di	ame				2 inc	ches				
	Depth (ft)	Probe Run	and p	to the reporobing noroximate differe	epo me ite k	oort neth	t text t hods. ounda	<b>So</b> for a p The aries b	prope stratit between	escr er unde ification een soi	ription derstand on lines oil types	<b>ON</b> nding of s indica es. Acti	of the so	subsurf elow re undari	represer ies may	nt the	Denth #	השלפת יוי	Symbol	PID, ppm	Well	Construction		D	Descr	Num ription Result	n,	;	Depth (ft)
J1/17/22 Log: APW Rev: Typ: VTY	- - - - - - - - - - - - - - - - - - -		Grey, F 28.8 fee  Grey, F  Dark gr feet.  Monitor  Constru	Poorly Correy, Silts	Gr. Gr.	Grad	mided Sand	Sand Sand Of (SM) BOT-20-4	d (SP)	h Silt (	(SP-S	oody o	organio			To To	25. - 28. - 35.	.0					210	∃ST- <b>Λ</b>	MW20			3	35
EOPROBE_WELL 102599-018.GPJ 21-20447.GPJ 1/17/22	2. · 3. ·	may have Groundw considere Refer to	cases where re slid down i vater level, if red approxim KEY for defi	re recove in the tul if indicate mate. finitions a	ery tube ited	ry w be p ed al	was log prior to above, expla	NOT ow in to to reme, was anatio	TES the up noval to s estime	pper pa from th nated d	the gro during ols.	ound. I probin	ng and	should	d be				202	1 S	Site C	Cha	aract	s Airp teriza , Ala	ation	n Rep	port		
WELL 102599-	3	sample;	rrosion test s GE = geotec	echnical s - No Soil	sar oil F	amp I Re	iple; A <u>L</u> ecove	AR = a LEGE ery	arched	ologica —	al samp	ıple.			tal Sand Fi	ilter						30	RII	NG	M\		<b>20-4(</b> )2599-		Ω
EOPROBE		_ 2" Pla: – <i>Run</i> Λ	istic Tube w Vo.	vith Soil	il R	Re	cove	<del>!</del> ry	Ā	Gro	ound W	Water I	Level A	ATD					INO NICAL AN			LS lenta	ON. I Cons	, IN(	<b>C</b> .	_	igure Sheet 2 c		

						LOG OF BO	DRIN	G						
ſ	Date	Started		11/1/21		the northern shoulder of Gustavu			Groun	d Ele	evation:	25.993 fe	et	
ſ	Date	Comple	eted	11/1/21	/3	30 feet west of the intersection with State Dock Rd.	h Wilso	n 🗔	Гуріса	l Ru	n Lengtl	o 5 feet		
Ī	Total	Depth	(ft)	45.0	Drilling Co	mpany: Discovery Drilling		ŀ	Hole D	iame		2 inches		
	Depth (ft)	Probe Run	a	nd probing r approximate	So port text for a p nethods. The e boundaries b	il Description proper understanding of the subsurface me stratification lines indicated below represe etween soil types. Actual boundaries mad d inside sample tubes during extraction.	nt the	Depth, ft.	Symbol	PID, ppm	Well Construction	Desci	Number, iption, lesults	Depth (ft)
102599-018.GPJ 21-20447.GPJ 1/17/22 Log: APW Rev: Typ: VTY	1	may hav	2-iri- 20/ <sup>3</sup> Scr Tot Tot Top	where recovery	well: 40.14 elevation: 29  ry was low in the prior to rem	pipe d pre-pack o 39.58 feet bgs feet bgs 5.599 feet  ES ne upper part of the run, the soil sample oval from the ground.					Gusta	vus Airport	Papart	55
	3. I 4. (	consider Refer to CT = cor sample;	ed appr KEY for rosion t GE = ge	oximate.  r definitions a  rest sample; eotechnical s	and explanation TR = thermal re sample; AR = a <u>LEGE</u>	esistivity sample; EN = environmental rcheological sample.		L			Gusta	vus, Alaska	W-20-40	
BE_WEL,	3			be - No Soi be with Soil	•	Piezometer Screen and Sand F		Janu	ary 2	022			102599-0	18
GEOPROBE_WELL		− Run N	lo.					SHA Geotec	NNO	N 8	k WILS	ON, INC. Consultants	Figure 1	<b>6</b>

											LOG	<b>3</b> O	F BC	RII	١G											
Date	Started	10/	25/21	ı	Lo	catio	Nea					f Fara	way Ro	l, 50 fe	et	Gr	ound	d Ele	evatio	n:	2	5.186	feet			
Date	Comple	ted 10/	25/21							corn						Ту	pica	Ru	n Len	gth	5	feet				
Total	Depth (	ft)	15.0	ı	Dri	lling	Com	npany	y: Dis	scove	ry Drill	ling				Но	le D	iame			2	inche	s			
Depth (ft)	Probe Run	and p	robing n roximate	epo me te k	ort t etho	ext for ds. T ndarie	Soil a pro he stres es bet	Des oper u ratifica tween	SCri  unders ation in soil t	<b>ptioi</b> standii lines ii types.	<b>n</b> ing of the	e subsi d below bounda	urface ma v represe aries ma raction.	nt the	Depth, ft.		Symbol	PID, ppm	Well				le Nu cript Res	ion,	r,	Depth (ft)
<u>-</u> - -		Brown,										3				,	<u> </u>	4								-
		Grey-b Grey-b							radeo	d San	d (SW)	); mois	st.		2.2											-
- - -5 - - -		,				<b>3</b> ,	,,				- ()	,,							\(\frac{1}{2}\)							5-
- - -		Light g	rey, <i>Po</i>	001	orly	Grad	ed S	and (	(SP);	wet.					8.0				During Drilling							-
—10 - - - -		Grey, I	Poorly (	Gr	rad	ed Gi	ravel	with	Sand	d (GP	S); wet	t.			10.0	)										10-
- - - - - -15		Grey, <i>I</i>	Poorly (	Gr	rad	ed Sa	and (	SP);	wet.						12.5											
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1						В	ОТТ	ОМ (	OF B	BORIN	٧G				10.0											-
-		Monito					-15	comp	plete	ed 10/2	26/21															-
- 20		Flush-r Top of 2-inch 20/40 g Screen Total d	gradationed inte	mo ter ion erv	noni s 0 er P' n si val: wel	umen 58 fe VC ris lica s 4.96	eet boser pand and to 1	pre-p 4.69 eet bo	feet gs																	20-
1   1																										-
02-12 CA5.	may have Groundwa considere	ases wher slid down ater level, i d approxin	in the tu f indicate nate.	ube ted	e pr d ab	is low ior to ove, w	remov as es	e uppe val fro stimat	m the ed du	e grour ıring pr	nd.		·				202	1 S	ite C	hara	acte	Airpor rizatio Alask	on R	Repo	rt	
	CT = corr sample; C	osion test : E = geote	sample; chnical s	; TF sar	R = ampl	therme; AR	al res = arc GEN	sistivit heolo	y sam gical s	nple; E sample	e.			iltor		LC	OG	O	FΒ	OF	RIN	G N	ſW	-21	-15	
GEOPROBE WELL	2" Plas	tic Tube - tic Tube v				•		Ţ Ā			er Scree ater Leve		d Sand F	ııter	Janı	uaı	ry 20	)22						1025	99-0	18
SEOPK T	– Run N	).													SH/ Geote	<b>4N</b> chn	INO ical an	N 8 d Env	wironme	SC ntal C	N, I	NC.		Figi	ıre '	17

											LOG	3 OI	F BO	RIN	IG										
D	ate	Starte	d	10/25/21		Lo	cation	Near				f Farav	way Rd, s	50 fe	et (	Grour	nd E	leva	ion	:	25.10	4 fee	t		
D	ate	Comp	letec	10/25/21					h of th						٦	Гуріс	al R	un L	eng	th	5 feet	t			
To	otal	Depth	ı (ft)	45.0		Dr	illing (	Comp	any: Di	scove	ery Drilli	ling			ŀ	lole I	Diam		-		2 incl	hes			
(3)	Deptin (iit)	Probe Run		Refer to the re and probing n approximate differe	epc me te l	ort i etho	text for ods. Th undaries	oil I a prop ne stran s betw	Descr er unde tificatior een soil	r <b>iptio</b> l erstandi n lines i l types.	<b>n</b> ing of the indicated	e subsu d below bounda	represent aries may b	the	Depth, ft.	Symbol	PID. ppm	Moll	Construction		De	escri	lumbei ption, esults	r,	Depth (ft)
LOg: APW Rev: Typ: VTY	5 10	Probe		and probing n approximate	Gr Gr Gr Gr Gr Gr Gr Gr Gr Gr Gr Gr Gr G	in the bount if it is in the bount if it is in the bount if it is in the bound if it is	ods. Trundaries soil shi iity Soi ML); mat grey ded Saided	e strais s between s betwe	ritification den soil side sar PSOIL)  I Grade  I Grade  The Grave   n lines in lines in lines in lines in lines in lines in lines. In lines in	indicated Actual It Actual It It It It It It It It It It It It It	d below boundaing extre	represent aries may b action.	the	2.2 2.6 8.0 10.0 17.5 18.5 20.0 20.5		PID. DO	During Drilling Drill	Consti			Real Real Real Real Real Real Real Real	sults		5—————————————————————————————————————	
_ 102599-018.GPJ 21-20447.GPJ 1/17/22	2. ( 3. I 4. (	may ha Ground conside Refer to CT = co	ve slid water ered a o KEY orrosid	es where recoved down in the turn level, if indicate pproximate.  If or definitions a contest sample; a geotechnical s	ube ted an	oe pi d ab ind e FR =	rior to re pove, wa explanate therma le; AR =	emova as estir ion of al resis	from the mated do symbols tivity sa	ne groui luring p s. mple; E	nd. probing ar EN = envi	nd shou	uld be					Site G	Ch ust	ara avı	us Airp acteriza us, Alas	ition ska			
SE WELL				Tube - No Soi Tube with Soil			covery	<u>Z, 12.</u> Z			ter Scree		Sand Filt		Janu	ary 2	2022	2					1025	99-0	18
GEOPROBE_WELL	_	- Run	No.					<del>.</del>	_ 0,0			JD			SHA Geotec	NN(	ON and E	& V	/ILS	<b>SO</b> al C	N, INC	;.	Figu	ire 1	8

														L	0	G	OF	BC	RI	N	3														
Dat	te St	tarted	10/25/21	L	Lo	_0	oc	atio	٨							of Fa	arawa	ay Rd	, <b>50</b> 1	feet	1	Gro	uno	i El	eva	tio	n:		25.1	104 1	feet				
Dat	e C	omple	ted 10/25/21											orne							-	Тур	ica	Ru	ın L	.en	gth	1	5 fe	et					
Tot	al D	epth (	ft) 45.0		D	Эr	)ril	ling	Co	omp	oany	y: Dis	sco	very	y Dril	illing	,				ı	Hol	e D	iam					2 in	che	s				
Depth (ft)		Probe Run	Refer to the re, and probing n approximate differe	epoi met ite b	ort eth bo	rt t	t te hoo	ext fo ds. T	Sor a The ies l	prop stra betw	Des per u atifica veen	scri under ation soil	ipti erstan i line type	ion nding es ind es. A	g of th dicate Actual	he sui ed bel al boui	bsurfa low re	epresei es may	nt the	's	Depth, ft.		Symbol	PID, ppm		Well				Des	crip	umbe tion, sults	•		Depth (ft)
1/7/22 Log:APW Rev: Typ:VTY	5		Grey, Sandy S  Grey, Sandy S  Grey, Sandy S  Grey, Silty San  Monitoring Wo	Siltt Siltt and	ilt (CC)	t (iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii	(M) (S) (S) (S) (S) (S) (S) (S) (S) (S) (S	//////////////////////////////////////	ret.	ret.	) MC	OF I	BOF	RING						3 3 4	37.5 37.5 40.0							21(	GST-	MVV	21-02	2		2	
018.GPJ 21-20	ma 2. Gr co 3. Re 4. C1	ay have roundwa nsidere efer to K r = corre	ases where recove slid down in the tu iter level, if indicate d approximate. EY for definitions a osion test sample; E = geotechnical s	very tube ited s and	yw ep da nd	wa e pi ab d e	was prid abo	s low or to ove, v cplan thern e; AR	vin fren was national (	TES the unova- esti on of resis	uppe al fro imate f sym stivity eolog	er par om the ed du nbols	ne gro uring s. mple;	ound g prol e; EN	d. obing a	and s	should	l be							Site G	Cl Sus	nar tav	ac /us	, Ala	atio	on F a	Repo	ort 1-45	<u> </u>	
	_		tic Tube - No Soi tic Tube with Soil					over	у		<u>-</u>				r Scre			Sand F	ilter	J			y 20			_`	<b>-</b> 1	<b>.</b>		- 14			599-		8
GEOPROBE WELL		Run No	).								_									S	HA eotec	NI	NO al an	N &	<b>&amp; V</b>	VIL	S(	ON Cons	I <b>, IN</b> sultant	C.		Fig	ure et 2 o	<b>18</b>	}

ſ					LO	G OF BORIN	G						
	Date	Started	10/25/21	Locat	Near the western end	of Faraway Rd, 50 fee	t G	round	d Ele	evation:	25.104 fe	et	
	Date	Compl	eted 10/25/21		south of the corner.		T	ypica	l Rui	n Length	5 feet		
	Total	Depth	(ft) 45.0	Drillin	g Company: <i>Discovery Dr</i>	illing	Н	lole D	iame		2 inches		
	Depth (ft)	Probe Run	and probing approxima	eport text methods. te bounda	Soil Description for a proper understanding of interestratification lines indicated the stratification lines. Actual shifted inside sample tubes do	the subsurface materials ted below represent the al boundaries may be	Depth, ft.	Symbol	PID, ppm	Well Construction	Descr	Number, iption, esults	Depth (ft)
IPW Rev: Typ:VTY			Screened int	ter PVC ion silica erval: 40 of well: 4	riser pipe sand pre-pack .01 to 44.76 feet bgs								55—
J 1/17/22 Log: APW	- - - - -												
7.GPJ					NOTES								
- 102599-018.GPJ 21-20447.GPJ 1/17/22	2. 3. 4.	may hav Groundv consider Refer to CT = cor	e slid down in the t vater level, if indica ed approximate. KEY for definitions rosion test sample	ube prior to ted above and expla ; TR = the sample; A	w in the upper part of the run, to removal from the ground.  , was estimated during probing anation of symbols.  rmal resistivity sample; EN = et R = archeological sample.  LEGEND	and should be	L			ite Cha Gusta	vus Airport racterizatior vus, Alaska	Report <b>N-21-45</b>	
=_WELL	3		stic Tube - No So	il Recove	ery Piezometer Sc	reen and Sand Filter	Janua	ary 20	022			102599-0	18
GEOPROBE WELL		– Run N			ay ∑ Ground Water Lo	EVELATO				WILSO rironmental	ON, INC.	Figure 1	

									LOG	OF	BORI	NG										
Date	Starte	d	10/25/21	ı	Location	In t	he nort	hern s	houlder	of Whit	te Dr, 390		Gı	round	d Ele	evation		26.2 f	eet			
Date	Comp	leted	10/25/21								h Wilson F	Rd.	Ту	/pica	l Ru	n Leng	th	5 feet				
Tota	l Depti	ı (ft)	15.0	Ī	Drilling	Com	pany:	iscove	ery Drillir	ng			Н	ole D	iam	eter:		2 inch	nes			
	_						Desc			<u> </u>						tion						
Depth (ft)	Probe Run		Refer to the re and probing r approximate differe	me te k	ethods. boundar	or a pro The str ies bet	pper und atificatio ween so	erstandi en lines i il types.	ing of the i	below rep oundarie	present the s may be	Denth #	Deptili, it.	Symbol	PID, ppm	Well Construction		De	scri	lumbe ption, sults	r,	Depth (ft)
-		E	Brown, <i>Organ</i>	nic	Soil w	ith Sai	nd (TOF	PSOIL)	; moist.					1/ 1/								- -
- - - - - -5			Grey-brown to			-				; moist	to 4.5	2.3				3 Drilling IA						- - - 5- 5-
- - - - -								<b></b>				9.0				During						- - - - -
- 10			Grey, <i>Poorly</i> (	Gr	raded S	and w	ith Silt	(SP-SN	<i>I</i> ); wet.			10.										_ 10 <i>-</i>
- 10 - - - - -			Grey, <i>Poorly</i> ( resent from					vel (SF	°G); wet.	Trace o	cobbles	10.	.U									- - - - -
- -15 - - - -			Nonitoring W	/ell			OM OF					15.	.0	: o :: :::Q								15— - - - -
- 200 - 200		C F T 2 2 S	Construction I Flush-mount I Top of casing I-inch diamet 10/40 gradation Foreened inter Total depth of	De mo j is ter ion erv	etails: ionume s 0.42 t r PVC r n silica val: 4.6 well: 14	nt eet bo iser p sand p to 1 .77 fe	js ipe pre-pac 4.33 fee et bgs	k et bgs	20/2 1													20
17/22																						_
018.GPJ 21-20 3.	may ha Ground conside Refer to	ve slic lwater ered a <sub>l</sub> o KEY	s where recove d down in the tu level, if indicate oproximate. for definitions	ube ted an	y was low e prior to d above, nd explar	remov was es	upper payal from to timated of timated of	he grou during p ls.	nd. Probing and	d should I	be			202	1 :1 S	Gust ite Cha Gusta	arac		tion	Repo	rt	
	sample	; GE =	on test sample; geotechnical s Tube - No Soi	sar	mple; Af <u>Lf</u>	R = arcl EGENI	heologica <u>D</u>	al sampl								F BC	RII	NG I	MV			
	•	astic <sup>·</sup>	Tube with Soil			•	<u>⊽</u> Gr	ound W	ater Level	ATD		Jar	nua	ry 20	)22					1025	99-0	18
GEOPROBE WELL	ruii	IVO.										SH Geot	<b>AN</b> echr	NO nical an	N 8 Id Env	wironmenta	SON al Cons	, INC sultants	-	Figu	ıre 1	9

ſ											LOC	G O	FΒ	ORI	NG	ì										
Ī	Date	Starte	d 10/25/2	1	L	oca	tion	n the	north	ern s	houlde	er of V	Vhite L	Dr, 390		G	round	i El	evati	on:		25.8	12 fe	et		
I	Date	Compl	leted 10/25/2	1							nterse		with V	/ilson I	₹d.	Ty	ypical	Ru	ın Le	ngt	h	5 fe	et			
	Total	Depth	(ft) 45.	0	D	Drilli	ng C	ompa	ny: Dis	scove	ery Drill	ling				Н	ole Di	iam				2 in	ches			
	Depth (ft)	Probe Run	Refer to the and probir approxin dif	ig n nate	port neth	rt text thods ound	So t for a t. The laries	prope stratii betwe	escri er under fication en soil	iptioi rstandi i lines i types.	<b>n</b> ing of the indicated	e subsi d below bounda	v repres aries m	sent the	: 4	Deptn, n.	Symbol	PID, ppm	Well	Construction			mple Descr and R	iptio	n,	Depth (ft)
102599-018.GPJ 21-20447.GPJ 1/17/22 Log: APW Rev: Typ: VTY		In some may have Groundy consider	Grey, Poor Grey, Poor present fro	GGradovove e tu cate	Grade  CO  CO  CO  CO  CO  CO  CO  CO  CO  C	ght gadea adea to 1	With Sand (Sand (Sand (NUED)) NO See No See	Poorling of with the digital with the transfer of the up noval to estimate the estimate of the second of the control of the up noval to estimate t	wet.  Silt (So Grave)  Wet.	SOIL);  ded Si o 4.25  SP-SM el (SP	and (SF 5 feet.  A); wet.  PG); we	P); mo	ce cob		9.0	0			Site (	usta Cha	avu	s Air	port ation		port	10—
	4.	CT = co sample;	rrosion test samp GE = geotechnic	le; al s	TR sam	t = the	ermal AR = a <u>LEGE</u>	resisti arched	vity sar ological	mple; E sample	e.			Filtor		L	OG	0	FE	30	RI	NG	i M	N-2	22-40	)
BE_WE	3	2" Pla	astic Tube - No sastic Tube with S				•	Ž			ter Scre ater Lev			riiter	Ja	nua	ary 20	)22						10	2599-	018
GEOPROBE_WELL		– Run I	Vo.												SF Geo	IAI tech	NNO nical an	N 8 d En	<b>W</b> vironm	ILS nental	ON Con	I, IN	<b>C</b> .	Fi	gure heet 1 c	<b>20</b>

												LO	G O	F B	ORI	NG	;										
	Date	Starte	d 1	0/25/21	T	L	ocati	In	the	north	hern s	should	der of V	White L	Dr, 390		G	roun	d El	evati	on:	2:	5.812	feet	<u> </u>		
	Date	Comp	leted 1	0/25/21	1	ĺ		fe	et w	est o	of the I	interse	ection	with V	ViÍson	Rd.	Ty	pica	lRι	ın Le	ngt	h 5	feet				
	Total	I Depth	(ft)	45.0	Ţ	D	rillin	g Co	mpa	iny: Di	iscov	ery Dri	illing				Н	ole D	iam	eter:		2	inche	es			
	Depth (ft)	Probe Run	and	er to the rep d probing n pproximate differe	epo me te b	oort neth	t text f hods. ounda	So for a p The aries b	oil De prope stratificative	escr er unde ification en soil	riptio erstand in lines il types	<b>ON</b> ding of the	the subs ed belov al bound	w repres daries m	sent the ay be	s i	Depth, ft.	Symbol	PID, ppm	Well	Construction		Des	scrip	umber otion, sults	ſ,	Depth (ft)
PJ 1/17/22 Log: APW Rev: Typ: VTY	- - - - - - - - - - - - - - - - - - -		Dark  Grey,  Monit Const	grey, Silt	/ell De	ell Noeta	MW-2	Sand	d with	h Silt (	BORI	ING					5.0					21G\$	ST-MW	V22-0	2		30 — 35 — 40 — 45 — — — — — — — — — — — — — — — — —
EOPROBE_WELL 102599-018.GPJ 21-20447.GPJ 1/17/22	2. 3.	may have Groundy consider Refer to	e cases who ve slid dow water level, ered approx o KEY for de	vn in the tu l, if indicate ximate. definitions a	ube ited	be ped al	was lov prior to above, expla	to rem , was anation	the up noval t estim	from th nated d symbols	he grou during p ls.	und. probing a	and sho	ould be				202	:1 S	Site (	Cha	avus A racte vus, A	rizati	ion F	Repor	t	
WELL 102599-	4. 3	sample;	orrosion tes ; GE = geot astic Tube	technical s	sar	amp	iple; Al <u>L</u>	R = a EGE	archec	ological	al samp	EN = en ble. eter Scr			Filter						30	RIN	IG N	ΜW	<b>/-22</b>		
EOPROBE_\		2" Pla — <i>Run l</i>	astic Tube <i>No.</i>	with Soil	il R	Re	cove	ry	Ā	. Gro	ound W	Vater Le	vel ATD	)				NNO			LS lental	ON, I	INC.	$\top$		599-01 Jre 2 et 2 of 3	

ſ					LOG OI	F BORIN	IG						
ſ	Date	Started	10/25/21	Locatio	In the northern shoulder of W			round	d Ele	evation:	25.812 fe	et	
	Date	Compl	eted 10/25/21		feet west of the intersection v	vith Wilson Ro	d. T	ypica	l Rui	n Length	5 feet		
	Total	Depth	(ft) 45.0	Drilling	Company: Discovery Drilling		Н	lole D	iame		2 inches		
	Depth (ft)	Probe Run	and probing i approximat	port text for methods. T e boundarie	Soil Description  a proper understanding of the subsu he stratification lines indicated below is between soil types. Actual bounda ifted inside sample tubes during extra	represent the aries may be	Depth, ft.	Symbol	PID, ppm	Well Construction	Desci	Number, iption, esults	Depth (ft)
22 Log: APW Rev: Typ: VTY			Top of casing 2-inch diamet 20/40 gradatic Screened into Total depth of Top of casing	ter PVC rison silica serval: 34.9 f well: 40.	ser pipe and pre-pack 2 to 39.67 feet bgs I1 feet bgs								55—
PJ 1/1													
L 102599-018.GPJ 21-20447.GPJ 1/17/22	2. 3. 4.	may hav Groundv consider Refer to CT = cor	e slid down in the tu vater level, if indicat- red approximate. KEY for definitions rosion test sample;	ery was low ube prior to ed above, w and explana TR = therm sample; AR	OTES in the upper part of the run, the soil sa removal from the ground. ras estimated during probing and shou tion of symbols. al resistivity sample; EN = environmer = archeological sample. GEND	ıld be	L			ite Cha Gusta	vus Airport racterizatior vus, Alaska	Report <b>N-22-40</b>	
E_WELL	3		stic Tube - No Soi	il Recovery	Piezometer Screen and		Janua	ary 20	022			102599-0	18
GEOPROBE_WELL		- Run N				-				WILSO rironmental	ON, INC.	Figure 2	

												L	OG	i Ol	F B(	ORI	NG	;										
D	ate	Started	i 10/20/	/21	ı	Lo	catio	Or							e Gust			G	round	l El	eva	tion	:	21.0	66 fee	et		
D	ate	Compl	eted 10/20/	/21				int	erse	ction	n wi	ith Gu	ustav	rus Ro	et norti d.	h of th	ie	T	ypica	Rι	ın L	eng	th	5 fe	et			
T	otal	Depth	(ft)	0.0	Ţ	Dr	illing	Cor	npan	ıy: Di:	sco	verv	Drillii	na				Н	ole D	iam	eter	:		2 in	ches			
F				0.0									<u> </u>	<u>''9</u>				1				o			01100			
<b>3</b>	Deptn (π)	Probe Run		oing n cimate	me te k	etho bou	text fo ods. undar	or a pi The s ries be	oper tratific tweer	cation n soil	erstan n line I type	nding o es indic es. Ac	icated i ctual b	below	represe aries ma	ent the	5 4	Deptn, ft.	Symbol	PID, ppm	l low	Construction			Desc	Num ription Result	n, <sup>'</sup>	Depth (ft)
F			Brown, O	rgan	nic	c S	oil (T	OPS	OIL);	; moi	ist.						0.3	3	,4 lv.				<b>4</b>					-
-  -  -  -  -  -			Grey-brov	wn to	o li	ligh	nt gre	еу, И	/ell G	ìrade	∍d Sa	and (	SW);	dry.							200		9:11 .11 .1X .XXXXXXX					-
F	5		Brown, Po	oorly	y C	Gra	aded	Sand	l with	n Org	ganic	cs (SF	<i>P</i> ); m	oist.			5.0		• • •									5-
-  -  -  -  -			Light grey	/ to g	gre	rey	-brov	νn, <i>V</i>	/ell G	3rade	ed S	and (	(SW);	mois	st.		5.6	Ö										-   -   -
- - - - -	10																— 13	ı n			\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \							10-
Typ: VTY	15		Grey, <i>Poc</i> feet. Clay												to 15			0.0			During Drilling							15—
<u>-</u> - ذ																												-
Ł	20						ı	вот	ГОМ	OF !	BOF	RING	<u> </u>				20	0.0			<u>:</u>	目.						20-
Log: APW			Monitorin	g We	/ell	ell IV	1W-2	23-20	com	ıplete	ed 1	0/21/	/21															-
- Z			Construct																									-
1/17/.			Flush-mo	unt r				nt ED NE	YT D^	AGE																		-
.GPJ						<u>UUI\</u>		NOTE		UE									1		1							1
102599-018.GPJ 21-20447.GPJ 1/17/22	2. (	may hav Groundv consider	cases where re e slid down in t vater level, if in ed approximate KEY for definit	ube ted	d ab	rior to oove,	remo was e	val fro stima	om thated do	ne gro luring	ound.			•				202	1 5	Site	Ch	ara	us Air cteriz ıs, Al	zatior	n Rep	oort		
		sample;	rosion test san GE = geotechr stic Tube - No	nical s	sar	amp	le; AF <u>LE</u>	R = are EGEN	cheolo	ogical	l sam	nple.			ntal I Sand I	−ilter						ВС	R	ING	S M		23-20	
)BE v		2" Pla	stic Tube with					•	⊻				r Level				Jai	nua	ary 20	)22	<u> </u>					10	2599-	018
GEOPROBE_WELL		– Run I	IO.														SH Geo	<b>IAI</b> otech	NNO nical an	N 8	<b>&amp; W</b> iviron	/ILS	SO al Co	N, IN onsultan	IC.	Fi s	gure heet 1 o	<b>21</b>

ſ								LOG	OF B	ORI	NG							
Ī	Date	Started	10/20/2	1	Location	On a p	orivate roa					Gre	ound	d Ele	evation:	21.66 fe	et	
	Date	Compl	eted 10/20/2	1		inters	ne Salmon ection witl	n Gustavu	s Rd.	th of th	ie [	Ту	pical	l Rui	n Lengtl	h 5 feet		
	Total	Depth	(ft) 20.0	,	Drilling	Compa	ny: Discove	ery Drilling	g			Но	le Di	iame		2 inche	s	
	Depth (ft)	Probe Run	approxim	rep g m	ort text for ethods. boundar	Soil Do or a prope The stratifies between	escriptio	ing of the su indicated be . Actual bou	ubsurface n elow repres undaries ma	ent the	Depth. ft.	iii (iiida)	Symbol	PID, ppm	Well Construction	Des	e Number, cription, Results	Depth (ft)
SPJ 1/17/22 Log: APW Rev: Typ: VTY	-35		Top of casing 2-inch diamged 20/40 grada Screened in Total depth Top of casing the casing the case of the casing the case of t	ete ation ter of	er PVC r n silica : val: 9.9; well: 20 elevation	iser pipe sand pre 2 to 19.6 21 feet n: 21.31	e-pack 55 feet bgs bgs											30 — 35 — 40 — 45 — — — — — — — — — — — — — — — — —
102599-018.GPJ 21-20447.GPJ 1/17/22	<ul><li>2.</li><li>3.</li></ul>	may hav Groundv consider Refer to	cases where reco e slid down in the vater level, if indic ed approximate. KEY for definition	tub ateo	ry was low be prior to d above, nd explan	removal t was estim ation of s	from the grounted during property growth with the ground the growth of t	und. probing and s	should be				202	1 Si	ite Cha	ivus Airpor racterizatio vus, Alask	n Report	
		sample;	rosion test sampl GE = geotechnica stic Tube - No S	al sa	ample; AF <u>LE</u>	R = arched EGEND	ological samp			Filter					F BO	RING N	IW-23-20	
GEOPROBE_WELL		2" Pla – <i>Run I</i>	stic Tube with S Vo.	oil I	Recover	y <u>⊼</u>	Ground W	/ater Level A	ATD	-	Jan		_		\A/!! C	ON INC	102599-0	
3E0P											Geote	AN echni	i <b>NU</b> ical an	IN & Id Env	rironmental	ON, INC. Consultants	Figure 2	<b>41</b> 2

											LOC	G O	F BC	DRII	NG											
	ate	Starte	d	10/20/21	L	Lo	cation	On a	privat	te road	d betwe	een th	e Gusta	avus li	nn	Gı	round	l El	evat	ion:	:	21.71	13 fee	et		
	ate	Comp	lete	d 10/20/21				inters	sectio	n with	River, 5 n Gusta	avus R		n of th	е	Ту	/pical	Ru	ın Le	engt	th	5 fee	ŧ			
T	otal	Depti	ı (ft)	50.0	[	Dr	illing (	Comp	any: <i>Di</i>	iscove	ery Drill	lling				Н	ole Di	iam	eter	:		2 inc	hes			
	Depth (ft)	Probe Run		Refer to the rep and probing n approximate differe	epo mei te b	ort t etho	text for ods. The indaries	<b>Soil C</b> a prop ne strat s betwe	Descr er unde tification een soil	riptio erstandi n lines i il types.	<b>)N</b> ling of the indicated	ne subsu ed below I bounda	v represe aries ma	nt the	Denth #	Jeptil, it.	Symbol	PID, ppm	Well	Construction		D	escri	Numbe ption, esults		Depth (ft)
F			ħ	Brown, <i>Organ</i>	nic	c S	oil (TO	PSOL	<i>L)</i> ; mo	ist.					0.3		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	_								_
-  -  -  -  -  -				Grey-brown to	o li	ligh	nt grey	, Well	l Grade	∍d Sar	nd (SW)	); dry.							* * * * * * * * * * * * * * * * * * *							- - - - -
F	5			Brown, <i>Poorly</i>	y G	Gra	aded S	and w	ith Org	ganics	<i>(SP)</i> ; n	moist.			5.0 5.6											5-
- - - - -			1	Light grey to g	gre	rey-	-brown	ı, Wel	ll Grade	ed Sar	nd (SW)	/); mois	st.		3.0											- - - - -
- - - - -	10			Grey, <i>Poorly</i> (	Gra	irad	led Sai	nd (Sł	P); wet	t. Trac	ce silt p	resent	to 15		13.	.0			Ţ Di		2	21GST-N	∕IW23-	-01		10-
Rev: Typ: VTY	· 15		1	feet. Clay laye	rer	r pr	esent	betwe	een 16	.5 and	I 16.75	feet.							During Drilling		***************************************					15— 
Log: APW	· 20			Dark grey to g Trace organic	CS	s pr		below	/ 45 fee		th Silt (S	SP-SM	<i>f</i> ); wet.		20.	.0					***************************************					20 —
GPJ						<u> </u>		OTES	, AGE										<u>. K</u>	<u>. IX</u>	<u> </u>					1
102599-018.GPJ 21-20447.GPJ 1/17/22	2.	may ha Ground conside Refer to	ive sli lwate ered a o KEN	es where recove id down in the tu r level, if indicate approximate. If for definitions a	ube ted and	oe pr d ab nd e	rior to re ove, wa explanat	emoval as estir tion of	from the mated d	he grou during p s.	ind. probing a	and shou	uld be				202	1 S	Site	Cha	ara	us Airp icteriza is, Ala	ation	Repo	ort	
		sample 2" Pl	; GE astic	on test sample; = geotechnical s Tube - No Soil	san il R	Red	le; AR = <u>LEG</u> covery		eologica	al sampl				ilter						30	R	ING	MV			
GEOPROBE_WELL		2" PI - <i>Run</i>		Tube with Soil	il R	Rec	covery	Ž	<u>Z</u> Gro	ound W	/ater Lev	vel ATD	ı	L			ry 20				_	<b></b>			599-0	
GEOPI															SH Geot	echr	NNO nical an	N & d En	<b>℄ W</b> vironn	ILS nenta	ol Co	N, INC	ا.ز	Fig She	ure 2 eet 1 of	<b>22</b> 3

				LOG	OF BORIN	IG						
Date	Started	10/20/21	Location	On a private road between	the Gustavus Inr	n	Groun	d Ele	vation:	21.713 fe	et	
Date	Complet	ed 10/20/21	i	and the Salmon River, 500 Intersection with Gustavus	s Rd.	7	Гуріса	l Rui	n Lengtl	h 5 feet		
Total	Depth (f	t) 50.0	Drilling C	ompany: <i>Discovery Drillin</i> g	1	F	Hole D	iame	eter:	2 inches		
Depth (ft)	Probe Run	and probing i approximat	<b>So</b> port text for a nethods. The e boundaries	proper understanding of the substratification lines indicated be between soil types. Actual bound inside sample tubes during of	bsurface materials low represent the indaries may be	Depth, ft.	Symbol	PID, ppm	Well Construction	Desci	Number, ription, Results	Depth (ft)
- 30 - 30 - 35 35 40 45 45			CONTINUED	NEXT PAGE						21GST-MW2S	3-02	35—
				the upper part of the run, the so moval from the ground.	il sample					vus Airport	_	
	considered	ter level, if indicat I approximate. EY for definitions		s estimated during probing and s	should be		202	21 S		racterizatior vus, Alaska	-	
4.	CT = corro sample; G	sion test sample; E = geotechnical s	TR = thermal sample; AR = <u>LEGI</u>	resistivity sample; EN = environ archeological sample.		L	.og	OI	F BO	RING M	W-23-50	
3	2" Plast	ic Tube - No Soi ic Tube with Soi		☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐		Janu	ary 2	022			102599-0	18
	– Run No					SHA Geotec	NNO hnical ar	N &	WILS	ON, INC. Consultants	Figure 2 Sheet 2 of	<b>22</b> 3

Г										LO	G O	F B	ORII	NG									
D	ate	Started	t	10/20/21	L	Locatio	On				ween th				Gr	ounc	d Ele	vation:	2	21.713	feet		
D	ate	Compl	eted	10/20/21			int	ersect	tion wi	th Gus	r, 500 fe stavus R		th of th	e	Ту	pical	Rui	n Lengt	h	5 feet			
T	otal	Depth	(ft)	50.0	[	Drilling	Con	npany	: Disco	very Dr	rilling				Но	le Di	iame		2	2 inche	es		
3	Deptn (rt)	Probe Run	R	efer to the re and probing r approximate differe	epo mei te b	rt text for thods. To ooundarie	<b>Soil</b> r a pro The st es be	Des oper ur tratifica tween	criptinderstar tion line	on nding of s indicat es. Actu	the subsi	v repres laries ma	ent the	Depth, ft.		Symbol	PID, ppm	Well Construction			le Nu scripti I Resi	ion,	Depth (ft)
E						В	ОТТ	гом с	F BOF	RING				50.0	0								
F				nitoring W			3-50	comp	leted 1	0/21/21	1												-  -
-  -  -  -  -	55		To 2-i 20	ish-mount in post of casing neh diamet 1/40 gradation reened inter	g is ter ion	0.25 fe PVC ris silica s	eet b ser p and	pipe pre-pa		ae													55— - -
- - - -			То	tal depth of p of casing	f w	/ell: 49.8	86 fe	et bgs	S	ys													     
-  -  -  -  -  -	60																						60 —
Typ: VTY	65																						65—
Log: APW Rev:	70																						70
117/22																							-
.GPJ 1.						N	IOTE	<u>s</u>															
102599-018.GPJ 21-20447.GPJ 1/17/22	2. (	may hav Groundv consider	re slid o vater le red app	where recover lown in the turn to the turn of the total o	ube ted	was low prior to r above, w	in the remo	e upper val fron stimate	n the gro d during	ound.		•				202	1 S	Gusta ite Cha Gusta	ract	erizati	on R	eport	
		sample;	GE = g	test sample; jeotechnical s ube - No Soi	san	nple; AR <u>LE</u> 0	= ard GEN	cheolog I <u>D</u>	ical sam	iple.	environme creen and		Filter		LC	G	OI	₹ ВО	RIN	IG N	/IW	-23-50	)
GEOPROBE_WELL			stic Tu	ıbe with Soi		•					evel ATD			Jan		_					_	102599-	
GEOPR		, wii i												SH. Geote	AN echni	NO cal an	N & d Env	WILS ironmenta	ON,	INC.		igure Sheet 3 c	<b>22</b> of 3

							LOG	OF BOR	IN	IG							
Date	Started	10/24/2	1	Locatio	In the	e northeri	n shoulder o	of Parker Dr, 86	60		roun	d Ele	evation	ı: 2	5.817 fe	et	
Date	Comple	ted 10/24/2	1		feet v	west of th	e intersecti	on with Wilson	n Ro	<i>1.</i> T	уріса	l Ru	ın Leng	th 5	feet		
Total	Depth (	ft) 10.	0	Drilling	Comp	any:	overy Drillin	α		Н	lole D	iam	eter:	2	inches		
		10.				Descript		9					o.		mones		
Depth (ft)	Probe Run	and probin approxin	g n nate	oort text for nethods. T boundarie	a prope the strates between	er understa tification lin een soil typ	anding of the s es indicated b	ubsurface materia elow represent the undaries may be extraction.	als e	Depth, ft.	Symbol	PID, ppm	Well Construction	;	Descr	Number, ription, lesults	Depth (ft)
-		Grey-browr	1, C	Organic Si	ilty Soil	(TOPSO	IL); moist.			0.5	71 1/V			3			_
_		\Grey-browr	ı, S	Sandy Silt	(MLS)	; moist.			Л	0.8							_
_		Grey-browr	1, <i>F</i>	Poorly Gra	ided S	and (SP);	moist.										_
- - - -		Grey, Well	Gra	aded San	d (SW)	; moist to	4 feet, wet	below.		2.4							-
-5 - - -										7.0			During Drilling				5
- - -		Grey, Poor	ly G	Graded Sa	and wit	h Gravel (	(SPG); wet.			7.3							-   -   -
- 10 - 				В	отто	M OF BO	RING			10.0	Ö						10-
- -		Monitoring	We	ell MW-24	I-10 cc	ompleted	10/25/21										-
-  - 15		Construction Flush-mount Top of casi	nt r ng	nonumen is 0.4 fee	t bgs												15
- - -		2-inch diam 20/40 grada Screened in Total depth	atic nte	on silica s rval: 4.77	and pr to 9.5	e-pack 2 feet bgs	S										-
- - -		Top of casi				-											-   -
-20 - -																	20-
- - -																	-   -   -
_																	_
					OTES												
		ases where rec		ry was low	in the u			oil sample [					C	·	Λ in		
2.	Groundwa considere	slid down in the ster level, if indic d approximate. EY for definition	cate	ed above, v	as estir	mated durin		should be			202	21 S	ite Ch	aracte	Airport erizatior Alaska	n Report	
	sample; G	osion test samp E = geotechnic	al s	ample; AR <u>LE</u>	= arche <u>GEND</u>	eological sa	mple.			L	.OG	0	F BC	ORIN	IG MI	W-24-10	)
3		tic Tube - No \$ tic Tube with \$ o.		,			meter Screen	and Sand Filter ATD		Janua						102599-0	)18
										SHA Geotech	NNO nnical ar	N 8	<b>WIL</b> S vironment	SON, al Consul	INC. Itants	Figure	23

												LO	G C	)F E	30RI	ĪN	G										
	Date	Starte	d	10/24/21	T	Lc	ocatio	n In	the ı	north	ern s	hould	ler of	Parke	er Dr. 86	 :0	G	round	d Ele	evati	on:	2	6.449	feet			
ı	Date	Comp	leted	10/24/21	1	l									Wilson		· T	ypical	l Ru	ın Le	ngt	h	feet				
	Total	I Depth		40.0	†	Dr	rilling	Con	npar	ny: Dis	scove	ery Dri	illing				Н	lole Di	iam	eter:			inche	es			
	Depth (ft)	Probe Run	a	efer to the re and probing n approximate	epo me te b	oort i	text for nods. To	<b>Soil</b> or a pro The stries bear	I De roper stratific etween	escri <sub>l</sub> undersication in soil t	<b>iptio</b> l rstandi lines i types.	ing of the indicate Actual	the substed below	osurface ow repr	resent the may be	ls ;	Depth, ft.	Symbol	PID, ppm	lell lel	Construction		Samp Des			,	Depth (ft)
				ey-brown, C ey-brown, S	Or	Orga	anic S	Silty S	Soil (T	TOPS	SOIL);	<i>ibes dui</i> ; moist		dracuoi	n. 	$\overline{}$	0.5	S	<u>-</u>	<b>S X X X Y X Y Y Y Y Y Y Y Y Y Y</b>	S S	_					
	_			ey-brown, <i>F</i>								oist.			/	´	8.0										-
		<u>181</u>		ey, Well Gr						` .	, ·		vet be	ilow.			2.4			Drilling i		21G	ST-MW	V24-0 <sup>1</sup>	1		5—
	- - - - - -		Gre	ey, <i>Poorly</i> (	Gr	irac	ded S	and i	with	Grave	el (SF	<b>~</b> G); w∈	et.				7.3			During							
	- - - 10 - -		Gree	ey, <i>Well Gr</i> a	 rac	ade	d Sar	า <b>d (S</b> i	₩); \	wet. 1	Trace	grave	 el pres	ent to	15		10.0										10-
Typ: VTY	    15  																										15—
7/22 Log: APW Rev:			Gre	ey, Poorly ( ey, Fat Cla) ey, Poorly ( ey, Poorly (	ay ( Gra	(Cl Grad	CH); we ded G	et. Gravel	el with	h Sand	nd (GF					7	18.3 18.7 18.8 20.0										20-
1/1 رد	-	Щ	<u></u>		_ <u>C</u>	<u>CO1</u>	NTINUE	ED NE	XT PA	AGE_						$\perp$			L		旭						
SEOPROBE_WELL 102599-018.GPJ 21-20447.GPJ 1/17/22	2.	may hav Groundv conside	ive slid do Iwater lev ered appr	where recove lown in the tu vel, if indicate roximate.	ube ted	be po	vas low orior to bove, v	remo was es	e upp oval fro estima	rom the	e grour uring p	ınd.		-	+			202	<u>-</u>	Site (	Cha	avus A aracte	erizati	ion R	Report	t	
:LL 102599-018	4.	CT = co sample;	orrosion t ; GE = ge	r definitions a test sample; eotechnical s	; TF sar	TR = amp	therm ple; AR <u>LE</u>	mal res R = arc EGEN	esistivi cheolo	vity sam logical s	mple; E sampl	le.					L	OG	0	FE	30	RIN	IG N	νw	-24-	-30	
3E_WE	3			ıbe - No Soi ıbe with Soil				-	<u>∵H∵</u> ∇			ter Scre /ater Le			nd Filter		Janua	ary 20	ງ22	)					10259	99-0 <sup>1</sup>	18
EOPROE	<u> </u>	– Run I	No.						*	0.00	and TV	4101 20	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	5	Ī		SHAI Seotech	NNO nnical an	N &	<b>₹ W</b> i	ILS nental	ON, I	INC.		Figu Sheet	re 2	4

				LOG OF BORI	NG						
Date	Started	10/24/21		orthern shoulder of Parker Dr, 860	)	Ground	d Ele	evation:	26.449 fe	et	
Date	Compl	eted 10/24/21		st of the intersection with Wilson	Rd.	Typical	Rur	n Lengtl	า 5 feet		
Tota	I Depth	(ft) 40.0	Drilling Company	y: Discovery Drilling		Hole Di	iame		2 inches		
Depth (ft)	Probe Run	and probing i approximat	Soil Des port text for a proper unethods. The stratifica e boundaries between	SCRIPTION  Inderstanding of the subsurface materials ation lines indicated below represent the soil types. Actual boundaries may be a sample tubes during extraction.	Depth, ft.	Symbol	PID, ppm	Well Construction	Desci	Number, iption, lesults	Depth (ft)
		Grey, Fat Cla	t with Clay (CL-ML)		- 30.0 - 31.0 - 32.5 - 37.0				21GST-MW24	L-02	30 —
Log: APW Rev: Typ: VTY		Construction Flush-mount Top of casing 2-inch diamet 20/40 gradati Screened inte	ell MW-24-30 composition of the	pack 2 feet bgs gs							45—
3PJ 1/17/22		Top of casing	elevation: 26.005	feet							
018.GPJ 21-20 3.	may hav Groundy consider Refer to CT = cor	e slid down in the tu vater level, if indicated ed approximate. KEY for definitions rosion test sample;	ube prior to removal fro ed above, was estimat and explanation of sym	ed during probing and should be  nbols.  y sample; EN = environmental				ite Cha Gusta	vus Airport racterizatior vus, Alaska		
		stic Tube - No Soi	l Danayam,	Piezometer Screen and Sand Filter		<b>-OG</b> ıary 20		- RO	RING M	<b>W-24-30</b> 102599-0	18
GEOPROBE WELL	_ Run N		i Recovery <u>⊽</u>	Ground Water Level ATD				WILS rironmental	ON, INC.	Figure 2	

ſ					LOG O	F BORIN	1G						
Ī	Date	Started	10/23/21	Location In t	the western shoulder of V	/ilson Rd, at th	e	Ground	d Ele	evation	: 28.918 fe	et	
Ì	Date	Comple	eted 10/23/21		ersection with Icy Dr.	,,,,,,		Гуріса	l Ru	n Leng	th 5 feet		
Ì	Total	Depth		Drilling Con	npany: Discovery Drilling		ŀ	Hole D	iame	eter:	2 inches		
İ		_			Description					tion			
	Depth (ft)	Probe Run	and probing r approximate	port text for a promethods. The steel boundaries be	oper understanding of the subs ratification lines indicated belo tween soil types. Actual bound inside sample tubes during ext	w represent the laries may be	Depth, ft.	Symbol	PID, ppm	Well Construction	Desc	Number, ription, Results	Depth (ft)
Ī	-		Brown, Organ	ic Silty Soil (T	OPSOIL); moist.		0.3			16.1 16			_
ŀ	_		Grey-brown, S	Sandy Silt (ML	S); moist.		1.0						_
	- - - -		Grey-brown, I	Well Graded S	and (SW); moist to 5 feet, v	wet below.							- - -
	-5 - - - - -	_	Grov Poorly	Graded Sand L	vith Gravel (SPG); wet.		7.8			During Drilling i			5—
	-  10 -  -		Gley, Foolly C	Stadeu Sand v	will Graver (3FG), wet.								10-
· -	- - - - - -15	-	Grey, Poorly (	Graded Sand (	(SP); wet.		12.8						15—
Typ: VTY	- - -			ВОТТ	OM OF BORING								
ŀ	- 		-		completed 10/23/21								-
Rev:	-		Construction   Flush-mount										
Log: APW R	- 20 -  		Top of casing 2-inch diamet 20/40 gradation Screened inter	is 0.5 feet bg er PVC riser p on silica sand erval: 4.93 to 1	oipe pre-pack 4.66 feet bgs								20 —
ŀ	- - - -		Total depth of Top of casing		=								_ _ _ _
(7.GP,				NOTE	_								
EOPROBE WELL 102599-018.GPJ 21-20447.GPJ 1/17/22	2.	may have Groundw considere	e slid down in the tu	be prior to remo	e upper part of the run, the soil s val from the ground. stimated during probing and sho of symbols.			202	1 S	ite Ch	avus Airport aracterization avus, Alaska	•	
:LL 102599-0	4.	sample; (	GE = geotechnical s	sample; AR = ard LEGEN	<u>D</u>		L	.OG	O	F BC	ORING M	W-25-15	
OBE_WE	3		stic Tube - No Soi stic Tube with Soil Io		☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐			ary 20				102599-0	18
EOPR		ran N	···				SHA Geotec	NNO hnical an	N 8 nd Env	WIL:	SON, INC. al Consultants	Figure 2	25

ſ					LOG OF BORIN	NG							
	Date	Starte	d 10/23/2	1	Location In the western shoulder of Wilson Rd, at the	ne	Groun	d El	evati	on:	29.473 fe	et	
	Date	Comp	leted 10/23/2	1	intersection with Icy Dr.		Typica	ΙRι	ın Lei	ngth	5 feet		
Ī	Total	Depth	(ft) 50.	)	Drilling Company: Discovery Drilling		Hole D	iam			2 inches		
	Depth (ft)	Probe Run	and probin approxim	g m ate	Soil Description  port text for a proper understanding of the subsurface materials methods. The stratification lines indicated below represent the boundaries between soil types. Actual boundaries may be ant if soil shifted inside sample tubes during extraction.	Depth, ft.	Symbol	PID, ppm	Well	Construction	Desci	Number, iption, lesults	Depth (ft)
	5	- - - - -	Grey-browr Grey-browr	ı, S	ic Silty Soil (TOPSOIL); moist.  Sandy Silt (MLS); moist.  Well Graded Sand (SW); moist to 5 feet, wet below.  Graded Sand with Gravel (SPG); wet.	- 7.8			During Drilling		21GST-MW25	5-01	5—
Typ: VTY	-10 -10 				Graded Sand (SP); wet.  aded Sand (SW); wet.	- 12.8 - 15.0							10—
PJ 1/17/22 Log: APW Rev:	- - - - - - - -		Grey, Poorl	y G	Graded Sand with Silt (SP-SM); wet.  Graded Sand (SP); wet. A layer of fat clay present and 25 feet.  CONTINUED NEXT PAGE	- 19.0 - 20.0							20
102599-018.GPJ 21-20447.GPJ 1/17/22	<ul><li>2.</li><li>3.</li><li>4.</li></ul>	may hat Ground conside Refer to CT = co	ve slid down in the water level, if indid red approximate. KEY for definition rrosion test samp	tul ate ns a le;	NOTES  ry was low in the upper part of the run, the soil sample be prior to removal from the ground.  ed above, was estimated during probing and should be and explanation of symbols.  TR = thermal resistivity sample; EN = environmental ample; AR = archeological sample.				Site C Gu	cha sta	vus Airport racterizatior vus, Alaska		
	3	2" Pla	astic Tube - No S	Soil	LEGEND  Recovery Piezometer Screen and Sand Filter		<b>LOG</b> uary 2			O	KING M	<b>N-25-47</b> 102599-0	10
GEOPROBE_WELL		2" Pla Run -	astic Tube with S Vo.	oil	Recovery					LS(	ON, INC.	Figure 2	

										LC	OG (	OF	BOR	RIN	G											
Date	e Starte	d	10/23/21	L	Loc		In th					Wilso	on Rd, a	t the	(	Grou	nd	Ele	vatio	on:		29.4	73 fe	et		
Date	e Comp	leted	10/23/21							ith Icy					1	Гуріс	al	Rur	ı Lei	ngtl	h	5 fe	et			
Tota	al Depth	ı (ft)	50.0		Dri	lling (	Com	oany:	Disco	very D	rilling	1			H	lole	Dia	me				2 in	ches			
Depth (ft)	Probe Run	ar	fer to the re nd probing r approximate differe	epoi met te b	ort te etho	ext for ds. The	<b>oil</b> a prop ne stra s betv	Dese per un atificat veen s	criptinderstantion line	ion Inding of es indica	f the su ated be ual bou	ıbsurfac elow rep ındaries	oresent th s may be	ne	Depth, ft.	Symbol		PID, ppm	Well	Construction			Descr	Numb iption esults	,	Depth (ft)
	55 —	Gre Gre	y, Silt with y, Poorly (	Gra	rade Sanc	ed Sai d (ML ed Sai	nd (S S); w	ret.	vet. Tra			ent.			28.5 30.0 39.0 40.0											30 - 35 - 40 - 45 - 45 - 45
0447.GPJ 1/17/22	I. In some	e cases w	here recove	<u>C</u>	CONT	<u>FINUED</u> <u>NC</u> s low ii	ONEXTOTES  on the	<u>r PAGE</u> upper	= part of	f the run,		il samp	ole							ueta			MW25	-02		- - - - - -
.018.GPJ	2. Ground conside 3. Refer to 4. CT = co	water levered appropriately of KEY for orrosion to	definitions a	ted and ; TR	abo nd ex	ove, wa kplanat therma	as est ion of al resi	imated f symb stivity	d during ools. sample	g probino	•					20	)21	Si	te C	cha	ract	teriz	port ation aska	Repo	ort	
	2" Pla	astic Tub	eotechnical s pe - No Soi	oil R	Rec	<u>LEG</u> overy	END	<u>)</u>			creen a	and Sa	and Filter						B	0	RII	NG	i M\		5-47	
GEOPROBE WELL	2" Pla — Run		oe with Soil	il R	Reco	overy		Δ (	Ground	l Water L	Level A	TD		<u> </u>	lanu				\A#			141			2599-0	
3EOP															SHA Seotec	hnical	and	Envi	ironme	∟ວ ental	Cons	, IN sultant	<b>Ե.</b> s	FIQ Sh	jure i	<b>20</b> 3

									LOG	OF I	BORI	NG								
	Date	Started	i 10/	/23/21	Loc						n Rd, at t	he	Gro	und	l Ele	vation:	29	.473 fe	et	
	Date	Compl	eted 10/	/23/21					th Icy Dr.				Тур	ical	Rur	n Lengtl	า 5 <i>f</i>	feet		
ľ	Total	Depth	(ft)	50.0	Dril	ling Co	ompan	y: Discov	very Drilli	ing			Hol	e Di	ame		2 i	nches		
	Depth (ft)	Probe Run	and p	probing n proximate	port te nethod e bour	So ext for a p ds. The ndaries b	proper of stratifications	scription understant tation line in soil type	on	e subsurfac I below rep boundaries	may be	Depth, ft.		Symbol	PID, ppm	Well Construction	s	Descr	Number, iption, esults	Depth (ft)
	-					ВОТ	TTOM	OF BOF	RING			50.0	ס							-
E	- -			oring We			7 com	pleted 1	0/23/21											_
	- -55 -		Flush-I Top of 2-inch	mount r casing diamete gradatio	monu is 0.1 er PV	ıment 75 feet /C riser	r pipe	pack												55—
	- - -		Total d	ned inte lepth of casing	well:	47.53	feet b	_	gs											-   -   -
	-60 -																			60 —
Typ: VTY	-65 -65																			65—
Log: APW Rev:	- - -70 - - -																			70-
11/17/22																				
102599-018.GPJ 21-20447.GPJ 1/17/22	2.	may hav Groundv consider	cases wher e slid down vater level, i ed approxin KEY for def	in the tul if indicate nate.	be pried abo	or to rem ove, was	the uppe noval fro estimat	om the gro ted during	ound.		ł		2	202 <sup>-</sup>	1 Si	Gusta te Cha Gusta	racter	izatior	ı Report	
	4.	CT = coi sample;	rosion test GE = geote stic Tube -	sample; <sup>-</sup> chnical s	TR = t sample	thermal re; AR = a	resistivi archeolo	ty sample; ogical sam			nd Filter	i	LO	G	OF	ВО	RIN	G MI	N-25-47	
GEOPROBE_WELL	ř <u>H</u>		stic Tube v			•	⊽		Water Leve			Janı						-	102599-0	
SEOPR		i (uii I										SH/ Geote	ANN echnic	NOI al and	N & d Envi	WILS	ON, II	NC.	Figure 2 Sheet 3 of	<b>26</b>

					LOG	OF BORII	NG							
Date	Starte	d	10/30/21	Location	At the southwestern end o	of Runway 2-20		Gro	ound	l Ele	evation:	NA		
Date	Comp	lete	d 10/30/21		within the safety area imm the tarmac.	•	of	Тур	oical	Ru	n Lengtl	า <i>5 f</i> eet		
Tota	l Depti	ı (ft)	15.0	Drilling C	ompany: Discovery Drilling	1		Hol	le Di	ame		2 inches		
Depth (ft)	Probe Run	R	and probing me approximate b	<b>S</b> ort text for a p othods. The s ooundaries be	oil Description roper understanding of the substratification lines indicated belowween soil types. Actual bound inside sample tubes during ext	surface materials w represent the daries may be	Depth, ft.		Symbol	PID, ppm	Well Construction	Desci	Number, iption, esults	Depth (ft)
-	1	(	Grey-brown, I	Well Gradeo	Sand (SW); moist.					8.0		21GST-SB00 <sup>-</sup>	I-01	_
- - - - -		ı	Red-brown to	light grey,	Poorly Graded Sand (SP); n	noist.	1.0			0.8	Γ.			-
<b>F</b>			Light grey, Po	oorly Grade	d Sand with Gravel (SPG); v	vet.	4.0	٥	Ü	0.5	jing ∤	21GST-SB00 <sup>-</sup>	1-02	_
-5 - - - - -	5		Grey-brown, <i>F</i> present.	Poorly Grad	led Sand (SP); wet. Trace g	ravel	5.0				During Drilling :	21GST-SB00 <sup>-</sup>	I-03	5—
- - - 10 - - - - - - -			Grey-brown to	o grey, <i>Poo</i>	rly Graded Sand with Grave	I (SPG); wet	8.8					21GST-SB00		10
1/17/22 Log: APW Rev: Typ: VTY				ВС	OTTOM OF BORING		15.0	o <sup>21</sup>						15—
018.GPJ 21-20 3.	may had Ground consider Refer to CT = co	ive sli lwater ered a o KEN orrosi	d down in the turn level, if indicate approximate.  If for definitions a contest sample;	ery was low in the prior to re ed above, wa and explanati TR = therma sample; AR =	resistivity sample; EN = environ archeological sample.	should be					ite Cha Gusta	vus Airport racterizatior vus, Alaska		
WELL 1			Tube - No Soi	•	<u>END</u>						ים וכ			40
GEOPROBE WELL	2" PI — <i>Run</i>		Tube with Soil	I Recovery		TD _	Jan SH		_		WILS	ON, INC. Consultants	102599-0	
SEC.							Geote	echnic	cal and	d Env	rironmental	Consultants	Figure 2	<b>4</b> 1

							LO	G OF	BORII	NG								
Date	Started	t	10/30/21	Loc	ation At	the south	western ei	nd of Run	way 2-20		Gro	ound	l Ele	evatio	n:	NA		
Date	Compl	eted	10/30/21		the	e tarmac.	-		ely south o	of [	Тур	pical	Ru	n Len	gth	5 feet		
Total	Depth	(ft)	15.0	Dril	ling Cor	npany: <i>Dis</i> e	covery Dri	illing			Hol	le Di	ame			2 inches		
Depth (ft)	Probe Run	an	er to the repo d probing me approximate b different	ort text ethods. bounda	Soi for a prop The stra aries betw	l Descrip per understantification line	otion  Inding of the  es indicated less. Actual b	subsurface below repre	esent the may be	Depth, ft.		Symbol	PID, ppm	Well	Construction	Desc	Number, ription, Results	Depth (ft)
- - - - -		Re	ed-brown to	light	grey, W	ell Graded	Sand (SW)	); moist.					0.2			21GST-SB00	2-01	- - - - -
- -5 - - - - -		or	ght grey to g ganics below	w 5 fe	eet.					4.5	1-28-28-28-28-38		0.1 0.1	During Drilling 1		21GST-SB00	2-02	5—
_ _ _ 10	8	W	oody organi	ics pr	esent in	whole inte	rval.			10.0		o (				21GST-SB00:	2-03	10-
- - - -			ark grey to g					vel (SPG);	wet.	11.3	3 9	) o (						-   -   -
- - - 	<b>18</b> 1		rey, Silty Sai rey, Poorly 0			with Grave	I (SPG); we	et.		13.3	3 9					21GST-SB00	2-04	- -
—15 - - - - - - - - 20 - - -	1				вот	ГОМ ОГ В	ORING			- 15.C	) -							15—
_					NOTE	<u>:S</u>												
2. · 3. ·	may hav Groundv consider Refer to	e slid vater le ed ap <sub>l</sub> KEY f	where recove down in the tu evel, if indicate proximate. or definitions a	ube prided about and extending	or to remo ove, was e oplanation	oval from the stimated dur of symbols.	ground. ing probing a	and should b	ре		:	202	1 S	ite C	haı	vus Airport racterizatioi vus, Alaska	•	
	sample;	GE =	test sample; geotechnical s	sample	e; AR = ar LEGEN	cheological s		vironmental			L	.00	<b>3</b> (	OF I	BC	ORING S	SB-002	
	2" Pla	stic T	ube - No Soil ube with Soil		•	∑ Grou	nd Water Le	vel ATD		Janı	uar	y 20	)22				102599-	018
3	– Run N	VO.								SH/ Geote	<b>ANI</b>	NOI cal and	N 8	vironme	_S(	ON, INC. Consultants	Figure	28

					LOG	OF BORIN	IG						
Date	Started	10/31/2	1	Location Wit	hin the safety area so	outh of Runway 2-2	20	Grou	nd El	evation	: NA		
Date	Complet	ed 10/31/2	1	and bui	l 230 feet west by sou Iding.	thwest of the ARF	F	Туріс	al Ru	ın Leng	th 5 feet		
Total	Depth (	ft) 10.	0	Drilling Com	pany: Discovery Drilli	ng		Hole	Diam		2 inches		
Depth (ft)	Probe Run	and probing i approximat	met te b	<b>Soil</b> t text for a proper hods. The strate oundaries between	Description er understanding of the su iffication lines indicated be een soil types. Actual bou side sample tubes during o	bsurface materials low represent the indaries may be	Depth. ft.		PID, ppm		Sample Desci and F	Number, ription, Results	Depth (ft)
_	18	Brown, Org	gani	ic Soil (TOPS)	OIL); moist.		0.5	74 1	0.5		21GST-SB003	3-01	_
      5  	<u>-</u> S	Light grey t	to g		ell Graded Sand (SW);		3.8		0.3	During Drilling ∤∆	21GST-SB003	3-02	5-
      	<b>15</b>	Grey, Poorl	ly G		vith Gravel (SPG); wet.		8.5	0			21GST-SB003	3-03	10-
- - -20 - - - - -													20 —
_													-
				NOTES	2								
2. 3.	may have Groundwa considere Refer to K	slid down in the ter level, if indid d approximate. EY for definition	e tul cate ns a	nd above, was es	upper part of the run, the val from the ground. stimated during probing an of symbols.	d should be		20	)21 S	Site Ch	tavus Airport aracterization avus, Alaska	=	
	sample; G		al s	ample; AR = arc <u>LEGEN</u>	istivity sample; EN = envir heological sample. <u>D</u>	onmental					ORING S		
		ic Tube with S	Soil	Recovery		I ATD	Jan	uary	2022	<u> </u>		102599-0	18
	– Run No						SH. Geote	ANN echnical	ON 8 and Er	& WILS	SON, INC. al Consultants	Figure 2	29

				LOG OF BORI	N	IG						
Date	Started	10/31/21	1	Location Within the safety area south of Runway 2	2-2	0	Fround	d El	evation:	NA		
Date	Comple			and 110 feet west by west of the ARFF building.			уріса	Ru	ın Lengtl	n 5 feet		
Total	Depth (	ft) 10.0	,	Drilling Company:  Discovery Drilling		Н	lole D	iam		2 inches		
Depth (ft)	Probe Run	and probing n approximate	neti e bo	Soil Description  t text for a proper understanding of the subsurface materials hods. The stratification lines indicated below represent the bundaries between soil types. Actual boundaries may be if soil shifted inside sample tubes during extraction.		Depth, ft.	Symbol	PID, ppm	Well Construction	Descr	Number, iption, esults	Depth (ft)
_	181	Brown to gro	•	brown, Well Graded Sand (SW); moist. Woody		1.0	****	0.5		21GST-SB004	I-01	
	- -		y-b	rown, Poorly Graded Sand with Gravel (SPG);		1.0		0.5 0.6 0.6	During Drilling i	21GST-SB004	I-02	5—
	<b>151</b>	Grey, Poorly	y G	Braded Sand (SP); wet.  BOTTOM OF BORING		8.0				21GST-SB004	<b>I-</b> 03	10—
- - - - - - 15 - - -												15—
- - - - - -20												20—
 - - - - -												-
				NOTES								
2.	may have Groundwa considere	slid down in the ster level, if indic d approximate.	tub ate	NOTES  Ty was low in the upper part of the run, the soil sample per prior to removal from the ground.  It is above, was estimated during probing and should be und explanation of symbols.			202	1 S	ite Cha	ivus Airport racterizatior vus, Alaska	n Report	
	sample; G	E = geotechnica	al sa	FR = thermal resistivity sample; EN = environmental ample; AR = archeological sample.  LEGEND			LO	<b>G</b> (	OF B	ORING S	SB-004	
3	2" Plas	tic Tube - No S tic Tube with S		•		Janua	ary 20	)22			102599-0	18
	– Run No	).				SHA Geotech	NNO nnical an	N &	& WILS	ON, INC. Consultants	Figure 3	30

				LOG OF BORIN	NG						
Date	Started	10/30/21		southern face of the ARFF	. [	Groun	d El	evation:	NA		
Date	Comple	ted 10/30/21	building.		1	Гуріса	I Ru	ın Lengtl	า <i>5 f</i> eet		
Total	Depth (	(ft) 10.0	Drilling Company: Discov	ery Drilling	ŀ	Hole D	iam		2 inches		
Depth (ft)	Probe Run	and probing me approximate b	Soil Description  t text for a proper understandir thods. The stratification lines in oundaries between soil types. If soil shifted inside sample tub	ON ng of the subsurface materials ndicated below represent the Actual boundaries may be	Depth, ft.	Symbol	PID, ppm	Well Construction	Desci	Number, iption, esults	Depth (ft)
- - - -	-8.	, ,	Well Graded Sand (SW); mo		2.5		1.2		21GST-SB005	i-01	
 - - - 5	<u> 181</u>	•	Silty Sand (SM); moist to 4.5		5.0		1.1 1.1	During Drilling I∕C	21GST-SB005	j-02	- - - 5-
- - - - -	-8-	Grey-brown, F	Poorly Graded Sand (SP); w	et. Trace silt present.	3.0			During			-
- 10		Light grey, Po	orly Graded Sandy Gravel (	·	9.3	0 C			21GST-SB005	5-03	10-
147.GPJ.1/17/22	In some o	cases where recove	NOTES ry was low in the upper part of t	ne run the soil sample							15—
018.GPJ 21-20 3.	may have Groundwa considere Refer to h	e slid down in the tu ater level, if indicate ad approximate. KEY for definitions a	pe prior to removal from the gro and above, was estimated during and explanation of symbols.	und. probing and should be		202	21 S	ite Cha	vus Airport racterizatior vus, Alaska	ı Report	
VELL 10259(	sample; 0		TR = thermal resistivity sample; ample; AR = archeological samp <u>LEGEND</u> Recovery			LO	G (	OF B	ORING S	8B-005	
		stic Tube with Soil	Pagayany	Vater Level ATD	Janu	ary 2	022			102599-0	18
SEOPR	ruii N	<b>u</b> .			SHA Geotec	NNO hnical ar	N &	& WILS vironmental	ON, INC. Consultants	Figure 3	81

					LOG	OF BORIN	IG	ì						
Date	Started	10/31/2	1	Location Nor	th of the taxiwav betv	veen Runwavs 2-2			round	l Ele	evation:	NA		
Date	Complet	ed 10/31/2	1	and win	l 11-29, 450 feet soutl dsock.	west of the		Ту	ypical	Ru	n Lengtl	h 5 feet		
Total	Depth (f	t) 10.0	0	Drilling Com	pany: Discovery Drillii	ng		Н	ole Di	ame		2 inches		
Depth (ft)	Probe Run	and probin approxim	g m nate	Soil port text for a pro- pethods. The str boundaries beto	Description per understanding of the atification lines indicated ween soil types. Actual benside sample tubes during	subsurface materials below represent the oundaries may be	4	Deptin, it.	Symbol	PID, ppm	Well Construction	Desci	Number, iption, esults	Depth (ft)
	181	Brown, San	idy	Organic Soil (	TOPSOIL); moist.		0.5	5	71 1/4			21GST-SB006	3-01	_
- - - -		,			and (SW); moist.		3.5							- - -
_	⊢			• • •	ilt (MLS); moist.		4.1	1						_
- 5 -	<b>TS</b>				d (SW); moist.		6.0	)			Ā	21GST-SB006	: 02	5-
- - - -	-	Light grey,	wet.					During Drilling ∤	21651-55000	<b></b>	- - - - -			
—10 - - -	<u> </u>			ВОТТ	OM OF BORING		10	.0	***			21GST-SB000	3-03	10-
 _ _ _ _ _ 15														- - - - 15-
- - - -														- - - -
-														-
20  														20-
														-
														_
				NOTES	<u> </u>									
2.	may have : Groundwat considered	slid down in the er level, if indic approximate.	tul cate	pe prior to remov	upper part of the run, the al from the ground. timated during probing and				202	1 S	ite Cha	avus Airport racterizatior vus, Alaska	n Report	
4.	CT = corro sample; Gl	sion test sampl E = geotechnica	le; <sup>-</sup> al s	FR = thermal resi ample; AR = arch <u>LEGENI</u>	istivity sample; EN = envir neological sample.	onmental			LOC	3 (	OF B	ORING S	SB-006	
3		c Tube - No S c Tube with S		Decement		ATD	Jar	านล	ary 20	)22			102599-0	18
	– Run No						SH Geo	<b>A</b> techr	NNOI nical an	N 8	k WILS	ON, INC. Consultants	Figure 3	32

					LOG OF BORI	NC	3						
Dat	e Start	ed	10/30/21		Location In the DOT yard, 150 feet south of the ARF	F	G	roun	d El	evation:	NA		
Dat	e Com	plete	ed 10/30/21		building.		Т	ypica	ΙRι	ın Lengt	h 5 feet		
Tot	al Dep	th (ft	10.0		Drilling Company: Discovery Drilling		Н	lole D	iam		2 inches		
Depth (ft)	Probe Run	,	and probing mea	ort ethi	Soil Description  text for a proper understanding of the subsurface materials ods. The stratification lines indicated below represent the undaries between soil types. Actual boundaries may be soil shifted inside sample tubes during extraction.		Depth, ft.	Symbol	PID, ppm	Well Construction	Desci	Number, ription, Results	Depth (ft)
	138	FF	Brown, Sandy	y C	Organic Soil (TOPSOIL); moist.	0	.3	\1 l <sub>y</sub>	1.3		21GST-SB007	7-01	_
 _ _ _ _ _ _ _ _ 5	-8			gre	ey-brown, Well Graded Sand (SW); moist to 4	3	.5		1.3		21GST-SB007	7-02	- - - - - - 5
- - - - -		_	Grey-brown, F	oorly Graded Sand with Gravel (SPG); wet.	7	.0			Ω	04007.0000		-   -   -   -	
7/22 Log: APW Rev: Typ: VTY 7/22 Log: APW Rev: APW Rev: Typ: VTY 7/22 Log: APW Rev: APW Rev: Typ: VTY 7/22 Log: APW Rev	5				BOTTOM OF BORING	11	0.0				21GST-SB007	7-03	10—
.018.GPJ 21-20	may h 2. Groun consid 3. Refer	ave s dwate dered to KE	lid down in the tu er level, if indicate approximate. Y for definitions a sion test sample;	ube ted an	NOTES  y was low in the upper part of the run, the soil sample eprior to removal from the ground.  above, was estimated during probing and should be devaluation of symbols.  R = thermal resistivity sample; EN = environmental male, AR = archeological sample.			202	21 S	Site Cha	avus Airport racterizatior vus, Alaska	n Report	
WELL 102.	2" F	Plastic	c Tube - No Soil	il F	Danas James	ءا		LO ary 2			ORING S	<b>5B-007</b> 102599-0	118
SEOPROBE	_	n No.	c Tube with Soil	ıı P	Recovery						ON, INC. Consultants	Figure 3	

						LO	G OF BORI	NC	3						
Dat	e Starte	d	10/31/21	Lo	cation North o	f the taxiway be	etween runways 2-2	20	G	round	d Ele	evation:	NA		
Dat	e Comp	letec	i 10/31/21				ıth of the windsock	ζ.	T	ypica	l Ru	n Lengtl	า <i>5 f</i> eet		
Tot	al Depti	ı (ft)	10.0	Dri	illing Company	y: Discovery Dri	lling		Н	lole D	iame		2 inches		
Depth (ft)	Probe Run		and probing n approximate	eport t metho	Soil Dest text for a proper upods. The stratifical fundaries between	scription understanding of thation lines indicate	ne subsurface materials ed below represent the I boundaries may be	S	Depth, ft.	Symbol	PID, ppm	Well Construction	Desci	Number, iption, tesults	Depth (ft)
<u>-</u> -	S		Grey, <i>Sandy S</i>	<i>Silt (I</i> o ligh	MLS); moist.	(SW), moist. Org	ganics present.  /); wet. Trace silt	0				∏i guil	21GST-SB008	3-01	-   -   -
- - - - - 5 -	-		eresent to 5 fe		Graded Sand (	<i>(SP</i> ); wet.		_ 5	.5			During Drilling	21GST-SB008	3-02	5—
- - - - -															-
	) 181				воттом	OF BORING		11	0.0				21GST-SB008	3-03	10 —
7 <i>yp: VTY</i> 	5														15—
- Rev: - - - - - - - - - - - - - - - - - - -															
Log: APW											- - - -				
PJ 1/17/22															
.GPJ 21-20	may ha 2. Ground conside	ve slid lwater ered a	d down in the tu level, if indicate pproximate.	ube pr ed ab	rior to removal fro	ed during probing a				202	:1 S	ite Cha	ivus Airport racterizatior vus, Alaska	n Report	
ELL 102599-0	1. CT = co sample	orrosio ; GE =	on test sample;	TR = sampl	thermal resistivit le; AR = archeolog	y sample; EN = en	vironmental			LO	G (	OF BO	ORING S	SB-008	
BE W	2" PI	covery <sub>∑</sub>	Ground Water Le	vel ATD	Ja	anua	ary 20	)22			102599-0	18			
SEOPRC	— Run	No.						S Ge	HAI otech	NNO inical an	N 8	k WILS	ON, INC. Consultants	Figure 3	34

				LOG OF B	ORIN	G						
Date	Started	d 10/30/21		of the intersection of Runwa	ys 2-20	G	round	l Ele	evation:	NA		
Date	Compl	eted 10/30/21		11-29.		Т	ypical	Ru	n Lengtl	า <i>5 f</i> eet		
Total	Depth	(ft) 15.0	Drilling Comp	any: Discovery Drilling		Н	lole Di	iame		2 inches		
Depth (ft)	Probe Run	and probing me approximate b	Soil E ort text for a proper ethods. The stratific boundaries betwee	Description  understanding of the subsurface ma cation lines indicated below represer in soil types. Actual boundaries may be sample tubes during extraction.	t the	Depth, ft.	Symbol	PID, ppm	Well Construction	Desci	Number, iption, esults	Depth (ft)
-	5	Light grey to g layer present	•	<i>l Graded Sand (SW)</i> ; moist. Silt				0.9		21GST-SB009	N-01	
- -5 - - - - -			grey-brown, <i>Poo</i> it below 5 feet.	rly Graded Sand (SP); wet. Trac	e	4.5		0.8	During Drilling	21GST-SB009	0-02	5—
 _ 10	S	wet.		rly Graded Sand with Gravel (SF	G);	10.0	) (			21GST-SB009	9-03	10-
- - -		Grey-brown, I present.	Poorly Graded S	and (SP); wet. Trace gravel		12.5						
 - _ - 15	181	Light grey, Po	oorly Graded Gra	vel with Sand (GPS); wet.		15.0				21GST-SB009	9-03	-
747: 477: 1   1   1   1   1   1   1   1   1   1			вотто	M OF BORING		15.0						15—
Log: APW Rev:												20-
1/17/22												_ 
GPJ 21-20	may hav Groundv conside	ve slid down in the tu	ube prior to removal ed above, was estir	nated during probing and should be			202	1 S	ite Cha	vus Airport racterizatior vus, Alaska	ı Report	
2 4. L	CT = co sample;	rrosion test sample; GE = geotechnical s	TR = thermal resis sample; AR = arche <u>LEGEND</u>	tivity sample; EN = environmental			LO	3 (	OF BO	ORING S	SB-009	
3		astic Tube - No Soi astic Tube with Soi	•	Z Ground Water Level ATD	]	Janua	ary 20	)22			102599-0	18
GEOPROBE WELL	– Run I	Vo.				SHA Geotech	NNO nnical an	N 8	k WILS	ON, INC. Consultants	Figure 3	35

					LOG OF	BORIN	IG						
Date	Started	10/3	0/21		ne intersection of Ru	nways 2-20	G	round	d Ele	evation:	NA		
Date	Comple	eted 10/3	0/21	and 11-29.			Т	ypical	Ru	n Length	o 5 feet		
Tota	I Depth	(ft)	10.0	Drilling Company:	iscovery Drilling		F	lole Di	iame		2 inches		
Depth (ft)	Probe Run	and pro	obing m oximate	Soil Description text for a proper under text for a pr		epresent the es may be	Depth, ft.	Symbol	PID, ppm	Well Construction	Desci	Number, iption, esults	Depth (ft)
10	p Pro	Grey-bro	own, V	nt if soil shifted inside sa Vell Graded Sand (SV	ith Silt (SP-SM); moist esent at 4.25 feet.  Gravel (GPS); wet.	tion.	3.0 5.0 6.0	Symptotic State of the State of		During Drilling 1∕⊲ We	21GST-SB010 21GST-SB010	D-01 D-02	10   15   15   15   15   15   15   15
GPJ 1/17/22 Log: APW Rev:				NOTES									20
.018.GPJ 21-20 3.	may have Groundw considere Refer to CT = cor sample;	e slid down in ater level, if i ed approxima KEY for defin rosion test sa GE = geotech	n the tub indicate ate. nitions a ample; <sup>1</sup> nnical sa	ry was low in the upper page prior to removal from to dispose above, was estimated on the explanation of symbol fixers. The explanation of symbol fixers at the explanation of symbol fixers at the explanation of symbol fixers. The explanation of symbol fixers are the explanation of symbol fixers at the explanation of symbol fixers. The explanation of symbol fixers are the explanation of symbol fixers at the explanation of symbol fixers are the explanation of symbol fixers at the explanation of symbol fixers are the explanation of symbol fixers at the explanation of symbol fixers are the explanation of symbol fixers are the explanation of symbol fixers at the explanation of symbol fixers are the explanation	during probing and should s. ample; EN = environmenta	be				ite Cha Gusta	vus Airport racterizatior vus, Alaska		
3 MEI		stic Tube - N stic Tube wi		Doogyony	ound Water Level ATD		Janu	ary 20	)22			102599-0	18
SEOPROE	− Run N	lo.		<u>.</u> 01	20.00,000		SHA Geotech	NNO nnical an	N 8	k WILSO	ON, INC.	Figure 3	36

					LOG OF BORI	N	G						
Date	Starte	d	10/31/21	ı	Location Southeastern end of the taxiway near the		G	iroun	d Ele	evation:	NA		
Date	Comp	lete	d 10/31/21		Alaska Airlines terminal.		T	ypica	l Ru	n Lengtl	h <i>5 f</i> eet		
Total	Depti	h (ft)	10.0	ı	Drilling Company: Discovery Drilling		Н	ole D	iam		2 inches		
Depth (ft)	Probe Run	F	and probing met approximate b	ort i etho	Soil Description  text for a proper understanding of the subsurface materials  ods. The stratification lines indicated below represent the  undaries between soil types. Actual boundaries may be  soil shifted inside sample tubes during extraction.		Depth, ft.	Symbol	PID, ppm	Well Construction	Desci	Number, iption, lesults	Depth (ft)
	8	`			ndy Organic Soil (TOPSOIL), moist.	_ c	0.5	<u>71 14.</u>	0.8		21GST-SB01	I-01	_
F					ell Graded Sand (SW); moist.	_ 1	1.6	1111					-
			Grey, Silty Sai		· · ·		2.5		0.9				-
 _ _ _ _5 _ _			Light grey, We to 5 feet.	/ell	Graded Sand (SW); moist. Iron staining present		0						5—
-	8		Grey-brown, F	Po	orly Graded Sand (SP); wet.	7	7.5		1.9	During Drilling ı⊠	21GST-SB01 <sup>2</sup>	1-02	-   -   -
E	H		Grey, Poorly 0	Gr	aded Sand with Silt (SP-SM); wet.	<u>و</u>	9.0			uring D			_
—10 —					BOTTOM OF BORING	<del> </del> 1	10.0			ā	21GST-SB01 <sup>-</sup>	1-03	10-
- - - - -													- - - -
— 15 - - - - - - - - - - - - - - - - - - -													15-
Kev:  -  -													-   -   -
—20 -													20-
Log: APW													-   -
1/1/1/22													
GPJ 21-20 2.	may ha Ground conside	ive sl lwate ered	lid down in the tuler level, if indicate approximate.	ube	NOTES  was low in the upper part of the run, the soil sample prior to removal from the ground.  above, was estimated during probing and should be dexplanation of symbols.			202	21 S	ite Cha	avus Airport racterizatior vus, Alaska	n Report	
3 4. L	CT = co sample	orros ; GE	ion test sample; = geotechnical s	TF sar	R = thermal resistivity sample; EN = environmental mple; AR = archeological sample. <u>LEGEND</u>			LO	G (	OF B	ORING S	SB-011	
3 ₩ 1			Tube - No Soil Tube with Soil		· · · · · · · · · · · · · · · · · · ·	J	anua	ary 2	022			102599-0	18
SEOPRO	– Run	No.				S	<b>HA</b> leotech	NNO nical ar	N &	k WILS	ON, INC. Consultants	Figure 3	37

							LOC	G OF I	BORII	NG									
Date	Started	l 10	/30/21	Loca			heastern e			29	Grou	ınd	Εle	vation:	NA				
Date	Comple	eted 10	/30/21		soil s	staging ai	n edge of rea.		aminated		Турі	cal	Ru	n Lengt	n <i>5 f</i> ee	t			
Total	Depth	(ft)	10.0	Drill	ing Comp	any: Disco	overy Drill	ling		ŀ	Hole	Dia	ame	eter:	2 inc	hes			
Depth (ft)	Probe Run	and pro	obing met oximate b	ort text f thods. counda	Soil I for a proper The stratifi- ries betwee	Descript understand cation lines on soil types		subsurface i pelow repres pundaries m	sent the nay be	Depth, ft.	Cymphol	99111001	PID, ppm	Well Construction	D	escri	lumber, ption, esults		Depth (ft)
- - - - -	_6_	Brown	to grey	/-brow	n, <i>Well Gr</i>	raded San	<i>d (SW)</i> ; m	oist.			•••		0.5		21GST-S	B012-	01		
-  -  -  -		Grey-l	brown to	o grey	, Poorly G	raded Sar	nd with Gra	avel (SPG)	); wet.	3.0		VI.	0.8	During Drilling i∕	21GST-S	B012-	02		
5 - - - -		•	·		and (SM);					5.0 - 7.0				ă				;	5— — — —
-	<b>IS</b> .	Wood	y organi	ics pre	esent from	8.5 to 9.5	y Gravel (0 2 feet.	<i>GPS</i> ); wet		9.2					21GST-S	B012-	03		
- 10 - 	Grey, Poorly Graded Sand (SP), wet.  BOTTOM OF BORING									10.0		···:						10	0 - - -
-																			
7yy: VTV 15 15																		1	 5 -
- - - - -																			-
																		20	  0
Log: APW																			- -
1/17/22																		-	
GPJ 21-20 2.	may have Groundw consider	e slid dowr vater level, ed approxi	n in the tul if indicate mate.	ibe prio ed abov	r to remova	I from the g mated durin	f the run, the round. ng probing an	-	ŀ		2	021	ı s	ite Cha	ivus Airp racteriza vus, Ala	ation	Report	<u>'</u>	
ELL 102599-0	CT = cor sample;	rosion test GE = geote	: sample; echnical s	TR = th sample;	nermal resis ; AR = arche <u>LEGEND</u>	tivity sampleological sa	e; EN = env mple.	ironmental			LO	OG	6 (	OF B	ORING	G S	B-012		
3 B B B B	2" Plastic Tube - No Soil Recovery 2" Plastic Tube with Soil Recovery									Janu	ıary	20	22				102599	9-018	
GEOPROBE WELL	– Run N	10.								SHA	NN chnica	ON I and	8 Env	WILS	ON, INC	<b>)</b> . T	Figure	e 38	

				LOG OF I	BORIN	IG						
Date	Started	10/30/21	Location Ne	ar the southeastern end of Ru	nway 11-2	9	Ground	d Ele	evation:	NA		
Date	Complet	ed 10/30/21	sta	the eastern edge of the contanging area.	ninated so	<i>il</i> 1	Гуріса	Ru	ın Lengtl	n 5 feet		
Total	Depth (f	t) 10.0	Drilling Con	npany: Discovery Drilling		ŀ	Hole Di	iam		2 inches		
Depth (ft)	Probe Run	Refer to the repo and probing me approximate b	Soil ort text for a prop ethods. The stra boundaries betw	Description er understanding of the subsurface intification lines indicated below represeen soil types. Actual boundaries misside sample tubes during extraction.	sent the ay be	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Descr	Number, iption, esults	Depth (ft)
	181	Grey-brown,	Silty Sand (SM	); moist. Organics present.		0.5		0.3		21GST-SB013	3-01	_
      5		present.		and (SW); moist. Trace gravel  Graded Sand with Gravel (SPG)	); wet.	3.5		0.5	During Drilling	21GST-SB013	3-02	5—
- - - - - - - - - -	<u> </u>	Grey, Fat Cla		OM OF BORING		9.8 10.0				21GST-SB013	3-03	10
- -15 - -												15—
- -20 - -												20 —
-												_
1	In some or	sees where roccur	NOTE	<u>S</u> e upper part of the run, the soil sampl	_							
2. 3.	may have a Groundwa considered Refer to Kl	slid down in the tu ter level, if indicat I approximate. EY for definitions	ube prior to remo ed above, was e and explanation	val from the ground. stimated during probing and should b of symbols.			202	1 S	ite Cha	ivus Airport racterizatior vus, Alaska	n Report	
	sample; Gl		sample; AR = ard LEGEN	sistivity sample; EN = environmental cheological sample.  D			LO	G (	OF B	ORING S	SB-013	
Ť <u></u>	2" Plast	ic Tube with Soi				Janu	ary 20	)22			102599-0	18
	– Run No					SHA Geotec	NNO hnical an	N 8	& WILS vironmental	ON, INC. Consultants	Figure 3	39

				LOG OF	BORIN	IG						
Date	Started	10/31/21	Location Ne	ear the southeastern end of l	Runwav 11-29	9 (	Ground	l Ele	evation:	NA		
Date	Complete		in st	the southern half of the con aging area.	taminated so		ГурісаІ	Ru	ın Lengtl	n 5 feet		
Total	Depth (ft		Drilling Co	mpany: Discovery Drilling		ŀ	Hole Di	am	eter:	2 inches		
Depth (ft)	Probe Run	Refer to the re and probing r approximate	Soi eport text for a p methods. The s e boundaries be	il Description roper understanding of the subsun tratification lines indicated below re tween soil types. Actual boundan d inside sample tubes during extrac	epresent the ies may be	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Descr	Number, iption, esults	Depth (ft)
- - - - -	19.			Sand (SW); moist. Trace silt pr		_ <del></del>	<i>(</i> )	<u>n.</u>		21GST-SB014		- - - -
- - - -5 -		Trace silt pres	sent to 5 feet	r Graded Sand with Gravel (SF el with Sand (GPS); wet.	PG); wet.	<ul><li>3.5</li><li>6.0</li></ul>			During Drilling ₁	21GST-SB014	I-02	5-
- - - - - - - - - - - - - - - - - - -		Grey, Fat Cla	<i>y (CH)</i> ; wet.	TOM OF BORING		9.9				21GST-SB014	I-03	10 —
  20     												20 —
2.	NOTES  1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.  2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.  3. Refer to KEY for definitions and explanation of symbols.  Gustavus Airport  2021 Site Characterization Report  Gustavus, Alaska											
4.	4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.  LEGEND  LOG OF BORING SB-014											
		Tube with Soil					ary 20				102599-0	18
	Null IVO.					SHA Geotec	NNOI hnical an	N 8 d Env	<b>WILS</b> vironmental	ON, INC. Consultants	Figure 4	10

#### Appendix C

# Field Notes

#### **CONTENTS**

- Sample Collection Logs
- Monitoring Well Construction Details
- Well Development Logs
- Monitoring Well Sampling Logs

Monitoring Well No.  Project Name Project Number    Number   Numbe		Date Installed Logged By Drille	JO/34/2 V Adem Wy Discovery	Drilling
I. TOP SECTION (CASING)  Initial Pipe Length Cuttoff Length Add-on Length Total Length	4.2	Diameter: 2"	4" Other	
II. MID SECTION (CASING)  Number of Blank Sections		V. BACKFILL	Depth Beld	ow GS
Length of Section(s):			Bottom	Тор
		CEM (No Pipe		100
	+	CEM_P		Ø'
		SLUF_PB/FIL_P		1,
		BCH_P		2'
		*SLUF_PB/FIL_P	-	
Sum of Lengths:	Q'	BGR P *SLUF_PB/FEL_P		
Sull of Lengths.		*SLUF_PS/FIL_P		2
		*SLUF/FIL (No Pipe		24.
III. SCREENED SECTION(S)		*SLUF_PB/FIL_P		
ALTONOMIC TO THE CONTROL OF THE CONT		Filter Pack Type		Viv
Joint Length:		Gradatio		inded silica son
	*			
		VI. MONUMENTS		
		Stickup  Flushmo	Section 1	
Screened ,		TOM to G		
Length: 4.75' Total Pipe		TOM to TO		
Length:	5.36	^TOC to G		
		Lock typ	ne N/A	
		VII. MOISTURE CONTEN		
BOW to	=	Depth to Water Below G	s 3.5'	
Joint Length: 9.063 BOS: 9.44				/
Pointed Flat			Frozen Soil E	
	9.56		Bottom	Тор
TOC to BOW:	1.50	Seasonal		<del></del>
		Seasonal		V
		Permafrost	_	) <del></del>
PCH = Pontanita China (alNT anda)		Permafrost	2	
BCH = Bentonite Chips (gINT code) BGR = Bentonite Grout (gINT code)				
bgs = Below Ground Surface VIII. CALCUL	ATIONS I	BELOW GROUND SURFAC	E	
BOS = Bottom of Screen BOW = Bottom of Well			Activity	
CEM = Cement (gINT code)			TOC to BOW	9.56
FIL = Sand Pack (gINT code)		2.5	- TOC to GS	- 9.5
GS = Ground Surface SLUF = Natural Collapse/ Pea Gravel (gINT code)	TOC to	o BOW9.56	BOW bgs	10.06
SS = Stainless Steel	- BOW	to BOS	MARKON MARKANAN	
TOC = Top of Casing TOM = Top of Monument	= TO	C to BOS	TOC to TOS	4.37
TOS = Top of Screen			- TOC to GS	-0.5
PB = Blank Pipe (gINT code)	TOC to	o BOS	TOS bgs	4.87
PS = Slotted Pipe (gINT code)  * Circle filter-pack type	- Scree	ened Length		
^ Flushmount = Negative Number	= TO	C to TOS	TOC to BOS	9.12
Stickup = Positive Number		7 M2 N V X	- TOC to GS	- 0.5
No 1			BOS bgs	9.62
de- no los of poin-laterare		, a		

4/9/2020 loy from MW-9-30 installed in 2019

SHANNON & WILSON, INC.

Well No. MV1-9-10

# SHANNON & WILSON, INC.

			7,100,000,000,000,000	The second state of the			$\neg$		
DRILL	COMPA	NY/DRILL	ER: Dis	covery	Dril	ling		JOB NO	: 102599-008 BORING NO: MW-14
			Geofra			V			ME: Gustavus DOT&PF PFAS
			Direct P					LOGGE	DBY: Adam Wyborny
HAMM	ER TYPE	Ξ:	Auto	ROD	TYPE/D	IA.: 2"			ON: GST ELEV.:
HAMM	IER WEI	GHT:	NIA	HAM	MER DR	OP: N/A		START	DATE: 10/27/21 END DATE: 10/27/21
CASIN	NG SIZE/	TYPE:	1.5"		HOLE SI	ZE:		WEATH	ER DURING DRILLING: Rain 40°F wind < Smph
						SAMF	PLE	DATA	
TIME	SAMP. NO. TYPE	FROM TO	DRIVING RESISTANCE BLOWS / 6 INCH	L. REC. # JARS	DRILL ACTION	CONTACTS / GROUNDWATER	PID	ENV. SAMPLE	FIELD CLASSIFICATION [density/consistency; color; slightly, minor, MAJOR, then trace constituents; moisture; structure; other; USCS classification (geology)]
1350	1	∅'	,	3.3			1	01	0'-3': Light gray wall graded sand, maist.
101		5'	/	2			/	11	31-3.75': Grey sandy silt, moist
10/27							_	8 6	3.75'-5': Light grey well graded sond, moist 5'-6.8': light grey to grey-brown well graded
1400	2	S'	1	3.5			1	Ø2	send, moist
10/27		10,	/	١		7		71	6.8'-9': Grey-brown well graded send, wet
1410	3	101	j	3.6			7	,	Grey poorly graded sand with gravel,
10/27		151	/	1.			/	/	
1420	4	151	/	4.8			1	∅3	Grey poorly graded coarse send with
10/27		90°1	/	1			/	171	With the B Y
1425	5	30'	)	4.5			1	04	Grey to dark grey fat clay, wet
10/27		251	/	1			/	⊋51	
1435	6	251	7	4.8			1	1	251-26.31', Grey fat clay, saturated
10/27		301		1			1	/	26.31-301: Grey silty sond, wet
1450	7	30'	1	4.8			1	Øs'	30'-33': Grey sity sand, wet 33'-33.2': Grey fet clay, saturated
10/27		351	/				1	341	33.8"-35": Dark grey silt with clay, wet
	PTH	T	SUMMARY FIE	LD LOG	OF BOR	RING			COMMENTS (i.e. materials used, visitors, problems, etc.):
FROM	то	USCS CLASSIF.	GENERA	LIZED SOIL	DESCRIPT	TION FOR DRAFTED	SINT L	OG	
									GROUNDWATER DATA
									WATER DEPTH TIME DATE
									71 1400 10/27
									SUMMARY OF TIME AND FOOTAGE
									FOOTAGE 45 SAMPLES: 9 Attempted
									DRILLED: 9 Recovered
									DRILL/SAMPLE hrs. STANDBY: hrs.
	3								SETUP/CLEANUP: hrs. WELL INSTALL: hrs.
									OTHER:
									BORING: MW-14 SHEET 1 OF 2



				17.75.00.00		MANUEL CONTRACTOR	_		
DRILL	COMPA	NY/DRILL	ER: Dis	cover	y Dri	Iling		JOB NO	: 102599 - 008 BORING NO: MW-14
			Geofre					JOB NA	ME: Gustavus DOT&PF PFAS
			Direct P						DBY: Adam Wyborny
						IA.: 2"			ON: GST ELEV.:
						ΟP: <u>λ/</u> / λ			DATE:  0/27/2  END DATE:  0/27/2
						ZE: 2"			ER DURING DRILLING: Rain 40°F wind < Smeh
11077314.00	AL INVIOUS PROPERTY.					- 40			Issue to come smeh
122202			000000			SAMF	PLE L	DATA	FIFE D. A. A. O. F. C. A. T. O. I.
DATE	SAMP, NO. TYPE	FROM TO	DRIVING RESISTANCE BLOWS / 6 INCH	L. REC. # JARS	DRILL	CONTACTS / GROUNDWATER	PID	ENV. SAMPLE	FIELD CLASSIFICATION  [density/consistency; color; slightly, minor, MAJOR, then trace constituents; moisture; structure; other; USCS classification (geology)]
1510	8	351	7	3.9			,		35'-38': Grey sondy silt, wet
1 1000 2 2 2 2 2 2	- 22			- 1			1	/	38'-38.8': Dark grey silt with clay, wet
10/27		40'		/					
1550	.9	40'	7	4.6			-7	06	Grey to Dark grey silt with sand
101.0		45'		1			/	441	Wet
10/27		-(5		1			_	4-1	
				1	<				
_					-		_		
		-			1				
_					-				
					Various sometimes	(Currierae)			
DE	PTH	uscs	SUMMARY FIE.	LD LOG	OF BOR	ING			COMMENTS (i.e. materials used, visitors, problems, etc.):
FROM	то	CLASSIF.	GENERAL	IZED SOIL	. DESCRIPT	ION FOR DRAFTED (	SINT L	ÓG	
									GROUNDWATER DATA WATER DEPTH TIME DATE
									71 1400 10/27/21
									(0/20//20)
									SUMMARY OF TIME AND FOOTAGE
									FOOTAGE SAMPLES: Attempted DRILLED: Recovered
									DRILL/SAMPLE hrs, STANDBY: hrs.
									SETUP/CLEANUP: hrs. WELL INSTALL: hrs.
				A					OTHER:
						¥			
									BORING: MW-14 SHEET 2 OF 2



Monitoring Well No.  Project Name  Project Number 102599 - 008	Date Installed 10 / 28 / 2021  Logged By Adam Wyberny  Driller Discovery Prilling
I. TOP SECTION (CASING) Initial Pipe Length Cuttoff Length Add-on Length Total Length	IV. WELL DATA  Pipe Type: PVC SS Other Diameter: 2" 4" Other Slot Size: 0.01 0.02 Other Joint Pin End: Up Down Type
II. MID SECTION (CASING)  Number of Blank Sections  Length of Section(s):	V. BACKFILL  Depth Below GS  Bottom Top  CEM (No Pipe)
Sum of Lengths:	SLUF_PB/FIL_PB 1 1' BCH_PB 3' *SLUF_PB/FIL_PB BGR_PB *SLUF_PB/FIL_PB 5 3
III. SCREENED SECTION(S) × 2  Joint Length: 9.17'	*SLUF_PS/FIL_PS   5 Z
Screened 4.75' Length: 4.75' 10.35'	VI. MONUMENTS  Stickup Flushmount TOM to GS  TOM to TOC -0.5  ^TOC to GS  Lock type N/A
Joint Length: Q.Q63' End Cap Length: Q.38' Pointed Flat  TOC to BOW: 14.77	VII. MOISTURE CONTENT  Depth to Water Below GS  Frozen Soil Below GS  Bottom  Top  Seasonal 1
BCH = Bentonite Chips (gINT code) BGR = Bentonite Grout (gINT code) bgs = Below Ground Surface BOS = Bottom of Screen BOW = Bottom of Well	Seasonal 2 Permafrost 1 Permafrost 2  BELOW GROUND SURFACE
CEM = Cement (gINT code)         FIL = Sand Pack (gINT code)           GS = Ground Surface         SLUF = Natural Collapse/ Pea Gravel (gINT code)         TOC to           SS = Stainless Steel         - BOW 1           TOC = Top of Casing         - BOW 1           TOM = Top of Monument         = TOC           TOS = Top of Screen         - Blank Pipe (gINT code)           PS = Slotted Pipe (gINT code)         * Circle filter-pack type	to BOS

4/9/2020

Well No. 14-15

Monitoring Well No.  Project Name  Gustavus DoTAPF  Project Number  102599 - 008	Date Installed 10/27/2021  Logged By Adam Wyberny  Driller Discovery Drilling
I. TOP SECTION (CASING) Initial Pipe Length Cuttoff Length Add-on Length  Total Length	Pipe Type: PVC X SS Other Diameter: 2" X 4" Other Slot Size: 0.01 X 0.02 Other Joint Pin End: Up Down Type
II. MID SECTION (CASING)	V. BACKFILL
Number of Blank Sections  Length of Section(s):	Depth Below GS  Bottom Top
Length of Section(s).	CEM (No Pipe)
10, 10,	CEM_PB 1' O'
	SLUF_PB/FIL_PB 5' I'
	*SLUF_PB/FIL_PB
200	BGR_PB
Sum of Lengths:	*SLUF_PBAFIL_PB 26 24  *SLUF_PSAFIL_PS 34
	*SLUF/FIL (No Pipe)
III. SCREENED SECTION(S)	*SLUF_PB/FIL_PB
9.17' [ ]	Filter Pack Type or
Joint Length: 9.17' +	Gradation 20/40 rounded silica sono
	VI. MONUMENTS
	Stickup  Flushmount
Screened . 75	TOM to GS
Length: Total Pipe	TOM to TOC
Length: 5.36	^TOC to GS
	Lock type N/A
	VII. MOISTURE CONTENT
BOW to	Depth to Water Below GS
Joint Length: 9.963 BOS: 9.44	
End Cap Length: 2.38	Frozen Soil Below GS
Pointed  Flat  TOC to BOW: 30.8	Bottom Top Seasonal 1
TOC to BOW:	Seasonal 2
	Permafrost 1
	Permafrost 2
BCH = Bentonite Chips (gINT code)	
BGR = Bentonite Grout (gINT code) bgs = Below Ground Surface	BELOW GROUND SURFACE
BOS = Bottom of Screen BOW = Bottom of Well	BELOW GROUND SCRI AGE
CEM = Cement (gINT code)	TOC to BOW
FIL = Sand Pack (gINT code) GS = Ground Surface	- TOC to GS -0.50
SLUF = Natural Collapse/ Pea Gravel (gINT code) TOC	to BOW
TOC = Top of Casing	OC to BOS TOC to TOS
TOM = Top of Monument TOS = Top of Screen	- TOC to GS 26.11 - 0.5
PB = Blank Pipe (gINT code) TOC	to BOS 30. 36 TOS bgs 36. 11
Circle litter-pack type	eened Length
^ Flushmount = Negative Number = TO Stickup = Positive Number	OC to TOS
Suckup – Posluve Number	- TOC to GS BOS bgs 30.86
	BOS bgs 30.86

# SHANNON & WILSON, INC. GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS:

DRILL COMPANY/DRILLER: Discovery Drilling								JOB NO: 102599-008 BORING NO: MW-15						
DRILL	RIG EQL	JIPMENT:	Geofros	oe 60	610 DT			JOB NA	ME: Gustavas	DOTS PF PFAS				
DRILL	ING MET	HOD:	Direct P	ush				LOGGED BY: Adam Wyborny						
HAMMER TYPE: Auto ROD TYPE/DIA.: "									ON: GST		ELEV.:			
100000000000000000000000000000000000000			N/A							END DATE:				
			1.5"				5				400F wind <5mph			
***************************************	Necksian San				AUPOCOUNT DOL									
TIME	SAMP, NO.	王 FROM	DRIVING	L. REC.	DRILL	SAMF CONTACTS /	LEC	CMMMH27		FIELD CLASSIFICATION	ON			
DATE	SAMP. NO.	DEPT	RESISTANCE BLOWS / 6 INCH	# JARS	ACTION	GROUNDWATER	PID	ENV. SAMPLE		color; slightly, minor, MAJ0 ucture; other; USCS class	OR, then trace constituents; ification (geology)]			
1245	1	Ø'	j	3.6			1	01		Organic soil	manufacture of the second seco			
		5'	/	3.2			1	0.35	0.5'-5.0': Arev	-brown well grade	d send, maist			
10/29		5		1				0.35						
1255	2	51	/	3.5'			1	03	5.0 - 8.5 . Gres	r-brown well gra	ded Sond, Moist			
10/29		10,	/	1		7		8.51		- brown poorly g				
1310	3	10'	,	4'			7	1		brown poorly gra	aded sond with			
10/29		15'	/	1			/	/	12'-15' : Grey	poorly graded :	sand with			
	4	151	V V	2'	1		7	03		graded sono	with gravely			
1350	,		/	~			/	18'	wet					
10/29		50,	/	1				1A						
1340	5	20'	/	41			1	1	20' - 20.5' : Gr	ey poorly grade	ed sand with			
10/29	11	251	/	1			1	/	20.5'-30': Gre	y poorly gra	ded sand, wet			
1350	6	25'	1	41			,	04	Grey well gr	aded sond,	wet			
10/29	37	30'		2			/	58,						
	7	301	1		1			N=0.50	30'-33.5' : Da	ick gray poorly	graded sand, wet			
1415			/	4.5'			1		235'-30': Gr	ay poorly grad	ted send with			
10/29		351	15%	/					5;1	+, wet				
DE	EPTH	uscs	SUMMARY FIE T	LD LOG	OF BOR	RING	_		COMMENTS (i.e.	materials used, visito	rs, problems, etc.):			
FROM	то	CLASSIF.	GENERA	LIZED SOIL	DESCRIPT	TION FOR DRAFTED	GINT L	.OG						
										GROUNDWATER D	ATA			
									WATER DEPTH	TIME	DATE			
									8.51	1300	10/29/21			
									SUMI	WARY OF TIME AND	FOOTAGE			
									FOOTAGE 50	SAMPLES:	\ () Attempted			
									DRILLED:	7	Recovered			
		Table To							DRILL/SAMPLE		ANDBY: hrs.			
									SETUP/CLEANUP: OTHER:	IIIS. VVELL	moracenrs.			
									OTHER.					
									BORING: MW	- \5 SHEET	\ OF ₽			

# SHANNON & WILSON, INC., GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

DRILL	СОМРА	NY/DRILL	ER: Disc	DIELLA	Drill	ng		JOB NO	: 102599-008 BORING NO: MW-15
			Geopro						ME: Gustavus DOT & PF PFAS
			Direct P						DBY: Adam wyberny
									ON: GST ELEV.:
HAMMER TYPE:A_A_ ROD TYPE/DIA.:# HAMMER WEIGHT:A/A HAMMER DROP:A/A									DATE: 10/29/21 END DATE:
CASIN	IG SIZE/	TYPE:	1.5"		HOLE SI	ZE: 2"			ER DURING DRILLING: Light rain 40°F wind 5 mg
									- 10 10 10 1 10 10 2 mp
TIME	SAMP. NO.	王 FROM	DRIVING	L. REC.	DRILL	SAMF CONTACTS /	3736374	ENV.	FIELD CLASSIFICATION
DATE	TYPE	FROM TO	RESISTANCE BLOWS / 6 INCH	# JARS	ACTION	GROUNDWATER	PID	SAMPLE	[density/consistency; color; slightly, minor, MAJOR, then trace constituents; moisture; structure; other; USCS classification (geology)]
1420	8	351	,	5'			1	Ø5	35'-37.5': Dark gray poorly graded sand with sill
10/29		40'	/	1			1	39'	37.5'-38': Gray fat clay, returned
		10					_		38'-40': Dark gray sandy silt, wet
			/				1		JA 10 . DUTE STRY SENTY THIT, WET
V	V	$\lor$	/	V			1		
1440	9	40'		2,			72	,	Grey sendy silt, wet
			/	1			/		
10/29		451		- (			_	, ''	
1515	10	45'	)	4.51			1	06	Gray poorly graded sand with sit, wet
10/29		SØ'	/	1			/	48'	
			7				_		
				- 5					
			1 16		7				
DEC	TH.		UMMARY FIEL	D LOG	OF BOR	ING	4		COMMENTS (i.e. materials used, visitors, problems, etc.):
FROM	то	USCS CLASSIF.	GENERAL	IZED SOIL	DESCRIPTI	ON FOR DRAFTED G	SINT LO	OG	
								11.00	
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	j							GROUNDWATER DATA  WATER DEPTH TIME DATE
									8:S' 1300 10/29/21
									10/6/1/81
									SUMMARY OF TIME AND FOOTAGE
									FOOTAGE 50' SAMPLES: \ \ Attempted
									DRILLED: 10 Recovered
					1				DRILL/SAMPLE 3 hrs. STANDBY: hrs.
								-	SETUP/CLEANUP: hrs. WELL INSTALL: hrs.
									OTHER:
									BORING: MW-15 SHEET 2 OF 2

Monitoring Well No.  Project Name  Project Number  102599 - 008	Date Installed 10/29/2021  Logged By Adam Wyberny  Driller Discovery Prilling
I. TOP SECTION (CASING) Initial Pipe Length Cuttoff Length Add-on Length Total Length 4.42	Pipe Type: PVC SS SS Other Diameter: 2" SS Other Slot Size: 0.01 Store Other Joint Pin End: Up Store Other Type
II. MID SECTION (CASING)	V. BACKFILL
Number of Blank Sections  Length of Section(s):	Depth Below GS  Bottom Top
Length of Section(s).	CEM (No Pipe)
+	CEM_PB) I'
	SLUF PB#FIL_PB 2' 1' BCH_PB 3' 2'
	*SLUF_PB/FIL_PB
Com of Langthan	BGR PB
Sum of Lengths:	*SLUF_PB/FIL_PB 5 3 *SLUF_PS/FIL_PS 151 5 81
	*SLUF/FIL (No Pipe)
III. SCREENED SECTION(S) 🗶 😩	*SLUF_PB/FIL_PB
Joint Length:	Filter Pack Type or Gradation 20/40 rounded Silica Sand
+	Gradation 20/40 Facabets Stife Sans
vi i i i i i i i i i i i i i i i i i i	VI. MONUMENTS
	Stickup  Flushmount
Screened 4.75'	TOM to GS
1 otal Pipe	^TOC to GS -0. 25'
4.73 Length: 3.48	Lock type N/A
	Service Continues endertain includentalists of the district reference from
	VII. MOISTURE CONTENT
Joint Length: 9.063' BOS: 0.563	Depth to Water Below GS
End Cap Length:	Frozen Soil Below GS
Pointed M Flat	Bottom Top
TOC to BOW: 14.89	Seasonal 1
	Seasonal 2
	Permafrost 1
BCH = Bentonite Chips (gINT code)	Permafrost 2
BGR = Bentonite Grout (gINT code)	/
bgs = Below Ground Surface BOS = Bottom of Screen  VIII. CALCULATIONS	BELOW GROUND SURFACE
BOW = Bottom of Well CEM = Cement (gINT code)	TOC to BOW
FIL = Sand Pack (gINT code)	- TOC to BOW
	o BOW
SS = Stainless Steel - BOW	to BOS
TOM = Top of Monument = 10	C to BOS 14.33 TOC to TOS 4.60
TOS = Top of Screen PB = Blank Pipe (gINT code) TOC t	- TOC to GS - 0.25 TOS bgs 4,85
PS = Slotted Pine (dINT code)	ened Length 9.73
^ Flushmount = Negative Number = TO	C to TOS TOC to BOS
Stickup = Positive Number	- TOC to GS
	BOS bgs [4.58



Monitoring Well No.  Project Name  Project Number  102599 - 008	Date Installed 10/29/2021  Logged By Adam Wyberny  Driller Discovery Drilling
I. TOP SECTION (CASING) Initial Pipe Length Cuttoff Length Add-on Length Total Length	IV. WELL DATA  Pipe Type: PVC SS SS ☐ Other  Diameter: 2" SS 4" ☐ Other  Slot Size: 0.01 SS 0.02 ☐ Other  Joint Pin End: Up Down ☐ Type
II. MID SECTION (CASING)  Number of Blank Sections	V. BACKFILL  Depth Below GS
Length of Section(s):	Bottom Top
3 18	CEM (No Pipe)
10' 10' +	SLUF_PB/FIL_PB 5'
	BCH_PB) 37' 5'
	*SLUF_PB/FIL_PB
Sum of Lengths: 30	BGR_PB *SLUF_PB/FIL_PB 4/4 3*
	*SLUF_PS/FIL_PS) 46' 31' 41
W CORFENED OF CTION(C)	*SLUF/FIL (No Pipe)
III. SCREENED SECTION(S)	*SLUF_PB/FIL_PB Filter Pack Type or
Joint Length: 0.17	Gradation 20/40 raunded silica sund
<b>↑</b>	
	VI. MONUMENTS  Stickup ☐ Flushmount 🔀
	TOM to GS
Screened 4.75 Length:	TOM to TOC - 0.33
Total Pipe Length: 5.48	^TOC to GS - 0.33
	Lock typeNIA
	VII. MOISTURE CONTENT
DOWA-	Depth to Water Below GS
Joint Length: 2.063 BOW to BOS: 0.563	
End Cap Length:	Frozen Soil Below GS
Pointed 🔀 Flat 🔲	Bottom Top
TOC to BOW: 46.45	Seasonal 1
	Seasonal 2
	Permafrost 2
BCH = Bentonite Chips (gINT code)	<del>/</del> -
BGR = Bentonite Grout (gINT code) bgs = Below Ground Surface	BELOW GROUND SURFACE
BOS = Bottom of Screen BOW = Bottom of Well	BELOW GROUND GOR! AGE
CEM = Cement (gINT code)	TOC to BOW46.45
FIL = Sand Pack (gINT code) GS = Ground Surface	to BOW 46.45 BOW bas 46.79
SEOT - Natural Collapses Fea Graver (gift Code)	to BOW 46.45 BOW bgs 46.78
TOC = Top of Casing = TO	OC to BOS 45.9 TOC to TOS 41.14
TOS = Top of Mortaliteria	- TOC to GS <b>○.33</b>
PS = Slotted Pine (aINT code)	to BOS 45.9 TOS bgs 41.47
* Circle filter-pack type - Scre	pened Length 4.75 DC to TOS 11.14 TOC to BOS 45.40
^ Flushmount = Negative Number = TC Stickup = Positive Number	TOC to BOS 45.40 - TOC to GS - 0.33
	BOS bgs 46.23





9/25/2015-Boring Log Template

DRILL	COMPAN	NY/DRILLI	ER: Disc	Over.	Drill	105		ЈОВ ИО	: 102599-008 BORING NO: MW-16
DRILL RIG EQUIPMENT: Gen Probe 6610 DT									ME: Gustavus DOT&PF PFAS
			Direct					LOGGE	DBY: Adam Wyborny
HAMMER TYPE: Auto ROD TYPE/DIA.: 2"									ON: GST ELEV.:
HAMMER WEIGHT: N/A HAMMER DROP: N/A								START	DATE: 10/31/21 END DATE: 10/31/21
						ZE:		WEATH	ER DURING DRILLING: Foggy 35°F wind < 5m/h
									- 507
TIME	SAMP NO	王 FROM	DRIVING	L. REC.		SAME	LEL	ENV.	FIELD CLASSIFICATION
DATE	SAMP. NO. TYPE	DEPT O	RESISTANCE BLOWS / 6 INCH	# JARS	DRILL ACTION	CONTACTS / GROUNDWATER	PID	SAMPLE	[density/consistency; color; slightly, minor, MAJOR, then trace constituents; moisture; structure; other; USCS classification (geology)]
0945	1	0'	/	3.8			1	01	0-0.5". Dark brown organis sendy soil
10/31		5'		2			1	0.25'	O.S'-3.8'; Light grey with iron staining well graded sand with trace sit maist
1 2 2 1	9	1	7	7		7		00	3.8'-5.0': Light grey poorly groded sond, wet
				-				3.8'	
$\downarrow$	1	<b>₩</b>	/	V			1		
0950	5	s'	1	4'			,		5.0'-5.75' Grey-brown poorly graded send with
		.01	/	1			/		5.75'- 9.1': Grey-brown poorly graded sondy
10/31		10,		-	-		-		9.1'-10': Grey-brown poorly graded sond, wet
		1	1	1			1	⊘3	4.1510 . Colley Stout Booking greater sond , thet
J	1	7	/	1			1	9.51	
1000	3	1⊘′	7)	4.8'				04	10'-11.8': Grey-brown poncly graded send with
		15'		1			/	13.51	The state of the s
10/31		13		1 v	1			100.00	13.8-15.01: Light gray poorly graded sandy
							1/		gravet, wet
V	V	V	,	V					
		-							
			SUMMARY FIE	I D I OG	OF BOE	ZING	_	<u> </u>	COMMENTS (i.e. materials used, visitors, problems, etc.):
D	EPTH	USCS	1 V	vicinal and a vicinal a	Y-700-700 (1924) 193	TION FOR DRAFTED	GINT I	OG	
FROM	ТО	CLASSIF.	OEMEN.						
									GROUNDWATER DATA
			**************************************						WATER DEPTH TIME DATE
Jaitannessa (11111111111111111111111111111111111									4' 0945 10/31/21
									SUMMARY OF TIME AND FOOTAGE
									FOOTAGE 15 SAMPLES: 3 Attempted
	-								DRILLED: Recovered
	a. a			((((())))					DRILL/SAMPLE 0,5 hrs. STANDBY: N/A hrs.
	-								SETUP/CLEANUP: hrs. WELL INSTALL: hrs. OTHER:
3									341140
		34							BORING: MW-16 SHEET 1 OF 1

Monitoring Well No.  Project Name  Project Number  No. 16 - 15  Gustavis DOT > PF  102599 - 008	ie	Logged By	Adam Wyborny Discovery Drillins
I. TOP SECTION (CASING) Initial Pipe Length Cuttoff Length Add-on Length Total Length	4.21	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	120 13 13 13 <del>1 </del>
II. MID SECTION (CASING)  Number of Blank Sections		V. BACKFILL	Depth Below GS
Length of Section(s):	+	CEM (No Pipe) CEM_PE *SLUF_PB/FIL_PE BCH_PE *SLUF_PB/FIL_PE	3 3' 2' 3'
Sum of Lengths:	Ø'	BGR PE *SLUF PS/FIL_PS *SLUF/FIL (No Pipe	5 3 5 15' 2/5
Joint Length: 9.17	Circ.	*SLUF_PB/FIL_PE Filter Pack Type o Gradation	B
Screened Length:  q.73  Total Pipe Length:  BOW to BOS:  O.34  Flat  TOC to BOW:	5.36	VI. MONUMENTS  Stickup Flushmou  TOM to GS  TOM to TOC  ^TOC to GS  Lock typ  VII. MOISTURE CONTEN  Depth to Water Below GS  Seasonal  Seasonal  Permafrost  Permafrost	Frozen Soil Below GS Bottom Top
BCH = Bentonite Chips (gINT code) BGR = Bentonite Grout (gINT code) bgs = Below Ground Surface BOS = Bottom of Screen BOW = Bottom of Well CEM = Cement (gINT code) FIL = Sand Pack (gINT code) GS = Ground Surface		BELOW GROUND SURFAC	TOC to BOW 14.56 - TOC to GS -0.58
SS = Stouria Striate SLUF = Natural Collapse/ Pea Gravel (gINT code) SS = Stainless Steel TOC = Top of Casing TOM = Top of Monument TOS = Top of Screen PB = Blank Pipe (gINT code) PS = Slotted Pipe (gINT code) * Circle filter-pack type  ^ Flushmount = Negative Number Stickup = Positive Number	- BOW = <b>TO</b> TOC - Scre	to BOW	TOC to TOS

4/9/2020

Well No. 11-15

## SHANNON & WILSON, INC.

				102 1011112				_						
DRILL COMPANY/DRILLER: Discovery Drilling									JOB NO: 102599 - 008 BORING NO: MW - 18					
DRILL RIG EQUIPMENT: Geoprobe 6610 DT									JOB NAME: GUSTAVUS DOTEPF PFAS					
DRILLING METHOD: Direct Push									LOGGED BY: Adam Wyborny					
HAMMER TYPE: Auto ROD TYPE/DIA.:										ON: GST ELEV.:				
HAMN	IER WEI	ЗНТ:		NIA	HAM	MER DR	OP: <u>N/A</u>		START	DATE: 10/28/21 END DATE: 10/28/21				
CASIN	NG SIZE/	TYPE:		1.5"		HOLE SI	ZE:っ"		WEATH	IER DURING DRILLING: Partly Cloudy 40-F				
8							SAMF	PLE	DATA					
DATE	SAMP, NO.	<u> </u>	ROM TO	DRIVING RESISTANCE BLOWS / 6 INCH	L. REC. # JARS	DRILL ACTION	CONTACTS / GROUNDWATER	PID	ENV. SAMPLE	FIELD CLASSIFICATION [density/consistency; color; slightly, minor, MAJOR, then trace constituents; moisture; structure; other; USCS classification (geology)]				
0945	71	0	)1	7	4.1			1	01	01-3.5": Light grey well graded send, moist				
10/28		5			1			1	0.5	3.5'-5.0': Light grey banded with iron staining.				
	_	5			4.5'		7		02	5.0'-6.8'. Grey poorly graded coarse send, wet				
0955	5		-	/	X-1/22			/	51	6.8'-9.5'' Grey-brown poorly greated sand with				
10/28		10	)'		9			-		9.5'-10': Grey-brown sond with silt. wet				
1010	3	(0	D'	,	3,25'			1	1	Light gray poorly gended sand with grown				
10/28		15	- 1	1	/			/	1	1				
1015	Ч	15	, 1	,	4.8			,	@3	Light grey poorly graded sand, wet				
10/28		20	)1	1	1			/	151					
1030	5	20	2/	191-11	3.751	1			7	Grey poorly graded sond with trace				
10/28		25		/	1			/		silt, wet				
10 45	6	25		5	4.51				04	Grey poorly graded send, wet				
10/28	, 567	30			1			/	251					
1100	7	30	9 '	/	41	1		<u> </u>	,	Grey poorly graded sand with trace sit				
10/28			51	1	1			/		wet				
1077-4			s	UMMARY FIE	LD LOG	OF BOR	RING			COMMENTS (i.e. materials used, visitors, problems, etc.):				
FROM	EPTH TO	US	SCS SSIF.	GENERA	LIZED SOIL	DESCRIPT	TION FOR DRAFTED	GINT L	.og	9: NOSCOBERTOTO PERSONNATION (SOCIOLO MERCHAN POR CONTRACTO S				
FROM	10													
										GROUNDWATER DATA  WATER DEPTH TIME DATE				
										51 0945 10/28/21				
-			-	-										
										SUMMARY OF TIME AND FOOTAGE				
							-			FOOTAGE 50' SAMPLES: 10 Attempted Recovered				
										DRILL/SAMPLE 2,5 hrs. STANDBY: hrs.				
									1	SETUP/CLEANUP: \ hrs. WELL INSTALL: hrs.				
		-							14	OTHER:				
							4	7		BORING: MW-18 SHEET 1 OF 2				

# SHANNON & WILSON, INC., GEOTEGHNICAL AND ENVIRONMENTAL CONSULTANTS:

DRILL RIG EQUIPMENT: GeoProbe GGIO DT  DRILLING METHOD: Direct Push									JOB NAI	ME: Gustavus Dot & PF PFAS  DBY: Adam Wyborny
										ON: GST ELEV.:
HAMMER TYPE:AU+0 ROD TYPE/DIA.:2"								- 1		DATE: 10/28/21 END DATE: 10/28/21
										9AVALUE
CASIN	IG SIZE/	YPI	=:	1.5"		HOLE SI	ZE:		VVEATH	ER DURING DRILLING: Partly Cloudy 40°F
							SAMF	LEC	ATA	
DATE	SAMP. NO. TYPE	DEPTH	FROM TO	DRIVING RESISTANCE BLOWS / 6 INCH	L. REC. # JARS	DRILL ACTION	CONTACTS / GROUNDWATER	PID	ENV. SAMPLE	FIELD CLASSIFICATION [density/consistency; color; slightly, minor, MAJOR, then trace constituents; moisture; structure; other; USCS classification (geology)]
1150	8	173	151	,	4.21			1	05	Grey paorly graded sand with trace
		15	77224	/	1			/	351	Silf , Wet
10/28		-	(Ø,		ſ				72.	Wasse assessment and advantage of the A
1140	9		101	7	0.5			1	)	Grey poorly graded sand, wet
10/28		- 1	151	/-	1			1	/	
1200	10		1.2.1	j	0.5			,	Ø6	Grey poorly graded sand, wet
10/28		Ş	;ø'	/2	j			/	45!	
							9			
							- 4			
		⊢						_		
_		$\vdash$				1				
			5	UMMARY FIE	LD LOG	OF BOF	RING			COMMENTS (i.e. materials used, visitors, problems, etc.):
FROM	EPTH TO		JSCS ASSIF.	GENERA	LIZED SOIL	DESCRIPT	ION FOR DRAFTED	GINT L	OG	
PROW	10									
		T								
										GROUNDWATER DATA
	-	-								WATER DEPTH   TIME   DATE
		1								3 0413 (0/20/2)
										SUMMARY OF TIME AND FOOTAGE
		_								FOOTAGE 50 SAMPLES: \ \ \ Attempted
		-								DRILLED: Recovered
		$\vdash$	_		_					DRILL/SAMPLE 2.5 hrs. STANDBY: hrs.
		-								SETUP/CLEANUP: hrs. WELL INSTALL: hrs.
		-								OTHER:
										BORING: MU-18 SHEET 2 OF 2

Monitoring Well No.  Project Name  Coustevus DOT APF  Project Number  102599-008	Date Installed 10/28/2021  Logged By Adam Wyberny  Driller Discovery Drilling
I. TOP SECTION (CASING) Initial Pipe Length Cuttoff Length Add-on Length Total Length	IV. WELL DATA         Pipe Type: PVC SS SS
II. MID SECTION (CASING)	V. BACKFILL
Number of Blank Sections	Depth Below GS
Length of Section(s):	Bottom Top CEM (No Pipe)
	+ CEM_PB I'
	SLUF PB/FIL_PB 2'
	*SLUF PB/FIL_PB
	BGR_PB
Sum of Lengths:	o' *SLUF_PB/(FL_PB) 5 3
	*SLUF_PS/(L_PS)   5'   2' 5
III. SCREENED SECTION(S) × 2	*SLUF/FIL (No Pipe) *SLUF_PB/FIL_PB
WARRAN SAN-TENDED IN THE RESERVE TO	Filter Pack Type or
Joint Length:	Gradation 20/40 rounded silica sand
	VI. MONUMENTS
	Stickup  Flushmount
	TOM to GS
Screened 4.75' Length: Total Pipe	TOM to TOC - Ø.5'
9.73' Length:	7OC to GS - 0.5'
	.35' Lock type N/A
	VII. MOISTURE CONTENT  Depth to Water Below GS
Joint Length: 9.9631 BOW to BOS: 9.44	Deput to water below 90
End Cap Length: 2.38	Frozen Soil Below GS
Pointed 🔀 Flat 🔲	Bottom Top
TOC to BOW:	.86 Seasonal 1
	Seasonal 2
	Permafrost 1
BCH = Bentonite Chips (gINT code)	Permanost 2
BGR = Bentonite Grout (gINT code)	
bgs = Below Ground Surface BOS = Bottom of Screen  VIII. CALCULATI	ONS BELOW GROUND SURFACE
BOW = Bottom of Well CEM = Cement (gINT code)	TOC to BOW 14.86°
FIL = Sand Pack (gINT code)	TOC to BOW
GS = Ground Surface SLUF = Natural Collapse/ Pea Gravel (gINT code)	TOC to BOW
SS = Stainless Steel	- BOW to BOS
TOC = Top of Casing TOM = Top of Monument	= TOC to BOS TOC to TOS
TOS = Top of Screen	TOC to BOS 14.42 TOS bas 5.19'
PB = Blank Pipe (gINT code) PS = Slotted Pipe (gINT code)	TOC to BOS TOS bgs
* Circle filter-pack type  ^ Flushmount = Negative Number	= TOC to TOS 4.69 TOC to BOS 14.42'
Stickup = Positive Number	- TOC to GS - 0.50
	BOS bgs 14.42'

Monitoring Well No. Mul 18 - 50  Project Name Gustavus POT 2 FF  Project Number 102599 - 008	Date Installed 10/28/2021  Logged By Adam Wyberny  Driller Discovery Drilling
I. TOP SECTION (CASING) Initial Pipe Length Cuttoff Length Add-on Length Total Length 4.42	IV. WELL DATA  Pipe Type: PVC SS Other  Diameter: 2" 4" Other  Slot Size: 0.01 SO02 Other  Joint Pin End: Up Sown Type
II. MID SECTION (CASING)	V. BACKFILL
Number of Blank Sections 4	Depth Below GS
Length of Section(s):	Bottom Top CEM (No Pipe)
10' 10' +	CEM PB) I'
10'	SEUF PB/FIL PB 4' I'
	*SLUF_PB/FIL_PB
	BGR_PB
Sum of Lengths: 40'	SLUF_PB(FIXFB) 45 41
Turk Mittind Lessort Thresh Stander Nobel Prof	SLUF_PSIFIL_PS 50' W145
W CORENED OF CTION(C)	*SLUF/FIL (No Pipe)
III. SCREENED SECTION(S)	*SLUF_PB/FIL_PB
Joint Length: 0.17'	Filter Pack Type or Gradation 20/40 Counded silves Send
+ /	
	VI. MONUMENTS
	Stickup  Flushmount
Screened ,	TOM to GS
Length: 4.751 Total Pipe 5.48	TOM to TOC
Length:	
	Lock type N/A
	VII. MOISTURE CONTENT
BOW to	Depth to Water Below GS
Joint Length: 9.963 BOS: 9.563	N N N N N N N N N N N N N N N N N N N
End Cap Length:	Frozen Soil Below GS
Pointed X Flat	Bottom Top
TOC to BOW: 49.9	Seasonal 1
	Seasonal 2
	Permafrost 1
BCH = Bentonite Chips (gINT code)	Permafrost 2
BGR = Bentonite Grout (gINT code)	
bgs = Below Ground Surface BOS = Bottom of Screen  VIII. CALCULATIONS	S BELOW GROUND SURFACE
BOW = Bottom of Well	Severage Telephone Telephone
CEM = Cement (gINT code) FIL = Sand Pack (gINT code)	TOC to BOW 49.90
GS = Ground Surface	- TOC to GS - 0.50 BOW bgs 50.40
SLOF - Natural Collapse/ Fea Graver (girl Code)	C to BOWBOW bgs
TOC = Top of Casing	OC to BOS 49.34 TOC to TOS 44.59
TOM = Top of Monument TOS = Top of Screen	- TOC to GS - 0.50
PB = Blank Pipe (gINT code) Too	C to BOS 49.34 TOS bgs 45.00
	reened Length
^ Flushmount = Negative Number = T	OC to TOS TOC to BOS
Stickup = Positive Number	- TOC to GS
	BOS bgs 49.84

Yer

SHANNON & WILSON, INC.

Well No. 18-50

# SHANNON & WILSON, INC., GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

					BOBING NO: MW-19
DRILL COMPANY/DRILLER:					102599-008 BORING NO: MW-19
DRILL RIG EQUIPMENT:					ME: Gustavus DOT&PF PFAS
DRILLING METHOD: Dice					DBY: Adam Wyborny
HAMMER TYPE: Auto					DN: Gustavus, AK ELEV.:
HAMMER WEIGHT://A					DATE: 10/31/21 END DATE: 11/01/21
CASING SIZE/TYPE:	1.5" HOLE S	IZE:		WEATH	ER DURING DRILLING: Partly Cloudy 45°F wind <5 mp
		SAMP	LE D	ATA	
RESIS	RIVING L. REC. DRILL STANCE # JARS ACTION	CONTACTS / GROUNDWATER	PID	ENV. SAMPLE	FIELD CLASSIFICATION [density/consistency; color; slightly, minor, MAJOR, then trace constituents; moisture; structure; other; USCS classification (geology)]
. 01	3.5		,		0'-0.5'; Dark brown sondy organic soil, moist
10/31	1		1		0.5' - 0.75': Gray brown well graded sand, maist
1 1 1	, ,		,	Ø1	0.75'-3': Gray silt, maist
1 1		*		3'	31-51: Gray-brown poorly graded sand
1605 2 5'	/ 4.25'		1	1	Gray-brown to light gray poorly graded
10/31 10,	1		/	/	
1610 3 101	3.5		1	/	Gray poorly graded sandy grovel, wet
10/31	1 1		/	/	
1615 4 [5"	/ 4.5		1	/	Gray poorly graded sond, wet
10/31 20'	1		_	/ :	Gray poorly graded sand with trace
1625 5 20'	) 2'		1	/	Silt, wet
10/31 25'					Gray poorly graded sand with introduct
1640 6 25'	1 2'	101	1	1	gray fat clay laver, Het
10/31 30'	"	· ·			
	MARY FIELD LOG OF BO		_		COMMENTS (i.e. materials used, visitors, problems, etc.):
DEPTH USCS FROM TO CLASSIF.	GENERALIZED SOIL DESCRIF	PTION FOR DRAFTED	GINT L	.OG	
					C POLINDWATER DATA
					GROUNDWATER DATA  WATER DEPTH TIME DATE
					3' 1600 10/31/21
					SUMMARY OF TIME AND FOOTAGE
					FOOTAGE 50 SAMPLES: 10 Attempted Recovered
					DRILL/SAMPLE 2 hrs. STANDBY: NIA hrs.
	· · · · · · · · · · · · · · · · · · ·				SETUP/CLEANUP: \ hrs. WELL INSTALL: hrs.
					OTHER:
					BORING: MW-19 SHEET 1 OF 2



	- 05016	CHAIC	AL A	NO ENVIRONM			V8920	$\top$		WHEN WE SHOULD B
DRILL	COMPAN	IY/DR	ILLE	R: Disco	very	Drill	ng	- 1		102599-008 BORING NO: MW-19
DRILL RIG EQUIPMENT: GeoProbe 6610 DT										ME: Gustavus DOT-RPF PFAS
DRILLI	ING MET	HOD:		Direct P	ush			- 1		DBY: Adam Wyborny
HAMM	ER TYPE		/	luto	ROD	TYPE/D	IA.:			ON: Gastavas, Ak ELEV.:
HAMMER WEIGHT: HAMMER DROP: /A								1	START [	DATE: 10/31/21 END DATE: 11/01/21
CASING SIZE/TYPE: 1.5" HOLE SIZE: 2"									WEATH	ER DURING DRILLING: Partly Cloudy 45"F wind < Smith
			_				SAMF	LE D	ATA	
TIME	SAMP. NO.	王 FF	ROM	DRIVING	L. REC.	DRILL	CONTACTS /	PID	ENV.	FIELD CLASSIFICATION [density/consistency; color; slightly, minor, MAJOR, then trace constituents;
DATE	SAMP. NO.	) Jago	то	RESISTANCE BLOWS / 6 INCH	# JARS	ACTION	GROUNDWATER	7.10	SAMPLE	moisture; structure; other; USCS classification (geology)]
0.930	7	30	01	, .	3.51		V	1	1	Grey poorly graded send, wat
ALC US—III		35	ev:		1			1		
11/01	1100		_		/			-		Grey poorly graded sand with trace
0949	8	3.9	5	1	1.7			/		peat, wet
11/01		40	0	/	1					
1000	9	4	(7) <sup>1</sup>	- 7	2,			1	1	401-441: Grey poorly graded sond, wet
11/01	(0);	45	0.00	/	1			/	/	44'-45': Grey sandy silt, wet
1015	10	4	200		2.51				05	Light gray poorly graded sand with gravel
	10	-50		/	1			/	48'	. 63 67
11/01		50	2		1	-		$\vdash$		
	1					1				
		-			-	-				
								1	A August	
		-	_	SUMMARY FIL	ELD L 00	OF BO	RING		40.1	COMMENTS (i.e. materials used, visitors, problems, etc.):
	EPTH	US	scs				PTION FOR DRAFTED	GINT	LOG	7/2
FROM	то	CLA	ASSIF.	GENERA	ALIZED GO					
								1	A. V.	GROUNDWATER DATA
									N	31 1600 10/31/21
							-			31 1660 10/31/21
										SUMMARY OF TIME AND FOOTAGE
				-	1 11	1				EQ SAMPLES IQ Attempted
								araili immo	3.11.1	FOOTAGE SAWIFLES. Recovered
		1					N.	34	1113	DRILL/SAMPLE 2 hrs. STANDBY: N/A hrs.
										SETUP/CLEANUP:   hrs. WELL INSTALL: hrs.
										OTHER:
						, , , , , , , , , , , , , , , , , , ,				SUEET C OF
								1		BORING: MW-19 SHEET 2 OF 2



Monitoring Well No	Date Installed / a a. a.
Project Name	Date Installed 11 / 01 / 2021
Project Name 102544-008 Gustavus Dot APF	Logged By Adam Wyberny
Project Number 102599-008	Driller Discovery Drilling
I. TOP SECTION (CASING) Initial Pipe Length Cuttoff Length Add-on Length Total Length 4.5'	IV. WELL DATA  Pipe Type: PVC SS Other Diameter: 2" 4" Other Slot Size: 0.01 0.02 Other Joint Pin End: Up Down Type
II MID SECTION (CASINO)	V BARKENI
II. MID SECTION (CASING)	V. BACKFILL
Number of Blank Sections	Depth Below GS
Length of Section(s):	Bottom Top
	CEM (No Pipe)
+	CEM_PB ('
	SLUF PD/FIL_PB 7' I'
	BCH_PB 3' 2'
	*SLUF_PB/FIL_PB
Sum of Lengths:	*SLUF_PB/RC_PB 5
oull of Lengths.	*SLUF_PS/FIL_PS 15' 75
	*SLUF/FIL (No Pipe)
III. SCREENED SECTION(S) X 2	*SLUF_PB/FIL_PB
A STANDARD CONTRACTOR	Filter Pack Type or
Joint Length:	Gradation 20/40 counded silica sond
+	MOTO TORRESTOR
	VI. MONUMENTS
	Stickup  Flushmount
Question of the control of the contr	TOM to GS
Screened 4.75'	TOM to TOC Q,33
a 231	^TOC to GS - 0.33
Length:	Lock type N/A
10.47	N/A
	VII. MOISTURE CONTENT
DOW/40	Depth to Water Below GS
Joint Length: 9.963' BOW to BOS: 9.563	Deptil to Water Below Go
End Cap Length: 9.5	Frozen Soil Below GS
Pointed 🗵 Flat 🗆	Bottom Top
TOC to BOW:	Seasonal 1
100 to Bow.	
	Seasonal 2
	Permafrost 1
BCH = Bentonite Chips (gINT code)	Permafrost 2
BGR = Bentonite Grout (gINT code)	
bgs = Below Ground Surface VIII. CALCULATIONS F	BELOW GROUND SURFACE
BOS = Bottom of Screen BOW = Bottom of Well	THE CONTROL OF STANDARD TO BE SUMMED AND STANDARD SECTION OF STAND
CEM = Cement (gINT code)	TOC to BOW [4.97
FIL = Sand Pack (gINT code)	- TOC to GS - 0.33
GS = Ground Surface SLUF = Natural Collapse/ Pea Gravel (gINT code) TOC to	BOW 14.47 BOW bgs 15.30
one in the control of the control (girli code)	to BOS
TOC = Top of Casing	C to BOS 14.41 TOC to TOS 4.68
TOM = Top of Monument TOS = Top of Screen	1000100
	- TOC to GS - 0.33 TOS bgs 5D\'
PS = Slotted Pipe (gINT code)	ned Length
	LI Z O
Stickup = Positive Number	100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
emergraphy and the contract of	
	BOS bgs 14.74



4/9/2020

SHANNON & WILSON, INC.

Well No.

Monitoring Well No.  Project Name  Project Number  102599 - 008	Date Installed  Logged By  Adam Wyberny  Driller  Discovery Drilling
I. TOP SECTION (CASING) Initial Pipe Length Cuttoff Length Add-on Length Total Length 4.5	IV. WELL DATA  Pipe Type: PVC SS Other Diameter: 2" S 4" Other Slot Size: 0.01 0.02 Other Joint Pin End: Up Down Type
II. MID SECTION (CASING) Number of Blank Sections	V. BACKFILL  Depth Below GS
Length of Section(s):	Bottom Top  CEM (No Pipe)  CEM_PB 1'  SLUF_PB/FIL_PB 2'  CCH_PB 79'  *SLUF_PB/FIL_PB
Sum of Lengths:	*SLUF_PB/fil_PB 45 39 *SLUF_PS/fil_PS 50' 38'45
III. SCREENED SECTION(S)	*SLUF/FIL (No Pipe) *SLUF_PB/FIL_PB
Joint Length:  Screened 4.75' Length:  Joint Length:  Joint Length:  BOW to BOS:  BOS:  Pointed Flat  TOC to BOW:  49.48  BCH = Bentonite Chips (gINT code)	VI. MONUMENTS  Stickup Flushmount TOM to GS TOM to TOC ^TOC to GS Lock type  VII. MOISTURE CONTENT Depth to Water Below GS  Seasonal 1 Seasonal 2 Permafrost 1 Permafrost 2
BGR = Bentonite Grout (gINT code) bgs = Below Ground Surface BOS = Bottom of Screen BOW = Bottom of Well  VIII. CALCULATIONS	BELOW GROUND SURFACE
SS = Stainless Steel	TOC to BOW



Well No. Mary9-8



DRILL	COMPAN	1Y/DRILLE	ER: Disc	over./	Drillio	\ <del>5</del>		JOB NO	: 102599-008 BORING NO: MW-20
			GeoPros				- 1		ME: Gustavus Dot & PF PFAS
I							LOGGE	DBY: Adam Wyborny	
HAMM	IER TYPE	E:	Auto	_ ROD	TYPE/D	IA.:			ON: Gustavus Ak ELEV .:
			N/A						DATE: 11/01/21 END DATE: 11/01/21
CASIN	√IG SIZE/	YPE:	(.5"		HOLE SI	ZE:	,	WEATH	ER DURING DRILLING: Sunny 40°F wind < Smpt
						SAMF	LE L	DATA	
DATE	SAMP. NO. TYPE	FROM TO	DRIVING RESISTANCE BLOWS / 6 INCH	L. REC. # JARS	DRILL ACTION	CONTACTS / GROUNDWATER	PID	ENV. SAMPLE	FIELD CLASSIFICATION [density/consistency; color; slightly, minor, MAJOR, then trace constituents; moisture; structure; other; USCS classification (geology)]
1305	1	Ø,	1	41			1		0'-1': Dark brown arganic sendy soil, maist
11/01		5					/		1'-1.33': Grey-brown well graded sand, moret
1			1				1	01	1.33'-4': Grey-brown silt, moist to wet
V	J	V	1	V		Ş	1	51	4'-5': Light grew well graded sand, maist to wet at 5'
1310	2	51	/	3.7		7	1	7	Light gray poorly graded soud with gravel
11/01		10'		/			1	/	
1350	3	10'	1	4.5'				1	10'-11': Light gray poorly graded send, wet
11/01		151		1			1		11'-15': Light gray poorly graded sandy growel
1415	Ч	151	1	4.5'			1	1	Light gray poorly graded sand with
11/01		50,		/			/	/	
1420	S	5W,	7	3.6'			ĵ	1	Light gray poorly graded sond, wet
11/01		25'		1			1	/	
1430	6	251	1	3.5'			1	1	25'-28" Gray poorly graded sand with silt
11/01		30'	/	1				1/2	28'-28.8'. Dark brown woody organic detris 28.8'-28': Gray Prorly graded sond, wet
			UMMARY FIE	LD LOG	OF BOR	ING			COMMENTS (i.e. materials used, visitors, problems, etc.):
FROM	PTH TO	USCS CLASSIF.	GENERAL	LIZED SOIL	DESCRIPT	ION FOR DRAFTED	GINT L	.og	
									GROUNDWATER DATA
>									WATER DEPTH TIME DATE
									5' 1305 11/01/21
									SUMMARY OF TIME AND FOOTAGE
									FOOTAGE 45' SAMPLES: 9 Attempted
									DRILLED:
									SETUP/CLEANUP: hrs. WELL INSTALL: hrs.
									OTHER:
									BORING: MW-20 SHEET / OF 2





DRILL	COMPAN	NY/DRILLI	ER: Dis	COVERY	Dril	ling		JOB NO	: 102599-008 BORING NO: MW-20
DRILL RIG EQUIPMENT: GeoProbe GGIO DT									ME: Gustovus DOT APF PTAS
DRILLING METHOD: Direct Push									DBY: Adam Wyberny
						IA.:			ON: Gustavus, AK ELEV .:
						OP: N/A			DATE: 11/01/21 END DATE: 11/01/21
						ZE:			ER DURING DRILLING: Sunny 40°F wind < 5mpl
						SAME	PLE	DATA	
TIME	SAMP. NO.	FROM TO	DRIVING RESISTANCE BLOWS / 6 INCH	L. REC. # JARS	DRILL ACTION	CONTACTS / GROUNDWATER	PID	ENV. SAMPLE	FIELD CLASSIFICATION [density/consistency; color; slightly, minor, MAJOR, then trace constituents; moisture; structure; other; USCS classification (geology)]
1500	7	30'		3.5			1	- 1	Grey poorly graded sand, wet
				/			1		
11/01		35'	1	/					
1520	8	351	1	2.51			1	02	Grey poorly graded sound with silt, wet
11/01		40'	/	1			1	37'	
1540	9	40'	,	3'				1	40'-42': Dark gray silty rond, wet
11/01		45'	/	1			/	/	42'-42.5': Gray fat aley, schurcturated
7.	1		1	1			7	1	42.5' - 45': Dark gray silty sand, wet
7	1	7	/	J			1		
							-		
					1				
					ļ		_		
			1						
			L SUMMARY FIE	LD LOG	OF BOR	ING			COMMENTS (i.e. materials used, visitors, problems, etc.):
	PTH	uscs	9/8For US 94/85 9/7/00/00		DE ANTONA POR SE ESCUCIO	ION FOR DRAFTED	GINT L	OG	
FROM	то	CLASSIF.	\$000000 W/9Y					1000	
F)4144444-(#8636644777777				ar (4-111-1111)					
									GROUNDWATER DATA
									WATER DEPTH TIME DATE
									5' 1305 11/01/21
		7							SUMMARY OF TIME AND FOOTAGE
									FOOTAGE 45 SAMPLES: 9 Attempted
-		-							DRILLED:  ORILL/SAMPLE 3 hrs. STANDBY: N/A hrs.
				olumnistanista				n. 10-4111 (1111-11111)	DRILL/SAMPLE 3 hrs. STANDBY: N/A hrs.  SETUP/CLEANUP:   hrs. WELL INSTALL: hrs.
									OTHER:
				HI					S. C. C. C. C. C. C. C. C. C. C. C. C. C.
									BORING: MU-DO SHEET DOF D



Monitoring Well No. MW-20-15

Project Name: Gustavus DOT & PF

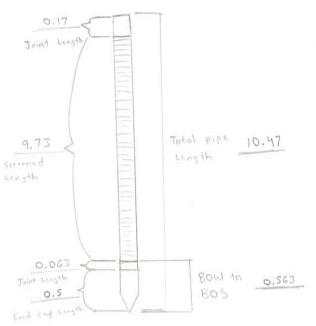
Project Number: 102599-008

1. Top section (Casing) Initial Pipe Length: 10' Cuttoff Length: 5.67'

4.33

11. Mid section (cosing) Number of blank sections: sum of Lengths!

III. Screened Section (s) x2



VIII.

Calculations Below Ground Surface

TOC to BOW: 14.80 - BOW to BOS: + 0.563 = TOC to BOS: 14.24

TOC to BOS: 14.24 - Screened Length: 9.73 = Toc to Tos: 4.51

Date Installed: 11/01/2021 Logged by: Adom Wyborny Driller: Discovery Drilling

IV. Well Data 2" PVC 5101 SIZE 0.01 Joint Pin end up

V. Backfill

	Bottom	Top
CEM-PB	1,1	0'
SLUF- PB	21	1,
BCH-PB	3'	21
FIL- PS	151	85
+ FIL-PB	5	3

VI. Monuments - Flushmount

TOM to TOC: -0.33

TOC +0 GS: -0.33

LOCK TYPE: NIA

VII. Moisture Content Depth to water Below GS:

> TOC +0 BOW: 14.80 - TOC to GS: -0.33 = BOW Las: 15.13

TOC to TOS: 4.51 - TOC 10 GS - - 0.33 \_ TOS: 4.84 TOC to BOS . 14,24

- TOC to GS: -0.33 = BOS: 14.57

MM-50-12

TOC +0 14.8

Monitoring Well No.  Project Name  Gustavus DOT 3 PF  Project Number  102599 -008	Date Installed 11/01/2021  Logged By Adam Wyberny  Driller Discovery Poiling
I. TOP SECTION (CASING) Initial Pipe Length Cuttoff Length Add-on Length Total Length	IV. WELL DATA  Pipe Type: PVC SS Other  Diameter: 2" S4" Other  Slot Size: 0.01 Other  1.33 Joint Pin End: Up Down Type
II. MID SECTION (CASING)  Number of Blank Sections	V. BACKFILL  Depth Below GS
Length of Section(s):	Bottom Top
10, 10, 10,	CEM (No Pipe)  CEM_PB
	BGR_PB
Sum of Lengths: 30'	*SLUF_PB(FIL_PB) 35 33  *SLUF_PS(FIL_PS) 40' 25' 35  *SLUF/FIL (No Pipe)
III. SCREENED SECTION(S)	*SLUF_PB/FIL_PB
Joint Length:	Filter Pack Type or Gradation 20/40 counded 5:13ca Sand
Γ <u></u> +	
	VI. MONUMENTS
0.000	Stickup  Flushmount  TOM to GS
Screened Length: 4.75'	TOM to TOC - 0.33
Total Pipe Length: 5.48	^TOC to GS - 0.33
25119411	Lock type A/A
	VII MOISTURE CONTENT
BOWLES =	VII. MOISTURE CONTENT
Joint Length: 9.963 BOS: 9.563	Depth to Water Below GS
End Cap Length:	Frozen Soil Below GS
Pointed 🖾 Flat 🗆	Bottom Top
TOC to BOW: 39.91	Seasonal 1
	Seasonal 2
	Permafrost 1
BCH = Bentonite Chips (gINT code)	Permafrost 2
BGR = Bentonite Grout (gINT code) bgs = Below Ground Surface BOS = Bottom of Screen  VIII. CALCULATIONS	BELOW GROUND SURFACE
BOW = Bottom of Well CEM = Cement (gINT code)	
FIL = Sand Pack (gINT code)	TOC to BOW
GS = Ground Surface SLUF = Natural Collapse/ Pea Gravel (gINT code) TOC	to BOW 39.81 - TOC to GS - 0.33
SS = Stainless Steel	to BOW
IOC = Top of Casing	C to BOS 39.25 TOC to TOS 34.50
TOS = Top of Screen	- TOC to GS - 0.33
PB = Blank Pipe (gINT code) PS = Slotted Pipe (gINT code) TOC	to BOS TOS bgs
* Circle filter-pack type - Scre	ened Length
^ Flushmount = Negative Number = TO Stickup = Positive Number	C to TOS TOC to BOS
	- TOC to GS - 0.33
	BOS bgs 39.58



Well No. WW-20-40



DRILL	COMPAN	IY/DRILLE	ER: Dic	COVET	Dr	illing		JOB NO:	: 102599 BORING NO: MW - 13
			GeoProb						ME: Gustavus DOTRPF PFAS
		ana a partir de la caraci <del>a</del>	Direct Pu						DBY: Adam Wyborny
						IA.: 2"		LOCATION	ON: GST ELEV.:
						OP: N/A			DATE: 10/19/21 END DATE: 10/19/2021
CASIN	IG SIZE/T	YPE:	L.5"		HOLE SI	ZE: 2"			ER DURING DRILLING: Rain 40°F wind Smph
		100 Mars 14				SAMF	DIFF	ΑΤΛ	
TIME	SAMP. NO.	王 FROM	DRIVING	L. REC.	DRILL	CONTACTS /		ENV.	FIELD CLASSIFICATION [density/consistency; color; slightly, minor, MAJOR, then trace constituents;
DATE	TYPE	DEP OT	RESISTANCE BLOWS / 6 INCH	# JARS	ACTION	GROUNDWATER	PID	SAMPLE	moisture; structure; other; USCS classification (geology)]
1105	1	0	,	4.6			1	0,000	0-2.4': Grey-brown sond w/ trace gravel,
		5,		1			1	01	2.4-3.1: Grey silt with sand, low plasticity
10/19		5		,			-	5,	moist. 3,1-5.0' Brown sand, loose, moist
1		1		1				1	poorly graded
V		V		1					
		5'		Ц					5.0-9.5: Gray-brown sand, loose, moist
1130	2		/	-		- 7	1	02	9.5-10.0: Grey sond, wet, coarse
10/19		10,	/	9				9'	Poorly graded
1150	3	10'	,	4			1		10-15': Grey sand, met, coarse
		15'		1			/		
10/19			-		-				Gray sand, wet, coarse, poorly graded
1240	4	15'		3.2			1	∅3	
10/19		30,		/			1	20'	
1315	5	20'		5	1		5.54		Gray silt with clay, medium placticity
1212	2		/				1	04	saturated
10/19		25'						251	
1400	6	251	,	4.5				Ø5	Dark Gray sondy Gravel, wet
10/19		301	1	1				30/	
1.07.1.1			SUMMARY FIL	LD LOG	OF BOI	RING		and the	COMMENTS (i.e. materials used, visitors, problems, etc.):
	EPTH	USCS CLASSIF	GENER/	ALIZED SOI	L DESCRIP	TION FOR DRAFTED	GINT	LOG	
FROM	то	CLASSIF	+						
									GROUNDWATER DATA WATER DEPTH TIME DATE
									9.5' 1130 10/19/21
									SUMMARY OF TIME AND FOOTAGE
									FOOTAGE 50 SAMPLES:Attempted
									DRILLED: Recovered
									DRILL/SAMPLE 6 hrs. STANDBY: 2 hrs.
									SETUP/CLEANUP: hrs. WELL INSTALL: hrs.
									OTHER:
									BORING: MW-13 SHEET 1 OF 2

# SHANNON & WILSON, INC. GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS:

Solumber of the second solution of the second	DRILL	COMPAN	Y/DRILLE	ER: Disc	overy	Drill	ing		ЈОВ ИО	: 102599 BORING NO: MW-13
HAMMER TYPE: Auto ROD TYPEDIA: 2" HAMMER WEIGHT: N/A HAMMER ROPP: N/A CASING SIZETTYPE: 1,5" HOLE SIZE: 2"  SAMPLE DATA  THE DESTRUCTION: GST ELEV: STATT DATE: 10/19/21 END DATE: 10/19/2021  THE DAT	DRILL	RIG EQU	IIPMENT:	Geofral	e 60	610 DT	7		JOB NAI	ME: Gustavus DOTIPF PFAS
HAMMER TYPE: ALLO ROD TYPE/DIA: 2"  HAMMER WEIGHT: N/A HAMMER RROP: N/A  CASING SIZE/TYPE: 1.5" HOLE SIZE: 2"  WEATHER DURING DRILLING: Rein 40°F U/19/20/21  TIME SAMP, NO, E FROM DRIVANO DATE 1798 9 TO BOOK 18 BIGH.  TO BOOK 18 BIGH.  AND AND AND E REC. CORLL CONTACTS! OCCURROWATER NO DRILL ACTION CONTACTS! OCCURROWATER NO DRILL ACTION CONTACTS! OCCURROWATER NO DRILL ACTION CONTACTS! OCCURROWATER NO DRILL ACTION CONTACTS! OCCURROWATER NO DRIVAN SAMPLE DATA  FRED CLASSFRCATION MAJOR, then trace constituents, moisture, structure offert using frem information (goology)  10/19	DRILL	NG METI	HOD:	Direct P	ish				LOGGEI	DBY: Adam Wyborny
HAMMER WEIGHT:  OASING SIZETYPE:  1.5" HOLE SIZE: 5"  WEATHER DURING DRILLING: Rain 40°F wind 5 mgh.  SAMPLED ATA  WASTERDATA  W									LOCATI	ON: GST ELEV.:
CASING SIZETYPE:  1,5" HOLE SIZE: 2" WEATHER DURING DRILLING: Rain 40°F wind 5 mph  SAMPLE DATA  TIME SAMP, NO E FROM DEVING TO TO THE SIZE: 3" SAMPLE DATA  TIME SAMP, NO E FROM DEVING RESISTANCE AND RESISTANCE TO TO THE SAMPLE DATA  TO THE TYPE STORY OF THE SAMPLE DATA  FIELD CLASSIFICATION  FRESSTANCE RESISTANCE AND ADDITION OF CONTACTS / NO ENG. SAMPLE  10/19 35' 1									START	DATE: 10/19/21 END DATE: 10/19/2021
TIME SAMP NO E PROM RESISTANCE DATA  TIME SAMP NO E PROM RESISTANCE DATA  THE SAMP NO E PROM RESISTANCE DATA  THE SAMP NO E PROM RESISTANCE DATA  THE SAMP NO E PROM RESISTANCE DATA  THE SAMP NO E PROM RESISTANCE DATA  THE SAMP NO E PROM RESISTANCE DATA  THE SAMP NO E PROM RESISTANCE DATA  ACTION GROUNDWATER PATA  THE SAMP NO E PROM TO CASSEF.  THE SAMP NO EXCHANGE TO CASSEF.  THE SAMP NO E PROM TO CASSEF.  THE SAMP NO EXCHANGE TO CASSEF.  THE SAMP NO EXCHANGE TO CASSEF.  THE SAMP NO EXCHANGE TO CASSEF.  THE SAMP NO EXCHANGE TO CASSEF.  THE SAMP NO EXCHANGE TO CASSEF.  THE SAMP NO EXCHANGE TO CASSEF.  THE SAMP NO EXCHANGE TO CASSEF.  THE SAMP NO EXCHANGE TO CASSEF.  THE SAMP NO EXCHANGE TO CASSEF.  THE SAMP NO EXCHANGE TO CASSEF.  THE SAMP NO EXCHANGE TO CASSEF.  THE SAMP NO EXCHANGE TO CASSEF.  THE SAMP NO EXCHANGE TO CASSEF.  THE SAMP NO EXCHANGE TO CASSE										
Time	127(0)(199-12)							7.55	ATA	
10   10   10   10   10   10   10   10	TIME	SAMP NO	T FROM	DRIVING	L REC	ppu.		LED		
10/19   35'   1	DATE	TYPE	DEPTI	RESISTANCE		10.000 10.000 10.000 1		PID		moisture; structure; other; USCS classification (geology)]
10/19   35'   1	500000000				ч					30'-33': Gray silt with sond, wet
SUMMARY FIELD LOG OF BORING   COMMENTS (i.e. materials used, visitors, problems, etc.):   SUMMARY FIELD LOG OF BORING   COMMENTS (i.e. materials used, visitors, problems, etc.):				/	1			/		33'-34': Gray Clay, medium plasticity,
1600 8 35' 5 5		,						1 60	06	34'-35': Dack gray silty sand, wet
Solumbed  TRIVELD LOG OF BORING  DEPTH  USCS FROM TO CLASSIF.  GENERALIZED SOIL DESCRIPTION FOR DRAFTED GINT LOG  GROUNDWATER DATA  WATER DEPTH  TIME  GROUNDWATER DATA  WATER DEPTH  TIME  GROUNDWATER DATA  WATER DEPTH  TIME  GROUNDWATER DATA  WATER DEPTH  TIME  GROUNDWATER DATA  WATER DEPTH  TIME  GROUNDWATER DATA  WATER DEPTH  TIME  DATE  SUMMARY OF TIME AND FOOTAGE  FOOTAGE  SAMPLES:  Attempted  SCHING COCKY STIT: Uset  LUC'-43.5': Dack gray cilty soad, just  SOMMENTS (i.e. materials used, visitors, problems, etc.):  GROUNDWATER DATA  WATER DEPTH  TIME  DATE  J. J. ALBO  SOUNDWATER DATA  SUMMARY OF TIME AND FOOTAGE  FOOTAGE  FOOTAGE  SAMPLES:  Attempted  RECOVERS.	1	1	1		1			1	351	
10/19 401  1630 9 401  10/19 451  10/19 451  10/19 501  Summary Field Log of Boring  Comments (i.e. materials used, visitors, problems, etc.):  GROUNDWATER DATA  WATER DEPTH TIME DATE  GROUNDWATER DATA  WATER DEPTH TIME DATE  SUMMARY OF TIME AND FOOTAGE  FOOTAGE SAMPLES: Attempted  DRILLED: Recovered.	12	O	361		С	1				35-38': Gray silty clay, medium plosticit
10/19 401  10/19 451  10/19 501  Summary FIELD LOG OF BORING  DEPTH USCS GENERALIZED SOIL DESCRIPTION FOR DRAFTED GINT LOG  FROM TO CLASSIF. GENERALIZED SOIL DESCRIPTION FOR DRAFTED GINT LOG  GROUNDWATER DATA  WATER DEPTH TIME DATE  SUMMARY OF TIME AND FOOTAGE  FOOTAGE SAMPLES: Attempted  RECOVERS.	1600	0		/				1		38'-40': Gray Sondy Silt, wet
SUMMARY FIELD LOG OF BORING   SUMMARY FIELD LOG OF BORING   SUMMARY FIELD LOG OF BORING   SUMMARY FIELD LOG OF BORING   COMMENTS (i.e. materials used, visitors, problems, etc.):    SUMMARY FIELD LOG OF BORING   COMMENTS (i.e. materials used, visitors, problems, etc.):    GROUNDWATER DATA   WATER DEPTH   TIME   DATE   SUMMARY OF TIME AND FOOTAGE   SAMPLES: Attempted   DRILLED:   Recovered   Recover	10/19		401		_			_		
SUMMARY FIELD LOG OF BORING  DEPTH USCS FROM TO CLASSIF.  GENERALIZED SOIL DESCRIPTION FOR DRAFTED GINT LOG  GROUNDWATER DATA  WATER DEPTH TIME DATE  9, 5 ALBO 10/9181  Summary OF TIME AND FOOTAGE FOOTAGE SAMPLES: Attempted DRILLED: Recovered	1630	9	401		55%			1		Section 100 March 100 Marc
SUMMARY FIELD LOG OF BORING  DEPTH USCS GENERALIZED SOIL DESCRIPTION FOR DRAFTED GINT LOG  GROUNDWATER DATA  WATER DEPTH TIME DATE  SUMMARY OF TIME AND FOOTAGE  FOOTAGE SAMPLES: Attempted DRILLED: Recovered.	10/19		451		1					Saturated
SUMMARY FIELD LOG OF BORING   COMMENTS (i.e. materials used, visitors, problems, etc.):    SUMMARY FIELD LOG OF BORING   COMMENTS (i.e. materials used, visitors, problems, etc.):   DEPTH	1	1	1		1			1	Ø7	44-45: Gray sandy sitt, wet
SUMMARY FIELD LOG OF BORING  COMMENTS (i.e. materials used, visitors, problems, etc.):  GROUNDWATER DATA  WATER DEPTH TIME DATE  SUMMARY FIELD LOG OF BORING  COMMENTS (i.e. materials used, visitors, problems, etc.):  GROUNDWATER DATA  WATER DEPTH TIME DATE  SUMMARY OF TIME AND FOOTAGE  FOOTAGE SAMPLES: Attempted DRILLED: Recovered					J			/	431	
SUMMARY FIELD LOG OF BORING  DEPTH USCS CLASSIF. GENERALIZED SOIL DESCRIPTION FOR DRAFTED GINT LOG  GROUNDWATER DATA  WATER DEPTH TIME DATE  3.5 LL30 LOL/ 512/  SUMMARY OF TIME AND FOOTAGE  FOOTAGE SAMPLES: Attempted DRILLED: Recovered.			0V 3448		- E	-				Gray silt with clay, saturated.
SUMMARY FIELD LOG OF BORING  DEPTH USCS FROM TO CLASSIF.  GENERALIZED SOIL DESCRIPTION FOR DRAFTED GINT LOG  GROUNDWATER DATA  WATER DEPTH TIME DATE  GROUNDWATER DATA  WATER DEPTH TIME DATE  GROUNDWATER DATA  WATER DEPTH TIME DATE  GROUNDWATER DATA  WATER DEPTH TIME DATE  GROUNDWATER DATE  GROUNDWATER DATA  WATER DEPTH TIME DATE  GROUNDWATER DATE  GROUNDWATER DATA  WATER DEPTH TIME DATE  GROUNDWATER DATE  GROUNDWATER DATE  GROUNDWATER DATE  GROUNDWATER DATE  GROUNDWATER DATE  GROUNDWATER DATE  GROUNDWATER DATE  GROUNDWATER DATE  GROUNDWATER DATE  GROUNDWATER DATE  GROUNDWATER DATE  GROUNDWATER DATE  GROUNDWATER DATE  GROUNDWATER DATE  GROUNDWATER DATE  GROUNDWATER DATE  GROUNDWATER DATE  GROUNDWATER DATA  WATER DEPTH  GROUNDWATER DATE  GROUNDWATER DATE  GROUNDWATER DATA  WATER DEPTH  GROUNDWATER DATE  GROUNDWAT	1810	10	1.50	/	4	-		/	9	hydric.
DEPTH USCS FROM TO CLASSIF. GENERALIZED SOIL DESCRIPTION FOR DRAFTED GINT LOG  GROUNDWATER DATA  WATER DEPTH TIME DATE  9, 5 1/30 10//912/  SUMMARY OF TIME AND FOOTAGE  FOOTAGE SAMPLES: Attempted DRILLED: Recovered	10/10		501		/				`	
DEPTH USCS FROM TO CLASSIF. GENERALIZED SOIL DESCRIPTION FOR DRAFTED GINT LOG  GROUNDWATER DATA  WATER DEPTH TIME DATE  9, 5 1/30 10//912/  SUMMARY OF TIME AND FOOTAGE  FOOTAGE SAMPLES: Attempted DRILLED: Recovered										
DEPTH USCS FROM TO CLASSIF. GENERALIZED SOIL DESCRIPTION FOR DRAFTED GINT LOG  GROUNDWATER DATA  WATER DEPTH TIME DATE  9, 5 1/30 10//912/  SUMMARY OF TIME AND FOOTAGE  FOOTAGE SAMPLES: Attempted DRILLED: Recovered				1						
DEPTH USCS CLASSIF. GENERALIZED SOIL DESCRIPTION FOR DRAFTED GINT LOG  GROUNDWATER DATA  WATER DEPTH TIME DATE  SUMMARY OF TIME AND FOOTAGE  FOOTAGE SAMPLES: Attempted DRILLED: Recovered.				SUMMARY FIL	LD LOG	OF BOI	RING			COMMENTS (i.e. materials used, visitors, problems, etc.):
GROUNDWATER DATA  WATER DEPTH TIME DATE  9, 5 ALBO LOLISTAL  SUMMARY OF TIME AND FOOTAGE  FOOTAGE SAMPLES: Attempted DRILLED: Recovered			USCS	GENER	NAME OF TAXABLE	at Samuransa samura	STATE OF THE STATE	GINT I	_og	
SUMMARY OF TIME AND FOOTAGE  SOUTH STATE OF THE AND FOOTAGE  FOOTAGE SAMPLES: Attempted DRILLED: Recovered	FROM	10	CEAGOII							
SUMMARY OF TIME AND FOOTAGE  SOUTH STATE OF THE AND FOOTAGE  FOOTAGE SAMPLES: Attempted DRILLED: Recovered										
SUMMARY OF TIME AND FOOTAGE  SOUTH STATE OF THE AND FOOTAGE  FOOTAGE SAMPLES: Attempted DRILLED: Recovered										
SUMMARY OF TIME AND FOOTAGE  SOUTH STATE SAMPLES: Attempted DRILLED: Recovered										
SUMMARY OF TIME AND FOOTAGE  FOOTAGE SAMPLES: Attempted DRILLED: Recovered										
FOOTAGE										
DRILLED: Recovered								-		SUMMARY OF TIME AND FOOTAGE
SALES SALES										FOOTAGE SAMPLES: Attempted
DRILL/SAMPLE hrs. STANDBY: hrs.										
SETUP/CLEANUP: hrs. WELL INSTALL: hrs.										
OTHER:										
										BORING: SHEET OF
										BORING: MW-13 SHEET 2 OF 2

	No. 3 at 10 to 10
Monitoring Well No. <u>Mω-13-20</u>	Date Installed 10/22/2021
Project Name Gustavus DoTAPF	Logged By Adam Wyborny
Project Number 102519 - 208	Driller Discovery Drilling
I. TOP SECTION (CASING)	IV. WELL DATA
Initial Pipe Length	Pipe Type: PVC ☑ SS ☐ Other
Cuttoff Length	Diameter: 2" 2 4" Other
Add-on Length	Slot Size: 0.01 🔀 0.02 🔲 Other
Total Length	
II. MID SECTION (CASING)	V. BACKFILL
Number of Blank Sections	Depth Below GS
Length of Section(s):	Bottom Top
	CEM (No Pipe)
	+ CEM_PB) Q.S Q.Q'
	SLUF_PB)FIL_PB 3.5' Ø.5'
	BCH_PB) 8' 3.5'
	*SLUF_PB/FIL_PB
Sum of Lengths:	BGR_PB *SLUF_PB(FIL_PB //O
Sum of Lenguis.	*SLUF_PS(FIL_PS) 20' 8'-10
	*SLUF/FIL (No Pipe)
III. SCREENED SECTION(S) X 2	*SLUF_PB/FIL_PB
III. SCREENED SECTION(S)	Filter Pack Type or
Joint Length: 9.17'	Gradation 20/40 rounded silice so
	+
	VI. MONUMENTS
	Stickup  Flushmount
Screened	TOM to GS
Screened 4.75' Length: Total Pi	TOM to TOC
Length:	
	Lock type N/A
	VII. MOISTURE CONTENT
BOW to	= Depth to Water Below GS
Joint Length: 2.063'- BOS: DOW to	563'
End Cap Length: Q.5'	Frozen Soil Below GS
Pointed 🛂 Flat 🗆	Bottom
TOC to BOW	
100 to 2011	Seasonal 2
	Permafrost 1
	Permafrost 2
BCH = Bentonite Chips (gINT code)	Tomanostr
BGR = Bentonite Grout (gINT code)	
bgs = Below Ground Surface VIII. CALC	CULATIONS BELOW GROUND SURFACE
BOS = Bottom of Screen BOW = Bottom of Well	PACIFICATION PROCESSOR (COL. MICHINEL INVESTIGATION CONTRACTOR CON
CEM = Cement (gINT code)	TOC to BOW
FIL = Sand Pack (gINT code)	- TOC to GS
GS = Ground Surface SLUF = Natural Collapse/ Pea Gravel (gINT code)	TOC to BOW 19.79 BOW bgs 20.04
SS = Stainless Steel	- BOW to BOS
TOC = Top of Casing	= TOC to BOS 19.23 TOC to TOS 9.5
TOM = Top of Monument TOS = Top of Screen	- TOC to GS - 0, 25
PB = Blank Pipe (gINT code)	TOC to BOS 19.23 TOS bgs 9.75'
PS = Slotted Pipe (gINT code)	- Screened Length
<ul><li>* Circle filter-pack type</li><li>^ Flushmount = Negative Number</li></ul>	= TOC to TOS TOC to BOS
Stickup = Positive Number	- TOC to GS -0.35
	BOS bgs +9.5.19.48
	DOG 193

Monitoring Well No. NW - 13 - 45 Project Name Project Number 102549		nstalled 10/21/2021 gged By Adam Wyberny Driller Discovery Drilling
I. TOP SECTION (CASING) Initial Pipe Length Cuttoff Length Add-on Length Total Length	Diameter: 2" Slot Size: 0.	VC
II. MID SECTION (CASING)	V. BACKFILL	
Number of Blank Sections3		Depth Below GS
Length of Section(s):		Bottom Top
10, 10, 10,	+	(No Pipe) Ø.5' Ø'
10, 10, 10,	444	B/FIL_PB 5' 0.5'
		BCH_PB) 31' 5'
		B/FIL_PB 35' 31'
Sum of Landhar		BOR_PB 38' 35'
Sum of Lengths:		BIFIT PB 40 38 S(FIL PS) 45' 38
	*SLUF_P	
III. SCREENED SECTION(S)		B/FIL_PB
LEM MANUAL A STATE OF THE STATE		ck Type or
Joint Length:		Gradation 20/40 rounded silica sond
	+	
	VI. MONUMENTS	
	5. <u>1</u>	Flushmount 🔀 OM to GS
Screened 4.751	TO	M to TOC - 0.25'
Total Pipe	-	OC to GS Ø, 25'
Length:		Lock type N/A
		- / //
	VII. MOISTURE CO	ONTENT
BOW to	= Depth to Water	Below GS
Joint Length: 9.963 BOS: 9.563		
End Cap Length:		Frozen Soil Below GS
Pointed 🔀 Flat 🔲	W: 70	Bottom Top
TOC to BOW:	Name of the second	seasonal 1
		easonal 2
		rmafrost 1
BCH = Bentonite Chips (gINT code)	Pe	mairost 2
BGR = Bentonite Grout (gINT code)		
bgs = Below Ground Surface BOS = Bottom of Screen  VIII. CALCU	ILATIONS BELOW GROUND SU	JRFACE
BOW = Bottom of Well		
CEM = Cement (gINT code) FIL = Sand Pack (gINT code)		TOC to BOW
GS = Ground Surface	TOC to BOW 44.79	- TOC to GS
SLUF = Natural Collapse/ Pea Gravel (gINT code) SS = Stainless Steel		BOW bgs 45.04
TOC = Top of Casing	- BOW to BOS	TOC to TOS 39.5
TOM = Top of Monument TOS = Top of Screen	- 100 to 803	- TOC to GS - 0.25
PB = Blank Pipe (gINT code)	TOC to BOS 44.23	TOS bgs 39.75
PS = Slotted Pipe (gINT code)  * Circle filter-pack type	- Screened Length	
^ Flushmount = Negative Number	= TOC to TOS	TOC to BOS
Stickup = Positive Number		- TOC to GS - 0.25
		BOS bgs 44.544.48

4/9/2020

SHANNON & WILSON, INC.

Well No.

MW-13-45

# SHANNON & WILSON, INC., GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS:

DRILL	COMPA	NY/DRILL	ER: Disc	0000-1	Drill:	ing	24	JOB NO: 102599 BORING NO: MW - 17				
DRILL	RIG EQU	JIPMENT	Geofro	be 6	610 D	)T	4)	JOB NA	ME: Gustavus DOT&PF			
DRILL	ING MET	HOD: _	Direct Pu	ish			2	LOGGE	EDBY: Adam wyborny			
HAMN	IER TYPE	Ξ:	Auto	ROD	) TYPE/C	DIA.: 2 "	2	LOCATI	ION: Gustavus, AK ELEV.:			
						ROP:N/A		START	DATE: 10/22/21 END DATE: 10/22/21			
			1.5"				47	WEATH	HER DURING DRILLING: Rain, 40°F wind < 5 mgh			
			T PRIVING	. 250	Г	SAMF	PLE D	1	FIELD CLASSIFICATION			
DATE	SAMP. NO. TYPE		DRIVING RESISTANCE BLOWS / 6 INCH	L. REC. # JARS	DRILL ACTION	CONTACTS / GROUNDWATER	PID	ENV. SAMPLE	[density/consistency; color; slightly, minor, MAJOR, then trace constituents; moisture; structure; other; USCS classification (geology)]			
1150	1	Ø,	-2	9			1	1	0'-1.5': Grey-brown poorly graded sond			
10/22		5'	/	1			1	/.	1.5'-3.6': light gray poorly graded sand			
								1	3.6'-4.25': Gray silt with clay, low plasticity, moist.			
7		1		1			/	1	M.25 - 5.01: Gicy-brown poorly graded sond.			
1200	2	51	,	4	1		,	j	5'-8': Grey-brown to grey peoply graded			
10/22	V.	10'		1			/	/	8'-10': Grey charse well graded sand,			
1205	3	10		3.5	1		7	Ø1	10'- 12.5': Grey-brown well graded cand,			
1803		1000	- /			3	= /	100.01	moist to wet			
10/22		15'		1				12,	Poorly graded, wet			
1330	4	151	/	4.8			1	1.	Grey sondy gravel, wet			
10/22		20'	/	/				- V				
1225	5	501		4.5		9	1	1	Grey poorly graded send with a D.S' clay layer between 27.5' and 23'.			
10/25		251	/	1			(		All material was wet.			
1315	6	95,		4.5		7	/	1	Grey poorly graded sand, wet			
10/55		30,		/			/	iZ.				
			SUMMARY FIE	ELD LOG	OF BOI	RING	_		COMMENTS (i.e. materials used, visitors, problems, etc.):			
FROM	EPTH TO	USCS CLASSIF	GENERA	ALIZED SOI	L DESCRIP	PTION FOR DRAFTED	GINT L	_OG				
						St. Northead						
									GROUNDWATER DATA			
						9			WATER DEPTH TIME DATE			
							_		18.5, 1800 10\85\81			
									SUMMARY OF TIME AND FOOTAGE			
									FOOTAGE SAMPLES: Attempted Recovered			
									DRILL/SAMPLE hrs. STANDBY: hrs.			
								- E	SETUP/CLEANUP: hrs. WELL INSTALL: hrs.			
									OTHER:			
							_		BORING: MW-17 SHEET OF 2			



DRILL	COMPAN	1Y/DRILLE	ER: Disc	DUET /	Dri	llins		JOB NO:	: 102599 BORING NO: MW-17
						DT			ME: Gustavus DOT & PF
			Direct				· I		DBY: Adam Wyborny
	HAMMER TYPE: Auto ROD TYPE/DIA.: 2"								ON: Gustavus, AK ELEV .:
						OP: N/A			DATE: 10/22/21 END DATE: 10/22/21
						ZE: 2"			ER DURING DRILLING: Rain 40°F wind a Smph
		25				SAMP			
TIME	SAMP. NO.	王 FROM	DRIVING	L. REC.	DRILL	CONTACTS /		ENV.	FIELD CLASSIFICATION
DATE	SAMP. NO. TYPE	OT DEPT	RESISTANCE BLOWS / 6 INCH	# JARS	ACTION	GROUNDWATER	PID	SAMPLE	[density/consistency; color; slightly, minor, MAJOR, then trace constituents; moisture; structure; other; USCS classification (geology)]
13,20	7	30,	ŝ	3			1	76	30'-31.3': Grey poorly graded sand, wet
		351		/			/	/	31.3-32.5" Dark grey silt with sond, wet
10/22		55							32.5-35': Grey fot clay, medium
1	1		1				/	1	plasticity, saturated
$\checkmark$	7	4	ν,	1			1		
1330	8	351	ý	Ч				02	35'-35,5': Grey fot clay with sond and
			/	+			1	371	35.5'-40': Grey to dock grey silty send,
10/22		40'						31'	No recovery after a attempts.
1400	9	40'	1	0			1	/	saturated silty clay mixture that
10/22		45'	1	1			(	/	drained out during extraction
1 (FW)		1000			1	i i			
					1				
			,	-					
			Select Operation with a series	Way and the same of the same o		Zarpyra			W
De	PTH	uscs	SUMMARY FIE	LZ SA SA CESTRO	nsiche de company		100000	22	COMMENTS (i.e. materials used, visitors, problems, etc.):
FROM	то	CLASSIF.	GENERA	LIZED SOIL	. DESCRIPT	TION FOR DRAFTED	GINT L	.OG	
									-
							_		
									GROUNDWATER DATA
		-	-						WATER DEPTH TIME DATE
									13.5, 1300 10/35/31
									SUMMARY OF TIME AND FOOTAGE
									FOOTAGE SAMPLES: Attempted DRILLED: Recovered
									DRILL/SAMPLE hrs. STANDBY: hrs,
									SETUP/CLEANUP: hrs. WELL INSTALL: hrs.
									OTHER:
									BORING:OFOF

Monitoring Well No. MW - 17 - 20 Project Name Gustavus DOTAPF Project Number 102599 - 008	Logged B	My Adom Wyberny  Discovery Drilling
I. TOP SECTION (CASING) Initial Pipe Length Cuttoff Length Add-on Length Total Length	Diameter: 2"	SS
II. MID SECTION (CASING)  Number of Blank Sections  Length of Section(s):	V. BACKFILL  CEM (No Pip	
Sum of Lengths:	SLUF_PB/FIL_F BCH_F *SLUF_PB/FIL_F BCR_F *SLUF_PB/FIL_F	PB 2' 1' PB 2' 2'
III. SCREENED SECTION(S) × 2  Joint Length: 9.17'	"SLUF_PS/FIL_I Calumn callegsed "SLUF/FIL (No Pig as DT 45 cessing was "SLUF_PB/FIL_I extracted. Screen Filter Pack Type Gradat	PS 20 8 40 De) PB
Screened 4.75 Length:	Stickup Flushmer TOM to TOM to Tom to	GS 0' OC 0.67' GS 0.67'
Joint Length: 9.0631 BOW to BOS: 9.563	VII. MOISTURE CONTE  = Depth to Water Below	NT
End Cap Length: ————————————————————————————————————	Season Season Permafro Permafro	Bottom Top al 1 al 2 st 1
BCH = Bentonite Chips (gINT code) BGR = Bentonite Grout (gINT code) bgs = Below Ground Surface BOS = Bottom of Screen BOW = Bottom of Well	LATIONS BELOW GROUND SURFA	CE
CEM = Cement (gINT code) FIL = Sand Pack (gINT code) GS = Ground Surface SLUF = Natural Collapse/ Pea Gravel (gINT code) SS = Stainless Steel TOC = Top of Casing TOM = Top of Monument TOS = Top of Screen	TOC to BOW	TOC to BOW - TOC to GS BOW bgs  TOC to TOS - TOC to GS - 0.67  - 0.67  - 0.67
PB = Blank Pipe (gINT code) PS = Slotted Pipe (gINT code) * Circle filter-pack type ^ Flushmount = Negative Number Stickup = Positive Number	TOC to BOS	TOS bgs 10.07  TOC to BOS 19.13  - TOC to GS - 0.67  BOS bgs 19.80

KRF

Well No. NW-17-20

Monitoring Well No. MW-17 - 40  Project Name Gustowus DoTAPF  Project Number 102599 - 008  Date Installed 10/22/2021  Logged By Adam Wyberns  Driller Discovery Drilling	
I. TOP SECTION (CASING)  Initial Pipe Length Cuttoff Length Add-on Length  Total Length  U. WELL DATA  Pipe Type: PVC SS Other Diameter: 2" 4" Other Slot Size: 0.01 0.02 Other Joint Pin End: Up Down Type	
II. MID SECTION (CASING)  V. BACKFILL  Depth Below GS	
Length of Section(s):  Bottom Top	
(olumn Collaps (SEM (No Pipe)   1   O'   10	4' to
Sum of Lengths:  Sum of Lengths:  *SLUF_PBETL_PB  *SLUF_PSFIL_PS  *SLUF_FSFIL_PS  *SLUF_FSFIL_	35
*SLUF/FIL (No Pipe)  *SLUF/FIL (No Pipe)  *SLUF_PB/FIL_PB	
Joint Length: O.17 [ ] Filter Pack Type or Gradation 20/40 rounded 4	lica sand
+ VI. MONUMENTS	
Stickup ☐ Flushmount 🔀	
Screened 4.75' Length: 4.75' TOM to GS TOM to TOC - 0.5'	
Total Pipe 5.48 ATOC to GS -0.5'	
Lock type N/A	
VII. MOISTURE CONTENT	
POW to Pepth to Water Below GS	
Joint Length: 9.063 BOS: 0.563 End Cap Length: D.5 Frozen Soil Below GS	
Pointed 🔀 Flat 🔲 Bottom To	
TOC to BOW: 39.86 Seasonal 1	
Seasonal 2 Permafoost 1	
Permafrost 2	
BCH = Bentonite Chips (gINT code) BGR = Bentonite Grout (gINT code) bgs = Below Ground Surface BOS = Bottom of Screen BOW = Bottom of Well	
CEM = Cement (gINT code) TOC to BOW 39.86	
GS = Ground Surface	
SS = Stainless Steel - BOW to BOS - 9.563	
TOM = Top of Monument	7.
PB = Blank Pipe (gINT code) TOC to BOS 39.3 TOS bgs 35.0	
PS = Slotted Pipe (gINT code)  * Circle filter-pack type  ^ Flushmount = Negative Number  - Screened Length  - TOC to BOS  39.3	0
Stickup = Positive Number - TOC to GS - 0.5	
BOS bgs 39.8	

YET

# SHANNON & WILSON, INC., GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS.

DRILL	COMPAN	Y/DRILLE	ER: Disc	covery	Drii	ling		JOB NO	: 102599-008 BORING NO: MW-21
DRILL	RIG EQL	IPMENT:	Geofice	obe 6	610 D	Т		JOB NAI	ME: Gustavus DOT &PF PFAS
DRILL	ING MET	HOD:	Direct P	ush				LOGGE	DBY: Adam Wyborny
HAMMER TYPE: Auto ROD TYPE/DIA.: 2"									ON: Gustavus, AK ELEV .:
			NIA					START	DATE: 10 / 25 / 21 END DATE:
			1.5"						ER DURING DRILLING: Overcast 40°F wind asmah
	_					SAMF	LE D	ATA	
TIME	SAMP, NO.	FROM TO	DRIVING RESISTANCE BLOWS / 6 INCH	L. REC. # JARS	DRILL ACTION	CONTACTS / GROUNDWATER	PID	ENV. SAMPLE	FIELD CLASSIFICATION [density/consistency; color; slightly, minor, MAJOR, then trace constituents; moisture; structure; other; USCS classification (geology)]
1530	i i	Ó		3.5			1	1	0'-2.2': Brown organic sitty soil, moist
10/25	,	5'		1			/	/	2.2'- 2.6': Grey-brown silt, moist
+	1	1	1	1			/	1	2.6'-5.0': Grey-brown to light grey well graded sand, moist to wet
1540	2	51	1	3.6		_	/	Ø1	51-81: Light grey well graded sand,
10/25		10'	/	1		=	_	7.5'	8'-10': Light gray poorly graded sond,
1550	3	10,	1	4,2			1	/	10'-12.5': Grey poorly graded gravel with
10/25		151	V	/-			700	, A	
1600	4	151	/	4.8			1	1	15'-17': Grey poorly graded sand with  gravel, wet  17'-17.5': Grey fot clay, wet
10/25		201	- 6	1					
1	1	1	,	1			. 1	1	17.5'-18.5': Grey silt, wet
V	V	$\downarrow$		1					18,5'-20': Grey, well geoded sond, wet
1610	5	201	1	5			1	1	20: 20.5: Grey sandy silt, wet
10/25		251	100				/		20.5'-25': Dark grey to grey fat clay, wet
	EDTU		SUMMARY FIE	LD LOG	OF BOR	RING			COMMENTS (i.e. materials used, visitors, problems, etc.):
FROM	TO	USCS CLASSIF.	GENERA	LIZED SOI	L DESCRIP	TION FOR DRAFTED	GINT L	.OG	
									GROUNDWATER DATA
							-		WATER DEPTH TIME DATE
									8 1540 10125121
									SUMMARY OF TIME AND FOOTAGE
									FOOTAGE SAMPLES: Attempted
									DRILLED: Recovered
									DRILL/SAMPLE hrs. STANDBY: hrs.
									SETUP/CLEANUP: hrs. WELL INSTALL: hrs. OTHER:
									BORING: SHEET OF



DRILL	COMPAN	IY/DRILLI	ER: Disc	Duery	Dei	11:00		JOB NO	: 102599-008 BORING NO: MW-21
DRILL COMPANY/DRILLER: Discovery Drilling DRILL RIG EQUIPMENT: GeoProbe 6610 DT									ME: Gustavus DOT & PF
									DBY: Adam Wyborny
						IA.:2\	- 1		ON: Gustavus, Ak ELEV .:
намм	IER WEI		Λ1/Δ	HAMI	MER DRO	OP: <u>N/A</u>			DATE: 10/25/21 END DATE:
			1.5"						ER DURING DRILLING: Overcast 40°F wind 45 mph
- OAGII	O OIZE/	S/15=1	1,2						
		= ====	DRIVING	L. REC.	10000000	SAMF	PLE D		FIELD CLASSIFICATION
DATE	TYPE	FROM TO	RESISTANCE BLOWS / 6 INCH	# JARS	DRILL ACTION	CONTACTS / GROUNDWATER	PID	ENV. SAMPLE	[density/consistency; color; slightly, minor, MAJOR, then trace constituents; moisture; structure; other; USCS classification (geology)]
1630	6	251	7	5			)	1	25' - 27.51: Grey fat clay, saturated
10/25		301	/	/			/	/	27.5'- 30': Grey to Dark grey silty sand,
1640	7	301	1	5			1	1	30'-33': Grey silt with sand, wet
10/25		35,	6	/			1		331-351: Grey Fat clay, sodurated
1700	8	351	1	4			1	/	35'-37.5': Grey fat clay, saturated
10/25		40'		/			20	/	37.5'-40'. Grey sondy silt, wet
1730	9	40'	/	5			1	Øa	Grey silty sand, wet
10/25		451	1	1				49,	
								197	
						la la			
					1				
			SUMMARY FIE	LD LOG	OF BOF	RING			COMMENTS (i.e. materials used, visitors, problems, etc.):
FROM	EPTH TO	USCS CLASSIF.	GENERA	LIZED SOII	L DESCRIP	TION FOR DRAFTED	GINT L	_OG	
	-								
									GROUNDWATER DATA  WATER DEPTH TIME DATE
									WATER DEPTH TIME DATE
									SUMMARY OF TIME AND FOOTAGE
									FOOTAGE SAMPLES: Attempted Recovered
									DRILL/SAMPLE hrs. STANDBY:hrs.
									SETUP/CLEANUP: hrs. WELL INSTALL: hrs.
									OTHER:
									BORING: MW-2 SHEET Z OF Z

Monitoring Well No. MW - 21 - 15  Project Name Gustavus DoT+PF  Project Number 103599 - 008	Date Installed 10/26/2021  Logged By Adam Wybern y  Driller Discovery Drilling
I. TOP SECTION (CASING) Initial Pipe Length Cuttoff Length Add-on Length Total Length	IV. WELL DATA
II. MID SECTION (CASING)  Number of Blank Sections  Length of Section(s):	V. BACKFILL  Depth Below GS  Bottom Top  CEM (No Pipe)  CEM_PB Q.S'  CSLUF_PB/FIL_PB 2'  O.S'
Sum of Lengths:	*SLUF_PB/FIL_PB
Joint Length: O.17'	*SLUF_PB/FIL_PB Filter Pack Type or Gradation+
4.73 Length: —	VI. MONUMENTS  Stickup ☐ Flushmount ☐  TOM to GS  TOM to TOC  ↑TOC to GS  Lock type  N/A
Joint Length: 2.963¹ BOW to BOS: 2.44 End Cap Length: Pointed ☑ Flat ☐  TOC to BOW:	VII. MOISTURE CONTENT  = Depth to Water Below GS  Frozen Soil Below GS  Bottom Top  Seasonal 1  Seasonal 2
BOS = Bottom of Screen BOW = Bottom of Well	Permafrost 1 Permafrost 2  TIONS BELOW GROUND SURFACE
CEM = Cement (gINT code)  FIL = Sand Pack (gINT code)  GS = Ground Surface  SLUF = Natural Collapse/ Pea Gravel (gINT code)  SS = Stainless Steel  TOC = Top of Casing  TOM = Top of Monument  TOS = Top of Screen  PB = Blank Pipe (gINT code)  PS = Slotted Pipe (gINT code)  * Circle filter-pack type  * Flushmount = Negative Number	TOC to BOW
^ Flushmount = Negative Number Stickup = Positive Number	- TOC to GS

VCF 4/9/2020

Monitoring Well No. MW - 21 - 45  Project Name Gostoves DOT +PF  Project Number 102599 - 908	Date Installed 10/26/2021  Logged By Adam Wybern y  Driller Discovery Drilling
I. TOP SECTION (CASING) Initial Pipe Length Cuttoff Length Add-on Length Total Length  9,34	Pipe Type: PVC 🔀 SS Dother Diameter: 2" 🛱 4" Other Slot Size: 0.01 🛣 0.02 Down Type
II. MID SECTION (CASING)	V. BACKFILL
Number of Blank Sections3	Depth Below GS
Length of Section(s):	Bottom Top
10, 10, 10, +	CEM_PB Q.5'
10	*SLUF_PB/FIL_PB 4' 0.5'
	BCH_PB) 37' 4'
	*SLUF_PB/FIL_PB BGR_PB
Sum of Lengths: 30'	*SLUF_PBACE_PB 40 37
oun of Longino.	*SLUF_PS/FIL_PS) 45' 21'40
	*SLUF/FIL (No Pipe)
III. SCREENED SECTION(S)	*SLUF_PB/FIL_PB
Joint Length:	Filter Pack Type or Gradation 20/40 rounded silica sond
Joint Length: +	Gradation 20/10 rounded Sitted Scho
	VI. MONUMENTS
	Stickup  Flushmount
Screened	TOM to GS
Length: Total Dina	TOM to TOC O.5'
Length: 5.36	^TOC to GS 0.51
	Lock typeN(A
	WILL MOISTLINE CONTENT
DOW/ =	VII. MOISTURE CONTENT
Joint Length: 9.063 BOS: 9.44	Depth to Water Below GS
End Cap Length: 9.381	Frozen Soil Below GS
Pointed 🗵 Flat 🔲	Bottom Top
TOC to BOW: 44.7	Seasonal 1
	Seasonal 2
	Permafrost 1
STEPHEN STEPHEN STEPHEN STEPHEN STEPHEN STEPHEN	Permafrost 2
BCH = Bentonite Chips (gINT code) BGR = Bentonite Grout (gINT code)	
hard Balance Constant Conference	BELOW GROUND SURFACE
BOS = Bottom of Screen BOW = Bottom of Well	SEEOW GROOMS GORN AGE
CEM = Cement (gINT code)	TOC to BOW
FIL = Sand Pack (gINT code) GS = Ground Surface	- TOC to GS - 0.50
SLUF = Natural Collapse/ Pea Gravel (gINT code) TOC t	BOW bgs 45.20
TOO - T ( Oin-	to BOS
TOM = Top of Monument	C to BOS 44.26 TOC to TOS 39.51
TOS = Top of Screen PB = Blank Pipe (gINT code) TOC t	- TOC to GS - 0.5 TOS bgs 40.01
PS = Slotted Pipe (gINT code)	o BOS TOS bgs TOS bgs
Circle litter-pack type	C to TOS 31.51 TOC to BOS 44.26
Stickup = Positive Number	- TOC to GS
	BOS bgs 44.76
Ty (	WINDOWS WATER

4/9/2020

Well No.

# SHANNON & WILSON, INC. GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS:

			ND ENVIRONME		A		T	IOB NO:	102599-008 BORING NO: MW-22				
			R: Disc				1	IOB NAN	ME: Gustavus DOT &PF PFAS				
			GeoProb					LOGGED BY: Adam Wyborny					
DRILLING METHOD: Direct Push									LOCATION: Gustavus, AK ELEV.:				
HAMMER TYPE: Auto ROD TYPE/DIA.: 2" HAMMER WEIGHT: N/A HAMMER DROP: N/A									DATE: 10/25/21 END DATE: 10/25/21				
HAMME	ER WEIG	<sup>HT:</sup> —	N/A	HAM	MER DRO	OP:			ER DURING DRILLING: Cloudy 35°F wind < 5mph				
CASING	G SIZE/T	YPE:	1.5"		HOLE SI	ZE:		VVEATITI	EK DOMINO BINELINO				
						SAME	LE D	ATA	FIELD CLASSIFICATION				
TIME S	SAMP, NO.	FROM TO	DRIVING RESISTANCE BLOWS / 6 INCH	L. REC. # JARS	DRILL ACTION	CONTACTS / GROUNDWATER	PID	ENV. SAMPLE	[density/consistency; color; slightly, minor, MAJOR, then trace constituents; moisture; structure; other; USCS classification (geology)]				
0955	1	Ø'	,	3,5	C.		1		0-2.25': Brown argonic soil with sand, maist				
0-132	- '	5'	/				(		2.25'- 4': Grey-brown to light grey poorly graded				
10/25		5		-					4'-4.25': light gray silty sond, moist to wet				
			/				1	Ø1	4.25'-5.0': hight grey, poorly graded coarse				
V	V	V		1		- 5	1.0	4.5'	sand, well				
CLSCXVVV-M	2	-1	100	3.5	1			, i	51-9". Grey-brown poorly graded sond, coore				
1000	Dr.	5'	/	2.3		9	1		9'-10's Grey, poorly graded sand with silt				
10/25		10'		/	1				Grey poorly graded cond with gravel,				
1010	3	10'	)	3.2'		U	1	1	trace cobbles, wet				
101-0		151		/			1	/					
10/25				- /	1				Grey poorly geaded sand with gravel.				
1050	9	151	/	4.5'			1	1	wet				
10/25		50,	- 7	/									
1030	5	30'	. ,	41				9	20'-23': Grey poorly graded sond with ground				
			/				1	/	23'-251: Grey well graded sand, wet				
10/25		52,			-			,	25'-26.25': Grey silt with clay, saturated				
1040	6	251	1	4.75			1	/	26.25'-30': Grey sitt with trace clay, saturated				
10/25		30	7						N				
			SUMMARY F	ELD LO	G OF BC	RING			COMMENTS (i.e. materials used, visitors, problems, etc.):				
FROM	EPTH TO	USCS	GENEF	RALIZED SC	IL DESCRI	PTION FOR DRAFTE	D GINT	LOG					
FROM	10	2/11/2/2020											
									GROUNDWATER DATA				
									WATER DEPTH TIME DATE				
									4.5' 1000 10/25/21				
									SUMMARY OF TIME AND FOOTAGE				
									FOOTAGE 45 SAMPLES: 9 Attempted Recovered				
									DRILL/SAMPLE 2.5 hrs. STANDBY: hrs.				
			-						SETUP/CLEANUP: \ hrs. WELL INSTALL: hrs.				
			-						OTHER:				
									BORING: MW-22 SHEET 1 OF 2				

# SHANNON & WILSON, INC., GEOTEGHNICAL AND ENVIRONMENTAL CONSULTANTS:

9/25/2015-Boring Log Template

DRILL	COMPAN	IY/DF	RILLE	R: Disc	overy	Dr:1	ling		JOB NO:	: 102599-008 BORING NO: MW-22
										ME: Gustavus DOT JPF PFAS
			- 6	TO 100	7					DBY: Adam Wyborny
HAMMER TYPE: Auto ROD TYPE/DIA.: 2"									LOCATION	ON: Bustanus, AK ELEV .:
LIANANA	MMER WEIGHT: N/A HAMMER DROP: N/A								START	DATE: 10/25/21 END DATE: 10/25/21
										ER DURING DRILLING: Cloudy 35°F wind <5mph
CASIN	IG SIZE/ I	YPE		1.5"		HOLE SI	Z-L-,		***	
							SAMF	LE	ATA	FIELD CLASSIFICATION
DATE	SAMP. NO.	DEPTH	ROM TO	DRIVING RESISTANCE BLOWS / 6 INCH	L. REC. # JARS	DRILL ACTION	CONTACTS / GROUNDWATER	PID	ENV. SAMPLE	[density/consistency; color; slightly, minor, MAJOR, then trace constituents; moisture; structure; other; USCS classification (geology)]
1110	7	30	7)	,	3'			1	1	Dark grey silty sond, wet
			2007	/	1			1	1	
10/25		35	)		_ /			_		Grey poorly graded sand with silt,
1140	8	35	31	/	4.31	7		1	02	wet
10/25		40	9.1	/	1			1	401	
,772,170,32					-1					Grey prorty graded sond with silt, wet
1510	9	d	0,	/	2'				/	
10/25		Н	٤,	/	/		1			
						1				
		-								
								L		
		_						_		
		-	-			+		$\vdash$	+	
				SUMMARY FIE	LD LOG	OF BOI	RING			COMMENTS (i.e. materials used, visitors, problems, etc.):
	EPTH		ISCS ASSIF.	GENERA	LIZED SOI	L DESCRIP	TION FOR DRAFTED	GINT	LOG	
FROM	ТО	100	ASSIF.	133,000,000			Photographic and the second of			
										7
		-								
		-								GROUNDWATER DATA
										WATER DEPTH TIME DATE 4.51 1000 10/25/21
		-								1/3
		-								SUMMARY OF TIME AND FOOTAGE
		+								N.C. STUDIES O MILITARY
	-	1								FOOTAGE SAMPLES: Attempted DRILLED: Recovered
										DRILL/SAMPLE 2.5 hrs. STANDBY:hrs.
		-								SETUP/CLEANUP: hrs. WELL INSTALL: hrs.
										OTHER:
										BORING: MW-22 SHEET 2 OF 2

Monitoring Well No. MW 22- 15 Project Name Gustayus DOT APF Project Number 102599 - 008	Date Installed  Logged By  Adam Wyberny  Driller  Discovery Prilling
I. TOP SECTION (CASING) Initial Pipe Length Cuttoff Length Add-on Length Total Length	Pipe Type: PVC SS Other Diameter: 2" 4" Other Slot Size: 0.01 0.02 Other Joint Pin End: Up Down Type
II. MID SECTION (CASING)	V. BACKFILL
Number of Blank Sections	Depth Below GS
Length of Section(s):	Bottom Top CEM (No Pipe)
+	CEM PB Q.S'
	SLUF_PB/FIL_PB 2' 0.5'
	BCH_PB 4'
	*SLUF_PB/FIL_PB
Sum of Lengths: Q'	*SLUF_PB/(CL_PB 5
Sum of Lengths.	*SLUF_PS/FIL_PS 15'
	*SLUF/FIL (No Pipe)
III. SCREENED SECTION(S) \chi 📿	*SLUF_PB/FIL_PB
0.17' [ ]	Filter Pack Type or
Joint Length:	Gradation 20/40 counded silice some
	VI. MONUMENTS
	Stickup  Flushmount
	TOM to GS
Screened 4.75' Length:	TOM to TOC 0,42 '
	^TOC to GS
9.73 Length:	Lock type N/A
10.3	
	VII. MOISTURE CONTENT
BOW to	Depth to Water Below GS
Joint Length: 2.063 BOS: 2.44	Frozen Sojl Below GS
End Cap Length:	Bottom Top
TOC to BOW:	Total Control of the
TOC to BOW.	Seasonal 2
	Permafrost 1
	Permafrost 2
BCH = Bentonite Chips (gINT code)	and constant of the second
BGR = Bentonite Grout (gINT code) bgs = Below Ground Surface	IS DELOW OR CURE CUREACE
BOS = Bottom of Screen	IS BELOW GROUND SURFACE
BOW = Bottom of Well	TOC to BOW
CEM = Cement (gINT code) FIL = Sand Pack (gINT code)	- TOC to GS - 0.42
CS - Ground Surface	DC to BOW 14.35 BOW bgs 14.77
SS = Stainless Steel - E	OW to BOSO. 44
TOC = Top of Casing	TOC to BOS 13.91 TOC to TOS 4.18
TOS = Top of Montanient	- TOC to GS
PB = Blank Pipe (gINT code)	OC to BOS 13.91 TOS bgs 4.60
	Screened Length 4.73
^ Flushmount = Negative Number =	TOC to TOS TOC to BOS
Stickup = Positive Number	- TOC to GS BOS bgs
	500 ngs 17.33

Q 4/1

Monitoring Well No.  Project Name  Gustavus DoT 1 PF  Project Number  102599 - 008	Date Installed 10/25/2021  Logged By Adam Wyberny  Driller Discovery Drilling
I. TOP SECTION (CASING) Initial Pipe Length Cuttoff Length Add-on Length Total Length 4.25	IV. WELL DATA         Pipe Type:       PVC       ★       SS       Other         Diameter:       2"       ★       4"       Other         Slot Size:       0.01       ★       0.02       Other         Joint Pin End:       Up       ★       Down       Type
II. MID SECTION (CASING)	V. BACKFILL
Number of Blank Sections 3	Depth Below GS
Length of Section(s):	Bottom Top
101 101 101 +	CEM_PB
10, 10, 10, +	SLUF_PB/FIL_PB 2'
	(BCH_PB) 31' 2'
	*SLUF_PB/FIL_PB
	BGR_PB
Sum of Lengths: 30'	*SLUF_PB/KI_PB 35 34
	*SLUF_PS_FIL_PS) 40' 37 35 *SLUF/FIL (No Pipe)
III COREENED SECTION(S)	*SLUF_PB/FIL_PB
III. SCREENED SECTION(S)	Filter Pack Type or
Joint Length:	Gradation 20/40 counded silica sand
+	
	VI. MONUMENTS
	Stickup Flushmount 🔀
Screened	TOM to GS O'TOM to TOC O.5
Length: 4.751 Total Pipe 5.36	^TOC to GS -0.5
Length:	Lock type N/A
	VII. MOISTURE CONTENT
BOW to	Depth to Water Below GS
Joint Length: 9.963 BOS: 9.441	
End Cap Length:	Frozen Soil Below GS
Pointed 🔀 Flat 🗆	Bottom Top
TOC to BOW: 39.61	Seasonal 1
	Seasonal 2
	Permafrost 2
BCH = Bentonite Chips (gINT code)	- Citianox 2
BGR = Bentonite Grout (gINT code)	
bgs = Below Ground Surface BOS = Bottom of Screen  VIII. CALCULATIONS	BELOW GROUND SURFACE
BOW = Bottom of Well	
CEM = Cement (gINT code) FIL = Sand Pack (gINT code)	TOC to BOW 34.61
GS = Ground Surface	to BOW 39.61 - TOC to GS - 0.50 - YO.II
SLUF = Natural Collapse/ Pea Gravel (gilvi code)	V to BOS 9.44
TOC = Top of Casing = TC	OC to BOS 39.17 TOC to TOS 34.42
TOM = Top of Monument TOS = Top of Screen	- TOC to GS -0,50
PB = Blank Pipe (gINT code) TOC	to BOS 39.17 TOS bgs 34.97
PS = Slotted Pipe (gINT code)  - Screen filter pack type	eened Length
r lugilillodit - riogative rianise.	OC to TOS 31.17 TOC to BOS 31.17
Stickup = Positive Number	- TOC to GS
	BOS bgs 31.67

4/9/2020

Well No.



	A PRINCIPLE						$\top$		
DRILL COMPANY/DRILLER: Discovery Drilling									102599 BORING NO: MW-23
DRILL	RIG EQU	IPMENT	Geopro	be 661	10 D	T	- 1		ME: Gustavus DOT&PF
DRILLING METHOD: Direct Push									DBY: Adam Wybarny
HAMMER TYPE: Auto ROD TYPE/DIA.: 3"								LOCATION	DN: Gustavus, Ak ELEV.:
			NIA						DATE: 10/20/21 END DATE: 10/20/2021
CASIN	G SIZE/T	YPE:	1.5"	НС	DLE SIZ	ZE:		WEATH	ER DURING DRILLING: Cloudy 40°F wind <5 mph
0778888778						SAMF	DI E D	ΔΤΛ	
TIME	SAMP. NO.	I FROM	DRIVING	L. REC.	DRILL	CONTACTS /		ENV.	FIELD CLASSIFICATION [density/consistency; color; slightly, minor, MAJOR, then trace constituents;
DATE	TYPE	FROM TO	RESISTANCE BLOWS / 6 INCH		CTION	GROUNDWATER	PID	SAMPLE	moisture; structure; other; USCS classification (geology)]
	1	0		4.5				01	0'-03': Brown orsenic soil, moist
1052	1		- /	1.110.50			/	1	0.31 - 51: Gray-brown to light gray, poorly well
10/20		5'		×				1500	5'-5.6': Brown poorly graded sand with
1040	2	51		3.5			1	1	
		-		/			1		5.6'-10'. Light gray poorly graded send
10/20		10)		4.51				01	10'-13': Gray-brown well graded sand, moist
1050	3	10,		7.3		<u>\</u>	1	131	13'-15': Gray, poorly graded sand with .
10/20		15'		1		75		13	trace silt, saturated.
1130	Ч	15'		31			5	/	Gray poorly graded sand with a 0.25' clay loyer at 16.5'. All material
		A.S.	/	/			/	1	was wet and they clay was saturated.
10/20		20		- 1			$\vdash$	+	Dark gray poorly graded sand with
1500	5	201		3.5			1/	/	silt, wet
10/20		251					/		
				5'					Dark gray silty send, saturated.
1330	6	25'	- /	5			1	1	
10/20		301		/				- 6	Dark gray silty sand wet
1400	7	30		4.5			10		Dark gray silty send wet
		35					1		
10/20	)	5>	SUMMARY F	IELD LOG (	OE BO	RING			COMMENTS (i.e. materials used, visitors, problems, etc.):
- 0	EPTH	USC				PTION FOR DRAFTE	D GINT	LOG	
FROM	то	CLASS	IF. GENE	RALIZED SOIL I	DESCRI	1101111011011111	12000		
			(14)))						GROUNDWATER DATA
			- 1	-					WATER DEPTH
			_/-						13' 10 50 10/20/21
			/				-		SUMMARY OF TIME AND FOOTAGE
									Attempted
									FOOTAGE 50 SAMPLES: O Attempted Recovered
									DRILL/SAMPLE 6 hrs. STANDBY: hrs.
									SETUP/CLEANUP: hrs. WELL INSTALL: hrs.
									OTHER:
									50(03(5)(5))
	_						-		BORING: MW-23 SHEET OF
1									

# SHANNON & WILSON, INC., GEOTEGHNIGAL AND ENVIRONMENTAL CONSULTANTS

						ling	11		102599 BORING NO: MW-23
DRILL	RIG EQL	JIPMENT:	GeoPr	obe	6610 D	T			ME: Gustavus DOT & PF PFAS
		10101-1010-1010	Direct P						DBY: Adam Wyborny
HAMMER TYPE: Auto ROD TYPE/DIA.: 2"									ON: Gustavus, Ak ELEV.:
						DP: <u> </u>		START I	DATE: 10/20/21 END DATE:
						ZE: 2"		WEATH	ER DURING DRILLING: Cloudy 40°F wind 25mgh
						SAMF	LEC	ATA	THE R. L. LOGISTON TION
TIME	SAMP. NO. TYPE	FROM TO	DRIVING RESISTANCE BLOWS / 6 INCH	L. REC. # JARS	DRILL ACTION	CONTACTS / GROUNDWATER	PID	ENV. SAMPLE	FIELD CLASSIFICATION  [density/consistency; color; slightly, minor, MAJOR, then trace constituents; moisture; structure; other; USCS classification (geology)]
1525	8	351	/	4.51			1	1	Dork gray poorly graded sand with
10/20		401	/	/			/.		Anna and an and an and an and an and an and an an an an an an an an an an an an an
1600	9	40'	- /	2.5'			1	05	Gray poorly graded sond with silt wet
10/20		45'	/	١				421	Gray poorly graded sound with silt
1635	10	451	/	'G.P'			1	1	and trace organics, wet
10/20		50'		- /-	-		_		
					-				
					-				
					101				
						¥			
			SUMMARY FIE	LD LOG	OF BOR	RING			COMMENTS (i.e. materials used, visitors, problems, etc.):
FROM	EPTH TO	USCS CLASSIF.	GENERA	ALIZED SOI	L DESCRIP	TION FOR DRAFTED	GINT	LOG	
									GROUNDWATER DATA
-		-							WATER DEPTH TIME DATE
									13 1050 10120121
									SUMMARY OF TIME AND FOOTAGE
									FOOTAGE SAMPLES: Attempted Recovered
									DRILL/SAMPLE hrs. STANDBY: hrs.
									SETUP/CLEANUP: hrs. WELL INSTALL: hrs.
									OTHER:
									BORING: MW-23 SHEET 2 OF 2

Monitoring Well No.  Project Name  Custage Dot APF  Project Number  102599 - 008	Date Installe Logged B Drille	10/21/2021 Adam Wyberny er
I. TOP SECTION (CASING) Initial Pipe Length Cuttoff Length Add-on Length Total Length	Diameter: 2"	SS  Other
II. MID SECTION (CASING)  Number of Blank Sections	V. BACKFILL	Depth Below GS
Length of Section(s):	CEM (No Pip + CEM_I SLUF_PB/FIL_I BCH_I	PB 1' 0' PB 3' 1' 1' 1' 1' 1' 1' 1' 1' 1' 1' 1' 1' 1'
Sum of Lengths:	*SLUF_PB/FIL_ BGR *SLUF_PB/FIL_ *SLUF_PS/FIL_	PB <b>%</b> 10 <b>4</b>
III. SCREENED SECTION(S) × 2	*SLUF/FIL (No Pij *SLUF_PB/FIL_	РВ
Screened 4.751 Length:  Total Pipe Length:	Filter Pack Type Gradat  VI. MONUMENTS Stickup Flushm TOM to TOM to T ATOC to Lock ty  VII. MOISTURE CONTE  Depth to Water Below	ount
Joint Length: 9.563 End Cap Length: Pointed 🔀 Flat	Season Season Permafro Permafro	Frozen Soil Below GS Bottom Top al 1 al 2 st 1
BCH = Bentonite Chips (gINT code) BGR = Bentonite Grout (gINT code) bgs = Below Ground Surface BOS = Bottom of Screen BOW = Bottom of Well CEM = Cement (gINT code) FIL = Sand Pack (gINT code) GS = Ground Surface SLUF = Natural Collapse/ Pea Gravel (gINT code) SS = Stainless Steel TOC = Top of Casing TOM = Top of Monument TOS = Top of Screen PB = Blank Pipe (gINT code) PS = Slotted Pipe (gINT code) * Circle filter-pack type  * Flushmount = Negative Number Stickup = Positive Number	TIONS BELOW GROUND SURFA  TOC to BOW	TOC to BOW

YEF

Monitoring Well No = 50	Date Installed 10/21/2021
Project Name Gustavus DOT + PF	Logged By Adam Wybacny
Project Number 192599 - 008	Driller Discovery Drilling
Troject Number (0 4544 = 005	VISCOULLY STRING
I. TOP SECTION (CASING) Initial Pipe Length Cuttoff Length Add-on Length Total Length	Pipe Type: PVC  SS  Other
4.13	
II. MID SECTION (CASING)	BACKFILL
Number of Blank Sections	Depth Below GS
Length of Section(s):	Bottom Top
Length of Ocotion(s).	CEM (No Pipe)
10, 10, 10, +	CEM PB) I' O'
10 10	ISLUF PB/FIL PB 5' I' Pea gravel
10,	BCH_PB) 39' 30' up to 5' wi
	*SLUF_PB/FIL_PB
	BGR_PB
Sum of Lengths: 40'	*SLUF_PB(FIL_PB) 45 39
oun of Lenguis.	*SLUF_PS/FIL_PS) 50' 39" 45
	*SLUF/FIL (No Pipe)
III SCREENED SECTION(S)	*SLUF_PB/FIL_PB
III. SCREENED SECTION(S)	
a"/o.17'	Filter Pack Type or Gradation 20/40 counded silica Sand
Joint Length:	Gladation 20/40 Paulage Strice Sono
	I. MONUMENTS
V	
	Stickup  Flushmount
Screened 6 75	TOM to GS
Length: Total Pine	TOM to TOC
Length: 5.48	^TOC to GS
	Lock type N/A
	II. MOISTURE CONTENT
POW to	Depth to Water Below GS
Joint Length: 3/1/0.0651 BOS: 0.563	
End Cap Length: 9.5'	Frozen Soil Below GS
Pointed 🗵 Flat 🔲	Bottom
	Seasonal 1
TOC to BOW: 49.61	
	Seasonal 2
	Permafrost 1
	Permafrost 2
BCH = Bentonite Chips (gINT code)	
BGR = Bentonite Grout (gINT code) bgs = Below Ground Surface	
BOS = Bottom of Screen VIII. CALCULATIONS BE	LOW GROUND SURFACE
BOW = Bottom of Well	Contaction Contact that the second frames
CEM = Cement (gINT code)	TOC to BOW 49.61
FIL = Sand Pack (gINT code) GS = Ground Surface	- TOC to GS
SLUF = Natural Collapse/ Pea Gravel (gINT code)  TOC to Be	OW BOW bgs
SS = Stainless Steel - BOW to	
TOC = Top of Casing = TOC +	O BOS 49.05 TOC to TOS 44.30
TOW - Top of Worldment	- TOC to GS
TOS = Top of Screen PB = Blank Pipe (gINT code) TOC to B	
PS = Slotted Pipe (gINT code)	
* Circle filter-pack type	Length 4.75
	o TOS 44.3 TOC to BOS 49.05
Stickup = Positive Number	- TOC to GS
	BOS bgs 49.30

with



	2 00010	OIIIIIOAE	AND ENVIRONM	100,000			$\top$				
DRILL COMPANY/DRILLER: Discovery Drilling									: 102599 - 008 BORING NO: MW - 24		
DRILL	RIG EQL	IPMENT	: Geopro	be 60	610 D	Т		JOB NAME: Gustavus DOTAPF PFAS			
DRILLING METHOD: Direct Push									DBY: Adom Wyborny		
HAMMER TYPE:AutoROD TYPE/DIA.:									ON: Gustavus, AK ELEV .:		
HAMM	IER WEI	SHT:	NIA	HAM	MER DR	OP: <u>N/A</u>			DATE: 10/24/21 END DATE:		
CASIN	IG SIZE/	YPE:	1.5"		HOLE SI	ZE: 2"		WEATH	ER DURING DRILLING: Sunny 40°F wind 45mph		
						SAME	N E D	ATA			
TIME	SAMP, NO.	于 FROM	DRIVING	L. REC.	DRILL	CONTACTS /	03500	ENV.	FIELD CLASSIFICATION		
DATE	SAMP. NO.	DEPT	RESISTANCE BLOWS / 6 INCH	# JARS	ACTION	GROUNDWATER	PID	SAMPLE	[density/consistency; color; slightly, minor, MAJOR, then trace constituents; moisture; structure; other; USCS classification (geology)]		
1450	1	0'	)	3			,	,	0-0.5" Grey-brown sitty organic soil, moist		
1130		2005	- /				/.	1	0.5-08' Grey-brown sondy silt, maist		
10/24		5'		1	ļ						
4	1	1					1	01	0.8'- 2.4': Grev-brown poorly graded sand, moist		
J	1	1		1				4,	2.4-5.0'. Grey well-graded sond, majet to wet		
1455	2	51	2	3.8			7	1	5'-7.25': Grey well graded sond, wet		
10/24	<u> </u>	10,		1			/	/	7.25'-10': Grey, poorly graded coarse sand with		
	3	10'		4,5	1			,	Grey well graded sond with trace		
1505	2	10	- /				1	/	grovel, wet		
10/24		151		/							
1515	Ч	151		5			1	1	15' - 18,75'; Grey well graded sand, wet		
10/24		20'	(	1					18.25-18.67': Grey poorly graded sand with		
1			9	1			1	1	18.67' · 18.8': Grey fat clay, wet		
V	1	V		7				1	18.8'-20'; Grey poorly graded grove with		
1540	5	20	1	4.2			1	1	Grey poorly graded sand, wet		
10/24		25	1	/			ľ				
		-	SUMMARY FIL	ELD LOC	OF BO	RING			COMMENTS (i.e. materials used, visitors, problems, etc.):		
	EPTH TO	USCS		ALIZED SO	IL DESCRIF	PTION FOR DRAFTED	GINT	LOG			
FROM	10										
									GROUNDWATER DATA WATER DEPTH TIME DATE		
									4, 1420 10/84/81		
									SUMMARY OF TIME AND FOOTAGE		
									FOOTAGESAMPLES:Attempted		
									DRILLED: Recovered		
									DRILL/SAMPLE hrs. STANDBY: hrs.		
									SETUP/CLEANUP: hrs. WELL INSTALL: hrs.		
									OTHER:		
									BORING: MW-24 SHEET \ OF 2		

# SHANNON & WILSON, INC. GEOTEGHNIGAL AND ENVIRONMENTAL CONSULTANTS

DRILL COMPANY/DRILLER: Discovery Drilling  DRILL RIG EQUIPMENT: GeoProbe 6610 DT										: 102599-008 BORING NO: MW-24  ME: Gustavus DOT 2 PF PFAS
DRILLING METHOD: Direct Push									LOGGE	DBY: Adam wyborny
HAMMER TYPE: Auto ROD TYPE/DIA.: 3"										ON: Gustavos, AK ELEV.:
							οp: <u>////</u>			DATE: 10/24/21 END DATE:
CASIN	IG SIZE/I	YPE		1.5"	Not 1,000 M	HOLE SI	ZE: 2"			ER DURING DRILLING: SURRY 40°F wind < Smph
				DRIVING	L. REC.		SAMF	LE D		FIELD CLASSIFICATION
DATE	SAMP. NO.	DEPTH	TO	RESISTANCE BLOWS / 6 INCH	# JARS	DRILL ACTION	GROUNDWATER	PID	ENV. SAMPLE	[density/consistency; color; slightly, minor, MAJOR, then trace constituents; moisture; structure; other; USCS classification (geology)]
1550	6	2	51	1	3.5			1	02	Grey poorly graded sand, wet
10/01		.50	D1		1.			1	28,	
1605	7		0'	7	Ч			,	1	301-311: Grey silt with clays wet
10/24			5'	/	1			/	- /	31-32.5': Grey fat clay, salurated
1	1		1	,	1			,	7	32.5'-35': Dark grey silt with clay, wet
1	1	1	5	/				1	1	
1625	8	3	s \		4.5				,	35'-37': Dark grey silt with clay wet
10/24	- 0		101		1			/		371-40': Grey silt with sond, wet
10/21						1				
		$\vdash$					ñ			
		$\vdash$								
		-	_			-				
		-				-		-		,
							L			
D	EPTH	Ti	scs	SUMMARY FIE						COMMENTS (i.e. materials used, visitors, problems, etc.):
FROM	ТО		ASSIF.	GENERA	LIZED SOI	L DESCRIP	TION FOR DRAFTED	GINT I	.OG	
		+								
										GROUNDWATER DATA WATER DEPTH TIME DATE
		-								4 1450 10/24121
		+								SUMMARY OF TIME AND FOOTAGE
										FOOTAGEAttempted
		+								DRILLED:         Recovered           DRILL/SAMPLE         hrs.         STANDBY:         hrs.
		+		-						SETUP/CLEANUP: hrs. WELL INSTALL: hrs.
										OTHER:
										BORING: MW-24 SHEET 2 OF 2

Monitoring Well No. MW - 24 - 10 Project Name Gustavus DoTaff Project Number 102599 - 008	Date Installed 10/25/2021  Logged By Adam Wybern y  Driller Discovery Drilling
I. TOP SECTION (CASING) Initial Pipe Length Cuttoff Length Add-on Length Total Length 4.2	IV. WELL DATA  Pipe Type: PVC SS SS Other  Diameter: 2" 4" Other  Slot Size: 0.01 000 Other  Joint Pin End: Up Down Type
II. MID SECTION (CASING)	V. BACKFILL  Depth Below GS
Number of Blank Sections  Length of Section(s):	Bottom Top
Echigan of Coston(c).	CEM_PB \(\bar{\chi}\) \(\overline{\chi}\)
	SLUF_PB/FIL_PB 2' I'
	BCH_BB 4, 3,
	*SLUF_PB/FIL_PB BGR_PB
Sum of Lengths:	SLUF_PB/FIL_PB 5 4
	*SLUF_PS/FIL_PS
III. SCREENED SECTION(S)	*SLUF_PB/FIL_PB
0.17'	Filter Pack Type or Gradation 20/40 rounded silica sor
Joint Length: +	Gradulli sty to require street
	VI. MONUMENTS
	Stickup  Flushmount  T
Screened 4.75	TOM to GS O. 4'
Length: Total Pipe	
Length:	Lock type N/A
	W MOISTURE CONTENT
	VII. MOISTURE CONTENT  Depth to Water Below GS
Joint Length: 9.963 BOW to BOS: 9.44	
End Cap Length:	Frozen Soil Below GS
Pointed 🔀 Flat 🗆 TOC to BOW: 4.5	Bottom Top
TOC to BOW:	Seasonal 1 Seasonal 2
	Permafrost 1
	Permafrost 2
BCH = Bentonite Chips (gINT code) BGR = Bentonite Grout (gINT code)	
bgs = Below Ground Surface VIII CALCULATION	NS BELOW GROUND SURFACE
BOS = Bottom of Screen BOW = Bottom of Well	Section wasses in the care.
CEM = Cement (gINT code)  FIL = Sand Pack (gINT code)	TOC to BOW
GS = Ground Surface	- TOC to GS - Q.40  OC to BOW 9.56  BOW bgs
SS = Stainless Steel	30W to BOS
TOC = Top of Casing TOM = Top of Monument	TOC to BOS TOC to TOS
TOS = Top of Screen	- TOC to GS - 0.40 OC to BOS
PS = Slotted Pipe (gINT code)	Screened Length 4.75
^ Flushmount = Negative Number =	TOC to TOS TOC to BOS
Stickup = Positive Number	- TOC to GS BOS bgs
	503 bgs 1,5%



Monitoring Well No. Project Name Project Number 102599 - 008	Date Installed 10/24/2021  Logged By Adam Wyberny  Driller Discovery Drilling
I. TOP SECTION (CASING) Initial Pipe Length Cuttoff Length Add-on Length Total Length 4.58	IV. WELL DATA  Pipe Type: PVC SS SS Other Diameter: 2" SS Other Slot Size: 0.01 0.02 Other Joint Pin End: Up Down Type
II. MID SECTION (CASING)  Number of Blank Sections  Length of Section(s):	V. BACKFILL  Depth Below GS  Bottom Top
10, 10, +	CEM (No Pipe)  (EM_PB) 1'  *SLUF_PB/FIL_PB) 3'  *SLUF_PB/FIL_PB  BGR_PB
Sum of Lengths: 20'	SLUF_PB/FIL_PB 25 22 25 SLUF_PS/FIL_PS 30' 22 25 *SLUF/FIL (No Pipe)
III. SCREENED SECTION(S)	*SLUF_PB/FIL_PB Filter Pack Type or
Screened 4.75' Length:  Joint Length:  Joint Length:  BOW to BOS:  BOS:  Pointed X Flat	VI. MONUMENTS  Stickup Flushmount  TOM to GS  TOM to TOC  ATOC to GS  Lock type  VII. MOISTURE CONTENT  Depth to Water Below GS  Frozen Soil Below GS  Bottom  Top
TOC to BOW: 29.9	
	Seasonal 2 Permafrost 1 Permafrost 2
BOS = Bottom of Screen	BELOW GROUND SURFACE
SEDF = Natural Collapse Pea Grave (gint code)  SS = Stainless Steel  TOC = Top of Casing  TOM = Top of Monument  TOS = Top of Screen  PB = Blank Pipe (gINT code)  PS = Slotted Pipe (gINT code)  * Circle filter-pack type	TOC to BOW 29.94  TOC to GS 29.5  TOC to TOS 24.75  TOC to BOS 29.5  TOC to TOS 24.75  TOC to BOS 29.5  TOC to TOS 24.75  TOC to BOS 29.5  TOC to BOS 29.5  TOC to BOS 29.5  TOC to GS 29.5  TOC to BOS 29.5  TOC to BOS 29.5  TOC to BOS 29.50  TOC to BOS 29.50  TOC to BOS 29.50  TOC to GS 29.50  TOC to GS 29.42  BOS bgs 24.92

# SHANNON & WILSON, INC., GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS:

9/25/2015-Boring Log Template

						ins	- 1		: 102599-008 BORING NO: MW-25
				West Control			- 1		ME: Gustavus DOT & PF PFAS
			Direct						DBY: Adam Wyborny
HAMMER TYPE: Auto ROD TYPE/DIA.:									ON: Gustavus, AK ELEV .:
HAMN	IER WEIC	SHT:	NIA	HAM	MER DR	op: <u>N/A</u>		START	DATE: 10/23/21 END DATE: 10/23/21
			1.5"					WEATH	ER DURING DRILLING: Rain 40°F wind 25mph
						SAMF	LE D	ATA	FIELD CLASSIFICATION
DATE	SAMP. NO. TYPE	FROM TO	DRIVING RESISTANCE BLOWS / 6 INCH	L. REC. # JARS	DRILL ACTION	CONTACTS / GROUNDWATER	PID	ENV. SAMPLE	[density/consistency; color; slightly, minor, MAJOR, then trace constituents; moisture; structure; other; USCS classification (geology)]
0915	1	0'	Ţ	3'			1	Ø1	0'-0.3': Brown silty organic soil, maist 0.3-1.0': Grey-brown silt with send, maist
10/23	,	S'	/	1		7	/	ųı	1.0'- 5.01: Grey-brown well graded sand moist to
0930	2	5'	765	4			90	j	5.0'-7.8': Grey-brown well graded sond, wet 7.8'-8.1': Grey-brown poorly graded sond with
10/23	-	101		1			/	/	gravel, met  8-1-101: Grey Poorly graded sand W/ Gravel, wet
	3	10'		4.8				,	10'-128': Grey poorly graded sound with gravel, 11
10/23		151		-1.8			/	/	128'-15': Grey partly graded sand, wet
-									15'-19': Grey well graded sond, wet
0950	4	15'	- /	4.25			1	/	19' - 20': Grey peoply graded sand with silt.
10/23		30,			1				wet.
1000	S	≥a'	1	4.8			1	1	201.24.51: Grev poorly graded sound, wet
10/23		251	1	/			_	-	24.5'-25': Grey fat clay, saturated  25'-28.5': Grey pearly graded send, wet
1035	6	25'	1	3.5			1	1	The second secon
10/23		30'		1				- /	28.5'-30': Grey silt with send, wet
1130	7	30'	1	4.2			1	1	Grey poorly graded sand wet
10/23		351	/	/				15	
			SUMMARY FIL	LD LOG	OF BO	RING			COMMENTS (i.e. materials used, visitors, problems, etc.):
FROM	EPTH TO	USCS	GENERA	ALIZED SOI	L DESCRIP	TION FOR DRAFTED	GINT I	_OG	
									GROUNDWATER DATA
									WATER DEPTH TIME DATE
							_		51 0915 10/23/21
									SUMMARY OF TIME AND FOOTAGE
-									FOOTAGE 50 SAMPLES: 10 Attempted
									DRILLED: Recovered
									DRILL/SAMPLE 3,5 hrs. STANDBY: hrs.
									SETUP/CLEANUP: hrs. WELL INSTALL: hrs.
						191			OTHER:
									BORING: MW-25 SHEET 1 OF 2

# SHANNON & WILSON, INC., GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS:

						Iling T	- 1		: 102599-008 BORING NO: MW-25 ME: Gustavus Dotapp PPAS
									DBY: Adam Wybarny
			Direct Pu						ON: Gustavus, Ak ELEV .:
HAMMER TYPE:									DATE: 10/23/21 END DATE: 10/23/21
HAMN	IER WEIC	эн I:	MA	- HAIVI	WER DR	OP: N/M			
CASIN	IG SIZE/1	YPE:	1.5	-	HOLE SI	ZE: 2"		VVEATH	ER DURING DRILLING: Rain 40°F wind 5 smph
						SAMF	LE D	ATA	
TIME	SAMP. NO. TYPE	FROM TO	DRIVING RESISTANCE BLOWS / 6 INCH	L. REC. # JARS	DRILL ACTION	CONTACTS / GROUNDWATER	PID	ENV. SAMPLE	FIELD CLASSIFICATION [density/consistency; color; slightly, minor, MAJOR, then trace constituents; moisture; structure; other; USCS classification (geology)]
1200	8	351	,	3.8			,	/	35'-39': Grey Poorly graded sond, wet
150-744	)	401	/	1			1	/	39'-40': Grey sondy silt, maist
10/23		10		/					Grey poorly graded sand with trace
1215	9	40'	/	2.5			1	1	silt, wet
10/23		451	7.	/			~	· ·	
1225	10	45'	1		2	ii ii	_	02	Grey poorly graded sond with silt
10/53		50'		1			1	47'	
101.61.2					1		$\vdash$		
									У.
						8			
		1	CLUMBAA DV EIE	10100	OF BOI	ZINC .	_		COMMENTS (i.e. materials used, visitors, problems, etc.):
DI	EPTH	uscs	SUMMARY FIE				CINT	00	COMMENTO (i.e. materials discu, visitors, prosierio, etc.).
FROM	TO	CLASSIF.	GENERA	LIZED SOI	L DESCRIP	TION FOR DRAFTED	GINT	.00	
									- 8
									GROUNDWATER DATA
									WATER DEPTH TIME DATE
									5' 0915 10/23/21
									SUMMARY OF TIME AND FOOTAGE
									FOOTAGE 50 SAMPLES: 10 Attempted
									DRILLED: Recovered
									DRILL/SAMPLE 3.5 hrs. STANDBY: hrs.
									SETUP/CLEANUP: hrs. WELL INSTALL: hrs.
									OTHER:
									BORING: MW-25 SHEET 2 OF 2

Monitoring Well No	Date Installed 10/23/2021  Logged By Adam Wyberny  Driller Discousery Drilling
I. TOP SECTION (CASING) Initial Pipe Length Cuttoff Length Add-on Length Total Length  4.85  7.66  Total Length	IV. WELL DATA  Pipe Type: PVC SS Other Diameter: 2" S 4" Other Slot Size: 0.01 S 0.02 Other Joint Pin End: Up Down Type
II. MID SECTION (CASING)  Number of Blank Sections	V. BACKFILL  Depth Below GS
Length of Section(s):	Bottom Top
Length of Section(s).	CEM (No Pipe)
	CEM_PB) Q.S'
	*SLUF_PB)FIL_PB ( O.5'
	BCH_PB) 3' I'
	*SLUF_PB/FIL_PB
Sum of Lengths:	BGR_PB
Sum of Lengths:	
	*SLUF_PS(FIL_PS) 15*  *SLUF/FIL (No Pipe)
III. SCREENED SECTION(S) × 2	*SLUF_PB/FIL_PB
STATE OF THE PRODUCT OF THE STATE OF THE STA	Filter Pack Type or
Joint Length:	Gradation
Some Length.	+
	VI. MONUMENTS
	Stickup  Flushmount
	TOM to GS
Screened 4.75	TOM to TOC
Total Pipe	.35 ^TOC to GS 0.5'
Length:	Lock type N/A
	A PA
	VII. MOISTURE CONTENT
DOWL-	= Depth to Water Below GS
Joint Length: 2.063 BOW to BOS: 0.44	Doparto Water Delon Go
End Cap Length: 0.38	Frozen Soil Below GS
Pointed S Flat	Bottom Top
The state of the s	Seasonal 1
Too to Bow.	Seasonal 2
	Permafrost 1
	Permafrost 2
BCH = Bentonite Chips (gINT code)	Fellialiose2
BGR = Bentonite Grout (gINT code)	
bgs = Below Ground Surface VIII. CALCULATIO	ONS BELOW GROUND SURFACE
BOS = Bottom of Screen BOW = Bottom of Well	The second control of the control of
CEM = Cement (gINT code)	TOC to BOW
FIL = Sand Pack (gINT code)	- TOC to GS - 0.5
GS = Ground Surface SLUF = Natural Collapse/ Pea Gravel (gINT code)	TOC to BOW BOW bgs
SS = Stainless Steel	BOW to BOSQ.44
TOC = Top of Casing TOM = Top of Monument	= TOC to BOS 14.16 TOC to TOS 4.43
TOS = Top of Screen	- TOC to GS - Q.5
PB = Blank Pipe (gINT code)	TOC to BOS 4.13
PS = Slotted Pipe (gINT code)  * Circle filter-pack type	Screened Length
	= TOC to TOS 4.43 TOC to BOS 14.16
Stickup = Positive Number	- TOC to GS - O.S
	BOS bgs 14.66

VEX

Well No. NW-25-15

Project Name Gustavius DoT APE Logged I	ed 10/23/2021  By Adam Wyberny  ler Discovery Drilling
Cuttoff Length 8.7 Diameter: 2"	0.02 Other
II. MID SECTION (CASING)  V. BACKFILL	
Number of Blank Sections	Depth Below GS
Length of Section(s):	Bottom Top
CEM (No Pi	A CONTRACT CONTRACTOR
10, 10, 10, + CEW	
SLUF PB/FIL	
SLUF+ (BCH	PB) 39' 3'
*SLUF_PB/FIL_	PB
BGR_	PB
Sum of Lengths: *SLUF_PB/FTC	
*SLUF_PS/FIL_	
*SLUF/FIL (No Pi	
III. SCREENED SECTION(S) *SLUF_PB/FIL_	
Filter Pack Type	
Joint Length: Gradat	tion
† .,,	
VI. MONUMENTS	R 40-0
Stickup 🗖 Flushm	The state of the s
Screened TOM to	
Length: Total Pine TOM to T	SECTION AND ADDRESS OF THE PROPERTY OF THE PRO
Length: 5.48	GS - 0.75
Lock t	ype N/A
VII. MOISTURE CONTE	NT
BOW to = Depth to Water Below	GS
Joint Length: 9.963 BOS: 0.563	22
End Cap Length: -0.5 -	Frozen Soil Below GS
Pointed 🖫 Flat 🔲	Bottom Top
TOC to BOW: 46.78 Season	al 1
Season	nal 2
Permafro	ost 1
Permafro	ost 2
BCH = Bentonite Chips (gINT code)	
BGR = Bentonite Grout (gINT code)	
bgs = Below Ground Surface BOS = Bottom of Screen BOW = Bottom of Well  VIII. CALCULATIONS BELOW GROUND SURFA	CE
CEM = Cement (gINT code)	TOC to BOW46.78
FIL = Sand Pack (gINT code)	- TOC to GS
GS = Ground Surface SLUF = Natural Collapse/ Pea Gravel (gINT code)  TOC to BOW	BOW bgs 47.53
SS = Stainless Steel - BOW to BOS - 563	The state of the s
TOC = Top of Casing	TOC to TOS 41.47
TOM = Top of Monument	- TOC to GS - 0.75
TOS = Top of Screen PB = Blank Pipe (gINT code) TOC to BOS	TOS bgs 42.22
PS = Slotted Pipe (gINT code)	38.66
* Circle filter-pack type  ^ Flushmount = Negative Number  = TOC to TOS	TOC to BOS 46.23
Stickup = Positive Number	- TOC to GS - 0.75
	BOS bgs 46.97



Well No.

		WELL	DEVELOPI	A ARTHUR THE STATE OF THE STATE	2	10.5	
wner-Client	POTTPU	12	,	Vell No.	mn-9		
ocation	657		, F	Project No _		1-008	
eather	rains			Date _	10-25	2/	
evelopment P	Personnel	4R					
			7.7	PVC			
	Type of Casing:	lanmont (fo	-		9,65		
otal Depth of	Well <b>Before</b> Deve r <b>Before</b> Developn	opment (re	et below top of	sing).	2,0	16	
epth to vvate	n Top and Bottom	(from Cons	struction Loa):	9/.	Top: 4.87	Bottom: /	0.06
eptil to Scree	en Top and Bottom	De	velopment				
eet of water in	n well	7.19		Time pumping	started	16:30	- 1645
Sallons per fo		0.17		Flow rate (gal		a 0.7	
	1.22		•	Flow-rate mea		ethod:	
	54090 61	. /		joy	100000000000000000000000000000000000000		
Pump used	Watter			Time pumping	g ended	47:30	17:3
Tuhip used Tubing used (f			-	Gallons Pum	Visit Control of the	~30	
abilig about (i			4	Disposal:	GAC	/	
	er <b>After</b> Developme				0 /	7	
			Observat	ions	1		
Time	Water Clarity	(Visual)		Time	Wate	er Clarity (Visua	al)
1631	fullide,	eav s	H-				
1703	+966id 9	vay	1	*			
1707	cloude	-					
1712	SAA						
1715	slightly o	Corole					
1718	SAA	/					
1-21	SAA			1			
1724	SAA		7				
1729	SIA						
1121	244						
18.11.2.2.2.2			_				
NOTES:							
		1					
		V	VELL CASING	VOLUMES			
Diameter of We	II [ID-inches]	11/4	VELL CASING	VOLUMES 3	4 0.66	6	8 2.6

SHANNON & WILSON, INC

Gallons per lineal foot

Well No. Mw-9-10



## MONITORING WELL SAMPLING LOG

Owner/Client	DOTAP	1=			L I	Project No.	102 599-00
Location	GST						10-25-21
Sampling Personnel	SKR						MW-9-10
Weather Conditions	19140		Air Temp. (°F	1 45	Ti	me started	
Weather conditions_	17/12				Time	completed	1815
Sample No.	MW-9-	10	Tim	e 1801			
Sample No Duplicate _ Equipment Blank _	-	-	Tim				
	Peri	edicated pum	n	Dia	meter and Type	e of Casing	2"
Purging Method		edicated pulli	Annrovi		epth of Well Be		10
Pumping Start					epth of Well Be		
Purge Rate (gal./min.)			Wica		th to Water Be		
Pumping End	17:38				e (if frozen) Be		
Pump Set Depth Bel	OW MD (ft )	7		Deptil to lo		ater in Well	719
Pump Set Deptil Bei	Tubing (ft.)					ons per foot	
	Tubing (ft.)					lons in Well	
TruPoly	rubing (it.)				Purge Water Vo		
			Purae W		bAC		
Monument Condition	9000		r dige v	ator Bioposar	000		8
		,					
Casing Condition	1000						
Wising Condition							
Wiring Condition (dedicated pumps)							
Measuring Point (MP)	Top of Casing	(TOC)		ument type: ent method:	Stickup // Rod & level /	Flushmount Tape meas	
Louis de la		026		Dot	alogger type	n/a	
Top-of-casing to mo		12 6				n/a	
Monument to ground	surface (ft.)				gger serial #_		
		473		vieasured cab	le length (ft.) _	n/a	
	ent and operation						
	legible on outsi	de of well					
Evidence of	of frost-jacking						
Notes							
			Mana Salah	S INCANT			
			L CASING V				
Diameter of Well [ID-inches		CMT 1½		) 3	4	6	8
Gallons per lineal foot	0.	000253 0.0	8 0.17	0.38	0.66	1.5	2.6

## MONITORING WELL SAMPLING LOG

Field Parameter Instrument	556	Circle one: Parameters stabilized or >3 well volumes purged
Sample Observations		
Notes		

FIELD PARAMETERS [stabilization criteria]

		LIE	LD PARAMETERS [st	abilization c	riteriaj	
Time	Temp. (°C) [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
1752	7-81	4.70	820	7.39	52.7	clear
755	7.81	3.75	625	7.28	42.9	1
158	8.04	2.71	518	7.30	39.8	-
1801	Sample					
	, ,					
	- 2					

130 3050		01	
Laboratory	SGS	14	

	Analysis	Sample Containers	Preservatives	Dup
	PFAS			
旦				
				_
□				_
旦				0
				_

KRF

Well No. Mr-9-10

#### WELL DEVELOPMENT LOG

Owner-Client Do7+PF  Location GST  Weather Overest  Development Personnel JKR	Well No. <u>Mw-13-20</u> Project No <u>102599-008</u> Date <u>10-27-21</u>
Diameter and Type of Casing:  Total Depth of Well <b>Before</b> Development (feet below Depth to Screen Top and Bottom (from Construction)	v top of casing): 5, 89
	Time pumping started Flow rate (gal/min) Flow-rate measurement method:  Time pumping ended Gallons Pumped Disposal:  Flow-rate measurement method:  11 5 4  5 4  6 4  6 4
Depth to Water After Development (feet below to Total Depth of Well After Development (feet be	1 () (2)

## **Observations**

Time	Water Clarity (Visual)
1105	terbid gray
1110	6 pages, gray
1114	very cloudy
1117	cloudy
1120	SAA
1124	SAA
1128	SAA
1/37	SAA
1136	SAA
1140	SAA

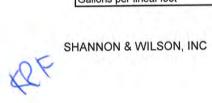
Time	Water Clarity (Visual)
1143	SAA
1147	SAA
1151	SAA
1/54	SULA
	Time // 43 // 47 // 5/ // 54

NOTES:

**WELL CASING VOLUMES** 

Diameter of Well [ID-inches]	11/4	2	3	4	6	8
Diameter of vven [15 mones]		-	10.000		4 6	0.0
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6
Galloris per linear loca						

Well No. 4 w < 13 - 20



## MONITORING WELL SAMPLING LOG

Owner/Client DOT	+ PF						102591-00
	7						10.25.21
Sampling Personnel 54 R	/=		100		_	and the second s	MW-13-20
Weather Conditions	cost	Air	Гетр. (°F)	450		me started ecompleted	1235
Sample No. <u>////////////////////////////////////</u>	13.20		Time _ Time _ Time	1226			
Pump Purging Method Pumping Start Purge Rate (gal./min.) Pumping End Pump Set Depth Below MP ( KuriTec Tubing ( TruPoly Tubing (  Monument Condition Casing Condition  908	ft.) / 7 ft.)		Approximat Measure [	Dia te Total De d Total De Dep Depth to Ic	Gal Ga Purge Water V <i>GAU</i>	elow MP (ft.) elow MP (ft.) elow MP (ft.) elow MP (ft.) Vater in Well lons per foot illons in Well Volume (gal.)	20 13.53 5.91 
Wiring Condition (dedicated pumps)							
Measuring Point (MP)	13	м 36	Monum leasurement			Flushmount Tape meas	37
Monument to ground surface				Datalo	gger serial #_	n/a	
□ Lock present and o □ Well name legible □ Evidence of frost-ja	perational on outside of wel		Mea	asured cab	le length (ft.)	n/a	
Notes							
_		WELL C	ASING VOLU	JMES			
Diameter of Well [ID-inches]	CMT	11/4	2	3	4	6	8
Callana par lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

## MONITORING WELL SAMPLING LOG

Field Parameter Instrument <u>/</u>	SS6 Circle one: Parameters stabilized or >3 well volumes purged
Sample Observations	
Notes	
	wately delicar symptometry

Time	Temp. (°C) [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
1217	8.24	4.59	504	6.75	110.0	cloudy
1223	7.19	0.77	408	6.89	82.1	clear
1226	Sampl	0.77	406	6.94	85.1	
	The state of the s					
_						

Laboratory	SGS	TA

	Analysis	Sample Containers	Preservatives	Dup
51	PEAS			_
므				旦
旦				<u></u>
				旦
므				
				<u></u>



Well No. MW-13-20

atter and Type of Casing:  meter and Type of Casing:  meter and Type of Casing:  project No Date    10-27-21		***	EVELUE	MENT LOG	
project No Date  Projec	ner-Client	noT+PF		Well No.	(1025 99-008) MW-1
peather personnel SkR  ameter and Type of Casing:  peth to Water Before Development (feet below top of casing):  peth to Screen Top and Bottom (from Construction Log):  Development Details  Top: 39.75 Bottom: 44.48  Development Details  Property of Water in well  allons per foot  allons in well  urge method  Sky  Urge method  Urge method  Sky  Urge method  Urge method  Sky  Urge method  Urge method  Urge method  Sky  Urge method  Urge		65T		Project No	
evelopment Personnel  Identified and Type of Casing:  Otal Depth of Well Before Development (feet below top of casing):  epth to Water Before Development (feet below top of casing):  epth to Screen Top and Bottom (from Construction Log):  Top: 39 75 Bottom: 44.48  Development Details  eet of water in well  46.25  Flow rate (gal/min)  Flow-rate measurement method:  Flow rate (gal/min)  Flow-rate measurement method:  Flow rate (gal/min)  Flow-rate measurement method:  Flow rate (gal/min)  Flow-rate measurement method:  Flow rate (gal/min)  Flow-rate measurement method:  Flow-rate method:  Flow-rate method:  Flow-ra		rainy		Date	10-27-21
is immeter and Type of Casing:    2" PVC   2		The state of the s			
total Depth of Well Before Development (feet below top of casing): epth to Water Before Development (feet below top of casing): epth to Screen Top and Bottom (from Construction Log):  Top: 39.75 Bottom: 44.48  Development Details  eet of water in well fillous per foot fold fillous per foot fold fillous per foot fold fillous per foot fillous per		Name of the second		10.0	
epth to Water Before Development (feet below top of casing): epth to Screen Top and Bottom (from Construction Log):    Development Details					411 - 6
Development Details  Seet of water in well					17.75
Pevelopment Details  Time pumping started Flow rate (gal/min) Flow-rate measurement method: Flow	epth to Water B	efore Development (feet bel	low top of ca	asing):	Ton: 24 75 Bottom: 44 48
rime water in well  Surge method  Surge meth	epth to Screen T	op and Bottom (from Const	ruction Log)		Тор. 39.73 Волот. 47.75
Sallons per foot Sallons in well Surge method Surge S		A. A.	veropmeni		started 1418 14 27
Flow-rate measurement method:  Surge method Surge block  Pump used  Pump used  Pump used  Publing used (ft)  Syr  Disposal:  Disposa		6 70 - 25			
Surge method Surge		0.17		ALCOHOL: SHOW AS A	
Time pumping ended 1682 Gallons Pumped Disposal:  Depth to Water After Development (feet below top of casing):  Total Depth of Well After Development (feet below top of casing):  Time Water Clarity (Visual)  Time Water		111			77,000
Gallons Pumped Disposal:  Carter Development (feet below top of casing):  Frotal Depth of Well After Development (feet below top of casing):  Observations  Time Water Clarity (Visual)  Fine				- / /	g ended _/652
Disposal:  Disposal:	**************************************	57'			
	ability asea (it)_	*/		Disposal:	GAC
			CASE OF CA		024
State   Description   Time   Water Clarity (Visual)					B. 20
42				-	
15 61 5 AA  15 17 5 AA  15 28 Very cloudy 15 37 5 AA  15 42 5 AA  15 42 5 AA  15 42 5 AA  15 85 5 AA  NOTES: So many Phy sharings; had to pull up foot  8 Section times that be on address now with the willy clear  WELL CASING VOLUMES  Diameter of Well [ID-inches] 11/4 2 3 4 6 8	Time	Water Clarity (Visual)			Water Clarity (Visual)
15 17 SAA  15 17 SAA  15 28 VERY COUNTY  15 37 SAA  15 42 SAA  15 49 SAA  1602 SAA  NOTES: So many Pro sharings: had to pull plant  5 Meeting Limit; Has been addressed now with the Arilly ches  WELL CASING VOLUMES  Diameter of Well [ID-inches] 11/4 / 2 3 4 6 8	Valutoren	1 11	C	1/17	
15 17 SA4  15 28 Very cloudy  15 37 SAA  15 49 SAA  15 49 SAA  15 85 SAA  NOTES: So many My sharings; had to pull up lost  5 westing time; has been addressed now with the willing clea	1420	turbid, gray		1017	very cloudy
15 17 SA4 15 28 Very Cloudy 15 37 SAA 15 42 SAA 15 49 SAA 1602 SAA NOTES: So may My Shavings: hid to pull up fort 5 with 1 mg Has been address now with the drilly clea	1420	turbid, gray		1017	SAA
NOTES:  So many Puc sharings; had to pull up foot  So many Puc sharings; had to pull up foot  WELL CASING VOLUMES  Diameter of Well [ID-inches]  1/4   2   3   4   6   8		tiv bid		1628	SAA
15 4 2 5 A A  15 4 9 5 A A  1602 5 A A  NOTES: So many Put sharings; had to pull up foot  S westing time: Has been addressed now with the drilling check  WELL CASING VOLUMES  Diameter of Well [ID-inches] 1½ 2 3 4 6 8	1561	tiv bid		1628	SAA
NOTES:  So many Pyc sharings; had to pull up to the property of the property o	1561	FLY GIRD SAA SAA		1628	SAA
NOTES: So maky Py Sharings; had to phillip checking times; has been addressed now with the drillip checking times; has been addressed now with the drillip checking times. Has been addressed now with the drillip checking times and the drillip checking times.  WELL CASING VOLUMES  Diameter of Well [ID-inches] 1½ 2 3 4 6 8	1561 1517 1528	FLY GIRD SAA SAA		1628	SAA
NOTES: So the by PVC sharings; had to pull up to the state of the stat	1561 1517 1528 1337	FLY GIRD SAA SAA		1628	SAA
NOTES: So the by PVC sharings; had to pull up to the state of the stat	1561 1517 1528 1337	FLY GIRD SAA SAA		1628	SAA
NOTES: So the by PVC sharings; had to pull up to the state of the stat	1561 1517 1528 1337	FLY GIRD SAA SAA		1628	SAA
WELL CASING VOLUMES  Diameter of Well [ID-inches]  11/4  2  3  4  6  8  26	1561 1517 1528 1337 1542 1549	FLY GIRD SAA SAA		1628	SAA
Diameter of Well [ID-inches] 11/4 / 2 3 4 6 8	1561 1517 1528 1337 1542 1549	FLY GIRD SAA SAA		1628	SAA
Diameter of Well [ID-inches] 11/4 / 2 3 4 6 8	1561 1517 1528 1337 1542 1549 1585 1602	SAA SAA SAA SAA SAA SAA SAA SAA SAA SAA	C share	1628	SAA
Gallons per lineal foot 0.08 0.17 0.38 0.66 1.5 2.6	1561 1517 1528 1337 1542 1549 1585 1602	SAA SAA SAA SAA SAA SAA SAA SAA SAA SAA	Shew add	1628 1650	SAA dondy
	15 6] 15 17 15 2 8 13 3 7 15 4 2 15 4 9 15 8 5 1602 NOTES:	SAA SAA SAA SAA SAA SAA SAA SAA SAA SAA	ELL CASIN	1628 1650	SAA dondy to pall part with the arilly check
	15 6] 15 17 15 2 8 13 3 7 15 4 2 15 4 9 15 8 5 1602 NOTES:	SAA SAA SAA SAA SAA SAA SAA SAA SAA SAA	ELL CASIN	1628 1650	to pall plant with the drilling check

SHANNON & WILSON, INC

## MONITORING WELL SAMPLING LOG

Owner/Client Do	TH PP						102599-00
Location	251					Well	10-27-21 MW-13-45
Sampling Personnel 5/4	R	Λin	Temp. (°F)	450		Fime started	
Weather Conditions	lay	Alf	remp. ( F)	75		e completed	
Sample No.  Duplicate  Equipment Blank	NW-13-45	5		1731			
T CITTLE T	(ft.) (ft.)		Measu	ate Total De red Total De Dep Depth to Ic	Gal Ga Purge Water V	elow MP (ft.) elow MP (ft.) elow MP (ft.) elow MP (ft.) Vater in Well lons per foot illons in Well Volume (gal.)	45 44.75 8.38 — 36.37 6.17 6.18
Casing Condition	rod						
Wiring Condition (dedicated pumps)							
Measuring Point (MP)	of Casing (TOC)	N	Monum deasurement	nent type: t method:	Stickup / Rod & level /	(Flushmount Tape meas)	
Top-of-casing to monument	t (ft )	50		Dat	alogger type	n/a	
Monument to ground surface			-		gger serial #	n/a	
Worldment to ground surface	(11.)		- Me		e length (ft.)	n/a	
<ul><li>Lock present and</li><li>Well name legible</li><li>Evidence of frost-</li></ul>	on outside of we	II					
Notes <u>depth</u> Saltust Arem	to water on the functioning	is de edi	aclos perly	a app casing	kept s	tion. socialer	
			ASING VOL				
Diameter of Well [ID-inches]	CMT	11/4	/ 2	3	4	6	8
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

Well No. Ahr- 13-45

## MONITORING WELL SAMPLING LOG

Field Parameter Instrument	YST SS6 Circle one: Parameters stabilized or >3 well volumes purged
Sample Observations	
Notes _	
	FIELD PARAMETERS [stabilization criteria]

Time	Temp. (°C) [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
1722 1725 1728 1731	7.41 7.51 7.53 52 mpl	8.36	27384 29345 29569	6.74	185.6	clear

SIS	Sample Containers	Preservatives
eis FAS		



Well No. MW-13-45

Owner-Client Location Weather	DeT/1 Gustavi Partly	PF	P	IENT LOO Vell No. Project No Pate	MW-14 102599- 11-1-3	008
Development I	Type of Cas	MSC ing:	a" PVC	casing).	12 58+	1.19= 4.77
Depth to Wate	er <b>Before</b> De	e Development (fe velopment (feet b Bottom (from Con	elow top of cas struction Log):	sing):	7,76 Top: 5,1	Bottom: 14.83
Feet of water	in well	7.01 0.17	evelopment	<b>Details</b> Time pump Flow rate (g		1335

Depth to Water After Development (feet below top of casing): B.33+1, 19=14,52 Total Depth of Well After Development (feet below top of casing):

## **Observations**

Time	Water Clarity (Visual)
1337	Twobid
346	Very cloudy
1402	Turbid
1404	very cloudy
1408	Very Cloudy
1413	Very Cloudy
1415	Cloudy
1419	Cloudy
1421	Cloudy
1425	Clouty

Surge block

Waterra

Time	Water Clarity (Visual)
1428	Cloudy
1432	Cloudy
1436	Very Clouds
1440	cloudy
1446	cloudy
1454	Slightly Cloudy

Flow-rate measurement method:

GAL

1455

30

Container

Time pumping ended

Gallons Pumped

Disposal:

NOTES:

WELL CASING VOLUMES

WELL CASING VOLUMES								
	11/	72	3	4	6	- 8		
Diameter of Well [ID-inches]	174	12		0.00	1.5	2.6		
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.0		
Gallons per linear loot				The state of the s				

SHANNON & WILSON, INC

Gallons per foot

Gallons in well

Surge method

Tubing used (ft)

Pump used

## MONITORING WELL SAMPLING LOG

Owner/Client	DOT+ PP					Project No.	102508-0
Location						Date	11-1-21
Sampling Personnel						Well	MW-14-20
Weather Conditions	clear	,	Air Temp. (°F)	40"	Т	ime started	1625
	Cider				Time	completed	1656
Sample No.	MW-14-	rs	Time	1650			
Duplicate			Time	-	•		
Sample No Duplicate _ Equipment Blank _			Time_		-		
Pump	Peri						2" PVC
Purging Method	portable / dec	dicated pum	o	Dia	ameter and Typ	e of Casing	2"PVC
Pumping Start	1634		Approxima				
Purge Rate (gal./min.)			Measur	ed Total D	epth of Well Be	elow MP (ft.)	
Pumping End					pth to Water Be		
				Depth to lo	ce (if frozen) Be		
Pump Set Depth Bel	ow MP (ft.) ~/3	2				ater in Well	
KuriTec	Tubing (ft.)					ons per foot	
	Tubing (ft.)					llons in Well	
					Purge Water V		
	,		Purge Wate	er Disposa	CAC		
Monument Condition	gard						
Casing Condition	good						
VIII. 3. V. 110.							_
Wiring Condition							
(dedicated pumps)							
Measuring Point (MP)	Top of Casing (T	OC)	Monun Measuremen	nent type: method:	Stickup // Rod & level /	Flushmount Tape measi	
Top-of-casing to mor	nument (ft.)	0.33		Da	atalogger type	n/a	
Monument to ground	surface (ft.)		<del></del>		ogger serial #		
Monument to ground s	surface (it.)		— Me		ble length (ft.)		
Look proce	ent and operationa	i	1110	abarba bar	olo louigui () _		
	legible on outside						
	•	e or well					
□ Evidence o	of frost-jacking						
Notes							
-		TABLE V					
			CASING VOL		1 1		
Diameter of Well [ID-inches		MT 11/4	2	3	4	6	8
Gallons per lineal foot	0.00	0.08	0.17	0.38	0.66	1.5	2.6

Well No. MW- 14-15

Field Parameter Instrument	1ST 556	Circle one: Parameters stabilized or >3 well volumes purged
Sample Observations		
Notes		

FIFI D	PARAMET	FRS let	ahilization	criterial
LIELD	PARAME	EKO ISI	abilization	criterial

FIELD PARAMETERS [stabilization criteria]						
Time	Temp. (°C) [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	[± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
1637	9.25	1.96	526	8.26	75.0	clast
1642	9.33	1.37	263	7-96	11.2	
1647	2.33	1.04	248	7-96	12.5	1
1650	Sample					
11277	A CONTRACTOR					
					3	

	2.00	
Laboratory_	ses .	1
CAN CALL LAND		

	Analysis	Sample Containers	Preservatives	Dup
口	PFAS			□
				旦
므				旦





# WELL DEVELOPMENT LOG

Owner-Client	GUSTAVAS DOT /PF	Well No.	MW-14-31	
Location	GUSTAVUS	Project No	102599-008	
Weather	Partly Cloudy	Date	11-1-21	

Diameter and Type of Casing: 2' PVC		
Total Depth of Well Before Development (feet below top of casing):	29,77+1.19=30.96	
Depth to Water <b>Before</b> Development (feet below top of casing):	4.16	
Depth to Screen Top and Bottom (from Construction Log):	Top: 26.// Bottom: 30.86	

	Deve	lopment Details	
Feet of water in well	24.8		0925
Gallons per foot	0.17	Flow rate (gal/min)	0.8
Gallons in well 4.56	)	Flow-rate measurement m	nethod:

Surge method Surge 6/604	Confainer
Pump used Waterra	Time pumping ended 1130
Tubing used (ft) 50	Gallons Pumped 40 15
	Disposal: 6AC

Depth to Water After Development (feet below top of casing):

Total Depth of Well After Development (feet below top of casing):

24.57 + 1.14 = 30.86

### **Observations**

Time	Water Clarity (Visual)
0926	Turkid, gray
0946	Very Cloudy
1061	Very Clanty
1015	Turbit, grey
1023	Turbid, grey
1027	Very Cloudy
1031	very Cloudy
1036	Cloudy
1052	Cloudy
1055	Turkid

**Development Personnel** 

Time	Water Clarity (Visual)
1/02	Cloudy Cloudy Cloudy Cloudy
1110	Cloudi
1118	Cloudy
1130 C	loudy

NOTES:	Strylt	Shun	in	burnel	
	S.				

WELL CASING VOLUMES

***************************************						
11/4	/20	3	4	6	8	
174		0.00	0.00	1.5	26	
0.08	0.17	0.38	0.00	1.0	2.0	
	_	11/4 /2	11/4 /2 3	11/4 /2 3 4	11/4 /2 3 4 6	

W.

Well No. MW-14-31

Owner/Client	DOTA	PP						02599-008
Location	GST						Date	1-1-21
Sampling Personnel	SKR							Mu -14-31
Weather Conditions	-1 00 V		Air	Гетр. (°F)	40			1550
vvodiner containers _	First	T've seen				Tim	e completed	1627
Sample No.	Mh - 1	4-31		Time_ Time	1620			
Duplicate _				Time	_			
Equipment Blank_				111116_				
Pump	Peri						. Labour Sta	-4010
<b>Purging Method</b>	portable	/ dedicated	pump		Dia	ameter and Ty	pe of Casing	z"PVC
Pumping Start				Approxima	ite Total D	epth of Well B	elow MP (ft.)	31
Purge Rate (gal./min.)				Measur		epth of Well B		
Pumping End								5.20
	1011				Depth to Id	ce (if frozen) B	elow MP (ft.)	
Pump Set Depth Beld	ow MP (ft.)	129					Vater in Well	
						Ga	llons per foot	6.17
TruPoly 7	Tubing (ft.)	33'				G	allons in Well	
Trui ory	(/_					Purge Water \	Volume (gal.)	~/
				Purge Wate	r Disposal	GAC	1300	
Monument Condition	good				14.14.15			
Casing Condition	jesol							
Wiring Condition (dedicated pumps)								
Measuring Point (MP)	Top of Ca	sing (TOC)	N	Monum leasurement	ent type: : method:	Stickup Rod & level	/Flushmoun /Tape meas	
Top-of-casing to mor	nument (ft )	0.3	2		Da	atalogger type	n/a	
				1 /-		ogger serial #		
Monument to ground	surface (it.)			- Me		ole length (ft.)		
	S. N. S. S. C.	Section 1		IVIC	asureu car	ole length (it.)	7,7,44	
Lock prese			ú					
		outside of we	di .					
□ Evidence c	f frost-jacki	ng _						
Notes								
			WELL C	ASING VOL	UMES			
Diameter of Well [ID-inches	1	CMT	11/4	1/2	3	4	6	8
Gallons per lineal foot		0.000253	0.08	0.17	0.38	0.66	1.5	2.6

751 556 Circle one: Parameters stabilized or >3 well volumes purged

	Sample Ob	servations				o wen volumes purgets
		Notes				
		17.5	SECULIER DE LA	No. of the	A delication of the second	
		FIE	LD PARAMETERS [st	abilization o	criteria]	
Time	Temp. (°C) [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
608	8.27	4.27	25706	7.42	174.4	clear
613	8-14	1.65	25890	7.34	169.1	1
5/1	8.10	12.1.21	26862	7.31	165.9	
520	Sampl	e				
			150			
	:					
					1 3	

		-	
Laboratory_	808	14	

Field Parameter Instrument

Analysis	Sample Containers Preservatives	Dup
PEAS		0
1		므
		므
		므
_		므

VE

Well No. Mw-14-31

Generator tooke

WELL DEVELOP	ME	NT	LOG
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		AA I.	IC IC
Owner-Client	D. T PF	Well No.	7 (5-15
Location	Constavus	Project No 1025	77-000
Weather	Rany	Date	- 41
Development	Personnel MSC	۵	

Diameter and Type of Casing: Total Depth of Well Before Development (feet below top of casing): Depth to Water Before Development (feet below top of casing): Bottom: Depth to Screen Top and Bottom (from Construction Log): **Development Details** Time pumping started Feet of water in well Flow rate (gal/min) Gallons per foot Flow-rate measurement method: Gallons in well Contamer Surge method 1565 Time pumping ended Pump used 15 Gallons Pumped Tubing used (ft) Disposal:

Depth to Water After Development (feet below top of casing):

Total Depth of Well After Development (feet below top of casing):

#### **Observations**

Time	Water Clarity (Visua
14/33	Turbil brown
1430	11 11
1440	or W
1443	very Cloudy
1446	11 1
449	" 11
1452	Clouts
1454	u 1
1459	4
1500	u 4

Time	Water Clarity (Visual)
1503	Cloudy
1503	Choudy

NOTES:

WELL CASING VOLUMES

	VV		0			
The second secon	11/.	V2	3	4	6	8
Diameter of Well [ID-inches]	174	(-)		0.66	1.5	2.6
Gallons per lineal foot	0.08	[0.17]	0.38	0.66	1.0	-
IGallons per lineal loot	0.00					

Well No. MW-15-15



(-autoroxy)	DTIP	2					Project No.	2597-008
Owner/Client_d	61/1		_				Date //	-3-21
Location	Custabu	5					Well 1	W-15-15
Sampling Personnel	MSC		Λ:	Town (°E)	40	Time started 1534		
Weather Conditions	Cloudy		Air	Temp. (°F)	73		completed //	
Sample No Duplicate _ Equipment Blank _	MW-1	5-15		Time Time	1611			
Purging MethodPumping StartPurge Rate (gal./min.)Pump Set Depth Belo	ow MP (ft.) / Tubing (ft.) / Tubing (ft.) /	4.50 7		Meas Purge Wa	nate Total D ured Total D De Depth to l	Ga	elow MP (ft.) _ elow MP (ft.) _ elow MP (ft.) _ elow MP (ft.) _ Vater in Well _ llons per foot _ allons in Well _ Volume (gal.)	7.52 7.05
Wiring Condition (dedicated pumps)		7.00		110	90.542.1	Otiokup	//Flushmount	
Measuring Point (MP)	Top of Cas	ing (TOC)			ument type: ent method:	Stickup Rod & level	/Tape measu	ire
		0,24				atalogger type	n/a	
Top-of-casing to mo	nument (ft.) _			_		alalogger type alogger serial #		
Monument to ground	surface (ft.)	_				able length (ft.)		
Well name	of frost-jackir	utside of well						
			WELL	CASING V	OLUMES		7-3-2	1/
Professional Professional Company		CMT	11/4	-	3	4	6	8
Diameter of Well [ID-inch	esj	0.000253	0.08		0.38	0.66	1.5	2.6
Gallons per lineal foot		0,000200						

Field Parameter Instrument	556	Circle one: Parameters stabilized or >3 well volumes purged
Sample Observations		weii voiumes purged
Notes		

FIELD PARAMETERS	[stabilization criterial
------------------	--------------------------

	Temp.	Dissolved	LD FARAIVE TERS [S		I	
Time	(°C) [± 3%]	Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
1556	8.78	2.83	368	5.63	-158.6	Sightly Cloud
	8.85	0.88	.324	Gill	-199.2	stylly closs
605	886	0.50	314	6.37	-239.2	9
	8.87	0,44	314	6.54	-26/15	Clear
1611	Sample		20	4.70	-282.8	Clery
7 12 17	1					

Laboratory_	SGS		
Analysis		12 3 3 5 5 6 6 6 6 6 6 6	

Analysis PF45	Sample Containers	Preservatives	Dup
1100			므
			므
			므
			므
			므
			旦



MILL	DEVEL	OPMENT	LOG

WELL DE	EVELOPMENT LOG
Owner-Client  Location  Weather  Development Personnel  Development Personnel  Development Personnel	Well No.  Project No  Date    MW-15-45     102599-008     W-2-21
Diameter and Type of Casing:  Total Depth of Well <b>Before</b> Development (feet Depth to Water <b>Before</b> Development (feet belong Depth to Screen Top and Bottom (from Constr	ow top of casing):
Deptil to screen rop and person	elopment Details
Feet of water in well  Gallons per foot Gallons in well  Gallons in well	Time pumping started 13/6  Flow rate (gal/min) 0/8  Flow-rate measurement method:
Surge method Surge 6 lock  Pump used Watere  Tubing used (ft) 65	Time pumping ended  Gallons Pumped  Disposal:  640  85
Depth to Water <b>After</b> Development (feet below Total Depth of Well <b>After</b> Development (feet below	w top of casing): $7.96$ below top of casing): $45.25+1.19 \approx 46.49$

### **Observations**

Time	Water Clarity (Visual)
1311	Turbed grey
315	Turbed gay
19	Turbid grey
1323	Turbid grey
Bas	Turbid grey
1332	Turbid gray
1334	turbed grey
1345	Turbid grey
1351	turbid grey
1402	Turbed arey

Time 1415	Water Clarity (Visual)
1421	Very Hondy

NOTES:

WELL CASING VOLUMES

	VVI	•	0			
	11/.	(2)	3	4	6	0
Diameter of Well [ID-inches]	174	/ -/	0.00	0.66	1.5	2.6
Gallons per lineal foot	0.08	( 0.17	0.38	0.00	1.0	
Gallons per lifteat toot						

SHANNON & WILSON, INC

Well No. MW -15 - 45

Owner/Client DoT	PF						102599-008
Location Gusta							11-3-21
Sampling Personnel -4056							MW-15-45
Weather Conditions Davily	Cloudy	Air T	emp. (°F)	95	Tim	Time started e completed	1743
Sample No. Duplicate Equipment Blank	-15-45 -115-45		Time _/ Time _/	1728			
Pump Purging Method Pumping Start Purge Rate (gal./min.) Pumping End	A  de / dedicated	pump	Measure	te Total De ed Total De Dep	oth to Water B se (if frozen) B	elow MP (ft.) elow MP (ft.) elow MP (ft.)	45-27-1.17-40 7-25
Pump Set Depth Below MP (	ft.)					Water in Well	
KuriTec Tubing (	ft.)					llons per foot	
TruPoly Tubing (						allons in Well	
30,000,000,000,000	1				Purge Water \		
	1		Purge Wate	r Disposal	CAC		
Monument Condition 1000			777 7 7 7				
1							
Casing Condition 4000				7.			
July 2 Strains			- 1				
-							
Wiring Condition(dedicated pumps)							
Measuring Point (MP) Top of	f Casing (TOC)	М	Monum easurement	ent type: method:		/ Flushmount / Tape meast	
Top-of-casing to monument	(ft.) 0,20			Da	talogger type	n/a	
Monument to ground surface				Datalo	ogger serial #	n/a	
Monument to ground canada	(,,,)		Mea	asured cab	ole length (ft.)	n/a	
Lock present and of Well name legible Evidence of frost-ja	on outside of we	ii		4			
Notes/	Vo Cock						
		WELLC	ASING VOL	JMES	1		
Diameter of Well [ID-inches]	CMT	11/4	2	3	4	6	8
Gallons per lineal foot	0.000253	0.08	(0.17	0.38	0.66	1,5	2.6

Well No.

MW-15-45

Field Parameter Instrument	YSI	556	Circle one:	Parameters stabilized	r >3 well volumes purged
Sample Observations					
Notes					

FIELD PARAMETERS [stabilization criteria]

Time	Temp. (°C) [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm)	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
1630	7.71	2.82	22012	6.87	-54,1	Stoghtly Cloudy
1636	7,24	1,30	27302	6.94	-149,5	Ce n
1639	2/18	0.55	28590	67.03	-2369	a &
1642	7.19	0.42	29/02	7-12	-262.9	clear
1650	7.17	0.56	29387	7.17	-294,4	Clear
1655	7.14	0.34	29488	7.21	-287.8	Clear
1701	7.16	0.35	29534	7.22	-272,9	Clear Clear
1704	7.16	0.30	29844	7.24	- 329.6	Cher
1707	7.16	0.27	29782	7.24	-354.8	Clear
1713	7,15	0.21	29421	7.27	-349.4	Cher
1714	7,15	0,27	29383	7.27	-333.3	cier
17.22	7.15	0.24	29484	7.28	-308.4	Cler
1725	7.14	0,25	21533	7.28	- 315.8	CLERT
1728	Sample		v.562			cer

Laboratory SGS

	Analysis	Sample Containers	Preservatives	Dup
4	THAT			0
므 .		*		口
므				므
ㅁ .				므
				□
□ .				므



Well No. MW-15-45

WEI		/		IT 1	00
VV = I	1 ) I - \	/	()		

Owner-Client  Location  Well No.  Project No  Date  Development Personnel  Diameter and Type of Casing:  Total Depth of Well Before Development (feet below top of casing):  Depth to Water Before Development (feet below top of casing):  Depth to Screen Top and Bottom (from Construction Log):  Development Details  Feet of water in well  Well No.  Project No  Dot 102.599-008  II-2-21  III-2-21  Date  III-2-21  Development Details  Time pumping started  Project No  Dot 102.599-008  III-2-21  Development Details  Time pumping started	
Weather Cloudy Date  Development Personnel MSC  Diameter and Type of Casing:  Total Depth of Well Before Development (feet below top of casing):  Depth to Water Before Development (feet below top of casing):  Depth to Screen Top and Bottom (from Construction Log):  Top: 4.97 Bottom: 14	
Development Personnel  Diameter and Type of Casing:  Total Depth of Well Before Development (feet below top of casing):  Depth to Water Before Development (feet below top of casing):  Depth to Screen Top and Bottom (from Construction Log):  Top: 4.97  Bottom: 14	
Diameter and Type of Casing:  Total Depth of Well Before Development (feet below top of casing):  Depth to Water Before Development (feet below top of casing):  Depth to Screen Top and Bottom (from Construction Log):  Top: 4.97 Bottom: 14.97	
Total Depth of Well <b>Before</b> Development (feet below top of casing):  Depth to Water <b>Before</b> Development (feet below top of casing):  Depth to Screen Top and Bottom (from Construction Log):  Top: 4.97 Bottom: 14.00	
Depth to Water Before Development (feet below top of casing):  Depth to Screen Top and Bottom (from Construction Log):  Top: 4.97 Bottom: 14.97	
Depth to Screen Top and Bottom (from Construction Log): Top: 4.97 Bottom: 14.97  Development Details	3
Development Details	
9:37	1,70
Feet of water in well 9,34 Time pumping started 9,27	
Gallons per foot 6.17 Flow rate (gal/min) 8-8	
Gallons in well 1.59 Flow-rate measurement method:	
Surge method Junge block Container	
Pump used Whitera Time pumping ended 1029	
Tubing used (ft) 50 Gallons Pumped 22	
Disposal: GAC	
Depth to Water After Development (feet below top of casing): 3.49	
Total Depth of Well After Development (feet below top of casing): 13,30 + 1,19 = 14,4	19

### **Observations**

Time	Water Clarity (Visual)
0932	Turbid brown
0934	Turbid, Grown
0940	Turbit, brown
0946	Thrb. I, brown
0949	Verv Clondy
0953	Very Cloudy
0955	very cloudy
1003	Very Cloubs
1005	Very Clony
1008	very cloudy

Water Clarity (Visual)
very cleaty
Cloudy
Cloudy
ji.

NOTES:

WELL CASING VOLUMES

Diameter of Well [ID-inches]	11/4	(2)	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

Well No. MW-16 - 15



Owner/Client	DOT IPF					Project No.	102599-008
Location	8 xus tavus					Date	11-2-21
Sampling Personnel	MSC					Well	MW-16-15
Weather Conditions	Cleaty	Air	r Temp. (°F)	36		Time started	
Action Services Assistant			THEFT		Tim	ne completed	1130
	MW-16		**	1122			
Sample No.	710		_ Time _ Time	110			
Duplicate							
Equipment Blank		_	_ Time _				
Duma	Peri A						
	portable / dedicated	numn		Dis	meter and Ty	ne of Casino	2"
		pump	Approxima		epth of Well B	Charles and the contract of th	
Pumping Start Purge Rate (gal./min.)			The Court of the Court of the Artist		epth of Well B		
			Measure		oth to Water B		
Pumping End	1100				e (if frozen) E		
Duman Cat Danib Dal	OW MD (ft ) 14		400	Debrii io ic		Nater in Wel	
Pump Set Depth Bel						llons per foot	
	Tubing (ft.)					allons in Wel	
	Tubing (ft.) 25						
0.5 5.4.	con				Purge Water \	volume (gal.)	4.8
			Purge Wate	r Disposal	CAC		
Monument Condition	1000						
4							
Casing Condition	1000						
	7						
A							
Wiring Condition							
(dedicated pumps)		~					
(3-3-3-3-3-1-7							
Measuring Point (MP)	Top of Casing (TOC)		Monume	ent type:	Stickup	/ Flushmoun	D .
Measuring Cont (Mir)	Top or Gasing (TOO)	1	Measurement		Rod & level	The second secon	
			vicasarcinent	metriou.	riod a lover	aupo modo	ar c
Top-of-casing to mor	nument (ft ) 0,37			Dat	talogger type	n/a	
			-		gger serial #	n/a	
Monument to ground s	surface (It.)		- Maa				
	Print No. Section 1		iviea	isured cap	le length (ft.)	n/a	
	nt and operational						
	legible on outside of wel	l .					
<u>d</u> ✓ Evidence of	f frost-jacking _						
Notes No	186						
		_					
		MELL C	AOING VOLU	IMEG			
COLUMN TO THE CO			ASING VOLU				1 0
Diameter of Well [ID-inches		11/4	2	3	4	6	8
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

Well No.

MW-16 - 15

Field Parameter Instrument	YSI	550	Circle one: Parameters stabilized or >3 well volumes purged
Sample Observations			
Notes			

### FIELD PARAMETERS [stabilization criteria]

Time	Temp. (°C) [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
1167 1190 1113 1116	8.20 8.32 8.38 9.37	8.63 8.78 8.35 8.13	138 136 135	7.89 7.89 7.97 8.05	107.4 162.7 101.8 100.3	Clear Clear Clear
1119	8.41 Simple	7.99	734	8.09	77. (	clear

Laboratory_	SGS		

	Analysis	Sample Containers	Preservatives	Dup
0	HFAS	THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TRANSPORT OF THE PERSON NAMED IN COLUMN TWO IS NAMED IN COLUMN TRANSPORT NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLU		<u></u>
口				므
旦				ㅁ
				므
口				旦

Owner-Client DOT+ PP  Location GST  Neather Overlast  Development Personnel TKK	OPMENT LOG         Well No.	7
Diameter and Type of Casing: Total Depth of Well <b>Before</b> Development (feet below Depth to Water <b>Before</b> Development (feet below to Depth to Screen Top and Bottom (from Construction)	Log): Top: 10.07 Botto	7 m: <del>26-36</del> 19.8
Feet of water in well  Gallons per foot  Gallons in well  Surge method  Pump used  Tubing used (ft)  Develop  11. 97  0. 17  0.	Time pumping started  Flow rate (gal/min)  Flow-rate measurement method:	9
Depth to Water After Development (feet below top Total Depth of Well After Development (feet below  Obs	of casing):  top of casing):  19.55  ervations	
Time Water Clarity (Visual)  1/23 turbid, gray, sifty  1/30 opague  1/34 very loady  1/44 sloady	Time Water Clarity 8 1210 cloudy 9 1214 SAA 10 1217 SAA 0 1221 SAA 1229 SAA	(Visual)

-Smin

1207	SAA vary longs	
NOTES:		

	WI	ELL CASING	VOLUMES			1
		2	3	4	6	8
Diameter of Well [ID-inches]	11/4	/ 4	/ 000	0.66	1.5	2.6
Gallons per lineal foot	0.08	0.17	0.38	0.00	1,0	
Gallons per liftear toot						

Owner/Client DoT+	PF				P	A CONTRACT OF A CONTRACT OF THE PARTY OF THE	10-28-21
Location 657							MW-17-20
Sampling Personnel 5 k R		37731			T:-	ne started	
Weather Conditions over conditions	+	Air Te	emp. (°F)				
Sample No.  Duplicate Equipment Blank  Pump Purging Method Pumping Start Purge Rate (gal./min.) Pumping End Pump Set Depth Below MP (ft.) KuriTec Tubing (ft.)	/ dedicated p		Time Time Approximate	Diamo Total Dept Total Dept Depth	eter and Type h of Well Bel h of Well Bel to Water Bel (if frozen) Bel Feet of Wa	ow MP (ft.) _ ow MP (ft.) _ ow MP (ft.) _	2" PVC 20 19.55 6.57 12.98 0.17
TruPoly Tubing (ft.)				_			10.7
Monument Condition 9000  Casing Condition 9000  Wiring Condition	/						
(dedicated pumps)							
Measuring Point (MP)	201	M	Monumer easurement m	ethod: /	Stickup / Rod & level / alogger type_	Tape measu	ure
Top-of-casing to monument (ft	)	7			ger serial #_	n/a	
Monument to ground surface (ft	.)		Meas		e length (ft.)		
□ Lock present and op □ Well name legible or □ Evidence of frost-jac	outside of well						
Notes							
				MES			
			ASING VOLU		4	6	8
Diameter of Well [ID-inches]	CMT	11/4	2	0.38	0.66	1.5	2.6
Gallons per lineal foot	0.000253	0.08	0.17	0.36	0.00		

Well No.

MW-17-20

		FIE	LD PARAMETERS [st	abilization o	riteria]	
Time	Temp. (°C) [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual
252	7.84	1.62	279	7/12	108.7	clear
255	7.96	1.02	280	7.26	28.2	
258	Sump	le	201	1-28	18.2	
_	,					
			27			
-						
		E 1200			70	
L	aboratory	sos (A				
	24174 ELIV () =	(//				
	nalysis		Sample Containers	D	reservatives	1.2
2 _	PFA3		- Pro Contamició		eservatives	Dup
						므

72

Well No.

MW-17-20

### WELL DEVELOPMENT LOG

WELL DE	VELOPINE IN LOC
Owner-Client  Location  Weather  Development Personnel  Tk.R	Well No. MW-17-40 Project No 1025 99-008 Date (0-26-3)
Diameter and Type of Casing:  Total Depth of Well <b>Before</b> Development (feet below Depth to Screen Top and Bottom (from Constru	w top of casing):
	elopment Details
Feet of water in well  Gallons per foot  Gallons in well  Surge method  Pump used  Surge block  Pump used	Time pumping started  Flow rate (gal/min)  Flow-rate measurement method:  Time pumping ended  1/4 27
Tubing used (ft) 52	Gallons Pumped 28  Disposal: 640
Depth to Water After Development (feet below Total Depth of Well After Development (feet be	top of casing):  alow top of casing):  39.82

#### **Observations**

Time	Water Clarity (Visual)	Time	Water Clarity (Visual)
1330		1 1 1 1 1 1 1 1 1	
353	turbid, gray, silty		
1462	slighty turbid, gray		
1403	cloudy		
1407	cloudy		
1411	SAA		
1414	SAA		
1417	5 A A		
14 20	SAA		
1427	SAA		

WELL CASING VOLUMES

	WI	ELL/GASING	VOLUMES			_
	11/.	2	3	4	6	8
Diameter of Well [ID-inches]	1/4	-		0.00	4 5	26
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.0
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	_

105

NOTES:

Well No. MW-17-40

Owner/Client	DOTE	PF					Project No.	1025 99-00
Location	GST	1						10-26-21
Sampling Personnel	5KR					1	and the second of the second o	MW-17-40
Weather Conditions	ring		Air	Temp. (°F)	45°		ime started completed	
						Time	e completed	1330
Sample No.	Mb -1	7-40		_ Time _	1454			
Duplicate	MW-	117-4	0	Time_	1444	H		
Equipment Blank				_ Time_	-			
Pump	Peni							0.45
Purging Method	portable /	dedicated	pump		Dia	ameter and Typ	e of Casing	2"
Pumping Start	1443	dedicated	pamp	Approxima		epth of Well Be		40
Purge Rate (gal./min.)	20.1					epth of Well Be		39.82
Pumping End	1451			749797		oth to Water Be		
rumping Lina_	1721					ce (if frozen) Be	TO REPORT OF THE PARTY OF THE P	
Pump Set Depth Bek	ow MP (ft )	37					ater in Well	
	Tubing (ft.)					Gal	lons per foot	0-17
	Tubing (ft.) _ Tubing (ft.)	WK 411					llons in Well	
Trui Oly	rabing (i.i.) _	40 11				Purge Water V	olume (gal.)	1
		,		Purge Wate	r Disposal	GAL		
Monument Condition	good	/						
Monument Condition	9000	-						
Casing Condition	good							
							_	
Wiring Condition								
(dedicated pumps)								>
	Law John			Managemen	ant time:	Stickup	Flushmount	
Measuring Point (MP)	Top of Cas	ing (TOC)		ivionum Measurement	ent type:	Stickup / Rod & level /		/
				vicasurement	metriou.	7100 0 10101 7		W.
Top-of-casing to mor	nument (ft.)	0.3	7		Da	talogger type	n/a	
Monument to ground s				_		ogger serial #	n/a	
Monument to ground s	surface (it.)_			– Mea		ole length (ft.)		
Look proce	nt and opera	ational		Wick	aoai oa oa.			
	legible on o		11	1.0			130 6	
7 - 4 4 6 6 6 6	TANK TO THE TANK THE TANK THE TANK							
□ Evidence of	f frost-jackin	9 _						
Notes								
			WELLO	ASING VOL	UMES			
Diameter of Well [ID-inches	1 [	CMT	11/4	2	3	4	6	8
Gallons per lineal foot	,	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

Well No. Mw-17-40

	FII	ELD PARAMETERS [sta	abilization c	riteria]	
Temp (°C) [± 3%	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual
6.74	2 2.86	8925	6.90	1968	Year
6.76 5 an	0.53	2281/	7.13	196.8	
6.76		22688	7.20	167-8	
5 6 m	D/e				
-					
-					

Analysis	Sample Containers	Preservatives	Du
PFAS			D/
			旦
			_
			_

AF

Well No.

MW-17-40

Owner-Client Location Weather Development Personnel  WELL DE  Cousteurs  Ranning  MSC	Well No. Project No Date  Well No.  ### 18-15  ### 19-3-21
Diameter and Type of Casing:  Total Depth of Well <b>Before</b> Development (feet below Depth to Screen Top and Bottom (from Constru	w top of casing):
Feet of water in well  Gallons per foot Gallons in well  Surge method Pump used  Water  Tubing used (ft) 25	Time pumping started Flow rate (gal/min) Flow-rate measurement method:  Continue  Time pumping ended Gallons Pumped Disposal:
Depth to Water After Development (feet below Total Depth of Well After Development (feet be	top of casing): 4,50

# **Observations**

Time	Water Clarity (Visual
1227	Furbrd Grex-B
032	u u
1235	11
1238	very cloups
1241	4 4
1244	u v
1246	Cloudy
248	Clouds
1250	4

Time	Water Clarity (Visual)
1257	Cowsil
1304	Cloudy Cloudy

NOTES:

WELL CASING VOLUMES

and the second	11/4	/2	3	4	6	8
Diameter of Well [ID-inches]	1/4	1-/		0.00	1.5	26
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.0	2.0
I Galloris per liftear foot						

R

Well No. Mw-18-15

Owner/Client*	AL DOT	PF					Project No.	
Location	Gustava	5						1-4-21
Sampling Personnel					7 1		Well.	
Weather Conditions			Ai	r Temp. (°F)	22		Time started _ e completed _	
Sample No. Duplicate Equipment Blank	MW-18	2-15		Time // Time _	014			
Pump Purging Method Pumping Start Purge Rate (gal./min.) Pumping End	portable por	/ dedicated		Approxima Measure	ate Total D ed Total D De Depth to I	repth of Well Beepth of Well Beepth of Water Book Cee (if frozen) Book Geepth Ge	Below MP (ft.) Below MP (ft.) Below MP (ft.) Below MP (ft.) Water in Well Bellons per foot Bellons in Well Volume (gal.)	15 3.62+1.19=19 4,50 10.51 0.17 1.79
Wiring Condition								
(dedicated pumps	)							
Measuring Point (MP	) Top of Ca	sing (TOC)		Monum Measurement	nent type: method:		/ Flushmount / Tape measu	re
		0.22					n/a	
Top-of-casing to mo		0.00				atalogger type		
Monument to ground	surface (ft.)					ogger serial #		
Well nam	sent and oper le legible on o of frost-jacki	outside of w	ell	ivie	asured ca	ble length (ft.)	- Ilia	
24.0	٨	1. Pock	<u></u>		. 4			
Notes	/ 4	0 10	1					
								- 1
			111211		LIMEO			
		T		CASING VOL	UMES	1	6	8
Diameter of Well [ID-inche	es]	CMT	11/4	/2/	3	4	1 -	0

0.17

0.000253

Gallons per lineal foot

0.08

0.38

Well No.

2.6

1.5

0.66

Field Parameter Instrument	Circle one: Parameters stabilized	or 3 well volumes purged
Sample Observations		
Notes		

FIELD PARAMETERS [stabilization criteria]

	Temp.	Dissolved	LD PARAIMETERS (S	GDINZGHOTT C	T	
Time	(°C) [± 3%]	Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
0956	8.51	5.00	143	8.41	-123.9	Clear
	8.65	3.02	192	8.12	-100,2	Clery
	8,69	2.87	193	8.05	-88-2	Cler
1005	8.69	3.31	193	810 i	-89,3	Clear
1008	8.68	3.58	192	7.99	-83.1	Clear
	8.69	2.39	191	7.28	-72.3	Clear
רוט	Sample			11/1/2		
	-	- 1				

Analysis	Sample Containers	Preservatives	Duj
PHAS			0
			旦
			旦



WELL DEVELOPMENT LOG MW-18-50 Well No. Owner-Client Project No Location Date Weather NEC **Development Personnel** Diameter and Type of Casing: 46.66+1,19-47.85 Total Depth of Well Before Development (feet below top of casing): Depth to Water Before Development (feet below top of casing): Top:45, 0° Bottom: 44 Depth to Screen Top and Bottom (from Construction Log): **Development Details** Time pumping started Feet of water in well Flow rate (gal/min) Gallons per foot Flow-rate measurement method: Gallons in well Conthine Surge method Time pumping ended Pump used Gallons Pumped Tubing used (ft) Disposal: Depth to Water After Development (feet below top of casing): Total Depth of Well After Development (feet below top of casing): **Observations** 

Time	Water Clarity (V	sual)
1059	7416:00	N
1104	'u 110	
1108	11 11	
1111	Jery Cloc	104
1115	1	1
1100	4	1
1138	11 7	
1195	Ciondy	

Time	Water Clarity (Visual)

NOTES:

WELL CASING VOLUMES

ni i i i i i i i i i i i i i i i i i i	11/4	2	3	4	6	8
Diameter of Well [ID-inches]	174		0.00	0.66	1.5	2.6
Gallons per lineal foot	0.08	/0.17	0.38	0.00	1.0	-
Galloris per liftear foot						

Well No. MW-18-50

SHANNON & WILSON, INC

Owner/Client DeT/	PF						109 599-008
Location Gustav	ine						211-4-21
Sampling Personnel MSC					-	_vveil _ime started	NW-18-50
Weather Conditions Foggy		Air	Temp. (°F)	36		completed _	
Sample No. MW- Duplicate MW- Equipment Blank	-18-50 -118-50		Time O	123			
Pump Purging Method Pumping Start Purge Rate (gal./min.) Pumping End Pump Set Depth Below MP (ff KuriTec Tubing (ff TruPoly Tubing (ff 0, 5 5 1/2000)  Monument Condition Casing Condition	- / dedicated	pump	Measure	te Total De ed Total De Dep Depth to Ic	oth to Water Bo e (if frozen) Bo Feet of V Gal Ga Purge Water V	elow MP (ft.) elow MP (ft.) elow MP (ft.) elow MP (ft.) elow MP (ft.) Vater in Well llons per foot allons in Well	50 48.63+1,19=4, 8,95 
Wiring Condition(dedicated pumps)	(TOO)		Monum	ent type:	Stickup	//Flushmoun	P
Measuring Point (MP) <u>Top of</u>	Casing (TOC)		Measurement		Rod & level	/ Tape meas	ure
Top-of-casing to monument (	m D.29			Da	talogger type	n/a	
Monument to ground surface (	ft)		_		ogger serial #		
Lock present and o Well name legible o Evidence of frost-ja	perational on outside of wel	11	Me	asured cal	ole length (ft.)	n/a	
Notes No lock							
		н					
		WELL	CASING VOL	UMES			
Diameter of Well [ID-inches]	CMT	WELL 11/4	CASING VOL	UMES 3	4	6	8 2.6

Gallons per lineal foot

Well No. MIN-18-50

Field Parameter Instrument _ Sample Observations _	YSI SS6 Circle one: Parameters stabilized or >3 well volumes purged
Notes	

FIELD PARAMETERS [stabilization criterial

	Temp.	Dissolved	LD FARAIVETERS [S			
Time	(°C) [± 3%]	Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	1	ORP (mV)	- 22-5 (190-70) (2-1)
0915	6.83	2.47	678	[± 0.1]	[± 10 mV]	Water Clarity (visual)
0118	6,95	0.60	672	8.12	-101.8	Cter Slightly Co
0921	6.96	0.50	670	8.43	-135.3	Char Slightly of
0924	6.97	0.43	668	8.48	-140.6	
0927	6.97	0.40	667	8.53	-155.0	
0130	6.98	0:41	670	8.54	-153.0	770
0933	Sample		970	0.04	-151.7	Slightly doudy
	- 2 2					7-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1
			71			
	7					
3 - 1 - 1						
	1.7					

Analysis	Sample Containers	Preservatives	Dup
TPAS			1
			旦
			旦
			旦

Laboratory SGS



Owner-Client  Location  Weather  Claudy  Development Personnel  WELL DE  WELL DE	EVELOPMENT LOG           Well No.         MW-19-15           Project No         152519-608           Date         U-5-21
Diameter and Type of Casing:  Total Depth of Well <b>Before</b> Development (feet below Depth to Water <b>Before</b> Development (feet below Depth to Screen Top and Bottom (from Constru	w top of casing):
Feet of water in well  Gallons per foot  Gallons in well  Surge method  Pump used  Waterra  Tubing used (ft)	Time pumping started Flow rate (gal/min) Flow-rate measurement method:  Conference  Time pumping ended Gallons Pumped Disposal:
Depth to Water <b>After</b> Development (feet below Total Depth of Well <b>After</b> Development (feet below total Depth of Well <b>After</b> Development (feet below total Depth of Well <b>After</b> Development (feet below total Depth to Water After Development (feet below total Depth to Water After Development (feet below total Depth to Water After Development (feet below total Depth to Water After Development (feet below total Depth to Water After Development (feet below total Depth to Water After Development (feet below total Depth to Water After Development (feet below total Depth total Dept	

Time	Water Cla	rity (Visual)
6919	Throid	PLONE
0923	11	11
0126	1	4
6930	very	Cloud
0933	11	1)
0936	W	-1
0939	11	1
0942	Cloud	-
0945	"	-1
2448	11	1)

_

NOTES:

WELL CASING VOLUMES

	***				•		ı
	11/4	2	3	4	6	0	ł
Diameter of Well [ID-inches]	174		0.00	0.66	1.5	2.6	١
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.0	2.0	1
It salions per linear look	0.00						

SHANNON & WILSON, INC



Owner/Client					1		2000	102547-00
		aska Petroleum		101//	T			107383-001
The state of the s		Terminal Off-	Site	Gusta	MS	0		11-5-21
Sampling Personnel				T (0E)				MW-19-15
Weather Conditions	Cloudy		Air	Temp. (°F)	35		Time started	
Sample No.	MW-1	19-15		Time	258		Time completed	1300
Duplicate	-		ysis:	Time	_	Der	th to Water (ft.)	
Equipment Blank (EB)	ER.		ysis:	Time		Dept	h to LNAPL (ft.)	
Equipment Blank (EB)	-	7 1114	y 0.0.	-	_	NAPI	Thickness (ft.)	
	0	1		Method o	of NAPL N	leasureme		
Pump/Controller	ter:	71					-	4
Purging Method	portable	/ dedicated	numn		Dia	ameter and	Type of Casing	2"
Pumping Start		, dod/odiod	μαπιρ	Approxima	te Total D	epth of We	I Below MP (ft.)	15
Purge Rate (gal./min.)							I Below MP (ft.)	
Pumping End				111231271			r Below MP (ft.)	
r uniping Life	1200			1	the state of the s		) Below MP (ft.)	
Pump Set Depth Bel	ow MP (ft )	13				The state of the s	of Water in Well	
	Tubing (ft.)	_					Gallons per foot	
	Tubing (ft.)	42					Gallons in Well	
	Tubing (ft.)					Gall	ons in Well x3 =	
Ollicone	rabing (i)	0.		(also	enter on l		Gallons Purged	
							AC Treatment	
Monument Condition	of Mind			, argo vvato	D.Opood.			
Monument Condition,	100							
Casing Condition	goed							
Wiring Condition	_							
			-					
(dedicated pumps)							1	
		sina (TOC)		Monume	ent type:	Stickup	/ Flushmount	1
Measuring Point (MP)	Top of Cas	0 24	N	leasurement	method:	Tape mea		
Measuring Point (MP) Top-of-casing to mor Monument to ground s	nument (ft.)	0.24	N		method:	Tape mea		
Top-of-casing to mor Monument to ground s  Frost-jackir Lock prese Well name	nument (ft.) surface (ft.) ng? Y / C nt and oper legible on o	0.24  No ational outside of well of		leasurement - -				
Top-of-casing to mor Monument to ground s  Frost-jackin Lock prese	nument (ft.) surface (ft.) ng? Y / C nt and open	0.24  No ational outside of well of		leasurement - -				
Top-of-casing to mor Monument to ground s  Frost-jackir Lock prese Well name	nument (ft.) surface (ft.) ng? Y / C nt and oper legible on o	0.24  No ational outside of well of	stickup	leasurement	well (flush			
Top-of-casing to mor Monument to ground s  Frost-jackin Lock prese Well name  Notes	nument (ft.) surface (ft.) ng? Y / C nt and oper legible on o	0.24 National utside of well	′stickup	leasurement - -	vell (flush _UMES	mount)	sure	
Top-of-casing to mor Monument to ground s  Frost-jackir Lock prese Well name	nument (ft.) surface (ft.) ng? Y / C nt and oper legible on o	0.24  No ational outside of well of	stickup	leasurement	well (flush			8 2.6

	Parame	Instrument: 151 eter Criteria: Circle One:	Parameters stabili	zed OR >	3 well volume	s purged	
	Water of	ons purged:bservations;		Gallons n	eeded for 3WV		
		Notes:	PH of	F			
		FIELD PAR	RAMETERS [stabili	zation crite	ria]		
	Temp.	Dissolved Oxygen	Conductivity	рН	ORP (mV) [±	Wate	r Clarity
9	(°C)	(mg/L) [± 0.10 mg/L]	(μS/cm) [± 3%]	[± 0.10]	10 mV]	(vis	sual)
	Purging st	art time					
	7.27	1,01	337	-7.61	583.8	2076	Yxelo
	736	108	348	-9.58	670.1	Clear	
	7,37	0.58	354	-9.99	737.1	Clear	
	7.35	0.47	356	-9.99	872.3	Clery	_
	Sample	/	2060	1.77	874.3	Ceny	
	- Carlo						
		6.5-					
	Laboratory	SGS					
	1 7 7 77 1						
	Analysis		Sample Containers		Preservatives	Dup	EB
	Sulfolane (1		2x 1-Liter amber bott		none	<u></u>	2
	PF45					_	
						_	_
- 10							



旦

Weather  Development Personnel  Diameter and Type of Casing:  Total Depth of Well Before Development (feet below top of casing):  Depth to Water Before Development (feet below top of casing):	MW-19-50 102599-008 1/-5-21		
Diameter and	Type of Casing:	2" PVC	
		(feet below top of casing):	48,69+ 1,19= 49.88
Depth to Wate	er Before Development (fee	et below top of casing):	3.57
Depth to Scree	en Top and Bottom (from C	Construction Log):	Top: 45.00 Bottom: 49.75

Feet of water in well

Gallons per foot
Gallons in well

Surge method
Pump used

Tubing used (ft)

Development Details

Time pumping started
Flow rate (gal/min)
Flow-rate measurement method:

Time pumping ended
Gallons Pumped
Disposal:

Gallons Pumped
Disposal:

Depth to Water After Development (feet below top of casing):
Total Depth of Well After Development (feet below top of casing):

3.94

Observations

Time		larity (Visual)
1039	Turbil	brown - grel
1042	u	4
1046	"	"
1049		2
1053	11	0
1100		4
1103	bery	Cloudy
1112	Clou	29
		~

Time	Water Clarity (Visual)

NOTES:

WELL CASING VOLUMES

Diameter of Well [ID-inches]	11/4	F2	3	4	6	8
Gallons per lineal foot	0.08	0.1/	0.38	0.66	1.5	2.6
Galloris per linear root	0.00					

Well No. MW-19-50



Owner/Client De7	PF		¢				102599-008
Location Gus	tavus					Date /	
Sampling Personnel M5						Well	NW-19-50
Weather Conditions Clar		Air	Гетр. (°F)	38		Time started _ ne completed	
Sample No.  Duplicate  Equipment Blank  Pump	N-119-50		Time _ Time _	2/2			2//
Purging Method por	table / dedicated	pump		Dia	meter and Ty	pe of Casing	2
Pumping Start 120		6 33.736	Approxima	te Total De	epth of Well E	Below MP (ft.)	50
Purge Rate (gal./min.)			Measure	ed Total De	epth of Well E	Below MP (ft.)	49.84
Pumping End 122	1			Dep	th to Water E	Below MP (ft.)	3.94
100	1.4			Depth to Ic		Below MP (ft.)	_
Pump Set Depth Below Mi	P (ft.) 48					Water in Well_	45,90
KuriTec Tubin						allons per foot_	0.17
TruPoly Tubin	g (ft.) 43					allons in Well_	7.80
0.5 silves	'n		Market Mark			Volume (gal.) _	4.5+ Level
4	1		Purge Wate	r Disposal	G.AC		
Monument Condition	ed .						
Wiring Condition							
(dedicated pumps)							
Measuring Point (MP)	of Casing (TOC)	М	Monum easurement	ent type: method:		/ Flushmount / Tape measu	re
	0 16	4		D		7/0	
Top-of-casing to monume		1			talogger type		
Monument to ground surface	ce (ft.)				gger serial # le length (ft.)		
Lock present an Well name legib	le on outside of we	II .	ivie	asured cab	ie length (it.)	II/a	
Notes No	lock						
		WELL CA	ASING VOL	JMES			
Diameter of Well [ID-inches]	CMT	11/4	25	3	4	6	8
Callana per lineal foot	0.000253	0.08	(0.17)	0.38	0.66	1.5	2.6

Field Parameter Instrument _	Circle one: Parameters stabilized or >3 well volumes purged
Sample Observations _ Notes	e# ??

FIELD PARAMETERS [stabilization criteria]

	1.1	LD PARAIVIE I ERS [S	tabilization o	ritoriaj		
Temp. (°C) [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm)	pH [± 0.1]	ORP (mV) [± 10 mV]	Water (	Clarity (visual)
6.09	0.72	377 377	5.20	29.3 23.1 54.3	Steam	> 1.75+14
6.09 6.09 Sample	6.38	373	2.75 2-143	88.6 149,1	10	11
				h 1		
	(°C) [± 3%] 6.04 6.08 6.08 6.08	Temp. (°C) (°C) (± 3%) (±10%)	Temp. (°C) Oxygen (mg/L) Conductivity (μS/cm) [± 3%] [±10%] [± 3%]  CON CONTROL (μS/cm) [± 3%]  CON CONTROL (μS/cm) [± 3%]	Temp. (°C) Oxygen (mg/L) Conductivity (μS/cm) pH [± 3%] [±10%] [± 3%] [± 0.1]	Temp. (°C) Oxygen (mg/L) Conductivity (μS/cm) pH ORP (mV) [± 3%] [± 10 mV]  (σ) (σ) (σ) (σ) (σ) (σ) (σ) (σ) (σ) (σ)	Temp. (°C) Oxygen (mg/L) Conductivity (μS/cm) pH ORP (mV) [± 3%] [± 10 mV] Water (1.0%) (0.0

Analysis	Sample Containers	Preservatives	Du
Analysis PFA3			
2000			
			_
			_
			_

Laboratory SGS



Well No.

WEI	I DE	VEL	OPI	/ENT	LOG
VVEL		_ v L L			

AALLL	LVLLOI IIILIII
Owner-Client  Location  Weather  Cloudy  Development Personnel  MSC	Well No. <u>MW-20-/5</u> Project No <u>102594-008</u> Date <u>II-4-21</u>
Diameter and Type of Casing:  Total Depth of Well <b>Before</b> Development (feet be Depth to Water <b>Before</b> Development (feet be Depth to Screen Top and Bottom (from Cons	elow top of casing):
Feet of water in well  Gallons per foot  Gallons in well  Surge method  Pump used  Tubing used (ft)  De  9,13  0,17  0,17  De  9,13  0,17  1,55  Surge block  Pump used  Tubing used (ft)	Time pumping started Flow rate (gal/min) Flow-rate measurement method:  Time pumping ended Gallons Pumped Disposal:  Time pumping ended  GAC
Depth to Water After Development (feet belonged Depth of Well After Development (feet	

### **Observations**

Time	Water Clarit	y (Visual)
_	_	****
1154	Turbid &	TOWN
1157	A.	"
1200	*	te.
1203	U	11
1206	Very (10	ady
1213		11
1216	Ic	11
12 19	1c	4

Total Depth of Well After Development (feet below top of casing):

Water Clarity (Visual)
Cloudy
Cloudy
Cloudy

NOTES:

WELL CASING VOLUMES

		75			6	8
Diameter of Well [ID-inches]	11/4	2	3	4	0	0
Diameter of Well [ID-Inches]		0.47	0.38	0.66	1.5	2.6
Gallons per lineal foot	0.08	(0.17)	0.50	0.00		



Well No. MW-20-15

Owner/Client	Det	PF					Project No.	102599-008
Owner/Client _ Location	6.4	sine 8					Date	15-11-4-21
	MEC							MW-20-15
Sampling Personnel _ Weather Conditions	Doctty	Clary	Δir.	Temp. (°F)	36		Time started	
vveather Conditions_	pernit.	Const	All	remp. (1)	) 0		ne completed	
Sample No Duplicate _ Equipment Blank _	MW-2	0-15		Time Time	618		×	
	w MP (ft.) ubing (ft.)	13	pump	Measure	e Total Do d Total Do Dep Depth to Id	oth to Water E ce (if frozen) E Feet of V Ga G Purge Water		9,13 0.17 1.5
Wiring Condition (dedicated pumps)  Measuring Point (MP)	M. A. Jan. S	sing (TOC)		Monume		Stickup	Flushmount	
			N	leasurement	method:	Rod & level	/ Tape measu	<i>g</i> e
		00	3		D-	talogger tun-	n/a	
Top-of-casing to mon	December 1977	UIL.		-		talogger type		
Monument to ground s	urface (ft.)	_		- 140-		ogger serial #		
Evidence o	legible on o	outside of we	II	iviea	sured car	ole length (ft.)	11/4	
Notes	vo w							
			WELL C	ASING VOLU	IMES			
Diameter of Well [ID-inches]		СМТ	11/4	(2)	3	4	6	8
College per lineal fact		0.000253	0.08	0.17	0.38	0.66	1.5	2.6

Well No. MW-20-15

Field Parameter Instrument	SI SSG	Circle one: Parameters stabilized or >3 well volumes purged
Notes _		

### FIELD PARAMETERS [stabilization criteria]

Time	Temp. (°C) [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
1609	7.64 7.73 7.86	\$3.42	404	7:54	116,5	Clear
1613	7.90	3.06	414	7.19	113.4	Clear Clear
1618	Sample					

12/91.00			
Analysis	Sample Containers	Preservatives	Dup
Pras			旦
			end.

Laboratory SGS



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	OTION	WELL DE	EVELOF	MENT LO	40.00-	40.0				
wner-Client	Do I FFF			Well No.	102599	008	MW-DI			
ocation Gustavus				Project No	102599-008					
Veather	Partly Clas	14		Date	11-4-21					
evelopment P	Personnel	C								
iameter and 1	Гуре of Casing:		2" A	/c						
	Well Before Develop	ment (feet l			38.60+1.	19= 39,	71			
	r Before Developmen				7,62					
	en Top and Bottom (fr			Top: 34, 83 Bottom: 37, 58						
reptil to ocice	an Top and Bottom (m			t Details						
22.17				Time pumping started 1407						
Feet of water in well				Flow rate (gal/min)						
Gallons per foo	- 1,7									
Gallons in well	1 1121		Flow-rate measurement method:							
Surge method	, , 0			_	1 1 1 1 1 1 1 1	1438				
Pump used	Waterra			Time pumpii			-			
Tubing used (f	t) 52			Gallons Pun		30				
			Disposal:	GAC						
Time	Water Clarity (V	isual)		Time	Wate	ual)				
408	Turbid gre	4								
MA	Turked Are	y								
1415	yery cloud	V								
HIA O	Very Clow	1								
1103		1			566					
473	Cloudy									
1426	cloudy				-					
1437 Cloudy										
					1					
NOTES:										
X X X X =							_			
		WE	LL CASIN	G VOLUMES		-73.				
Diameter of Well [ID-inches]		11/4	/2	3	4	6	8			
Gallons per lineal foot		0.08	0.17	0.38	0.66	1.5	2.6			



0	IT PF					Project No.	127599 108
Owner/Client	61 11					Date /	
	ise						nw-20-40
Sampling Personnel Weather Conditions		Air	Temp. (°F)	38		Time started	500
vveather Conditions	Hy cloudy	All	Temp. (T)			e completed	
Sample No	W-20-40  ec: A ortable / dedicated	pump	Time _ Time _ Time _	1539	meter and Ty	pe of Casing	2"
Pumping Start 15		pamp	Approxima		epth of Well B		46
Purge Rate (gal./min.)						elow MP (ft.)	
Pumping End 15			11,000,00		oth to Water B		5,65
Fullipling Lind 19					e (if frozen) B		
Pump Set Depth Below I	MP (ft.) 38			D-0-027-1005		Water in Well	34.14
	oing (ft.)				Ga	llons per foot	0.17
TruPoly Tub					G	allons in Well	5,80
1.5 5-locan						Volume (gal.) _	4 + Levelope
V. C. Invitation	Y.		Purge Wate	r Disposal	GAC	17776 -1-75	The state of the s
Monument Condition	000						
Wiring Condition (dedicated pumps)							
Measuring Point (MP)	op of Casing (TOC)	N	Monum leasurement	ent type: method:		/Flushmount /Tape measu	de
Ton of poping to monum	ont (ft ) 0.25			Da	talogger type	n/a	
Top-of-casing to monument (ft.) Datalogger type Datalogger serial #_							
Worldment to ground sun	ace (it.)		- Me		le length (ft.)		
	and operational lible on outside of we ost-jacking _	II		200			
Notes N/A							
			ASING VOL			0	
Diameter of Well [ID-inches]	CMT	11/4	2	3	0.66	6 1.5	2.6
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.0

Field Parameter Instrument	YSI 556	Circle one: Parameters stabilized or 3 well volumes purged
Sample Observations Notes		

FIELD PARAMETERS [stabilization criteria]

Time	Temp. (°C) [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
1524	6.37	18:02	325 325	7.73	105.0	Clear
1530	6.33	0.74	325	7.57	102.8	Clear
1536	6,33 Sample	6,68	324	7.58	97.8	Clear
	1					

1	Analysis	Sample Containers	Preservatives	Dup
	FAS			旦
口				旦
므				
				므

Laboratory SGS



Well No. MW-20-40

Owner-Client  Location  Weather  Development Personnel	Well No.
Diameter and Type of Casing: Total Depth of Well <b>Before</b> Development ( Depth to Water <b>Before</b> Development (feet Depth to Screen Top and Bottom (from Co	below top of casing): 6.22
	Development Details
Feet of water in well  Gallons per foot  Gallons in well  Surge method  Pump used  Tubing used (ft)  S-29  6.17  6.17  6.17  6.17  7.40  7	Time pumping started  Flow rate (gal/min)  Flow-rate measurement method:  Time pumping ended  Gallons Pumped  Disposal:   Time pumping ended  AC
Depth to Water After Development (feet b	

#### **Observations**

Time	Water Clarity (Visual)
1557	turbid gray
1615	clouds
1618	SA/A
1621	SAA
1624	544
1627	5A4
1630	SAA
1633	SAA
1636	541
1839	SAA

Time	Water Clarity (Visual)
1642	SAA
1645 3	BAA
1650 5	AA
	•

NOTES:

WELL CASING VOLUMES

Diameter of Well [ID-inches]	11/4	2	3	4	6	8
	0.08	0.17	0.38	0.66	1.5	2.6
Gallons per lineal foot	0.08	0.17	0.00	0.00		

Well No. MW - 2/-15

RE

n and an an an an an an an	· 10:3					Project No	250000
	T PE					Date /	
Location 65	(			_			1111-21-15
Sampling Personnel 3/6	, , ,	Λir	Temp. (°F)	200	Ti	me started	
Weather Conditions	Hy cloudy	All	remp. ( F)	2		completed _	
Sample No. MA	1-21-15		Time	1115			
Duplicate			Time	_			
Sample No			Time				
Pump P	eki						
Purging Method porta	No / dedicated	numn		Diar	neter and Type	e of Casing	Z" PVC
Pumping Start 10:5		pamp	Approximate		oth of Well Be		15
Purge Rate (gal./min.) ~0.			Measured	Total De	pth of Well Be	low MP (ft.)	14.51
			16.4.25.40.03	Dept	h to Water Be	low MP (ft.)	6.27
Pumping End			D		(if frozen) Be		
Daniel Cat Danth Bolow MD	(ft ) ***		-			ater in Well	8,24
Pump Set Depth Below MP KuriTec Tubing	(ft.)				Gallo	ons per foot	02/7
TruPoly Tubing	(ft.) #2 17					lons in Well	
Turdy Tubing	(11.)			P	urge Water Vo	olume (gal.)	3.2
			Purge Water		GAC		
Monument Condition	/		1 3 - 11 1				
Casing Condition 50	4						
Mining Condition							
Wiring Condition							
(dedicated pumps)							
Measuring Point (MP) Top	of Casing (TOC)		Monume			Flushmount	
The state of the s			Measurement r	nethod:	Rod & level /	Tape measu	re
Top-of-casing to monumen	+ (ft) 0.49	,		Dat	alogger type_	n/a	
Monument to ground surface			_		gger serial #		
Monument to ground surface	(it.)		— Mea		e length (ft.)		
Leak areasat and	operational		1,777		_		
□ Lock present and	operational	II.					
- 11	e on outside of we						
Evidence of frost-	-jacking _						
Notes							
-		in C	Table Overheid				×
		WELL	CASING VOLU	MES			-
Diameter of Well [ID-inches]	CMT	11/4	2	3	4	6	8
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

Field Parameter Instrument_	 556	Circle one: Parameters stabilized or >3 well volumes purged
Sample Observations		o iteli retained parged
Notes		
	10000	

FIELD PARAMETERS [stabil	ization criter	ial
--------------------------	----------------	-----

			LD PARAIVIETERS (ST	abilization	ntenaj	
Time	Temp. (°C) [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
1058	6.69	6-42	387	7.24	1305	clearish
1907	7.36	1.83	395	720	124.6	
1106	7.52	2.09	393	7.21	118.3	clear
1109	7.51	2-06	393	7-20	114.9	1
1/12	7,5	1093	3 93	7.21	113.0	
1115	Sampl	1	1112		74.1-37	

Yours HWA		71
Laboratory_	SGS	1 A

	Analysis	Sample Containers	Preservatives	Dup
口	PrAS		-	므
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므				므
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Well No. MW-2/-/<

	DOTAPE		MW-21-45
ocation	GST	Project No _	102599-008
Veather	overcast	Date _	10-31-21
evelopment F	Personnel <u>TKR</u>		·
Diameter and	Type of Casing:	2" PVC	
otal Depth of	Well Before Development (feet be	low top of casing):	44.63
epth to Wate	r Before Development (feet below	top of casing):	7.33
epth to Scree	en Top and Bottom (from Construct		Top: 40.0/ Bottom: 44.7
	Develo	opment Details	Aller Carrier
eet of water i	n well 37.30	Time pumping	started <u>0:30</u>
Sallons per fo	ot 0.17	Flow rate (gal/	CALL THE RESERVE AND ADDRESS OF THE PARTY OF
Gallons in well	6.34	Flow-rate mea	asurement method:
Surge method	surge block	1.5	2.5
Pump used	wattera	Time pumping	44-
Tubing used (	ft) 63'	Gallons Pump	ped 145
		Disposal:	GAL
	er After Development (feet below to f Well After Development (feet belo Ok	ow top of casing):	44.64
	f Well <b>After</b> Development (feet belo		44.64
	f Well <b>After</b> Development (feet belo	ow top of casing):	Water Clarity (Visual)
Total Depth of	f Well <b>After</b> Development (feet belo	ow top of casing):  oservations	
Time	Well After Development (feet belo	ow top of casing):  oservations	
Time 10 31	Water Clarity (Visual)  SAA	ow top of casing):  oservations	
Time 10 % 10 % 10 %	Water Clarity (Visual)  Farbid, sitly, and SAA  very clouds	ow top of casing):  oservations	
Time 10 31 10 46 10 98	Water Clarity (Visual)  SAA	ow top of casing):  oservations	
Time 1031 1046 1058 1102	Water Clarity (Visual)  Farbid, sitly, and SAA  very clouds	ow top of casing):  oservations	
Time 10 31 10 46 10 98	Water Clarity (Visual)  Farbid, sitly, and SAA  very clouds	ow top of casing):  oservations	
Time 1031 1046 1058 1102	Water Clarity (Visual)  Farbid, sitly, and SAA  very clouds	ow top of casing):  oservations	
Time 1031 1046 1058 1102 1108 1111	Water Clarity (Visual)  Farbid, sitly, and SAA  very clouds	ow top of casing):  oservations	
Time 1031 1046 1058 1102	Water Clarity (Visual)  Farbid, sitly, and SAA  very clouds	ow top of casing):  oservations	
Time 1031 1046 1058 1102 1108 1111	Water Clarity (Visual)  Fav6 desitly stay  SAA  Very clouds  cloudy  SAA  SAA  SAA  SAA  SAA	ow top of casing):  Diservations  Time	

WELL CASING VOLUMES

Diameter of Well [ID-inches]	11/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17/	0.38	0.66	1.5	2.6
Gallons per linear loot	0.00	-				

SHANNON & WILSON, INC

Well No. MW - 21 - 45

Owner/Client	20T-PF						102591-00
Location	05T				11-1		1031-21
Sampling Personnel 5	k R				2	The state of the s	MU-21-45
Weather Conditions	oxeveast	Air	Temp. (°F)	40			150 1/20
Weather Conditions	eartly cloudy				Time	completed_	1210
Sample No	1W-21-45		Time				
Duplicate	n-721-45		Time_				
Equipment Blank	_		Time				
Pump	Perí						
Purging Method D	ortable / dedicated	amua b		Dia	meter and Typ	e of Casing	z"pvc
Pumping Start //		r restrict	Approximat		pth of Well Be		
Purge Rate (gal./min.)					pth of Well Be		
	141				th to Water Be		
r diffping Life				epth to Ico	e (if frozen) Be	low MP (ft.)	
Pump Set Depth Below	MP (ft.) 42			Z.A. W. C. C. C. C. C. C. C. C. C. C. C. C. C.		ater in Well	39.14
KuriTec Tub					Gall	ons per foot	0.17
TruPoly Tub					Gal	lons in Well	6.65
That ony the	9 (/			F	Purge Water V	olume (gal.)	~2-5
			Purge Water	Disposal	GAC	13.16	
Monument Condition	9000		V 7 3 7 7 3				
Casing Condition	900d						
Wiring Condition							
(dedicated pumps)							
Measuring Point (MP)7	op of Casing (TOC)	N	Monume Measurement r		Stickup / Rod & level /	Flushmount Tape measu	re
Top-of-casing to monun	nent (ft.)	45		Dat	alogger type	n/a	
Monument to ground surf			-		gger serial #	n/a	
Monument to ground sun			– Mea		le length (ft.)	n/a	
- Lock present	and operational				, , –		
7	gible on outside of we	all					
□ Evidence of fr	oot jaakiing	7.0					
Notes Stylf	uster; stre	depti	4 water	social	er; hool.	to visc	116
		WELL C	ASING VOLU	IMES			
Diameter of Well [ID-inches]	СМТ	11/4	/2/	3	4	6	8
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

Well No. Mw -21-45

Field			Circle one:	Parameters	stabilized or	>3 well volumes purged
	Sample Ob	oservations				AL CO
		Notes H	probe malfine	Ction;	of isr	elatin
		,	LD PARAMETERS [st			
Time	Temp. (°C) [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
1/27	6.60	3.64	2371	6.78	181.9	War (viola)
1/32	6.64	0.95	100 7100	07.62	171-7	
1137	6,60	0.75	7/43	7.72	164.7	
11 40	6.61	6.65	7/53	7.75	162.6	
1143	6.62	0.60	7164	7 73	160.9	
1146	6.61	0.58	7169	7.74	159,5	
1149	6.60	0.59	7172	7.76	157.1	
11 52	Saupla					
	,					

Laboratory sgs TA

	Analysis	Sample Containers	Preservatives	Dup
旦	PEAS			6
므				
口				
旦				
旦				_

KRF

Well No. Mw-21-45

Owner-Client  Do T+PF  Location  Weather  Overage  Development Personnel	Well No. <u>Mhj - 22 - 15</u> Project No <u>162 5 99 - 06 8</u> Date <u>10 - 30 - 21</u>
Diameter and Type of Casing:  Total Depth of Well <b>Before</b> Development (feet below Depth to Water <b>Before</b> Development (feet below Depth to Screen Top and Bottom (from Construction)	top of casing): 2-94
	lopment Details
Feet of water in well  Gallons per foot  Gallons in well  Surge method Surge hlock	Time pumping started  Flow rate (gal/min)  Flow-rate measurement method:
Pump used Wattera  Tubing used (ft) 24	Time pumping ended  Gallons Pumped  Disposal:  GAC
Depth to Water After Development (feet below to	top of casing): 2.94

## **Observations**

Time	Water Clarity (Visual)
9:12	turbide sitter on
9-21	less furbid
925	very clouds
9:30	clouds
933	SAA
9:36	SAA
2:40	SAA
9:43	SAA
2.46	SAA
9:49	SAA

Total Depth of Well After Development (feet below top of casing):

Time	Water Clarity (Visual)
9:52	AA
9:55	SAA
2:58	SAA
1001	SAA
1005	

14,20

NOTES:

WELL CASING VOLUMES

		TEL ONOTITE				
Diameter of Well [ID-inches]	11/4	2	3	4	6	8
Diameter of Well [ID-Inches]	174			0.00	1 5	26
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.0

X

Well No. MW-22-15

Owner/Client	Gustavas							102599-019
Location	Gustivus					2	Date	10-30-21
Sampling Personnel	Mse							MW-22-15
Weather Conditions			Ai	r Temp. (°F)	39		Time started	
VVCddiloi oolidaa		71				Tim	ne completed	1535
Sample No Duplicate _ Equipment Blank _	MW-22-	15		Time	1536			
Duplicate	_			_ Time	-	_		
Equipment Blank	~			_ Time	-	-		
Pump	Peri A							0.2
Purging Method	portable /	dedicated p	oump		Di	iameter and Ty	pe of Casing	2'
Pumping Start	is II	dodination p	6	Approxim	ate i otai L	Cotti oi vvoii e		
Purge Rate (gal./min.)	0.13			Measu	red Total D	Depth of Well E	Below MP (ft.)	13,18+1,19=15
Pumping End					De	epth to Water E	Below MP (ft.)	2.95
						lce (if frozen) E		
Down Cat Doubh Bol	ON MD (ft )	12			2260112		Water in Well	
Pump Set Depth Bel KuriTec	Tubing (ft.)						allons per foot	
Kuntec	Tubing (ft.)							1.94
	Tubing (ft.)					Purge Water		
0.55.1	rcon			Purae Wa	ter Disposa	•	, -, -, -, -,	
Mark the state of the same	. 1			ruige vva	ter Dispose			
Monument Condition	9-00							
	7							
Casing Condition	geod							
			_					
Wiring Condition								
(dedicated pumps)								
				440.00	and was	011-1	Flyndry	A
Measuring Point (MP)	Top of Casin	g (TOC)			ment type:		Flushmoun	
-0.000000000000000000000000000000000000				Measureme	nt method:	Rod & level	/ Tape meas	ure
Top-of-casing to mo	nument (ft.)	-0.27		_		atalogger type		
Monument to ground	surface (ft.)					logger serial #		
				M	easured ca	able length (ft.)	n/a	
Lock prese	ent and operat	onal						
	legible on out							
	of frost-jacking							
- <del>5</del> 0 - 5110076		- T						
Notes No Co	CK							
-								
-			/E1.1	CASING VO	LIMES			
				CASING VO	3	4	6	8
Diameter of Well [ID-inche	s]	CMT	11/4	1	-	0.66	1.5	2.6
Gallons per lineal foot		0.000253	0.08	0.17	0.38	0.00	1.0	2.0

Well No.

MW-22-15

Field Parameter Instrument	YSI SSG	Circle one: Parameters stabilized or >3 well volumes purged
Sample Observations		- The street of purgod
Notes		

FIELD PARAMETERS [stabilization criteria]

		ric	LD PARAMETERS [st	abilization	criteria	
Time	Temp. (°C) [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	[± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
1512	7.94	7 2.31	369	7.59	102,0	Clan
515	7.90	0.83	366	7,43	100.5	Cient
518	7.88	0.57	364	7.38	97.5	Chear
1521	7.87	0,49	362	7.37	96,4	Clear
524	7.36	0.40	360	7.36	97.8	Cleur
1527	7.85	0,44	360	7.36	97.9	Cher
1530	Simple					
					10 9	

Analysis	Sample Containers	Preservatives	Dup
PFAS			<u></u>
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			旦



Owner-Client  Location  Weather  Development Personnel  OOT+ PF  Location  STR	Well No.  Project No  102591-008  Date  10-30-21
Diameter and Type of Casing:  Total Depth of Well <b>Before</b> Development (feet below Depth to Water <b>Before</b> Development (feet below Depth to Screen Top and Bottom (from Construc	top of casing):
Feet of water in well  Gallons per foot  Gallons in well  Surge method  Pump used  Watter  Tubing used (ft)	Time pumping started Flow rate (gal/min) Flow-rate measurement method:  Time pumping ended Gallons Pumped Disposal:   Time Details  1020  1121  CALC  Time pumping ended  1121  CALC  Time pumping ended  1121  CALC  Time pumping ended  1121
Depth to Water After Development (feet below to Total Depth of Well After Development (feet be	top of casing):

## **Observations**

Time	Water Clarity (Visual)	Time	Water Clarity (Visua
1050	fubit, gray		
1055	very cloudy		
1088	SAA		
1103	cloudy		
1106	SAA		
1/12	SAA		
11/6	Y LA		
1/20	> HA		

NOTES: Surge block + footer @ bottom of well

WELL CASING VOLUMES

		7-7-				
	11/.	7 2	3	4	6	8
Diameter of Well [ID-inches]	1/4	1 -		0.00	1.5	26
Callana nor lineal fact	0.08	0.17	0.38	0.66	1.0	2.0
Gallons per lineal foot	0.00					

Well No. Mu - 22-40



Owner/Client	Guelava	5					Project No. 102	1879-019
	Gustavi						Date 10	
Sampling Personnel		, ,		11. 12. 13.1				V-22-40
Weather Conditions			Ai	r Temp. (°F)	46		Time started 14	02
Weather Conditions						Tim	e completed 15	02
	e17	1 2 10			1459			
Sample No.	7 MI	N-22-40		_ Time_	1459			
Duplicate		4		_ Time_	1			
Sample No. Duplicate Equipment Blank		-		_ Time_				
Dunan	Parl	1					la ramo la	1
Pump Purging Method	portable	/ dedicated	ритр		Dia	ameter and Ty	pe of Casing	2
Pumping Start	DAS IL	125	Pamp	Annroxima	te Total D	epth of Well B	elow IVIP (II.)	0
Pumping Start Purge Rate (gal./min.)				Measur	ed Total D	epth of Well B	elow MP (ft.) 38	15+1.19=
Purge Rate (gal./min.) Pumping End				47.50 CA	De	oth to Water B	elow MP (ft.) 2.	30
Pumping End	1957				Depth to Id	ce (if frozen) E	selow MP (ft.)	_
Duma Cat Danib Da	low MD (ft )	36 37			Arthur Ca.	Feet of \	Nater in Well 3	.94
Pump Set Depth Be KuriTec TruPoly	Tubing (ft.)	~				Ga	llons per foot	.17
Kurrrec	Tubing (ft.)	40				G	allons in Well 6	,11
0-5 s. (	Tubing (IL.)	70				Purge Water	llons per foot <u>@</u> allons in Well <u>(</u> Volume (gal.)	4
0.33,1	cort			Purge Wate	r Disposa	GAL	6.00.00.00	
A feet of the house	dond							
Monument Condition	1000							
					_			
Casing Condition	Jose							
	-							
Wiring Condition	1							
(dedicated pumps	)							
						4117	(F)	
Measuring Point (MP	) Top of Ca	asing (TOC)			ent type:	Stickup	/Flushmount	
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				Measuremen	method:	Rod & level	/Tape measure	
		220						
Top-of-casing to mo	onument (ft.	50,30				atalogger type		
Monument to ground	surface (ft.	) —				ogger serial #		
	at head and			Me	asured ca	ble length (ft.)	n/a	
Lock pres	ent and ope	erational						
		outside of we	11					
	of frost-jack							
LVIderice	or moor jao.	9						
Notes No	la k							
Notes No	a							
-								
			1.0	S. A. T. S. No.	Acres 1			
			WELL	CASING VOL				0
Diameter of Well [ID-inch	es]	CMT	11/4		3	4	6	8
Gallons per lineal foot		0.000253	0.08	0.17	0.38	0.66	1.5	2.6

Field Parameter Instrument	Circle one:	Parameters stabilized	or >3 well volumes purged
Sample Observations Notes			

FIELD PARAMETERS [stabilization criteria]

Time	Temp. (°C) [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
1450 1453 1456	7.55 7.53 7.51 7.50 7.50 7.49 7.49 7.49 7.49 7.49 7.49 7.49 7.49	8.24 4.32 4.60 3.90 3.34 2.83 1.99 1.80	459 490 498 519 545 582 <b>5</b> 09 <b>6</b> 30 <b>6</b> 52 <b>6</b> 76	7.56 7.43 7.41 7.34 7.32 7.27 7.27 7.26 7.24 7.27 7.97	144.1 143.7 141.7 142.0 142.1 141.7 140.7 139.9 138.2 137.2	Clear Clear

Preservatives	Duj
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	므

Laboratory SGS



O Oliont	DOT	Well No.	MW-23-20
Owner-Client	1 ct	Project No	102599 -008
Location	631	Date	117-24-21
Weather	partly closely	Date	70
Development F	Personnel 5 K R		

Diameter and Type of Casing:

Total Depth of Well Before Development (feet below top of casing):

Depth to Water Before Development (feet below top of casing):

Depth to Screen Top and Bottom (from Construction Log):

Top: 9,67 Bottom: 19,46

## **Development Details**

Feet of water in well

Gallons per foot

Gallons in well

Surge method

Pump used

Tubing used (ft) ~ 30'

Time pumping started

13 29

Flow rate (gal/min)

Flow-rate measurement method:

Time pumping ended

Gallons Pumped

Callons Pumped

Disposal:

Time pumping started

13 29

Flow rate (gal/min)

Flow-rate measurement method:

Gallons Pumped

Callons Pumped

C

Depth to Water After Development (feet below top of casing):

Total Depth of Well After Development (feet below top of casing):

19-79

#### **Observations**

Time	Water Clarity (Visual)
Time	
1330	turbid, silty . gra
1340	etonoty opasse
1344	opoque
1348	very cloudy
1354	cloudy
1358	cloudy
1403	SAA
1409	SAA
1413	SAA
14/6	811

	Time	Water Clarity (Visual)
8	1421	cloudy
9	1426	SAA
10	1431	SAA
1200	1438	SAA
-	1505	SAA
	1525	SAA
	1235	SAA
	1550	SAA
	1612	SAA

NOTES:

WELL CASING VOLUMES

	***				0	Q
	11/	/2/	3	4	6	0
Diameter of Well [ID-inches]	174	/-/	2122	0.00	1.5	2.6
	0.08	0.17	0.38	0.66	1,0	2.0
Gallons per lineal foot	0.00					

2000	20 T- 10 E					Project No.	102599-00
Owner/Client	CT					The state of the s	10-24-21
	k R						MW-23-20
Weather Conditions	al a lade	Air	Temp. (°F)	45	Ti	me started	
Weather Conditions	× +1 (7 (10-0)	7,10	, cp. ( . /			completed	
							1651
Sample No.	44-23-20		Time	1650			( E E C
Duplicate			Time	-			
Sample No Duplicate Equipment Blank			Time	-			
			7 YA 1				
Pump							6
Pump Purging Methodpc	ortable / dedicated	pump			meter and Type		2
Pumping Start 16	:40		Approxima	te Total De	pth of Well Bel	ow MP (ft.)	20
Purge Rate (gal./min.) - 6			Measure	ed Total De	epth of Well Bel	ow MP (ft.)	19.77
Pumping End 16				Dep	th to Water Be	ow MP (ft.)	7.47
			+1	Depth to Ic	e (if frozen) Be	low MP (ft.)	-
Pump Set Depth Below N KuriTec Tubi	MP (ft.) /8				Feet of W	ater in Well	12.30
KuriTec Tubi	ing (ft.)				Gallo	ns per foot	0.17
TruPoly Tubi	ing (ft.) 2 3				Gall	ons in Well	2-1
100				F	Purge Water Vo	olume (gal.)	2.1
			Purge Wate	r Disposal	6.AC		
Monument Condition	9000						
Casing Condition	20.00						
Wiring Condition							
(dedicated pumps)							
(dedicated pumps)							1
Management (MD) T	on of Cooling (TOC)		Monum	ent type:	Stickup /	Flushmount	
Measuring Point (MP)	op of Casing (TOC)		Measurement		Rod & level 7	The second second second second second	
		1	vieasurement	method.	nod a lover	rapo modo.	
12.4.75a.eschibbanen	ent (ft.) 0 48			Dat	alogger type	n/a	
Top-of-casing to monum		_	-		gger serial #	n/a	
Monument to ground surfa	ace (ft.)		_		TO THE REAL PROPERTY AND ADDRESS OF THE PARTY	n/a	
	Superior States (Sept.		iviea	asured cab	le length (ft.) _	II/a	
Lock present a							
	ible on outside of we	II.					
Evidence of from	st-jacking _						
Notes							
		MEL .	ACINIONO	IMES			
1200010 2000000000000000000000000000000	Tour I		ASING VOL	3 3	4	6	8
Diameter of Well [ID-inches]	CMT	11/4	0.17	0.38	0.66	1.5	2.6
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.00	1.0	2.0

Field Parameter Instrument	YSI	Circle one: Parameters stabilized or >3 well volumes purged
Sample Observations		
Notes_		

FIELD PARAMETERS [stabilization criteria]

Time	Temp. (°C) [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
1644	8.62	3.24	358 359 362	7.21	96.5 91.0 88.2	Clear
1650	se hypi	/	3.6			

Analysis	Sample Containers	Preservatives	Dup
PIAS			
			므
			<u></u>

Laboratory SGS



Well No. MW-23 - 26

Owner-Client	DAT + PF	Well No.	MW-23-50	
Location	GST	Project No	102599-008	
Weather	rainy	Date	10-25-21	_
	TLP			

Diameter and Type of Casing:

Total Depth of Well Before Development (feet below top of casing):

Depth to Water Before Development (feet below top of casing):

Depth to Screen Top and Bottom (from Construction Log):

Top: 49.53

Development Details

Feet of water in well

Gallons per foot

Gallons in well

Gallons in well

Flow-rate measurement method:

Surge method Surga Clock

Pump used Waffelm

Tubing used (ft) 60'

Time pumping ended 1347

Gallons Pumped 50

Disposal: 640

Depth to Water After Development (feet below top of casing):
Total Depth of Well After Development (feet below top of casing):

9.35

50 99

#### **Observations**

Time	Water Clarity (Visual)
12 52	gray, Antid
1302	gray less turbid
1308	opegae, gray
1311	less opaque " gray
1322	very cloudy
1326	closely
1331	SAÁ
1335	SAA
1339	SAA
1341	gray, om the

Time /347	Water Clarity (Visual)
/>4/	sightly cloudy

NOTES:

WELL CASING VOLUMES

Diameter of Well [ID-inches]	11/4	2	3	4	6	8
	0.00	0.17	0.38	0.66	1.5	2.6
Gallons per lineal foot	0.08	0.17	0.30	0.00		

Well No. MW-23-50

KRP

Owner/Client _	DOTA	PF					Charles War and State Control of the	102599-00
Location _	657						17 (a) ( b) ( b) ( c) ( c) ( c) ( c) ( c) ( c	10-25-21
Sampling Personnel_	SKR			- 10-1			and the second s	Mn-23-50
Weather Conditions _	rainy		Air	Temp. (°F)	45		Time started e completed	
	MW- Per portable 1428 ~0.1 1436	-		Measure	Dia te Total Do ed Total Do Dep Depth to Id	ameter and Ty epth of Well B epth to Water B se (if frozen) B Feet of V Ga Ga Purge Water V	pe of Casing elow MP (ft.) elow MP (ft.) elow MP (ft.) elow MP (ft.) Vater in Well llons per foot allons in Well	2"PUC \$0 49.55 9.35 
Casing Condition  Wiring Condition	9004							
(dedicated pumps)								
Measuring Point (MP)	Top of Ca	sing (TOC)	N	Monum Jeasurement	ent type: method:	Stickup Rod & level	/Flushmount /Tape meas	
Top-of-casing to mor	nument (ft )	0.3	4		Da	talogger type	n/a	
	THE RESERVE AND A RESERVE OF THE PROPERTY OF			-		ogger serial #	n/a	
Monument to ground	surface (it.)			- Me		ole length (ft.)		
2.0.1.000.0		A 200		IVIC	asureu car	no longin (it.)	100	
	nt and oper							
	•	outside of we	ell					
□ Evidence o	of frost-jacki	ng .						
Notes								
110100								
			WELL C	ASING VOLU	JMES			
Diameter of Well [ID-inches	1	CMT	11/4	/ 2	3	4	6	8
Gallons per lineal foot		0.000253	0.08	0.17	0.38	0.66	1.5	2.6

Well No. - 23 - 50

Field Parameter Instrument_	YSI	Sicircle one: Parameters stabilized or >3 well volumes purged
Sample Observations_	•	
Notes_		

FIELD PARAMETERS [stabilization criteria]

Time	Temp. (°C) [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
1433	6.87	2.20	19000	7.02	168.4	clear
1436	6.91 Sample	1.13	24622	7.11	133.3	

	Di
	-
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	므
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Well No. MW-23-50

VELOPMENT LOG
Well No. <u>MW-24-10</u> Project No <u>1025 99-008</u>
Date 10-29-21
2" PVC
elow top of casing): 2,65
v top of casing):
ction Log): Top: 4.77 Bottom: 9.52
lopment Details
Time pumping started 1236
Flow rate (gal/min)
Flow-rate measurement method:
144
Time pumping ended 1325
Gallons Pumped ~/6
Disposal: GAC
top of casing): 3,40
elow top of casing): 9.66
Anna dise
<u>Dbservations</u>

Time	Water Clarity (Visual)
1237	tur bid
12 44	less turbid
1249	very cloudy
1253	SAA
1257	SAA
1301	SAA
1304	SAA
13 25	cloudes

Time	Water Clarity (Visual)			

NOTES:

WELL CASING VOLUMES

					The second secon	
Diameter of Well [ID-inches]	11/4	2	3	4	6	8
Diameter of vveil [iD-inches]	177		2.00	0.00	1.5	26
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.0	2.0
Galloris per liftedi foot						



Ourse/Olient	DOT+ PF					Project No.	102599-008
	Williams Alaska Pe North Pole Termina		657				10-29-21
Sampling Personnel		ai Oir-Site	031				MW - 24-10
Weather Conditions		-	Air Temp. (°F)	co 450	T	ime started	
vveatilei Conditions	fartly cloudy		in rompi ( r )	- 10		completed	
Sample No.	MW-24-1	0	Time	15:28			
Duplicate		Analysis:	Time			Water (ft.)	
Equipment Blank (EB)	The state of the s	Analysis:	Time	_			
			44.00	CALABI MA		ckness (ft.)	
	na. '		Method	of NAPL M	easurement		
Pump/Controller		<del></del>		D:-		o of Cooling	74 DIE
Purging Method		cated pump	) ^i		epth of Well Be		2" PVC
Pumping Start					epth of Well Be		
Purge Rate (gal./min.)			ivieasu		th to Water Be		
Pumping End	15:22				e (if frozen) Be		
Down Oat David Dal	OW MD (ft )			Debri to ice		ater in Well	
Pump Set Depth Bel	and the second s				1 17 7 9 9 9 9 9	ons per foot	
	Tubing (ft.)					lons in Well	
12 (d. 21%) 11 (d. 21%)	Tubing (ft.) /3 Tubing (ft.) 0.5					in Well x3 =	
Silicone	rubing (it.)	_	(als	enter on b	ack) Total Gall		
			20 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		Onsite GAC T		
Casing Condition	/ 4						
Wiring Condition							
(dedicated pumps)							
Measuring Point (MP)			Measuremen	nent type: t method:	Stickup 7 Tape measure	Flushmount	>
Top-of-casing to mor Monument to ground s	nument (ft.) O	,51					
<ul> <li>Lock prese</li> </ul>	ng? Y / N ent and operational legible on outside	of well (stick	up) or inside o	f well (flushr	nount)		
Notes						-0 -	
W W							
-			. 131				
		WEI	LL CASING V	LUMES			
Diameter of Well [ID-inches	] CM	T 11/4	/ 2	3	4	6	8
Gallons per lineal foot	0.010	0.08	0.17	0.38	0.66	1.5	2.6

Well No.

	Param	eter Criteria: Circle One:	Parameters stabili.	zed OR >	3 well volumes	s purged
		bservations:  Notes:		Gallons no	eeded for 3WV	
	± 3%	± 10% FIELD PAR	AMETERS [stabiliz	zation criter	ia]	
е	Temp. (°C)	Dissolved Oxygen (mg/L) [± 0.10 mg/L]	Conductivity	pH	ORP (mV) [±	Water Clarity
2	Purging st	art time	(µ3/GH) [± 3%]	[± 0.10]	10 mV]	(visual)
2	8.08	2.40	3/5	7.55	00 3	
7	8.16	1.27	324		90.3	clear
7	8.19	0.98	325	7.39	86.2	-
S		/	103	7125	84.6	
	Samp	le				
_						
-						
-						
_						
_						
-						
-		A				
			=			
+						
$\dashv$						
	Laboratory	sgs_TA			OD)	al
	Analysis		Sample Containers		Preservatives	Dup EB
-	Sulfolane (1		x 1-Liter amber bottle	7		
-	DE 1-		A PEREI GITIDEI DOUR		none	므 므
-	1-45					므 므
-						ㅁ ㅁ
						므 므
-						므므
						0 0

11/19/2020

~ 3511

Owner-Client  Location  Weather  Development Personnel  Development Personnel	Well No. MW - 29 - 30  Project No 1025 99 - 608  Date 10 - 29 - 30
Diameter and Type of Casing:  Total Depth of Well <b>Before</b> Development (feet below Depth to Screen Top and Bottom (from Construction)	top of casing):
	opment Details
Feet of water in well  Gallons per foot  Gallons in well  Surge method  Surge block	Time pumping started  Flow rate (gal/min)  Flow-rate measurement method:
Pump used Watter Tubing used (ft)	Time pumping ended /4 35  Gallons Pumped ~25

## **Observations**

Time	Water Clarity (Visual)
1406	tuble nox
1414	cloude
1419	SAA
1422	SAA
1425	SAX
1428	SAA
1431	S.AA
1435	SAA

Time	Water Clarity (Visual)
11.1	

NOTES: X suge block and footer came off in well; will be

WELL CASING VOLUMES

Diameter of Well [ID-inches]	11/4	2	3	4	6	8
	0.08	0.17	0.38	0.66	1.5	2.6
Gallons per lineal foot	0.08	0.17	0.00			

Well No. MW - 24 - 30



						De la Vige d	10- 00 -
Owner/Client	DOTAPF			-			025 09-008
Location	GST					Date	
Sampling Personnel 5	61			-	_		MW-24-30
Weather Conditions	antly close	Air	Temp. (°F)	45		ime started_	
		and the			Time	e completed_	1540
Sample No.	MW-24-5	20	Time	1539			
Duplicate	Y	j. 1986	Time	-			
Equipment Blank	, -		Time _				
	Peri	T. are see		В.		a of Cooling	211 10 . 2
Purging Methodp		d pump	Albertasi		meter and Typ		
Pumping Start /					pth of Well Be		30
Purge Rate (gal./min.)			Measure		epth of Well Be		3.62
Pumping End/	536		100		th to Water Be	SERVICE AND ADMINISTRATION OF THE PROPERTY OF	3,02
	2 0			epth to Ic	e (if frozen) Be		200
Pump Set Depth Below	MP (ft.)					Vater in Well_	26.30
	oing (ft.)					lons per foot_	0.17
TruPoly Tub	oing (ft.)					Illons in Well_	
					Purge Water V		~ 2
	/		Purge Water	Disposal	GAC		
Monument Condition	9009		37.22.31.00				
Casing Condition	sood						
	/						
Wiring Condition	_						
(dedicated pumps)							
Measuring Point (MP)	Top of Casing (TOC)		Monume	ent type:	Stickup *	Flushmount	
weasuring Fount (wir )	op or casing (100)	M	leasurement i			Tape measu	re
				*		The state of the s	
To a familia de manum	nent (ft.) 6-32	2		Dat	alogger type_	n/a	
Top-of-casing to monun	1101111 (1111)	in the second	-		gger serial # _	n/a	
Monument to ground sur	race (ft.)		- Maa		le length (ft.)		
			iviea	sured cap	le length (it.)_	II/a	
	and operational			1			
_	gible on outside of w	ell					
Evidence of fr	ost-jacking			A CO		· Lan S	
						4.4	•
Notes							
18							
· ·		W	A CINIO VOICE	MEC			
Transaction of the second of t		1	ASING VOL		4	6	8
Diameter of Well [ID-inches]	CMT	11/4	2	0.38	0.66	1.5	2.6
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.00	1,0	2.0

4º

Well No.

New-24-30

Flei	Sample Ol	Notes				>3 Well volumes purged
	Tomn		LD PARAMETERS [st	abilization c	riteriaj	
me	Temp. (°C) [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
0	6-78	2.49	308	7.46	104.8	clear
3	6.43	2.64	322	7.52	109.7	
6	6.36 Sample	1 . 65	340	7.55	110.2	

1533	6-78	2.64	308	7.46	104.8	clear
1536	6.36	1.65	340	7.52	109.7	
530	sampl.		340	//	110.2	
N. S. H.						
15						
L						
					A	
				-		

Analysis	Sample Containers	Preservatives	
PF-AS			
-			



Owner-Client  Location  Weather  Development Personnel	Well No. MW - 25-15  Project No 1025 99-008  Date 10-28-21
Diameter and Type of Casing:  Total Depth of Well <b>Before</b> Development (feet below Depth to Water <b>Before</b> Development (feet below Depth to Screen Top and Bottom (from Constru	w top of casing):
Deve	elopment Details
Feet of water in well  Gallons per foot  Gallons in well  Surge method  Pump used  Tubing used (ft)  Surge Mattera  Tubing used (ft)	Time pumping started Flow rate (gal/min) Flow-rate measurement method:  Time pumping ended Gallons Pumped Disposal:
Depth to Water After Development (feet below Total Depth of Well After Development (feet b	elow top of casing):  1.65  19-71

## **Observations**

Time	Water Clarity (Visual)
1334	thick tartide go
1345	very cloude
1351	544
1354	SAA
1359	StA
1404	8 cloudy
1408	SAut
1411	SAA
1414	SAA
1417	SAA

Time	Water Clarity (Visual)
1420	SAA
1423	SAA
1435	SAX
1 - L	

NOTES:

WELL CASING VOLUMES

a contain IID inches	11/4	2	3	4	6	8
Diameter of Well [ID-inches]	1/4	1	0.00	0.66	1.5	2.6
Gallons per lineal foot	0.08	0.17	0.38	0.00	1.0	
Gallotta per ilitioa. 1541						

Well No. MW -25-15



Owner/Client	nati Pi						Project No.	102599-0
Location	657					-		10-28-20
Sampling Personnel	5/5 R						Well	mw-25-15
Weather Conditions	rainy		Air	Temp. (°F)	45%		Time started	
vvodinor ooriginorio_	lowy					Time	e completed	1515
Sample No Duplicate _	mw-	25-15		Time_	1503	2		
Duplicate -				Time		5		
Equipment Blank		_		Time_	-	-		
Pump	Per	ri			v.			24.4
Purging Method	portable /	/ dedicated	d pump			iameter and Typ		
Pumping Start						Depth of Well Be		
Purge Rate (gal./min.)				Measur		Depth of Well Be		
Pumping End	1506					epth to Water Be		
Problems -		0.8			Depth to	Ice (if frozen) Be		
Pump Set Depth Belo	ow MP (ft.)	13					Vater in Well	
	Tubing (ft.)						lons per foot	
	Tubing (ft.)						llons in Wel	
7.7.6.6	77 X 77 201					Purge Water V		~2
				Purge Wate	er Disposa	6AC		
Monument Condition	Sant				F T. 33.73.			
11/2/12/10/10/20 2/20/20/20	7	1						1
Casing Condition	good							-
1/2								
Wiring Condition								
(dedicated pumps)								
(40-44-44)						Total A		
Measuring Point (MP)	Top of Cas	sing (TOC)	N	Monun leasuremen	nent type: t method:	Stickup // Rod & level /	/ Flushmoun / Tape meas	
Top-of-casing to mor	nument (ft.)	A-20	-07	7	D	atalogger type _	n/a	
Monument to ground s	surface (ft.)		0.0			logger serial#	n/a	
Monument to ground s	surface (it.)			- Me		ble length (ft.)	n/a	
Look proce	nt and opera	ational		1777			-	
T			sii.					~
	legible on o		311			*		
□ Evidence o	f frost-jackir	ig .						
				•				
Notes			-					
-								
						-		
		T Y	WELLO	ACING VOL	LIMES			
m:	, 1	CMT	11/4	ASING VOL	3	4	6	8
Diameter of Well [ID-inches	1	CIVIT	1.74	1 4				

0.17

0.000253

Gallons per lineal foot

0.08

0.38

0.66

Well No.

2.6

1.5

	Temp.	Dissolved	LD PARAMETERS [sta	TO THE CHAPTER OF	iteriaj	
Time	(°C) [± 0.2%]	Oxygen (mg/L) [±0.1 mg/L]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Turbidity (visual)
1500	8.2	0.91	289.4	8-44		clear
503	8.3	0.89	285,1	8.57	158.3	1
506		0.65	2 20 3	8.62	157.1	
09	Sumpl	1				-/
				_		
				-		

Well No.

A STATE OF			
WELL	DEVEL	OPMENT	LOG

Owner-Client  Location  Weather  Development Personnel  Ske	Well No.
Diameter and Type of Casing:  Total Depth of Well <b>Before</b> Development (feet below Depth to Screen Top and Bottom (from Construction)	w top of casing):
	Time pumping started Flow rate (gal/min) Flow-rate measurement method:  Time pumping ended Gallons Pumped Disposal:
Depth to Water After Development (feet below Total Depth of Well After Development (feet be	

Time	Water Clarity (Visual)
0 406	tur Bid gens
min 1636	SAA
1645	very cloudy
1 1648	SAA
2 1651	cloudy
3 1654	SAA
4 1657	5.44
5 1800	5AA
0 1705	SAA

Time	Water Clarity (Visual)
in the	

NOTES:

WELL CASING VOLUMES

Diameter of Well [ID-inches]	11/4 2		3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

Well No. MW - 25 - 47



Owner/Client	N-17 -16	E					Project No.	102519-00
Owner/Client _ Location	POTT					10-	29-2/ Date	
	651							MW-25-4
Sampling Personnel	JEK		۸	r Temp. (°F)	1.00		Time started	
Weather Conditions _	partly c	loudy	A	r remp. ( r)	48	Tin	ne completed	and the same of th
Sample No				Time	101			
Duplicate _ Equipment Blank	nu-		7	_ Time .	1851	1		
Purging Method _ Pumping Start _ Purge Rate (gal./min.) _ Pumping End _	10:29		d pump		ate Total D red Total D De	pth to Water E ce (if frozen) E	Below MP (ft. Below MP (ft. Below MP (ft.	47 46.63 1.43
Pump Set Depth Belo		//	***				allons per foo	
	Fubing (ft.) _	01111					allons in Wel	
TruPoly	Tubing (ft.) _	# 48						) 5
				Duran Mot		The same of the sa		
Marian di kecaman		,		Purge vvati	er Disposa	64		
Monument Condition	good							
Casing Condition	good							
Wiring Condition (dedicated pumps)	-							
Measuring Point (MP)	Top of Cas	ing (TOC)		Monun Measuremen	nent type: t method:	Stickup Rod & level	/∉lushmoun /Tape meas	5 1111
Ten of easing to mon	umont (ft )	6.3	2		Da	talogger type	n/a	
Top-of-casing to mor Monument to ground s	urfood (ft.)		_	_		ogger serial #		
Monument to ground s	surface (it.)_					ole length (ft.)		
	nt and opera		all	,	asureu cai	ole length (it.)	11/4	1
	f frost-jackir		J.I.					
- Garagner		31						1
Notes								5,000
Notes								
(								
			WELL	CASING VOL	UMES			
Diameter of Well [ID-inches]		CMT	11/4	/2	3	4	6	8

Well No.

1.5

0.38

0.17

0.08

0.000253

Gallons per lineal foot

0.66

Field Parameter Instrument
Sample Observations
Notes

FIELD PARAMETERS [stabilization criteria]

	Temp. (°C)	Dissolved Oxygen (mg/L)	Conductivity (µS/cm)	рН	ORP (mV)	
Time	[± 0.2%]	[±0.1 mg/L]	[± 3%]	[± 0.1]	[± 10 mV]	Turbidity (visual)
10 3/	6.34	6.48	474	7.59	147.2	clear
1036	6.17	3.81	B 246	7.75	106.9	
1039	6,12	3-35	240	7,74	103,1	
1042	6.07	2.76	239	7.71	101.5	
1045	6.06	1.8 4	230	7.72	101.7	
1048	6.05	1.28	228	7.72	101.9	
1052	6.02	0.21	230	7.71	100.2	
1055	6.01	0.93	233	7.69	99.4	
10 58	6.00	0.86	236	7.69	98.2	
1101	sample					
	- "					

Analysis	Sample Containers	Preservatives	Du
PFAS			1
			旦
			므
			ㅁ
			_

RE

#### SAMPLE COLLECTION LOG

Project Number: 10 2599 - 008 Lo	cation: GST									Page of
Pate: 10/31/2021										
Sampler: APW		5								
100		Sample	Dept	h Interval (ft)	Matrix	Sampling	Sample	PID		
Sample Number	Location	Time	top	bottom	Туре	Method	Туре	Reading		Analyses
21 GST - MW16 - 01	MW-16	0955		0.25	58	G	ES	N/A	PEAS	rinaryoso
21 GST - MW16 - 02	1	1900		3.8	1	ī	I	1	1	
21 GST - MW 16 - 03		1005		9.5						
RIGST - MW16 - 04	<b>V</b>	10 15		13.5	J	4	Ţ	J	•	
21 GST - MW19 - 01	MW-19	1605		3	SB	G	ES	N/A	PFAS	
	11/01/2021 -									
21GST - MW19 - 02	MW-19	1030		48	58	G	Es	NIA	PFAS	
21 GST - MW 20 - 01	MM-30	1345		5	SB	G	ES	NIA	PFAS	
21 GST - MW20 - 10	1	1335		5	1	Ī	FD	1		
21GST - MW20 - 02	Ų	1610		37'	î	7	ES	J	1	
					1.20					
-										
									3	
			. AR . GW	Air Groundwater	Sampli B D	ng Method  Bailer/Coliwasa  Drill cuttings	Samp Es ER	ele Type Environmental s Equipment rinsa		
			PR SB	Product Subsurf, soil	G H	Grab sampling Hand auger	FB	Field blank Field duplicate		
			SE SG SS	Sediment Sludge Surface soil	L P SS	Tube liner Pump (liquid) Split spoon	FM FR MD	Field measurem Field replicate Matrix spike dup		
			SW WR	Surface water Water	T V	Shelby tube Vacuum (gas)	MS	Matrix spike dup Trip blank		

#### SAMPLE COLLECTION LOG

Sampler: APW		Sample	Depth	Interval (ft)	Matrix	Sampling	Sample	PID	
Sample Number	Location	Time	top	bottom	Туре	Method	Type	Reading	Analyses
21GST - SB003 - 01	58-003	1/35	iop	0.25	SB	G	ES	0.5	GRO, BTEX, DRO, RRO, PAH, PFAS
AIGST - SB003 - 02		1140		3.8			1	0.3	4
21GST - SB003 - 03	V	1150		9.5	Ų	4	V		PFAS
21GST-58004-01	SB-004	1105		0.25	58	G.	ES	0.5	GRO, BTEX, DRO, RRO, PAH, PE
21GST-SB004-02		1110	7 11	3.8	1			0.6	J
21GST-58004-03	· ·	11 20		9	7	V	4	NIA	PFAS
21GST - 58006 - 01	SB-006	1230		0.25	5B	G	ES	N/A	PFAS
21 GST - SB006 - 10		1220		0.25			FD		
21 GST - SB006 - 02		1240		36			ES		
21 GST - 5 B 006 - 03	₹ .	1245		10	4	y	ES	· ·	<b>V</b>
21GST- SB 008-01	SB-008	1305		0.5	SB	G	ES	NIA	PFAS
21 GST - 58 008 - 02		1310		5.5					
216ST-SB008-03	<b>V</b>	1315		10	4	4	f.	4	4
21GST-58011-01	SB-011	1415		0.5	58	G	ES	0.8	GRO, BTEX, DRD, RRO, PAH, PEA
21GST-58011-12		14 25		7.5			FD	1.9	
21 GST-5B011-02	20	1435		7.5			ES	144	8
21 GST - SBØ11 - 03	<b>\$</b>	1445		10	4	V	ES	N/A	PEAS
21 GST - SBO14 - 01	58-014	1500		0.25	SB	G	ES	NIA	PFAS
21 GST - SB014-02		1505		3.5					
21GST - 58014-03	· ·	1510		4.5	7	4	Ż	Ÿ	· V
			M	atrix Type	Sampl	ing Method Bailer/Coliwasa	Samp	ole Type Environmental	
			GW PR	Groundwater Product	D G	Drill cuttings Grab sampling	ER FB	Equipment rins Field blank	sate
			SB	Subsurf. soil	н	Hand auger	FD	Field duplicate	
-		7	SE	Sediment Sludge	L P	Tube liner Pump (liquid)	FM FR	Field measure Field replicate	
			SS	Surface soil	SS	Split spoon	MD	Matrix spike di	uplicate
			SW	Surface water Water	T V	Shelby tube Vacuum (gas)	MS	Matrix spike di Trip blank	uplicate
			****		w	Wipe sampling		any assum	

SOIL SAMPLE COLLECTION LOG

mpier:	KRF			in ara)	Sample	Depth	Sample	PID	
Date	Sample ID		Location	poets	Time	(ft)	Туре	Reading	Analyses
121/2	12165-55-030 No	ear Dat & DE The	10 - near + relina	(Seff foundations	1349	SIN	ES	A\N	DFAS x 18 and 14
1311-	21657-55-010 V	ear POTEPF Sho	- behind septic		1354	1	ES		4.112
	21657-55031 11		- Near borns		1359		ES		
	71651-55				1349		FD		
	2165T-55-00A N	Vear Dot EPF that d	or Ceder at a soha	14	1413		ES		
	21GGT-55-012 R.	ZABTOG MINS	- 44		1419		EZ		
	21G5T-55-011 Re	SIDE DATE PF W	me distern w	11190	1427	1	ES	7	
	21G5T-55-613	Vew POTEPF That de Nind DOTEPF W	,,,,		1431	1	ES	V	$\checkmark$
		1 1 1	11 1 11		, ,				
	Vovember L	2021 prolou	soil sint a				-		- VA 6 VA 4.4.
	21G5T-55-032			1 1110	948	SW+	ES	N/A	PFAS-18 and Vyte
	21G5T-55-633	> Between Gles	dition and duck	pond outside	956		ES		
	21GST-55-034/	gate.			959		ES		
	2165T-55-004 \		- ( -) .1 .		10:16		ES		
	2165T-55-003 2165T-55-103	I near blast zen	e of shork rul	nway,	10:19		FD		
	21657-55-103	> immediately	of the pavel	nont.	10:09		LÃ		
	21657-55-002	Some paint ch	ips in samples		10:36	1/	ES	1	
	21657-55-001				10:28	W	63	V	
\									
_									
_									
								P	
						1			
						-			
						_	1		
							-	-	
						1	1		
						1			
					1				

#### SAMPLE COLLECTION LOG

Project Number: 102599 - 008 Loc	ation: GST								Page of
ate: 10/30/2001									
Sampler: APW									
		Sample	Depti	h Interval (ft)	Matrix	Sampling	Sample	PID	
Sample Number	Location	Time	top	bottom	Туре	Method	Type	Reading	Analyses
21 GST-SB010-01	SB-010	1235		0.25	SB	G	ES	NIA	PFAS
21GST-SB010-10	1	1225		0.25			FD		
21GST-SB010-02		1240		4,			ES		
21GST - SB Ø10 - Ø3	· ·	1245		10,	V	v	ES	Ÿ	V
2165T-58012-01	SB-012	13 25		0.25	SB	G	ES	0.5	GRO, BTEX, DRO, RRO, PAH, PFA
21GST - SBØ12 - 02		1330		3				0.8	•
21 GST - SB012 - 03	V	1340		8.5'	V	4	V	NIA	PFAS
21 GST - SBØ13 - Ø1	SB-013	1430		0.25	5B	G	ES	0.3	GRO, BTEX, DRO, RRO, PAH, PE
21 GST - SB@13 - @2		1435		3.5				0.5	•
21 GST - SBQ13 - Q3	V	1445		10	V	J	V	NIA	PFAS
21GST - SBOOS - OI	58-005	1510		0.25	5B	G	ES	1.2	GRO, BTEX, DRO, RRO, PAH, PEAS
21 GST -SB 005 - 02		1515		4				1.1	
21GST-SB005-03	₹.	1530		9	v	V	V	N/A	PFAS
21GST - 5B007 - 01	SB-007	1500	1600	Q. 25	SB	G	ES	1.3	GRO, BTEX, DRO, RRO, PAH, PE
21GST - 58007 - 10	1	1950	1550	0.85	1		FD	1.3	
21 GST - SB 007 - 02	-	1605		4			ES	1.3	<b>V</b>
21 GST - SB00 7 - 03	٧.	1615		9.5	V	V	ES	NIA	PFAS
			AR GW	latrix Type Air Groundwater	Sampl B D	ing Method  Bailer/Coliwasa  Drill cuttings	Samp ES ER	ole Type Environmenta Equipment rin	
			PR SB	Product Subsurf, soil	G H	Grab sampling Hand auger	FB FD	Field blank Field duplicate	
			SE	Sediment	L -	Tube liner	FM	Field measure	ement
3-2-			SG	Sludge Surface soil	P SS	Pump (liquid) Split spoon	FR MD	Field replicate Matrix spike d	
			SW	Surface water	T V	Shelby tube	MS	Matrix spike d	
			WR	Water	w	Vacuum (gas) Wipe sampling	TB	Trip blank	

#### SAMPLE COLLECTION LOG

roject Number: 102599 - 008 Lo	ocation: Gustavus Airport								Page of /
ate: 10/29/2021									
ampler: APW		1-1				•			
		Sample	Dept	h Interval (ft)	Matrix	Sampling	Sample	PID	
ample Number	Location	Time	top	bottom	Туре	Method	Туре	Reading	Analyses
11GST - MW15 - OI	MW-15	1300		0.25	58	G	ES	AIK	PFAS X 18
165T - MWIS - 02	1	1305		8.5'	1	1	1	1	1
11 GST - MW 15 - 03		1355		18,					
11GST - MW15 - 04		1410		38,			4		
RIGST-MWIS-14		1400	•	28'			FD		
21 GST - MW 15 - 05		1435		391			ES		
11GST-MW15-06	V	1530		48'	1	\ \	1	4	V
	— 10/30/2021 —								
21 GST - SB 002 - 01	58-002	0935		0.25'	SB	G	ES	0.2	GRO, BTEX, DRO, RRO, PAH, P.
1165T - 58007 - 02		0950		4.51			1	0.1	1
11 GST - SB 000 - 03		1000		91		0.00		NIA	PFAS
1GST - 58002 - 04	<b>V</b>	1010		13.51	4	1	4	NIA	1
11 GST - SB 001 - 01	58-001	1030		0.25	SB	G	ES	0.8	GRO, BTEX, DRO, RRO, PAH, PFA
116ST - 58001 - 02		1040		4'				0.5	4
11 GST - SB001 - Q3		1050		81				N/A	PFAS
11 GST - SBOO1 - O4	· V	1100		14'	4	V	V	NIA	1
21GST-58009-01	SB-009	11 35		0.25	SB	G	ES	0.9	GRO, BTEX, DRO, RRO, PAH, PE
21GST - SB009 - 10	1	11 25		0.25	1	ī	FD	0.9	Control May 1 Miles
31GST -SB Q 09 - Q2		1150		4.5"			ES	0.8	4
11 GST-SB009 - 03		1200		91			1	N/A	PFAS
11GST - 58 009 - 04	V	1205		13'	J	V	V	NIA	1
	· ·		М	atrix Type	Sampli	ing Method	Samp	le Type	
			AR GW	Air Groundwater	B	Bailer/Coliwasa Drill cuttings		Environmental Equipment rins	
			PR	Product	G	Grab sampling	FB	Field blank	
			SB	Subsurf, soil Sediment	H.	Hand auger Tube liner		Field duplicate Field measurer	
			SG	Sludge	Р	Pump (liquid)	FR	Field replicate	
			SS	Surface soil Surface water	SS	Split spoon Shelby tube		Matrix spike du Matrix spike du	
			WR	Water	v	Vacuum (gas)		Trip blank	Sharin

SOIL SAMPLE COLLECTION LOG

4	1.0000 -0	SUIL SAMPLE COLLECTION LOC		5-10	11-			Page	of
		Project Name: DOTAPF GUSTAVUS -Sulface	Soil	Sout	TIM			Page	OI
impler:	KRF					-	_		
			Sample		Sample			401	
Date	Sample ID	Location	Time	(ft)	Туре	Readir		Analyses	
129/21	21457-55-023		10:51	3inde		1	T+T	-18 analy-	es
	71GST-SS-029	in all drie puth gray/brown soul, son organices	1	S a Roccie					
		old stackpille of Sand, grey Sund, dry	10:53	SUL	Ez				
	21657-55-027	brown Sand	11:04	27+	ES				
	21957-55-02		11:10	Surf	EZ		_		
	21657-55-126		1411:00		Dis		-		
	ZI GST-SS-025	between water Jant prillys			1-2				
	21657-53-124	where concrete was stored during summer project	11:44	2014	ES	-	1		
-		new All Air terminal out 3 feet from a sphalt	12:04	SUFL	ES				
-	21657-55-021			5014	ES				
-	21657-55-020	V	12:19	_					
-	21957-55-019		12142	441	ES				
-	21657-55-018	Area new MW-11, across dil de from runway	12:56	2016	ES				
_		intersection 2 runnings to southwest	13:07		E5		-		
_	21GST-SS-017	Introcerton 2 runnings to Southwest	13:16	221E	ES				
_	ZIG5T-55-06	11 43 103 101 3091	13:19	Fred	ES				
	2195-55-015	inside fore outside Dot shop	13:28	236	ES				
-		Mean Minery	11/10	SUL	ES			- 1	
_	21657-55-006	In the wife of the sequence of	13126		aco				
_	2 657-55-005	11	13150		ES				
1	21657-56-007	11 late trainuse noted	1354	100	ES	1/		1	
V	21657-55-/		132	1300		14	1 0		
	2 657-55-							1	
	21657-58-					W/			
	21657-55-					V			
	2165-55-					I		\/	
	21667-65-					1		X	
	21857-15-						\		
	7×4-57-55					1/1	/		
	Z1G5T-55						\ /		
	21657-55-					1	' /		
1	21657-55-								
/	21957-55-					- 1		V	
					V				
	Marie To								
	1								

#### SAMPLE COLLECTION LOG

roject Number: 102599 Loc	ation: GST								Page of
ate: 10/27/2021									
ampler: Arw									
		Sample	Depti	h Interval (ft)	Matrix	Sampling	Sample	PID	
Sample Number	Location	Time	top	bottom	Туре	Method	Туре	Reading	Analyses
21GST - MW14-01	MW-14	1400		P	SB	G	ES	NIA	PFAS XI8
21 GST - MW14 - 10	1	1350		14	SB	G	FD	NIA	
21 GST - MW14 - 02		1410		7'	SB	6	ES	NIA	
21 GST - MW 14 - 03		1425		17'		1	1	1	
IGST - MW14 - 04		1430		251					
aIGST - MW 14 - 05		1500		34'	TA TO				
21 GST - MW 14 - 06	ý.	1600		441	4	Ŷ	7	4	<b>y</b>
	- 10/28/2021 -								
21GST - MW18 - 01	mw - 18	0955		0.51	58	G	ES	NIA	PFAS ×18
21GST - MW 18 - 02		1010		5'	SB	6	ES	N/A	T
21GST - MW 18 - 12		1000		5'	SB	6	FD	NIA	
21GST - MW 18 - 03		10 20		151	SB	G	ES	NIA	
21GST - MW 18 - O4		11 10		25'	1		1		
21 GST - MW 18 - 05		11 25		351					
21GST - MW18 - 06	<b>y</b>	1210		451	V	1	4	4	4
	-								
1 =									
			M AR	Matrix Type	Sampl	ling Method Bailer/Coliwasa	Samp	ole Type  Environmental sample	
			GW	Groundwater	D	Drill cuttings	ER	Equipment rinsate	
			PR SB	Product Subsurf, soil	G H	Grab sampling Hand auger	FB FD	Field blank Field duplicate	
			SE	Sediment	L	Tube liner	FM	Field measurement	
			SG	Sludge Surface soil	P SS	Pump (liquid) Split spoon	FR MD	Field replicate Matrix spike duplicate	
			SW	Surface water	55 T	Shellby tube	MS	Matrix spike duplicate	
			WR	Water	v w	Vacuum (gas) Wipe sampling	ТВ	Trip blank	1

#### SAMPLE COLLECTION LOG

roject Number: 102599 Loca	ation: Gustavus, AK								Page of
ate: 10/24/2021									
ampler: APW									
		Sample	Depth	h Interval (ft)	Matrix	Sampling	Sample	PID	6
ample Number	Location	Time	top	bottom	Туре	Method	Туре	Reading	Analyses
11GST - MW 24 - 01	νς - ω <sub>M</sub>	1500		41	SB	G	ES	NIA	PFAS X18
11GST - MW 24 - 02	MW-24	1650		28'	SB	G	ES	NIA	PFAS X 18
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	77100 = 1	1000							
	- 10/25/2021								
	10,000								
11 GST - MW 22 - 01	Wm - 35	1010		4.51	SB	G	ES	NIA	PFAS x 18
11GST - MW 22 - 02	MW - 22	1220		401	SB	G	ES	NA	PFAS X 18
1GST - MW 21 - 01	MW-21	1545		7.51	SB	G	ES	NIA	PFASX18
21 GST - MW 21 -02	MW-21	1735		421	SB	G	ES	NIA	PFASXIS
						7.			
							1		-
									3
			1	-					
									4
							-		
								LT	
			. AR	latrix Type	Sampli	ing Method Bailer/Coliwasa	Samp	ole Type Environmental:	sample
			GW	Groundwater	D	Drill cuttings	ER	Equipment rinsa	
			PR SB	Product Subsurf, soil	G H	Grab sampling Hand auger	FB FD	Field blank Field duplicate	
			SE	Sediment	L	Tube liner	FM	Field measuren	
2			SG	Sludge	Р	Pump (liquid)	FR	Field replicate	
			SS	Surface soil	SS	Split spoon	MD	Matrix spike du	
			sw	Surface water	т	Shelby tube	MS	Matrix spike du	plicate
			WR	Water	W	Vacuum (gas) Wipe sampling	TB	Trip blank	

#### SAMPLE COLLECTION LOG

Sampler: Adam Wybarny		1 - 1			L	T		I I	
Samuel Mountain	1.00	Sample		Interval (ft)	Matrix	Sampling	Sample	PID	Analysis
Sample Number	Location	Time	top	bottom	Type SB	Method	Туре	Reading	Analyses
21GST-MW13-01 .	MW-13	1110		_	20	9	ES	N/A	PFAS×18
21GST - MW13-02.	-	1140		q1 ,			ES FD		
31 GST - MW13 - 12 "		1130							
21 GST - MW13 - 03 .		1300		20'		_	Es		
21GST - MW13 - 04.		1330		25'					
21GST - MW13 - 05'		1410		30,					not submitted our
216ST - MW13-06		1445		431	4	1	1		The somition per
21GST - MW13-07,	V	1645		43.	V	•		4	4
	10/20/2021 -								
	10/20/2021	+				1			
21GST - MW 23 -01.	MW-23	1100		13'	SB	G	ES	N/A	PFAS XI8
21GST - MW 23 -02	WM - 53	1610		421	SB	G	ES	NA	PFAS XI8
21631 - 1100 23 - 02	71.00 23	1610		7.6	20	G	63	100	PEAS AND
_	10/22/2021 -								
	10/2021								
21 GST - MW 17 - 01	MW-17	1215		15,	SB	G	ES	N/A	PFAS X 18
21 GST - MW 17 - 02.	MW-17	1335		371	SB	G	ES	NIA	PFA5 × 18
21931 - 7100 17	pt. 11	1333		31	28	9	E2	1-1/1	FINSKI
	10/23/2021 -				+				
	10/ #3/ 2021 -								
21 GST - MW 25 - 01	MW-25	0925		41	58	G	Es	NIA	PFAS X 18
21 GST - MW 25 - 02	MW-25	1230		47'	58	G	ES	N/A	PFAS X 18
21 031 774	10000	18.30		1	-			7501	11/10 % 10
			M	atrix Type	Sampl	ing Method	Sami	ole Type	
			AR	Air	В	Bailer/Coliwasa	ES	Environmental sample	
			GW PR	Groundwater Product	D G	Drill cuttings Grab sampling	ER FB	Equipment rinsate Field blank	
			SB	Subsurf, soil	Н	Hand auger	FD	Field duplicate	
	9		SE	Sediment	L P	Tube liner Pump (liquid)	FM FR	Field measurement Field replicate	
			SS	Sludge Surface soil	SS	Split spoon	MD	Matrix spike duplicate	
			sw	Surface water	T	Shelby tube	MS	Matrix spike duplicate	
			WR	Water	W	Vacuum (gas) Wipe sampling	TB	Trip blank	



DRILL	COMPA	NY/DRILL	ER: Disc	DUET V	Deille	ng		JOB NO	D: 102599 - 008 BORING NO: SB-001
DRILL	RIG EQ	UIPMENT	: Geopro	Le Gi	Ta als	ng	-		
DRILL	ING MET	HOD:	Direct Po	sh	215/1-121		-	LOGGE	ME: Gustavus DOT & PF PFAS
						DIA.: ə"		LOCATI	DBY: Adam Wyborny
						OP: N/A		START	ON: GST ELEV.:
CASI	NG SIZE/	TYPE:	1.5"		HOLE S	IZE:		MEATH	DATE: 10/30/21 END DATE: 10/30/21
								VVLAIII	ER DURING DRILLING: Overcost 40°F wind 45mgh
TIME	SAMP. NO.	∄ FROM	DRIVING	L. REC.		SAME	PLE D	DATA	FIELD CLASSIFICATION
DATE	SAMP. NO.		RESISTANCE BLOWS / 6 INCH	# JARS	DRILL ACTION	CONTACTS / GROUNDWATER	PID	ENV. SAMPLE	FIELD CLASSIFICATION - [density/consistency; color; slightly, minor, MAJOR, then trace constituents; moisture; structure; other; USCS classification (geology)]
10 50	1	0'	1	4.2			0.2	01	0'-1' Grev-brown well graded send, most
10/30		5'		6		: <del></del>	1997	0.251	1' - 2': Red-brown to light grey poorly graded
1	e.	6	V	1		7	0,5	Ø2	2'.4': Light grey poorly graded enoise eard, moi
			/					QJ (	gravel, wet
4	V	4		7				H.	
1025	2	2,	7	4.51			,	Ø3	5'-8.8' Grey-brown poorly graded sand with
10/30		\⊘'		1			/	81	e.8-10": Carev-brown poorly graded sand with
1030	3	10'	1	4.71			2	04	10'-13': Grey-brown poorly goded sand with gravel
10/35		151		Y					131-15": Grey poorly graded sand with gravel.
10/36		13		1				14.	wet
									1
									1
		SI	UMMARY FIEL	D LOG (	OF BORI	NG		$\overline{}$	COMMENTS (i.e. materials used, visitors, problems, etc.):
DEP FROM	TH TO	USCS CLASSIF.	0.838298.5.7	9225 20		ON FOR DRAFTED GI	INT LO	G	
ricom	10	our tooli :							
				(00000000000000000000000000000000000000	***************************************				
									GROUNDWATER DATA
140111111111111111111111111111111111111									WATER DEPTH TIME DATE
									4. 1020 10/30/21
									SUMMARY OF TIME AND FOOTAGE
									FOOTAGE 15 SAMPLES: 3 Attempted
									DRILLED: 3 Recovered
****************									DRILL/SAMPLE hrs. STANDBY: hrs.
									SETUP/CLEANUP: hrs. WELL INSTALL: hrs.
									OTTIGAN.
									BORING: SB-001 SHEET OF



		Most Grown	2570000	SEAL TO ANTI-SER COME ATTENDED	AMERICAN CO.	*,118.5	11.1-	$\overline{}$		THE TAXABLE OF THE SAME SOUND TO SEE SOUND SAME SAME SOUND SAME SAME SAME SAME SAME SAME SAME SAME	_
DRILL	COMPA	'NA\C	RILL	ER: Disc	covery	Dril	lling	_	JOB NO	0: 102599 - 908 BORING NO: SB - 008	
				: Geo Prol						AME: Gustavus DOT & PF PFAS	
				Direct P						EDBY: Adam Wyberny	_
			1.5	Auto	11101-120	) TYPE/[	DIA.: 2"			TION: GST ELEV.:	1
							ROP: N/A	- 1		DATE: 10/30/21 END DATE: 10/30/21	
				1,5"				ē		HER DURING DRILLING: Overcast 40 f wind 45	·
	Arven		-			al Viner				7	/h
	T	1		DRIVING	T	<del></del>	SAMF	?LE L	T	THE SALASSISSISSISSISSISSISSISSISSISSISSISSISSI	
DATE	SAMP, NO.	DEPT	TO	DRIVING RESISTANCE BLOWS / 6 INCH	L. REC. # JARS	DRILL ACTION	CONTACTS / GROUNDWATER	PID	ENV. SAMPLE	moisture; structure; other; USCS classification (geology)]	s;
0920	1	C	D'	1	4.21			~ =	01	0'-1': Red-brown well graded sand, maist	
10/30			51		6		1	0.2	Ø.25'	1'-4.5'. Light green well granted sound, maist	_
1	1			1	1	1 /			02	4.5' - S.O': Light grey poorly-graded good, wet	
			1		1	1		0.1	ч,5'		
800		$\vdash$	5'			1		_		5'-8': Grev-brown poorly graded road with	
0930	8				5'	'		1	03	woody debries wet	
10/30		10	(O)	· ·	1	] /		(6.	9'	B'-10': Dark gray to gray poorly graded sono	
0940	3	10	0'	1	4.8'	'		1	04	10'-11.25': Grey-brown poorly graded sond, wet	
10/30		1/	5'	1	ì			/	13,51	11.25'-13.33': Dark gray to gray poorly graded	
1	1	V	1	1	1			1		13.33'-138': Grey silly send, wet	
$\forall$	V		1			1		/		13.8' - 15.0'; Grey poorly graded rand with	
	100	$\vdash$	4	<u> </u>	V	<b>∤</b> ′		5		scavel, wet	$\Box$
				1		1 '					
					'	1 /					
						1 1					
				1		1 1	!				-
		<u> </u>	s	SUMMARY FIEL	IDLOG	OF BOR	UNG.			COMMENTO (i.e. materials used visitors problems ato):	
	PTH		scs		Construction of the Constr		TION FOR DRAFTED G	OINIT L	20	COMMENTS (i.e. materials used, visitors, problems, etc.):	
FROM .	то	CLAS	ASSIF.	A STATE OF THE STA	2000	DESCI	ION FOR BRALLES -	illN1 L	)G		
											i u
						,					į
				f						GROUNDWATER DATA	4
										WATER DEPTH TIME DATE	
		<b></b>							***************************************	4.5' 0430 10/30/21	
										SUMMARY OF TIME AND FOOTAGE	1
					***************************************					FOOTAGE 15 SAMPLES: 3 Attempted	
Marillo Company		17430935555		A standard large structure on a						DRILLED: 3 Recovered	- 1
					(1111)					DRILL/SAMPLE hrs. STANDBY: hrs.	
										SETUP/CLEANUP: hrs. WELL INSTALL: hrs.	
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,								arramanan		OTHER:	
										BORING: SB-002 SHEET OF I	2

RF

9/25/2015-Boring Log Template



DRILL	COMPAN	NY/DRILLI	ER: Disc	covery	Drill	ing		JOB NO	0: 102599-008 BORING NO: SB-003
						Т			ME: Gustavus DOT&PF PFAS
									DBY: Adam wybarny
						IA.:			ION: GST ELEV.:
						OP: <u>N/A</u>			DATE: 10/31/21 END DATE: 10/31/21
CASIN	NG SIZE/	YPE:	1.5"		HOLE SI	ZE:	1	VVEATH	HER DURING DRILLING: Overcost 4000 wind < 5 mgh
						SAME	PLE D	ATA	
DATE	SAMP. NO. TYPE	FROM TO	DRIVING RESISTANCE BLOWS / 6 INCH	L. REC. # JARS	DRILL ACTION	CONTACTS / GROUNDWATER	PID	ENV. SAMPLE	FIELD CLASSIFICATION [density/consistency; color; slightly, minor, MAJOR, then trace constituents; moisture; structure; other; USCS classification (geology)]
1100	Ĭ	0'	1	di				Øl	0'-0.5': Brown argonic sail, moist
10/31	<u> </u>	5'		6			0.5	0.951	O.S'-3.8': Red-brown (iron staining) to light gray well graded sand, maist
	- 4							Ø2	3.8. S.O.: Light gray poorly graded sand, wet
V		1		1			0.3	3.8'	
1110	2	51	j j	3.8'			/	Ø3	5.0-8.5': Grey-brown poorly graded sond with
		10'	/	,				9.51	8.5'-10" Grey poorly graded sand with grovel
10/31		10		1			Ĺ	14.0	wet
							_		
							-		
			UMMARY FIE	LD LOG	OF BOR	ING			COMMENTS (i.e. materials used, visitors, problems, etc.):
DE	PTH	USCS	95/2010/20	WOODSANTSHOT	Tarento Konseo	ION FOR DRAFTED	GINT L	og	
FROM	ТО	CLASSIF.	04.14.01						
									000000000000000000000000000000000000000
	. (								GROUNDWATER DATA WATER DEPTH TIME DATE
									4' 1130 10/31/21
		2000							SUMMARY OF TIME AND FOOTAGE
					***************************************				FOOTAGE OR SAMPLES: Attempted Recovered
									DRILL/SAMPLE O.5 hrs. STANDBY: N/A hrs.
									SETUP/CLEANUP: 0.5 hrs. WELL INSTALL: N/A hrs.
									OTHER:
	· · · · · · · · · · · · · · · · · · ·						M4444444		
									BORING: SB-003 SHEET OF



				AND THE STREET, STREET				_		
DRILL	COMPAN	1Y/	DRILLI	ER: Disc	over y	Dri	ling		JOB NO	: 102599-008 BORING NO: 58-004
DRILL	RIG EQU	JIPI	MENT:	Geoffe	she i	6610 1	DT			ME: Gustavus DOT-2PF PFAS
				Direct					LOGGE	DBY: Adam Wyborny
							IA.: ə"		LOCATI	ON: GST ELEV.:
							OP:/A			DATE: 10/31/21 END DATE: 10/31/21
				1.5"						ER DURING DRILLING: Overcast 4047 wind & South
200 55-600	15 (21)									
				DRIVING			SAME	PLE C	DATA	FIELD CLASSIFICATION
DATE	SAMP. NO. TYPE	DEPTH	FROM	RESISTANCE BLOWS / 6 INCH	L. REC. # JARS	DRILL ACTION	CONTACTS / GROUNDWATER	PID	ENV. SAMPLE	[density/consistency; color; slightly, minor, MAJOR, then trace constituents; moisture; structure; other; USCS classification (geology)]
1030	1	$\overline{}$	⊘'	j	2.5'			0.5	Ø1	0'-1': Brown to grev-brown well graded sand
23474402	,	$\vdash$	5'		15500001			0.6	0.25	1'-5': Gray to gray-brown poorly graded
10/3/			>	40	6		3		02	send with gravel, moist to wet at 4'
1040	3		51	2	4.25			1	03	5'-8'. Grav-brown poorly graded send with
10/31			10'	/	1			/	q'	8'-10': Gray poorly graded send, wet
		-								
		_								
								_		
		H						_		
		L								
		T				1				
		H								
		L								
				1		1				
		_		SUMMARY ELE	10100	OF BOE	INC	_		COMMENTS (i.e. materials used, visitors, problems, etc.):
DE	PTH	Т	USCS	SUMMARY FIE	Tarrier ( et al.	ESTERIE DE	wayanaga maturaya wa			COMMENTS (i.e. materials used, visitors, problems, etc.).
FROM	ТО		LASSIF.	GENERA	LIZED SOIL	DESCRIPT	TION FOR DRAFTED	GINT L	.OG	
***************************************									()	
	·							o II redicino da la		
-										GROUNDWATER DATA
		ļ								WATER DEPTH TIME DATE
										4' 1115 10/31/21
										SUMMARY OF TIME AND FOOTAGE
			.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,							FOOTAGE SAMPLES: Attempted Recovered
										mental acceptance of a secondary of a secondary of the se
					(()41)(()41)(()41)(()41)				.,(iii)	DRILL/SAMPLE $\bigcirc$ .S hrs. STANDBY: $\cancel{N}/A$ hrs. SETUP/CLEANUP: $\bigcirc$ .S hrs. WELL INSTALL: $\cancel{N}/A$ hrs.
										OTHER:
										BORING: SB-004 SHEET \ OF



						ing.			D: 102599-008 BORING NO: SB-ØØ5
									ME: Gustavus Dot 2 PF PFAS
						DIA.: 2"		LOCATI	DBY: Adam Wyborny
							54		ION: GST ELEV.:
						OP: N/A			DATE: 10/30/21 END DATE: 10/30/21
CASIN	NG SIZE/	TYPE:	1.5"		HOLE S				IER DURING DRILLING: Cloudy 40°F wind <5 mpl
TIME	SAMP NO	I FROM	DRIVING	L. REC.	Ι	SAMF	PLE L		FIELD CLASSIFICATION
DATE	SAMP. NO.		RESISTANCE BLOWS / 6 INCH	# JARS	DRILL ACTION	CONTACTS / GROUNDWATER	PID	ENV. SAMPLE	[density/consistency; color; slightly, minor, MAJOR, then trace constituents; moisture; structure; other; USCS classification (geology)]
1435	1	Ø'	/	41			1.8	0.52,	01-251: Grey-brown well graded sonal, maist
10/30		5'		6		~	1.1	A,	2.5'-5.0': Grey-brown silty sond, moist to
1440	2	5'		4.51			- 31	Ø3	5.0-9.25": Grey-brown poorly graded sand
			- /	3.110				q.	9.25'-10'- Light gray sandy gravel, wet
10/30		10'		l.		,	- /	d	Trees to Flant Blox soundy Bloker, men
				<u> </u>					
			1						
	-								
					-		_		
								_	
			SUMMARY FIEL	LD LOG	OF BOR	ING			COMMENTS (i.e. materials used, visitors, problems, etc.):
	PTH	USCS CLASSIF.	92835598255	NAMES OF STREET	September 1	ION FOR DRAFTED G	SINT LO	og	
FROM	то	CLASSIF.					_		
							mminika.		
									GROUNDWATER DATA
·	HO))))))))))))))								WATER DEPTH TIME DATE
	***************************************					***************************************	(0)		4.5' 1435 10/30/21
		V 11111 11111 1 1 1 1 1 1 1 1 1 1 1 1 1							SUMMARY OF TIME AND FOOTAGE
	***************************************								FOOTAGE 10 SAMPLES: 2 Attempted Recovered
									DRILL/SAMPLE hrs. STANDBY; hrs.
	***************************************							***************************************	SETUP/CLEANUP: hrs. WELL INSTALL: hrs.
									OTHER:
)—————————————————————————————————————									BORING: SB-005 SHEET   OF \



# SHANNON & WILSON, INC.

						illing			E 102599-008 BORING NO: SB-006  ME: Gustavus Dot a PF PFAS
20.000			Birect						
						IA.:		LOCATION	ON: GST ELEV .:
						OP:/A		START	DATE: 10/31/21 END DATE: 10/31/21
						ZE: 🦼 "			IER DURING DRILLING: Overcast 40 = 1 wind < Smph
						SAMF	LE D	ATA	
DATE	SAMP, NO. TYPE	FROM TO	DRIVING RESISTANCE BLOWS / 6 INCH	L. REC. # JARS	DRILL ACTION	CONTACTS / GROUNDWATER	PID	ENV. SAMPLE	FIELD CLASSIFICATION [density/consistency; color; slightly, minor, MAJOR, then trace constituents; moisture; structure; other; USCS classification (geology)]
1310	1	Ø'	1	4'			,	01	0'-0.5': Brown sondy soil with organics, mout
10/31		5'		Ň			/	0.25	Q.S'-3.S': Gray-brown well staded sand, maist
	1		/	1			,		3.5'-4.1': Red-Grown to grey sendy kill, maist
$\downarrow$	V	1		V			/		4.1'-5.0': Light gray well graded sand, more
1550	2	5'	j.	3.51			,	92	5.0'-6.0': hight gray well graded send, moist
10/31		10'		2			/	03 03	6.0'-10': Light gray poorly graded sound with
					1		$\vdash$		
		T	UMMARY FIE	LD LOG	OF BOR	ring			COMMENTS (i.e. materials used, visitors, problems, etc.):
FROM	TO	USCS CLASSIF.	GENERA	IZED SOIL	. DESCRIPT	ION FOR DRAFTED	GINT L	OG	
				imainimaine de la constitución d					
									GROUNDWATER DATA
									WATER DEPTH TIME DATE
									(, 1550 10/31/51
									SUMMARY OF TIME AND FOOTAGE
									FOOTAGEO SAMPLES: Attempted
									DRILLED: Recovered
									DRILL/SAMPLE 0.5 hrs. STANDBY: //A hrs.
									SETUP/CLEANUP: 0.5 hrs. WELL INSTALL: M/A hrs.  OTHER:
· · · · · · · · · · · · · · · · · · ·									
HILLIAN HOUSE MAN									BORING: <u>SB-006</u> SHEETOF





DRILL	. COMPA	NY/DRILL	ER: Disc	COURTY	Dent	ng		JOB NO	D: 102599- 008 BORING NO: SB- 007
DRILL	RIG EQU	JIPMENT:	GeoPr	obe 6	610 D	-			ME: Gustavus DOT-& PF PFAS
									DBY: Adam wyborny
						:.AI		LOCATI	ON: GST ELEV.:
						OP: Ν/Α			DATE: 10/30/21 END DATE: 10/30/21
						ZE: 🤿			IER DURING DRILLING: Cloudy 40°F wind & Smph
						SAMF	PLE	DATA	
DATE	SAMP. NO. TYPE	FROM TO	DRIVING RESISTANCE BLOWS / 6 INCH	L. REC. # JARS	DRILL ACTION	CONTACTS / GROUNDWATER	PID	ENV. SAMPLE	FIELD CLASSIFICATION [density/consistency; color; slightly, minor, MAJOR, then trace constituents; moisture; structure; other; USCS classification (geology)]
1510	i	0	,	3.8				01	0'-0.33': Brown przenie sendy spil, moist
10/30		5'	/	6			1.3	0.25	@.33' - 3.5': Grev-brown peoply graded sand with
1			1			~~~~		Ø2 4'	3.5'-5.0': Light gray well graded send, moist
V	$\downarrow$	<b>V</b>	/	7			1.3	3"	
1515	2	5'	1	4.51			1	Ø3	5.0'-7.0': Grey-brown well graded sand, wet
10/30		10'	1.	ť			/	9.5	7.0'-10': Grey-Grown poorly graded sound with
							_		
									The state of the s
-	PTH	USCS	GENERAL	0201923300-0	District Control	ING	SINT LO	OG .	COMMENTS (i.e. materials used, visitors, problems, etc.):
FROM	то	CLASSIF.							
									GROUNDWATER DATA
									WATER DEPTH TIME DATE
									SUMMARY OF TIME AND FOOTAGE
		***************************************					,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		FOOTAGE SAMPLES: Attempted DRILLED: Recovered
									DRILL/SAMPLE hrs. STANDBY: hrs.
								······································	SETUP/CLEANUP: hrs. WELL INSTALL: hrs.
									OTHER:
									BORING: SHEET OF





DRILL	COMPA	NY/DRILLI	ER: Dis	COURTY	Dri	lling		JOB NO	D: 102599-008 BORING NO: SB-008
DRILL	RIG EQU	JIPMENT:	Geof	obe	6610	DT			ME: Gustavus DOT-8 PF PFAS
									DBY: Adam Wyborny
						IA.: 🧷 Ə 🗥		LOCATI	ION: GST ELEV.:
						OP:/A			DATE: 10/31/21 END DATE: 10/31/21
						ZE: 2"			HER DURING DRILLING: OVERCEST 4015 Wind Small
0/101/			1.0					.,,_,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	OVERELY 40+ WIND SME
2000			DRIVING			SAME	PLE D	ATA	FIELD CLASSIFICATION
DATE	SAMP. NO. TYPE	FROM TO	RESISTANCE BLOWS / 6 INCH	L. REC. # JARS	DRILL ACTION	CONTACTS / GROUNDWATER	PID	ENV. SAMPLE	[density/consistency; color; slightly, minor, MAJOR, then trace constituents moisture; structure; other; USCS classification (geology)]
1300		Ø'	1	3.81			1	Ø1	0'-0.75". Grey-brown well graded send
10/31		51		1			/	0.5	@.75'-1.75', Grey sandy silt, moist
(	1	Ť	.7	4			,		1.75'-50': Grey-brown to light grey well
1	V	V		V			/		graded sand with trace silt, wet
1310	2	51		3'		- V	,	ØΩ 5.5'	5.0'-5.5'. Grey-brown well graded sound, more
10/31		1⊘′	/	2			/	0.3	5.5'-10': Light grev poorly graded sand, wet
-				-			_		
		s	UMMARY FIE	LD LOG	OF BOR	ING			COMMENTS (i.e. materials used, visitors, problems, etc.):
FROM	ртн то	USCS CLASSIF.	GENERAL	IZED SOIL	DESCRIPT	ION FOR DRAFTED (	SINT L	OG	
A.A.I.W.III		yes a comment for the comment							
***************************************	0.0000000000000000000000000000000000000	***************************************	······································	***************************************					
	0					***************************************			
									GROUNDWATER DATA
	<u> </u>						***************************************		WATER DEPTH
***************************************			***************************************						5.5' 1310 10/31/21
)	4×		Various (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)						SUMMARY OF TIME AND FOOTAGE
									FOOTAGE O SAMPLES: Attempted
			-						CONTROL CONTRO
.))))		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		**********************					DRILL/SAMPLE 0.5 hrs. STANDBY: M/A hrs. SETUP/CLEANUP: 0.5 hrs. WELL INSTALL: M/A hrs.
									OTHER:
									O HER.
									BORING: _SB - OO & SHEET _   OF _





DRILL COMPANY/DRILLER: Discovery Drilling								JOB NO: 102599-008 BORING NO: 58-009					
								JOB NAME: Gustavus DOT & PF PFAS					
								LOGGED BY: Adam Wyborny					
						IA.: 🌊 "		LOCATION: GST ELEV.:					
						OP: N/A	1		DATE: 10/30/21 END DATE: 10/30/21				
			1,5"										
0/1011	10 OILLI	10.1010300			TIOLE OF			WEATHER DURING DRILLING: Outroast 40 F wind Smith					
TIME	SAMP NO	∓ FROM	DRIVING	L. REC.		SAME	PLE D		FIELD CLASSIFICATION				
DATE	SAMP. NO. TYPE	ТО	RESISTANCE BLOWS / 6 INCH	# JARS	DRILL ACTION	CONTACTS / GROUNDWATER	PID	ENV. SAMPLE	[density/consistency; color; slightly, minor, MAJOR, then trace constituents; moisture; structure; other; USCS classification (geology)]				
1110	)	0	1	3.61				01	0'-1': Light gray well graded send, maist 1'-1,5': Grey-brown to red-brown well graded sand				
1-1		51	1	9			0.9	0.25	with sitt band, maist				
10/30		2		1.)			_		1.5'-4.5': Light gray well graded send, moist				
			1	1			- 4	05	4.5'-5.0': Light gray poorly graded sand, wet				
V	V	V	/	J			Ø.8	4,5					
11.20	2	51		3.7	,	2		Ø3	5.8'-88', Grey-brown Poorly graded sand with				
1150	-	10000	/	3.1			/	120000	8.8-10': Light gray poorly graded rand with				
10)30		10,	· ·	1				9'	gravel, wet				
1130	3	10	- i	4,1			1	04	101-12.51: Grey-brown Poorly graded sand with				
101		15'	1 /	1			1	13'	18.5'-15': Light grey goody graded sondy gravel				
10/30		15.		. 1				1-2	wet				
-													
			-										
DE	DTU	T	SUMMARY FIE	LD LOG	OF BOR	ING			COMMENTS (i.e. materials used, visitors, problems, etc.):				
FROM	PTH TO	USCS CLASSIF.	GENERAL	IZED SOIL	DESCRIPT	ION FOR DRAFTED	SINT L	OG					
									GROUNDWATER DATA				
	(1000)								WATER DEPTH TIME DATE  4.5 110 10/30/21				
						***************************************	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		1110 10/30/201				
									SUMMARY OF TIME AND FOOTAGE				
	(mmm)			)II)III					FOOTAGE 15' SAMPLES: 3 Attempted DRILLED: 3 Recovered				
									DRILL/SAMPLE hrs. STANDBY: hrs.				
									SETUP/CLEANUP: hrs. WELL INSTALL: hrs.				
									OTHER:				
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,									BORING: SB-009 SHEET OF				





DRILL	COMPA	NY/DRILL	ER: Disc	OULTY	Drillin	75		JOB NO: 102599-008 BORING NO: 58-010					
						×		JOB NAME: Gustavus DOT&PF PFAS					
								LOGGED BY: Adom Wyborny					
						IA.: 🧷 🤊 "		LOCATION: GST ELEV.:					
			T: N/A HAMMER DROP: N/A										
								START DATE: 10/30/91 END DATE: 10/30/91					
CASIN	NG SIZE/	TPE:	1.5"		HOLE SI	ZE ə''		WEATHER DURING DRILLING: Cloudy 40°F wind < Smeh					
						SAMF	PLE D	ATA					
DATE	SAMP. NO. TYPE	DEPTH O Solution	DRIVING RESISTANCE BLOWS / 6 INCH	L. REC. # JARS	DRILL ACTION	CONTACTS / GROUNDWATER	PID	ENV. SAMPLE	FIELD CLASSIFICATION [density/consistency; color; slightly, minor, MAJOR, then trace constituents; moisture; structure; other; USCS classification (geology)]				
1220	1	0	<i>j</i>	4.251			j,	01	0' - 3': Grey-brown well graded sand moit				
			1	54755.			/	0.25	3'- 4.25': Grey-bown poorly gooded sound with site				
10/30		5'		2		$\triangleleft$		Ø. po					
Ť	ľ	1	j,	1		· · ·	,	02	4.25'-S.O': Grey-brown poorly graded sond				
J			/	1/2			/	ч 1	with silt and crushed called , , , et				
		9	//	V				-1					
1230	2	5'	7	Ч'			,	Ø3	5.0'-6.0': Grey-brown poorly graded sondy grovel				
		101	/	1			1	10'	6.0'- 10": Grey-brown poorly graded sand, wet				
10/30		10		-			_	18					
				_									
			UMMARY FIE	LD LOG	OF BOR	ING			COMMENTS (i.e. materials used, visitors, problems, etc.):				
FROM	ртн то	USCS CLASSIF.	GENERAL	IZED SOIL	DESCRIPT	ION FOR DRAFTED (	GINT L	og	2 1 58eX 0 8				
FROM	10	540.105011											
		-							GROUNDWATER DATA				
otue mane me		01111							WATER DEPTH TIME DATE				
***************************************		d							4.75' 1220 10/30/21				
									SUMMARY OF TIME AND FOOTAGE				
an(i))m(an(i))maan									FOOTAGE 10' SAMPLES: 2 Attempted DRILLED: Recovered				
									DRILL/SAMPLE hrs. STANDBY: hrs.				
							mio mone		SETUP/CLEANUP: hrs. WELL INSTALL: hrs.				
									OTHER:				
		(minimum							BORING: SHEET OF 1				



DRILL COMPANY/DRILLER: Discovery Drilling								JOB NO	: 102599-0	8 BORING	NO: SB-Ø11		
						DT		JOBNAME: GUSTAVUS DOT & PF PFAS					
								LOGGED BY: Adam Wyborny					
						IA.: 🍃 🖰		LOCATION: 6ST ELEV.:					
						OP: N/A				END DATE:			
			1,5"								or wind a smph		
						SAME	LE D	ATA					
TIME DATE	SAMP. NO.	FROM TO	DRIVING RESISTANCE BLOWS / 6 INCH	L. REC. # JARS	DRILL ACTION	CONTACTS / GROUNDWATER	PID	ENV. SAMPLE		FIELD CLASSIFICATION COLOR; slightly, minor, MAJO Cucture; other; USCS class	OR, then trace constituents;		
1325	1	0'	7	3.8'				01			czanie soil, moist		
10/31		s'	/	.11			0.8	0.51	0.5'-1.6': Grey	1- Stown well gra	ded sand, moist		
1	ą.	- (	)	4						ey silty sand			
1	1	1					0.9		25'-50''	Few at the	n stolling, well		
				V					910	aded sand, mals	+		
1330	5	5	/	41		7_		00	5.0' - 7.5' Ligi	ht grey well gri	aded send, most		
10/31		101	1	6		5	1.9	7.51			graded cond, wet		
1	1	1	/	1				03	9'-10' Grey	poorly graded	silty sond, wet		
	V	4	/	1/				10'					
				-				N.E.					
					1								
							_						
		<u> </u>	UMMARY FIE	LD LOG	OF BOR	ING			COMMENTS (i.e.	materials used, visitor	s problems etc.):		
	PTH	uscs	0.00			ION FOR DRAFTED (	SINT LO	og		materialo acca, vicitor	o, problemo, etc.y.		
FROM	то	CLASSIF.							-				
									-				
										GROUNDWATER DA	ATA		
									WATER DEPTH	TIME	DATE		
		,							7.5'	1330	10/31/21		
									SUMI	MARY OF TIME AND I	FOOTAGE		
									FOOTAGE	SAMPLES:	Attempted Recovered		
									NEUROSEED	O.S hrs. STA	•		
									A CONTRACTOR OF THE PROPERTY O	0.5 hrs. WELL	server and the server		
									OTHER:		AND AND AND AND AND AND AND AND AND AND		
									BORING: SB-	OIL SHEET	\ OF \		



DDILL	DRILL COMPANY/DRILLER: Discourry Drilling								100 NO						
DKILL	COMPA	VY.	DRILL	ER: Disc	over y	Prillio	ns			0: 102549 - 008 BORING NO: 58-012					
							T			AME: Gustavus DOT & PF PFAS					
									LOGGED BY: Adam Wyborny						
HAMM	IER TYPE	Ē:		Auto	ROD	) TYPE/C	DIA.:	_	LOCATI	TION: GST ELEV.:					
HAMM	MER WEIG	GH1	IT:	N/A	HAM	MER DR	ROP: N/A			T DATE: 10/30/21 END DATE: 10/30/21					
CASIN	NG SIZE/	TYF	PE:	1,5"		HOLE S	SIZE:			HER DURING DRILLING: Cloudy 40°F wind Smeh					
		_				Distance of									
TIME	CAMP NO	T <sub>E</sub>	TEROM	DRIVING	T. 850	T	A STANDARD CONTRACTOR OF	PLE D	.E DATA FIELD CLASSIFICATION						
DATE	SAMP. NO. TYPE	-		RESISTANCE BLOWS / 6 INCH	# JARS	DRILL ACTION	CONTACTS / GROUNDWATER	PID	ENV. SAMPLE	[density/consistency; color; slightly, minor, MAJOR, then trace constituents; moisture; structure; other; USCS classification (geology)]					
1300	1	1	0'	1	3'			0.5	01	Q'-3': Brown to greybrown well graded send					
1000 E			5'					0.8	200000	3'-5': Grey-brown to grey poorly graded					
10/30	<u> </u>	+			6	4	5	0,0	31	sond with gravel, wet					
1310	2		5'	1	4.5'	1 /		1		5'-7': Grey-brown sity sand, saturated					
			10'	/		1		/		7'-8.5': Grey to dock grey poorly graded sondy					
10/30	<u> </u>	1	10	(f.)	1	4		- 5		7'-8.5': Grey to dock grey poorly graded sandy Arayol, wet.					
1	1		1	1	1			1	Ø3	R.S'- 9.3': Woody detris					
1	1		V	/	J		1	/	8.5	9.21-101. Grey goorly graded sand, well					
	-	$\vdash$		111	74	4			340.4						
	('														
	<del></del> '	$\vdash$				4	1		-						
	('														
	<del></del>	$\vdash$	'		-			_	-						
	[]														
				1		1			1 /						
	<del></del>	$\vdash$		-		4		_	-						
	L'														
		_	<del></del>	 SUMMARY FIEL	10106	OF BOE	200			Salar and American State of the Salar State of the					
DE	PTH	I	USCS					-	_	COMMENTS (i.e. materials used, visitors, problems, etc.):					
FROM	TO		LASSIF.	GENERAL	_IZED SOIL	DESCRIP	TION FOR DRAFTED O	3INT LC	)G						
						The second secon									
O'CR. West Commonweal	Account New of Life Consu.		Pittin Bestu												
										GROUNDWATER DATA					
										WATER DEPTH TIME DATE					
		**********								3.25' 1310 10/30/21					
		ļ								200000000000000000000000000000000000000					
	(									SUMMARY OF TIME AND FOOTAGE					
			***************************************			***************************************				FOOTAGE 10 SAMPLES: 2 Attempted Recovered					
										DRILL/SAMPLE hrs. STANDBY: hrs.					
		(*********								SETUP/CLEANUP: hrs. WELL INSTALL: hrs.					
- 1	( '									OTHER:					
										OTHER:					
										BORING: SB-OIR SHEET OF					





		_			_			$\overline{}$						
DRILL	COMPAN	VY/	DRILLI	ER: Disco	wet y	Drill	ns		JOB NO	: 102599-008 BORING NO: 5B-013				
									JOB NAME: GUSTAVUS DOTA PE PEAS					
HAMMER TYPE: Auto ROD TYPE/DIA.: 2"									LOGGED BY: Adom Wyboiny					
									LOCATION: GST ELEV.:					
HAMN	IER WEIC	3H7	B	NIA	HAM	MER DR	OP: <u>N /A</u>		START	DATE: 10/30/21 END DATE: 10/30/21				
CASIN	IG SIZE/1	ΓΥF	E:	1.5"		HOLE SI	ZE:		WEATH	ER DURING DRILLING: Cloudy 40+F wind 5 mph				
							SAMF	LE D	LE DATA					
TIME DATE	SAMP. NO. TYPE	DEPTH	FROM TO	DRIVING RESISTANCE BLOWS / 6 INCH	L. REC. # JARS	DRILL ACTION	CONTACTS / GROUNDWATER	PID	ENV. SAMPLE	FIELD CLASSIFICATION [density/consistency; color; slightly, minor, MAJOR, then trace constituents; moisture; structure; other; USCS classification (geology)]				
1350	1	Г	0'	. j	41			0,3	01	0'-0.5': Grey-brown silty sand with organics,				
12.4.									0.251	Q.5'-35". Grey-brown well graded sand with				
10/30			5'		6		abla	0.5		trace grayet moist				
1			3	,		1	7		05	3.5'- 5.0': Grey-brown poorly graded sand				
1				/-	-				3.5	with gravel, wet				
V	<b>→</b>		W	0	V									
1400	12		5	· · · · · · · · · · · · · · · · · · ·	5'				03	5'-7': Grey-brown poorly graded sound with				
1100		_	70	/						7-9.8' Gray poorly graded sand with gravel				
10/30			10,		1			,	10,	wet				
1	7		ľ		1			,		9.8'-10': Grey for clay, wet				
1	1	H	1	/										
V	V		0	/	1			/						
	*	Г				1								
		L	_											
		Г				1								
		H												
		0.0	s	UMMARY FIE	LD LOG	OF BOR	ING			COMMENTS (i.e. materials used, visitors, problems, etc.):				
	PTH		JSCS	GENERAL	IZED SOIL	DESCRIPT	ION FOR DRAFTED (	SINT LO	og	ACCES AND AND AND AND AND AND AND AND AND AND				
FROM	то	Çi	ASSIF.					3444	20					
		-												
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,										GROUNDWATER DATA  WATER DEPTH TIME DATE				
										With Shariff Time Office				
	***************************************		************							SUMMARY OF TIME AND FOOTAGE				
		1								162				
		ļ								FOOTAGE 10 SAMPLES: Attempted DRILLED: Recovered				
										1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				
										DRILL/SAMPLE hrs. STANDBY: hrs.				
		-								SETUP/CLEANUP: hrs. WELL INSTALL: hrs.				
										OTHER:				
										POPING: CP O13 CHEET : OF				
	me machenings.			TO THE REPORT OF THE PARTY OF T	manacia nette illi					BORING: SB-013 SHEET OF 1				





DRILL	COMPA	NY/DRILL	.ER: Dis	COVEC	y Dri	Iling		JOB NO	0: 102599 - 008 BORING NO: 58 - Ø14				
DRILL	RIG EQI	JIPMENT	GeoP	robe	6610	DT			ME: Gustavus DOT-SPF PFAS				
								LOGGED BY: Adam Wyborny					
HAMN	IER TYPE	E:	Auto	ROD	TYPE/D	DIA.: ə "		LOCATI	ON: GST ELEV.:				
						OP:/A		START	DATE: 10/31/21 END DATE: 10/31/21				
CASIN	IG SIZE/	TYPE:	1,5"		HOLE SI	ZE: 2"			IER DURING DRILLING: Overcast your wind & Smph				
						SAME	LE D	E DATA					
TIME	SAMP. NO.	FROM TO	DRIVING RESISTANCE BLOWS / 6 INCH	L. REC. # JARS	DRILL ACTION	CONTACTS / GROUNDWATER	PID	ENV. SAMPLE	FIELD CLASSIFICATION [density/consistency; color; slightly, minor, MAJOR, then trace constituents; moisture; structure; other; USCS classification (geology)]				
1340	V	Ø'	1	LIT.			7	01	0'-0.66'; Grey-brown well graded sond with				
	0	S'	/				/	0.75	0.66'-3.5': Grey-brown well graded cond.				
10/31		>		2		<u>~</u>			Paging Paging				
	Ì		1				1	02	3.5'-5.0': Grey-brown to grey poorly graded good with gravel, wet				
4	V	V	1	7			1	3,51	grove some some grader, we				
1350	Ð	5'	1	5			7	Ø3	5.0'-6.0': Grey-brown prorty graded sand with				
1 1 1 1			/				/		6.0'-9.9': Grey poorly graded sandy grovel				
10/31		10,		- 1			-/-	9.5					
			. /				1		9.9'-10': Grey fat clay coturated				
V	V	V	/	V			/						
					1								
						1							
DE	PTH		UMMARY FIEL	LD LOG	OF BOR	ING			COMMENTS (i.e. materials used, visitors, problems, etc.):				
FROM	то	USCS CLASSIF.	GENERAL	IZED SOIL	DESCRIPTI	ON FOR DRAFTED G	INT LO	OG					
•••••••••••••••••••••••••••••••••••••••		***************************************											
horometro-montane,													
									GROUNDWATER DATA  WATER DEPTH TIME DATE				
					***************************************				3.5' 1340 10/31/21				
									SUMMARY OF TIME AND FOOTAGE				
									FOOTAGE SAMPLES: Attempted DRILLED: Recovered				
									DRILL/SAMPLE 0.5 hrs. STANDBY: N/A hrs.				
									SETUP/CLEANUP: 0.5 hrs. WELL INSTALL: N/A hrs.				
			er transmatory at the growth and						OTHER:				
									BORING: SB-014 SHEET OF				

Owner/Client DO	T + PF			Project No.	102599-008
Location Cusa	a vita f				10-27-21
Sampling Personnel V7 /					2165T-TWP-1
	er cast A	ir Temp. (°F)	7	Time started	
Weather Conditions	Cr Casi	ii reilip. (1)		me completed	
Sample No.  Duplicate  Equipment Blank  Pump  Purging Method  Pumping Start  Purge Rate (gal./min.)  Pumping End  Pump Set Depth Below MP (for KuriTec Tubing (for Set Depth Set	T/T  Die / dedicated pump  (ft.) 12	Measured <sup>-</sup>	Diameter and T Fotal Depth of Well Fotal Depth of Well Depth to Water oth to Ice (if frozen) Feet of	Below MP (ft.) Below MP (ft.) Below MP (ft.)	20 22.45+0.28=1 8.8 13.93
KuriTec Tubing (	Tt.)			alions per 100t Ballons in Well	
TruPoly Tubing (	n.) <u>30</u>			Volume (gal.)	
Silten		Duras Water D	sposal GAC	volume (gal.)	/
Monument Condition N/A					
Wiring Condition (dedicated pumps)					
Measuring Point (MP)		Monument Measurement me		/Flushmount /Tape meas	
Top-of-casing to monument (	(ft.)		Datalogger type	n/a	
Monument to ground surface (	(ft.) 2,5	= 1	Datalogger serial #		
		— Measur	ed cable length (ft.)		
□ Lock present and o □ Well name legible o □ Evidence of frost-ja	on outside of well				
Notes					
110100					
	WELL	CASING VOLUME	S		
Diameter of Well [ID-inches]	CMT /1½	2	3 4	6	8

0.000253

Gallons per lineal foot

0.08

0.17

0.38

0.66

Well No. 21 GST-TWP-1

2.6

Field Parameter Instrument	YSF	B	Circle one: Parameters stabilized or >3 well volumes purged
Sample Observations			
Notes			

#### FIELD PARAMETERS [stabilization criteria]

. 801-40	Temp. (°C)	Dissolved Oxygen (mg/L)	Conductivity (µS/cm)	рН	ORP (mV)	
Time	[± 3%]	[±10%]	[± 3%]	[± 0.1]	[± 10 mV]	Water Clarity (visual)
1132	6.5	1.92	324.1	7,50	174,2	(166-
1135	6.5	0,53	323.1	7.44	167.0	Clear
1138	6,5	0.40	322,6	7.47	161.8	Chear
141	6,5	0.31	322,7	7,50	154,9	Cleri
1144	605	024	322.6	4.52	147,9	Clear
1147	somple	2 25270				
1.9.5						
	1			]		
	+					
	1					
	-					
	-					
		10				

Analysis	Sample Containers	Preservatives	Dup
PFAS	2x 250mc	_	<u></u>
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Laboratory SGS



Well No. 2165T-TWP-1

Owner/Client	Star Dot + 9	OF.					107599-008
Location A	port onsite						10-27-21
Sampling Personnel 450						Well	2165T-TUP-2
Weather Conditions Over	cost	Air Te	emp. (°F)	40	Ţ	ime started	1234
Sample No. Duplicate Equipment Blank  Pump Purging Method Pumping Start Purge Rate (gal./min.) Pumping End  Pump Set Depth Below Minimary KuriTec Tubing	ST-TUP-2	pump	Time Time Time Approximat Measure	Dia te Total De ed Total De Dep Depth to Ico	meter and Typepth of Well Beepth of Well Beepth to Water Beepth (if frozen) Beepth Gall Gall Gall Gall Gall Gall Gall Gal	e completed be of Casing elow MP (ft.) elow MP (ft.) elow MP (ft.) vater in Well lons per foot llons in Well volume (gal.)	-08-1,2 20 17.44+.27=18. 4.55
Wiring Condition (dedicated pumps)  Measuring Point (MP) Top				ent type:		' Flushmoun	
Building about and	4.60			Da	talogger type	n/a	
Top-of-casing to monume  Monument to ground surface	nt (it.)				gger serial # _		
□ Lock present an	d operational le on outside of we	II	Mea		ole length (ft.)		:
Notes							
-		WELL CA	SING VOL	IMES			
The second of th	OUT	WELL CA	SING VOLU	3	4	6	8
Diameter of Well [ID-inches]	O 000253	(0.08)	0.17	0.38	0.66	1.5	2.6

Well No. 2165T-TWA2

Field Parameter Instrument	Circle one: Parameters stabilized or >3 well volumes purged
Sample Observations _ Notes	
Notes_	

FIELD PARAMETERS [stabilization criteria]

	1277		LD PARAMETERS (St	abilization	chteriaj	
Time	Temp. (°C) [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
307	9.1	0.62	544	7,71	180.9	Clear
310	2.0	0.21	545	7.71	172.6	Clerc
7/3	9,0	0.20	544	7.76	163.5	Clear
3/8	1.0	0.16	428.7	7.72	148,1	Contr
31	20	0.16	508	7.80	145.9	Clear
324	29	0.16	502	7.90	138.8	Clear
327	8.9	0.15	508	7,81	133.3	clothy clear
330	8.8	0.20	782	7.80	128.1	chem Clarks
333	9,0	0.16	489.9	7.88	118.3	Cher
1336	9.0	0.16	498,1	7.87	113.7	Clear
339	8.9	0.17	503	7,90	107.7	clear
342	8.9	0.15	507	7.90	102.6	Clear
345	Simple					
					1	
					1	

Analysis	Sample Containers	Preservatives	Dup
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Laboratory SGS



Well No. 2/65T-7WP-2

Owner/Client De T	Project No. 103599-019
Location Gusta-3	Date 10-28-21
Sampling Personnel ASC	Well 21657- TWP. 3
Weather Conditions Partly Cloudy	Air Temp. (°F) 39 Time started 7:46 Time completed 7:037
Sample No. 21 65T - TWP - 3 Duplicate 21 65T - TWP - 103 Equipment Blank	Time 1027 Time 1017 Time
Pump Per. A  Purging Method portable / dedicated pum, Pumping Start 100 >  Purge Rate (gal./min.) 22  Pumping End /027	Measured Total Depth of Well Below MP (ft.)  Depth to Water Below MP (ft.)  Depth to Ice (if frozen) Below MP (ft.)
Pump Set Depth Below MP (ft.) 17.5	Feet of Water in Well 13.09
KuriTec Tubing (ft.)	Gallons per foot 09
TruPoly Tubing (ft.) 25.5	Gallons in Well 1.05
0.5 5/100n	Purge Water Volume (gal.)
and and season	Purge Water Disposal 64 C
Monument Condition	
Wiring Condition(dedicated pumps)	
Measuring Point (MP)	Monument type: Stickup / Flushmount  Measurement method: Rod & level / Tape measure
- ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) (	Datalogger typen/a
Top-of-casing to monument (ft.)  Monument to ground surface (ft.)	Datalogger serial # n/a
Monument to ground surface (ft.)	Measured cable length (ft.) n/a
□ Lock-present and operational □ Well name legible on outside of well □ Evidence of frost-jacking	
Notes	
16.104	
	5.5 Why 96. MAL
WEL	L CASING VOLUMES

Well No.

8

2.6

6

1.5

4

0.66

3

0.38

11/4

0.08

CMT

0.000253

Diameter of Well [ID-inches]

Gallons per lineal foot

2

0.17

Field Parameter Instrument Sample Observations	YSI	B	Circle one: Parameters stabilized or >3 well volumes purged
Notes			

FIELD PARAMETERS [stabilization criteria]

Time	Temp. (°C) [± 0.2%]	Dissolved Oxygen (mg/L) [±0.1 mg/L]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Turbidity (visual)
1012	8.9	4,45	681	7.94	166.4	(un
1015	9.0	0.24	684	7.68	159-3	Clear
1018	9.0	0.16	685	7.67	151.5	Clear
1024	4,6	0.12	688	7,69	143,9	Clear
1627	Somple	0.13	490	7.70	136.9	Clear
Var	Sample					
		TE CONTRACTOR				
						2
/						

Analysis	Sample Containers	Preservatives	Du
livia			<u>n</u>
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Owner/Client Da	T					Project No. /	
Location Custo	und						10-28-21
Sampling Personnel 150	10-07			100			1657-TWP-4
Weather Conditions Spring	Chand .	Air T	emp. (°F)	39		ime started /	
vveatrer conditions	Will The Control of t				Time	completed ]	135
Sample No. 2657 ~ Duplicate	Tup 4		Time_	1150			
Duplicate	-		Time	*			
Equipment Blank			Time_				
Pump Pari	A						0 /20
Purging Method portal	Ne / dedicated	nump		Diar	meter and Typ	e of Casing_	0-1.25
Pumping Start 1110	ole / dodlodied	Pump	Approxima	te Total De	oth of VVell Be	PIOW IVIP (Tt.)	20
Purge Rate (gal./min.) 0.2	_		Measur	ed Total De	pth of Well Be	elow MP (ft.)	18.234,29=1
Pumping End 1130				Dept	h to Water Be	elow MP (ft.)	10.64
Pumping End Res	_				e (if frozen) Be		
Down Set Death Bolow MP	(ft ) 19					ater in Well	7.88
Pump Set Depth Below MP	(ft.)					ons per foot	
KuriTec Tubing TruPoly Tubing	(ft.)				Ga	llons in Well	0.63
0.5 Stiren	(IL.) <u>21</u>			P		olume (gal.)	
U.> Sitreen			Purge Wate			7	
Monument Condition	4		r dige vvale	Dioposa			
Casing Condition//2							
Wiring Condition(dedicated pumps)							
			To. T.		1		
Measuring Point (MP)	of Casing (TOC)	Me	Monum easurement	THE CASE OF THE		′ Flushmount ∕ ⊈ape measur	·6
Top-of-casing to monument	(ft ) ~			Data	alogger type	n/a	
Monument to ground surface					gger serial #	n/a	
Monument to ground surface	(11.)		Me		e length (ft.)	n/a	
□ Lock present and	operational						
111 11 11 11 11		1					
□ Well name legible		'					
Evidence of frost-j	acking _						
111122							
Notes							
-							
		WELLCA	SING VOL	UMES			
E	CMT	11/4	2	3	4	6	8
Diameter of Well [ID-inches] Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6
Gallotta per liftedi toot							

Well No.

Field Parameter Instrument	YSI B	Circle one: Parameters stabilized or >3 well volumes purged
Sample Observations		etablinged et l'et voir voidines purged
Notes		

FIELD PARAMETERS [stabilization criteria]

Time	Temp. (°C) [± 0.2%]	Dissolved Oxygen (mg/L) [±0.1 mg/L]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Turbidity (visual)
1115	10.1	4.70	537	7.70	159.3	Slightly Cloudy
1118	10.1	0,22	536	7,43	145.7	clear
1191	10-1	0.14	57 57 6	738	134.1	Clear
1124	10.1	0.12	576	7.78	124.9	Clear/
1127	10.0	0.14	536	7,59	116.1	CHER
130	Simple					

Analysis  Dr.15	Sample Containers	Preservatives	Dup
PFAS		1100017441700	Du
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Owner/Client Do	T					Project No.	2599-119
Location Cous	HUUS					Date /c	28-21
Sampling Personnel MSC							65T-TWP-5
Weather Conditions 4027	Cast	Air Te	emp. (°F)	39		Time started /// e completed	
Sample No. 2/65 Duplicate Equipment Blank	T-TWP-	5	Time Time	2 12			
Pump Purging Method Pumping Start Purge Rate (gal./min.) Pumping End Pump Set Depth Below MP (for KuriTec Tubing (for TruPoly	ft.)		Measure	e Total De d Total De Dep Depth to Io	epth of Well E epth of Well E oth to Water E se (if frozen) E Feet of V Ga Purge Water	rpe of Casing _/ Below MP (ft.)	7.62 7.57 7.08 7.69
Wiring Condition(dedicated pumps)							
Measuring Point (MP)	Casing (TOC)	Me	Monume easurement	ent type: method:	Stickup Rod & level	/ Flushmount (Tape measur	e
Top-of-casing to monument	(ft )			Da	talogger type	n/a	
Monument to ground surface	(ft.) 2.87				ogger serial #		
□ Lock present and o □ Well name legible □ Evidence of frost-ja	operational on outside of we	II	Mea	asured cab	ole length (ft.)	n/a	
Notes							
-		WELL CA	SING VOL	IMES			
The second of the second of	CMT	MELL CA	SING VOLU	3	4	6	8
Diameter of Well [ID-inches]	0.000253	(0.08)	0.17	0.38	0.66	1.5	2.6

Well No. 2165T-ThP-5

Field Parameter Instrument	Circle one: Parameters stabilized or >3 well volumes purged
Sample Observations Notes	

FIELD PARAMETERS [stabilization criteria]

			LD PARAMETERS [st	abilization of	criteria]	
Time	Temp. (°C) [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
157	7.5	4,28	240.7	8,66	152.6	(60-
200	95	1,03	258.9	87.41	142,4	Chool-
1203	9.5	0.92	2575	7.87	134.3	440
206	9.5	0.90	257.1	7.86	127.6	Cler
1212	9.5	0.92	2573	7.85	122.0	Clerk
212	Sumple					
	1.10					
					121	

Analysis	Sample Containers	Preservatives	Duj
PFAS			<u></u>
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Well No. 216575711P-5

Owner/Client	7					Project No. 4	02599-019
Location Ones							2-30-21
Sampling Personnel ASC						Well	1657-TWP-
Weather Conditions (4)	21.2	Air	Temp. (°F)	37		Time started 7	912
Service and the service of the servi					Tim	e completed	000
Sample No. 216  Duplicate  Equipment Blank	ST-TWP-6		Time	0957			
Duplicate			Time	-			
Equipment Blank			Time_	_			
Pump Per	· A						125
Purging Methodporta	No / dedicated	d numn		Dia	ameter and Tv	pe of Casing_	1.23
Purging Wethod pone	Die / dedicatet	pump	Approxima	te Total D	epth of Well B	elow MP (ft.)	20
Pumping Start0926			Measur	ed Total D	enth of Well B	elow MP (ft.) 7	822 1.27:18
Purge Rate (gal./min.) 0, 2			Weasu	De	oth to Water B	selow MP (ft.)	5,37
Pumping End <u>095</u>	7				ce (if frozen) B		
	m K			Deptil to it		Water in Well 7	314
Pump Set Depth Below MP KuriTec Tubing	(ft.) / b					llons per foot	
KuriTec Tubing	(ft.)					allons in Well	
TruPoly Tubing	(ft.) 24						
05 Silicon			Durgo Wate			Volume (gal.) _	919
Monument Condition///	A		Purge vvale	er Disposal	On		
Casing Condition N/	9						
odding communi							
-			-				
Wiring Condition							
Wiring Condition							
(dedicated pumps)							
Measuring Point (MP)	of Casing (TOC)	М	Monum easurement	ent type: method:		/ Flushmount / Tape measul	8
Top-of-casing to monument	t (ft )			Da	talogger type	n/a	
Monument to ground surface			•		ogger serial#		
Monument to ground surface	(IL.)		Me		ole length (ft.)		
	Cart age Associa		ivie	asureu car	ole length (it.)	11/4	
Lock present and							
Well name legible	on outside of we	ell					
Evidence of frost-	jacking						
Common of the co							
Notes							
		Z. Line	T. 17.11	1,0,075			
		WELL CA	ASING VOL		1-2-1		
Diameter of Well [ID-inches]	CMT	1179	2	3	4	6	8
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

Field Parameter Instrument	22.0	Circle one: Parameters stabilized or 3 well volumes purged	
Sample Observations			_
Notes			

### FIELD PARAMETERS [stabilization criteria]

Temp. (°C) [± 0.2%]	Dissolved Oxygen (mg/L) [±0.1 mg/L]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Turbidity (visual)
8,65	17.10	343			Clear
		344	7.32		Clear
	0.63	344	7.38	122.6	Clear
	0.54	344	7.43	119.5	Clear
	0.50	343	747	117.0	Clear
Sample					
				/	
	(°C)	(°C) Oxygen (mg/L) [± 0.2%] [±0.1 mg/L]  8.45	(°C) Oxygen (mg/L) Conductivity (μS/cm) [± 0.2%] [±0.1 mg/L] [± 3%]  8.65 /7 /0 343  8.70 0.63 344  8.71 0.63 344  8.71 0.54 344  8.70 0.50 343	(°C) Oxygen (mg/L) Conductivity (μS/cm) pH [± 0.2%] [± 0.1 mg/L] [± 3%] [± 0.1]  8.45 /7 /0 343 7.25  8.70 7.46 344 7.39  8.71 0.63 344 7.38  8.71 0.54 344 7.43  8.70 0.50 343 7.47	(°C)         Oxygen (mg/L)         Conductivity (μS/cm)         pH         ORP (mV)           [± 0.2%]         [± 0.1 mg/L]         [± 3%]         [± 0.1]         [± 10 mV]           8.45         17.10         343         7.35         135.3           8.70         5.46         344         7.32         127.9           8.71         0.63         344         7.38         127.9           8.71         0.54         344         7.43         119.5           8.70         0.50         343         7.47         117.0

Analysis	Sample Containers	Preservatives	Du
PEAS		1 Teservatives	
Mark Street			
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RF

Well No.

5.00	OT		Pro	oject No. 102599-019
Owner/Clie			-	Date 10-30-21
	on Onstavus		-	Well 21657-TWP-7
Sampling Personn		Air Town (°E) 30	- Time	e started Wol
Weather Condition	15 Choudy	Air Temp. (°F) 39		ompleted 1031
Equipment Blar Purging Metho Pumping Sta Purge Rate (gal./mir Pumping Er	np Per. A od portable / dedicated pun art 1615 n.) 6. 2 nd 1038 Below MP (ft.)	Approximate Total Measured Total D	Diameter and Type of Depth of Well Below Depth to Water Below loe (if frozen) Below Feet of Water	of Casing 1.25 v MP (ft.) 20 v MP (ft.) 12.33 +29:17:00 v MP (ft.) 7.4 9
KuriT	ec Tubing (ft.)			
TruPo	oly Tubing (ft.)			ns in Well O, 81
0.5	Silicon	Purge Water Dispos	Purge Water Volu	ime (gai.) <u>9.9</u>
Monument Condition  Casing Condition				
Wiring Conditi (dedicated pum	ps)	Monument type	: Stickup /Fl	ushmount
Measuring Point (N	MP)Top of Casing (TOC)	Measurement method		The state of the s
Top-of-casing to	monument (ft.)		Datalogger type	n/a
Monument to group	nd surface (ft.) 3-29		alogger serial #	n/a
Monument to grou	nd surface (it.)	Measured o	able length (ft.)	n/a
□ Well na	resent and operational  ame legible on outside of well  oe of frost-jacking	*		
Notes				
=				
	WEL	L CASING VOLUMES		

0.17

0.08

0.38

CMT

0.000253

Diameter of Well [ID-inches]

Gallons per lineal foot

1.5

0.66

2.6

Field Parameter Instrument 457 554	Circle one: Parameters stabilized or >3 well volumes purged
Sample Observations	and the stabilized of 25 well volumes purged
Notes	

FIELD PARAMETERS [stabilization criteria]

Time	Temp. (°C) [± 0.2%]	Dissolved Oxygen (mg/L) [±0.1 mg/L]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Turbidity (visual)
023	10:41	5.66	152	7.84	95.3	Chent
1026	10,64	0.47	150	7.86	81.2	Clear
1029	10-66	0.36	149	7.86	87.2	Clear
1032	10,67	6.29	149	7.97	85.4	clear
035	10:68	0,27	149	7.88	83.9	Clear
1038	Sample					Class
	U					
			14-11-17			

Analysis	Sample Containers	Preservatives	Du
TEAS			П
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Owner/Client	DOT					Project No	102599-019
	Constaurs					Date_	- A
Sampling Personnel					1 1	ے vveil Fime started	2165T-TWP-8
Weather Conditions		Air	Temp. (°F)	39		e completed _	
Sample No.	2165T-TWP-8	}	Time	322	0		
Duplicate			_ Time_	1			
Equipment Blank			_ Time_				
Rumn	Peri A						125
Duraina Mothod	portable / dedicated	d pump		Dia	ameter and Ty	pe of Casing	1122
Pumping Start	rasa rasarate	e. Je. maniera	Approximat	e Lotal D	epth of vveli b	elow IVIF (IL.)	40
			Measure	d Total D	epth of Well B	elow MP (ft.)	11.13+,29-10
Purge Rate (gal./min.)	1332			De	pth to Water B	elow MP (ft.)	6,99
Pumping End	1 901		1	Depth to I	ce (if frozen) B	elow MP (ft.)	
	In MD (#) 17.8				Feet of V	Water in Well	11.03
Pump Set Depth Be	Tow IVIP (ft.)				Ga	llons per foot	0.08
KuriTec	Tubing (ft.)					allons in Well	
TruPoly	Tubing (ft.) 25				Purge Water \	Volume (gal.)	4.9
0.2 2011			Purge Wate	r Disnosa	The state of the s		
	C / A		ruige vvate	Поросс	0.10		
Monument Condition	N/N						
Casing Condition	NA						
Wiring Condition							
	)						
(acaicatea parrips					1	San San San	
Measuring Point (MP	Top of Casing (TOC)		Monum Measurement		7000	/Flushmount /Tape meas	
	was the			D	atalogger type	n/a	
Top-of-casing to mo	onument (ft.)	200	-		logger serial #		
Monument to ground	d surface (ft.)	1.01	N		able length (ft.)		
			ivie	asureu ca	ible length (it.)	- 1110	
Lock pres	ent and operational						
□ Well nam	e legible on outside of w	ell					
Evidence	of frost-jacking					-	
-							
Notes							
				To the			
		WELL	CASING VOL	UMES		-	
Diameter of Well IID-inch	es] CMT	11/4	2	3	4	6	8

Diameter of Well [ID-inches]

Gallons per lineal foot

Well No.

1.5

0.66

0.38

0.17

0.08

0.000253

2.6

Field Parameter Instrument YSTB Sample Observations	Circle one: Parameters stabilized or 3 well volumes purged
Notes	

FIELD	<b>PARAMETERS</b>	[stabilization criteria	1

	Temp.	Dissolved	1 2110 [0		I	
Time	(°C) [± 0.2%]	Oxygen (mg/L) [±0.1 mg/L]	Conductivity (µS/cm) [± 3%]		ORP (mV)	- 2000000
307	9.2	2.82	252.3	[± 0.1]	[± 10 mV]	Turbidity (visual)
1310	4.2	0-31	253,9	8.29	150,4	Clear
313	9.2	0,16	2539	\$.15	142.6	Clear
316	9.2	0.14	253.7		134.6	Clear
311	9,1	003	2551	8.17	128,1	clear
322	Sungle		D-224	80/8	12109	Clear
	ange					
	12.00					

Laboratory			
Analysis	Sample Containers	Preservatives	Dup
TAB			<u></u>
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7. Ca Well No.

Owner/Client	DoT		P	roject No. 107519-017
	Enstavus			Date 10-30-21
Sampling Personnel				Well 3/63T-TWP-9
Weather Conditions	Cloudy	Air Temp. (°F) 37		ne started 1044
Sample No. Duplicate Equipment Blank	2165T-TWP-0	Time 1/24 Time	<del>-</del>	
Purging Method Pumping Start Purge Rate (gal./min.) Pumping End Pump Set Depth Be KuriTec	low MP (ft.) Tubing (ft.) Tubing (ft.)	Approximate Tot Measured Tot Depth	al Depth of Well Beld al Depth to Water Beld to Ice (if frozen) Beld Feet of Wa Gallo Purge Water Vo	ow MP (ft.)/7.93 +.39=1) ow MP (ft.) <u>8.67</u>
Monument Condition	JY//A			
Casing Condition	NIA			
Measuring Point (MP	Top of Casing (TOC)	Monument typ Measurement metho		lushmount Tape measure
Top-of-casing to mo	onument (ft.)		Datalogger type	n/a
Monument to ground	surface (ft.) 4.13	D	atalogger serial #	
Monument to ground	3411466 (IC.)	Measured	d cable length (ft.)	n/a
	ent and operational legible on outside of well of frost-jacking			
Notes				
1				
1				
( <del></del>		TO BEST STATE OF THE REAL PROPERTY.		
	WE	ELL CASING VOLUMES		

Diameter of Well [ID-inches]

Gallons per lineal foot

CMT

0.000253

0.08

Well No.

1.5

0.66

0.38

0.17

2.6

Field Parameter Instrument YSI 556	Circle one: Parameters stabilized or >3 well volumes purged
Sample Observations	well volumes purged
Notes	

FIELD PARAMETERS	[stabilization criteria]
------------------	--------------------------

Time	Temp. (°C) [± 0.2%]	Dissolved Oxygen (mg/L) [±0.1 mg/L]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Turbidity (visual)
109	9.33	6.21	215	7.75	103.0	Scoolett x Cloudy
115	9.40	0.54	220	770	98.0	Cier
118	9.40	0.40	221	7.67	95.5	Clear Clear
121	9.40	0.28	221	7.66	92.8	Clear
1124	Sample	<i>P</i>	0.2	7:65	14.8	Cher
	1					

Analysis	Sample Containers	Preservatives	Dur
PEAS	cample containers	rieservatives	Dup
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	T+PF					Designat No. /	00599-008
						Project No. // Date //	0.9599-008
Location Gus A	mis					Well	
Sampling Personnel M5C			(05)	-	T	ime started	
Weather Conditions Ram	0	Air Ten	np. (°F)	3>		completed 1	
Sample No. 2165  Duplicate  Equipment Blank	T-TWP	-10	Time _ Time _ Time _	1654			
Pump Purging Method Pumping Start Purge Rate (gal./min.) Pumping End Pump Set Depth Below MP (fill KuriTec Tubing (fill TruPoly Tubing (fill Monument Condition	1.) 17 1.) 1.)		Measure [	d Total De Dep Depth to Id	oth to Water Be e (if frozen) Be Feet of W Gall	elow MP (ft.) elow MP (ft.) vater in Well ons per foot looks in Well olume (gal.)	9.54
Monument Condition							
Casing Condition	L						
Wiring Condition(dedicated pumps)							
Measuring Point (MP)	Casing (TOC)	Mea	Monum surement	ent type: method:		'Flushmount 'Tape measur	e
	4)			Da	atalogger type_	n/a	
Top-of-casing to monument ( Monument to ground surface (	#1 1.70				ogger serial#		
□ Lock present and o □ Well name legible o □ Evidence of frost-ja	perational on outside of wel	II	Mea		ble length (ft.)		
Notes							
		WELL CAS	NO VOL	IIMES			
		WELL CAS		3	4	6	8
Diameter of Well [ID-inches]	CMT	11/4	0.17	0.38	0.66	1.5	2.6
Gallons per lineal foot	0.000253	0.08	0.17	0.50	0.00		

Well No. 2165T-TWP-10

Field Parameter Instrument Sample Observations	B	Circle one:	Parameters stabilized or >3 well volumes purged
Notes			

FIELD PARAMETERS [stabilization criterial

	Temp.	Dissolved	ELD PARAIVIETERS [S		I	
Time	(°C) [± 3%]	Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
1639	7.8	0.56	340-0	7.87	1575	Sightly clondy
1642	9.8	0.27	343.1	7.81	151.5	Clear
645	9.8	0.26	344.1 34 <b>5.</b> 9	7.79	144.5	Char
648	2.8	8.24	344.5	7.79	135-8	Clear
451	9.8	6.23	346.0	7.80	129.2	Clear
454	Sauple		370.0	7.00	123.4	Clear
		111111111111111111111111111111111111111				
			A.A. Tarana			

Analysis	Sample Containers	Preservatives	Dup
1773			旦
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Laboratory SGS

Owner/Client	OT				F	Project No.	2599-019
Location 6	ies favus					Date /	
Sampling Personnel						Well 2/	657-TWP-
Weather Conditions C		Air T	emp. (°F)	31		me started 🖊	
Weather Conditions	roud?		STREET STREET		Time	completed is	244
Sample No. 21	165T-TWP-11	1	Time	242			
Duplicate 2	165T-TWP-	111	Time 1	232			
Equipment Blank			Time_				
B 9	er: A						100
Pump _/	ortable / dedicated	d numn		Dia	meter and Type	e of Casing	1.25
Pumping Start	123	pamp	Approximat	e Total De	meter and Type pth of Well Bel pth of Well Bel	ow MP (ft.)	20
Purge Rate (gal./min.)	1		Measure	d Total De	pth of Well Be	low MP (ft.) 🧏	.42+,29=
Pumping End			12,000,000	Dep	th to Water Be	low MP (ft.)	7.16
Pumping End 18	4		I	Depth to Ice	e (if frozen) Be	low MP (ft.)	
Pump Set Depth Below	MP (ft ) 18,5				Feet of W	ater in Well /	
Pump Set Depth Below	bing (ft.)				Gallo	ons per foot 0	,08
TruPoly Tu	bing (ft.)				Gal	lons in Well 0	84
5 51.00	bing (it.)			F	Purge Water Vo	olume (gal.) 🤼	1.9
10 1110	7		Purge Wate	Disposal	GAL		
Monument Condition	NIA			CAMMA	_		
Casing Condition	NIA						
= =====================================				_			-
Wiring Condition							
(dedicated pumps)							
Measuring Point (MP)	Top of Casing (TOC)			ent type:		Flushmount	
		Me	easurement	method:	Rod & level /	Tape measure	3
Top-of-casing to monur	ment (ft )			Dat	alogger type	n/a	
Monument to ground sur	rface (ft.) 3:40			Datalo	gger serial #	n/a	
Monument to ground sur	riace (it.)		Mea		le length (ft.)	n/a	
Lead procent	and operational		77.77		=		
	gible on outside of w	اام					
		CII					
□ Evidence of f	rost-jacking						
Notes							
	V						
-							
-		WELL CA	SING VOL	JMES		0	
Diameter of Well [ID-inches]	СМТ	WELL CA	SING VOLU	JMES 3	4	6	8

Well No. 21657-TWP-//

Field Parameter Instrument	15.I SS6	Circle one: Parameters stabili	zed or >8 well volumes purged
Sample Observations _ Notes			

FIELD PARAMETERS [stabilization criteria]

	_	FIL	LD PARAMETERS [st	abilization c	riteriaj	
Time	Temp. (°C) [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
1227	8.3.9	2.32	210	7.82	100.0	Clony
1230	827	0.59	207	7.71	95.4	Clear
233	8.26	040	205	7.68	10.4	Clear
1236	8.26	0,34	206	7507	88.2	Cun
1239	8.26	0,30	206	7.65	87,4	Cunt
1242	Sample			110	100	- 101 1
	11 - 10					
				7		
				-		

Sample Containers	Preservatives	Dup
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	Sample Containers	Sample Containers Preservatives

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Well No.

Owner/Client	DOT						Project No.	102599-019
Location		5					Date_	10-30-21
Sampling Personnel				110 100 100		_	Well	2165T-TWP-12
Weather Conditions	Cloudy		Air	Temp. (°F)	39		Time started	1254
Sample No. Duplicate Equipment Blank	Pari A portable /	- TWP-D		Time _ Time _ Time _ Approxima Measure	Diate Total Ded Total De	Tim iameter and Ty Depth of Well B Depth of Well B	rpe of Casing selow MP (ft.) selow MP (ft.)	1,25 20 15 10.91+ 29=13.
		13			Depth to I	Ice (if frozen) E	Below MP (ft.)	1.01
Pump Set Depth Be KuriTec TruPoly	low MP (ft.) _	1-				Feet of \	Water in Well Illons per foot	1.08
KuriTec	Tubing (ft.) _					Ga	allons per 100t allons in Well	0.54
TruPoly	Tubing (ft.)	20				Purge Water	Volume (gal )	5.1
0.5 5	ilrean			D 10/-4-	. Diamons	al_GA	volume (gal.)	0,
				Purge vvate	er Dispose	1		
Monument Condition	NJA							
Wiring Condition (dedicated pumps								
							Levels (1)	
Measuring Point (MP	) Top of Cas	sing (TOC)		Monum Measurement	ent type: method:		/ Flushmount / Tape meas	
Top-of-casing to me	onument (ft.)	-				atalogger type		
Monument to ground		3.30				logger serial#		
□ Lock pres	ent and opera e legible on o of frost-jackir	ational utside of wel		Me	asured ca	able length (ft.)	n/a	
Notes								
-			WELL	CASING VOL	IIMES			
Control of Supersylvian as Inc.		OME T	-0	2	3	4	6	8
Diameter of Well [ID-inch	es]	CMT	0.08	0.17	0.38	0.66	1.5	2.6
Gallons per lineal foot		0.000253	0.08	0.17	0.38	0.00	1.0	

Field Parameter Instrument	-	Circle one: Parameters stabilized or >3 well volumes purged
Sample Observations		and the state of t
Notes_		

Time	Temp. (°C) [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
1327 1333 1337	8.87 8.87 8.89	2.37	196 195 194	7.89 7.83 7.80	92.6	Clear Clear Clear
1340	8.87 Sample	2.23	194	7.78	89.2 88.3	Clear

Laboratory <u>SGS</u>			
Analysis	Sample Containers	Preservatives	Du
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Well No.

Owner/Client	RTON	RE					Project No.	102599-00
Owner/Client _ Location	Gusten	16					Date	10124121
Sampling Personnel	V19	7.5					Well	51-9WT
Weather Conditions	clour		Air	r Temp. (°F)	50		Fime started_	1400
Weather Conditions_	0 (30.1					Tim	e completed_	1530
Sample No.	21657	- TWP-	013	_ Time_	1515	_		
Duplicate		_		Time	_	_		
Equipment Blank		_		_ Time_		-		
Pump	per vo	ame						1 1/4 011
Purging Method		dedicated	pump			ameter and Ty		1 100
Pumping Start			Transfer.	Approxima	ate Total D	epth of Well B	elow MP (ft.)	20
Purge Rate (gal./min.)				Measur	ed Total D	epth of Well B	elow MP (ft.)	17.75+0.28
Pumping End						pth to Water B		5.89
Cambud	10.6				Depth to I	ce (if frozen) B		
Pump Set Depth Belo	ow MP (ft.)	18					Vater in Well	12.14
KuriTec	Fubing (ft.)						llons per foot	
TruPoly	Tubing (ft.)	25					allons in Well	
normos.	- 1			Durgo Wat	ar Dienoea	Purge Water \	/olume (gal.)	4.5
Monument Condition	nia			Fulge vval	ei Dispose			
Casing Condition	na							
Wiring Condition (dedicated pumps)	nla							
V. a. A. W. W. A. A.		4.753.45		447404		OKATIO	/ Flushmount	
Measuring Point (MP)	Top of Cas	ing (TOC)		Monun Measuremen	nent type: t method:		/ Tape measi	
Top-of-casing to mor	nument (ft.)	_			D	atalogger type	n/a	
Monument to ground		3.1		5 4.0	Data	logger serial #	n/a	
Worldment to greating	2011000 (1117)			— Me	asured ca	ble length (ft.)	n/a	
- Lock prese	nt and opera	ational V	19			And the Zen Cap.		
		utside of wel	l nla	a				
	f frost-jackir		M					
□ Evidence o	i iloot jaokii	-						
						1		
Notes ve	11 general	ed prior	to	parameter	k colle	ection		
			111	1016				
			WELL	CASING VOL	UMES			
Diameter of Well [ID-inches	1	CMT	11/4	2	3	4	6	8
Gallons per lineal foot		0.000253	0.08	0.17	0.38	0.66	1,5	2.6

Field Parameter Instrument_	-	Circle one: Parameters stabilized or >3 well volumes purged
Sample Observations		
Notes_		

FIELD PARAMETERS [stabilization criteria

Time	Temp. (°C) [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
1500	9.0	0.90	488-7	6.86	143.5	clear
1503	9.0	0.64	488-8	6.94	127.2	clear
1506	0.0	0.37	489. 2	7.09	90.1	clear
1509	9.0	0,27	489.3	7.16	64.4	ctear
1515	Sample	0,24	488,4	7.17	51.7	clear
1312	sample					

A221.02	, , , , , , , , , , , , , , , , , ,		0	
Laboratory SGS	Preservative	Sample Containe	Analysis	
I ab a sale a sa		ory_SGS	Laboratory_	

Analysis	Sample Containers	Preservatives	Dup
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Owner/Client	DOT!	RPF						102599-008
Location	Gustan	us					Date_	10124121
Sampling Personnel	V79	-					Well	
Weather Conditions	clear		Air T	emp. (°F)	50	7	ime started	1555
vveatner Conditions_	Clary		7	J		Time	e completed_	1700
Sample No Duplicate _ Equipment Blank _	21651	-TWP-	114	Time Time Time	1642			
	portable 1605 0.14 1642	/ dedicated	pump	Approxim Measu	ate Total Do red Total Do Dep Depth to lo	Gal	elow MP (ft.) elow MP (ft.) elow MP (ft.) elow MP (ft.) vater in Well llons per foot ullons in Well	1114 PUC 15 14.25+0.28 5.09 
						+ 4 4	olume (gal.)	
Monument Condition  Casing Condition	na				er Disposal			
Wiring Condition (dedicated pumps)	yla					6	15 A. A.	
Measuring Point (MP)	Top of Ca	sing (TOC)	M	Monur easuremer	ment type: it method:		/ Flushmount / Tape measu	ıre
T-0 1/ 322102 12 022	aumont /ft \	_			Da	atalogger type	n/a	
Top-of-casing to mo	nument (it.)	0 11		•		ogger serial #	n/a	
Monument to ground	surface (ft.)	0,7				ole length (ft.)		
□ Well name	ent and oper legible on o of frost-jacki	ational \( \rangle \) outside of we	a 11 n/a n/a					
Notes	vell dev	dopad pri	or to	Param	pto co	silection		
			MELLO	ASING VO	LIMES			
				ASING VO		4	6	8
Diameter of Well [ID-inche	3]	CMT	(11/4)	2	3		1.5	2.6
Gallons per lineal foot		0.000253	0.08	0.17	0.38	0.66	1.0	2.0

Field Parameter Instrument	451	B	Circle one: Parameters stabilized or 3 well volumes purged
Sample Observations			
Notes			

Time	Temp. (°C) [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
1627	7.2	0.64	284.9	7.35	130.6	cloudy
1630	7.2	0.40	284.3	4.37	112.8	clear
1633	7.2	0.30	284.0	7.40	94.6	clear
1636	7.2	0,25	283.8	7.41	82.0	clear
1639	7.2	0.20	183.5	7.42	70.0	clear
1642	Sample					
					- 1	

PFR5 x18 2x250 me	Analysis DFPS x 18	Sample Containers	Preservatives	- 0
	PFP6 X18	2x250 me		10
				_
				-
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Owner/Client	DOT 8	PF					Project No.	102599-008
	Gustav	us						10124121
Sampling Personnel							Well	
Weather Conditions	7	,	Ai	r Temp. (°F)	40		ime started	
vvcamer containers	010.00.0					Time	completed	1030
Sample No. Duplicate	2165	T- TWF	-15		1010	2.1		
Duplicate	2165T	-TWP.	-115		1000	2		
Equipment Blank				_ Time	_	-		
Pump	pert pour	пр						m 011 5
Purging Method	portable	dedicated	pump		Di	iameter and Typ	e of Casing	1119 100
Pumping Start	0934			Approxim	ate Total D	Depth of Well Be	low MP (ft.)	13
Purge Rate (gal./min.)				Measu	red Total D	Depth of Well Be	low MP (ft.)	13.25+0,6
Pumping End					De	epth to Water Be	low MP (ft.)	4.93
					Depth to I	Ice (if frozen) Be		
Pump Set Depth Bel	ow MP (ft.)	13					ater in Well	
Pump Set Depth Bel KuriTec	Tubing (ft.)							0.08
TruPoly	Tubing (ft.)	20					llons in Well	
Control of				Purge Wat	er Disnosa	Purge Water V	olume (gal.)	6.5
Monument Condition	nla			Fulge Wal	ет Бізрозс			
Casing Condition	appd							
	0							
Wiring Condition		/						
(dedicated pumps)	-/-							
Measuring Point (MP)	Top of Cas	ing (TOC)		Monur Measuremer	nent type: it method:		Flushmoun Tape meas	
Top-of-casing to mo	nument (ft.)	wa			D	atalogger type _	n/a	
Monument to ground		3.5			Data	logger serial #	n/a	
Monument to ground	Surrace (III.)	0,0		M		able length (ft.)	n/a	
- Lock pres	ent and oper	ational 2	10			alega kungan dalah b		
T 1	e legible on o			a				
	of frost-jacki		mla					
□ Evidence	or most-jackii	-	7 70					
Notes								
Notes								
Notes				AVIA V	20024			
			77	CASING VO			0	
Notes  Diameter of Well [ID-inche	s]	CMT 0.000253	WELL (11/4) 0.08	CASING VOI	_UMES 3 0.38	4 0.66	6	8 2.6

Field Parameter Instrument	B	Circle one: Parameters stabilized or >3 well volumes purged
Sample Observations	/	
Notes_		

FIELD PARAMETERS [stabilization criteria]

Time	Temp. (°C) [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
0949	10.9	1.59	443.7	7-11	223.8	clear
0952	10.9	0.42	442.0	4.17	191.5	clear
0955	11.0	0.27	441.0	7.21	170.5	etear
0958	10.9	0.20	441.4	7.24	152.0	clear
1001	11.0	0.19	941.2	7.25	145.0	elear
1004	11.0	0.17	441.8	7.26	135.6	clear
1007	11.0	0.14	441.4	7. 27	122.7	clear
1010	sample					
					E 1	

Analysis	Sample Containers	Preservatives	Dup
PFAS X 18	2× 250 me		F
		A	므
			므

Laboratory SGS

Monoo

4



# WATER SUPPLY WELL SAMPLING LOG

Address_wner/Occupant_failing address_ Telephone_ample Location_	SA	bay Constructions  Spigot		ject Number _ roject Name _ Date _ Time _ ng Personnel _	102599-008 6usique siteclus 10126121 0800 VTY	atleriz
Sample Number Duplicate	pw-01	16	17 -	Time_ Time_	0838	
44.5	PFASX		-17		Test America	-
Purge Volume	3gal/ws	PARAMETERS [	$\underline{a} = 84$	ga e		
Time  08.14 08.14 08.25 08.25 08.25 08.25	Temp. (°C) [± 0.5]	Conductivity (µS/cm) [± 3%] 383.0 384.5 393.4 393.6	pH (std. units) [± 0.1] 7.03 7.10 7.15 7.16 7.18		ater Clarity (visual)	
0838	shople					
Notes:					P-016 due to owner's estead sample PW-016.	



# SOIL SAMPLE COLLECTION LOG

mpler:		Project Name: Gustavus DOT 1 PF PFAS					_
			Sample	Depth	Sample		
Date	Sample ID	Location	Time	(ft)	Type	Reading	Analyses
17/21	,	21GST-SW-010	0915		ES	NIA	PFAS X 18
1		algst-sed-010	0920				
		21GST-SW-008 water level 0.25 ft bas	0945				
		21 GST - SED - 008	0950				
		21GST - SW - 024	1015				
	_	21 GST - SED - 024	1020				
	_	21 GST - DPSED - 024	1035		Ÿ		
		21GST - SW - 124	1005		FD		
		21 GST - SED - 124	1010				
	_	21 GST - DPSED - 124	1025		V		
	ž.	21GST-SW-005 water level 0.5ft bgs	1115		ES		
	_	21 GST - SED -005	1120				
		21 GST - SW - 004 Dry No Sample collected	N/A				
**	_	21 GST -SED - 004	11.35				
	0	21GST-SW-006 water level O.S ft bgs	1200				
	_	21 GST - SED - 006	1205				
	4	21 GST - SW - 007 water level 0.25 ft bgs	1330				
	~	21 GST + SED - 007	1225				
-		21GST - SW - OIL	1240				
		21GST - SED - 011	1245				
	_	21 GST - DPSED -OIL	1255				· .
		21 GST - SW - 017	1315				
	-	21GST-SED-017	1320				
	•	21GST - DPSED - 017	1330				
	1	21 GST - SW - 019	1345				3
	)	21 GST - SED - 019	1350				
	¥	21 GST - SW - 016	1405				
	-	21 GST - SED - 016	1410				
	•	21GST - SW - 013	1440				
	-	21 GST - SED -013	1445	-			
		21GST - SW - 014	1500				
	~	21 GST - SED - Q14	1505				
		21 GST -SW - 015	1515		1		
		21 GST - SED - Ø 15	1520				
	•	2165T - 5W - 018	1540				
	_	21 GST - SED - Ø18	1545		V		
	٠	21 GST -SW - 118	1530		FD		5
		21 GST - SED - 118	1535		1		
		21 GST - SW - 020	1610		ES		
de	-	21 GST - SED - 020	1615		1	•	<b>y</b>

# SOIL SAMPLE COLLECTION LOG

Project Numbe	er: 102599	Project Name: Gustavus	DOT + PF	PFAS							Page 🧣 of フ
Sampler: A				1 1712							
T					Sample		Sample	1			
Date	Sample ID		Location		Time	(ft)	Type	Readir	g		Analyses
10/17/21	<b></b>	21GST-DPSED-020			16 25		ES	NIA		PFA:	5 × 18
1		21GST - SW - 021			1645						
	_	21 GST - SED - 021			1650						
	<u> </u>	alGST - DPSED - 021			1700						
	6	21GST - SW - 012			1720						
		21GST - SED - 012			1725		4				
•		21GST - EB - 012			1740		EB	· V			7
10/18/21	b	2165T-5W-001			0900		ES	NI	†	PEAS	× 18
1	ů.	21GST-5W-002			0905						
	L	21GST - SW - 003			0915						
* .		2165T-5W-022			0 930						3
		2165T - SED - 022			0935						
7		21 GST - SW - 009			1945						
		21 GST - SED - 009			1050						
		21 GST - DPSED -009			1100						
		21GST - SW - 023			1150	0					
		21GST - SED - Q23			1155						
		21 GST - DPSED - 023			1200		-				
		2165T - 5W-030		,	1325						
		216ST - SED - 030	,		1330						
		21 GST - SW - @ 28			13 45				- 8		
		21GST - SED - 1028			1350						
		21 GST - DPSED -028		-	1400						
					1415						
		21GST - SW - 029			1420						
		21GST - SED - 029			1435						
		21GST - SW - 027		,	1440						
		21GST - SED - 027			1425		FD				
		21 GST - SW - 127			1430		PD				
		21 GST - SED - 127					ES	1			·
		21GST-SW-026			15001		1	-	+		
		21 GST - SED - 0 26			1505	- 4			-		
		21 GST - SW - Q 25			1520.			1			,
4		21 GST - SED - 0 25			1525		•	9			
	0	21 GST - EB - 025		1 1 13 -1	1530	1	EB	MIN			
	MA	2) GST-SW-031	> p~ 10	ocal historiou	1245	1 100		NA			
10/3//21		2165I-SW-17	31 / 1		1332	143	FD	NA			V
					*1	, 6					
						100					
					H+TH 度に						
Sample Type	FS = Field screen	ning measurement only ES = Environ	nental sample FD =	Field duplicate TB = Trip	blank.						

# Appendix D

# **Analytical Results**

# **CONTENTS**

- QA/QC Summary
- Eurofins TestAmerica Laboratories, Sacramento and SGS North America, Inc.
   Laboratory Reports
- DEC Laboratory Data Review Checklists (LDRCs)

# QA/QC SUMMARY

QA/QC procedures assist in producing data of acceptable quality and reliability. Shannon & Wilson, Inc. (S&W) reviewed the analytical results for laboratory QC samples and conducted a QA assessment for this project. Staff reviewed the chain-of-custody records and laboratory-receipt forms to verify custody was not breached, sample holding-times were met, and the samples were properly handled from the point of collection through analysis by the laboratory. QA review procedures document the accuracy and precision of the analytical data, as well as check the analyses were sufficiently sensitive to detect analytes at levels below regulatory standards.

Please note, the laboratory applies the flag 'J' to a detection reported less than the RL but greater than the detection limit; this "flagged" datum is considered an estimated concentration. Qualified environmental staff reviewed the data using the current DEC laboratory data review checklist (LDRC) and applied standardized qualifiers to any result found to have been affected by a QC issue. Unless rejected, a qualified result is considered usable data. During the QC review, flags were applied to indicate estimated data or analytical bias, as applicable.

Our summary below provides details regarding QA/QC failures that resulted in flags being applied to the data set. For further details of failures not resulting in flags, please refer to the LDRCs.

# SAMPLE HANDLING

Monitoring well samples are collected following stabilization of parameters, as noted in Section 2.3.3 or once three well volumes have been purged.

Coolers containing soil and water samples were shipped via Alaska Goldstreak to the laboratories to perform the analyses noted on the chain of custody (COC). The coolers contained a temperature blank to measure whether samples were kept appropriately cold. Lab personnel measured the temperature blank at the time the samples arrived at each of their facilities; the temperature blank was recorded within the proper temperature range upon arrival at the laboratories.

Our review of COC records and laboratory sample-receipt documents did not reveal sample-handling anomalies that would affect the quality or usability of the data, and the samples were processed within the appropriate method holding times. Data is considered usable.

# ANALYTICAL SENSITIVITY

S&W compared soil and water sample limits of detection (LODs) for SGS data and RLs for Eurofins TestAmerica data to the DEC regulatory levels. For groundwater data, LODs and RLs were less than DEC-established cleanup or action levels, where applicable, with the following exceptions.

• The LODs for analyte naphthalene is reported above the DEC regulatory limit for SGS work order 1204821.

PFAS analysis uses isotope dilution method for analysis. This analytical technique requires the observation of the transition mass ratios. The ratios associated with PFAS analysis were within limit for the project data set with the following exceptions.

- Eurofins TestAmerica 320-80903: PFOS for the listed samples are considered estimated and flagged 'J' in the associated data tables due to transition mass ratios outside of laboratory limits: samples 21GST-SED-006, 21GST-SED-010, 21GST-SED-015, 21GST-SED-024, 21GST-SED-124, 21GST-DPSED-024, 21GST-SED-026, 21GST-SED-027, and 21GST-SED-127.
- Eurofins TestAmerica 320-81055: PFHpA for the PW-016 is considered estimated and flagged 'J' in the associated data table due to transition mass ratios outside of laboratory limits.
- Eurofins TestAmerica 320-81254: the following analytes for the listed samples are considered estimated and flagged 'J' in the associated data tables due to transition mass ratios outside of laboratory limits: PFOS results for samples 21GST-SB008-01, 21GST-SB007-10, 21GST-SS-017, 21GST-SS-031 / 21GST-SS-131, 21GST-SS-029, GST21-SS-015, 21GST-SED-006, 21GST-DPSED-024, 21GST-SED-010, 21GST-SED-015, 21GST-SED-024 / 21GST-SED-124, 21GST-SED-026, and 21GST-SED-027 / 21GST-SED-127; PFTriA results for sample 21GST-SS-126.
- Eurofins TestAmerica 320-81258: PFBS for the MW-22-15 is considered estimated and flagged 'J' in the associated data table due to transition mass ratios outside of laboratory limits.

The laboratory analyzes a method blank (MB) with each sample batch to provide information regarding potential for analyte carryover during analysis. Project analytes were not detected in the MBs associated with the project work orders with the following exceptions.

SGS 1217257: GRO were detected below the LOQ in one of the MBs associated with this work order. GRO were also detected below the LOQ in samples 21GST-SB002-01, 21GST-SB002-02, 21GST-SB001-02, 21GST-SB009-01, 21GST-SB009-10, 21GST-SB009-02, 21GST-SB012-01, 21GST-SB013-02, 21GST-SB005-01, 21GST-SB007-01, 21GST-SB007-10,

and 21GST-SB007-02. These results are considered not detected and have been flagged 'UB' at the LOQ for the affected samples.

S&W submits a laboratory-provided trip blank (TB) with each of the volatile analyses for this project. A TB is used to determine if cross-contamination associated with sample handling and transport is contributing to the project sample results. TB results did not affect the project samples.

S&W collected equipment blanks for the sediment sampling tooling. No project analytes were detected in the equipment blanks.

# **ACCURACY**

The laboratory assessed the accuracy of its analytical procedures by analyzing laboratory control samples (LCS), LCS duplicate samples (LCSD) matrix spike samples (MS), MS duplicate samples (MSD) and laboratory duplicate samples. LCS/LCSD analysis allows the laboratory to evaluate their ability to recover analytes added to clean aqueous matrices, and MS/MSD analysis allows the laboratory to evaluate their ability to recovery analytes added to project sample matrices.

LCS/LCSD and MS/MSD recoveries were within laboratory limits for the project samples, where reported with the following exceptions.

• Eurofins TestAmerica 320-81254: percent recovery for hexafluoropropylene oxide dimer acid (HFPO-DA) was below laboratory control limits in the MSD associated with this work order. The parent sample, 21GST-MW15-04, is considered affected. The non-detect HFPO-DA result is considered an estimate and has been flagged 'UJ'.

The laboratory also assessed the accuracy of isotope dilution analysis (IDA) analytes and surrogates added to individual project samples. IDAs and surrogates allow the laboratory to assess the accuracy of their analytical method using chemically similar compounds as those requested for the project sample set. Surrogate and IDA recoveries were within QC limits for the project samples with the following exceptions.

- Eurofins TestAmerica 320-80911: all IDA recoveries associated with project samples 21GST-SW-007 and 21GST-SW-008; IDAs 13C2 PFUnA, 13C2 PFDoA, 13C2 PFTeDA, and 13C3 HFPO-DA associated with project sample 21GST-SW-005; and IDA 13C2 PFTeDA associated with project samples 21GST-SW-001 and 21GST-SW-015 were outside QC limits. The associated analytes for the listed project samples are considered estimated. Detected analytes are flagged 'J' and not detected analytes are flagged 'UJ' in the associated data tables.
- Eurofins TestAmerica 320-81055: all IDA recoveries associated with project sample MW-23-50; all IDA recoveries except 13C4 PFOA associated with project sample MW-123-50; IDA recoveries for 13C2 PFHxA, 13C4, PFHpA, 13C5 PFNA, d3-NMeFOSAA, and 13C3 HFPO-DA associated with project sample MW-17-40; IDA recoveries for 13C5 PFNA

and 13C3 HFPO-DA associated with project sample 21GST-TWP-114; and the IDA recoveries for d3-NMeFOSAA and d5-NEtFOSAA associated with project sample PW-016 were outside QC limits. The associated analytes for the listed project samples are considered estimated. Detected analytes are flagged 'J' and not detected analytes are flagged 'UJ' in the associated data tables.

# **PRECISION**

S&W submitted 36 field duplicate samples in our work orders. To evaluate data precision and reproducibility of our sampling techniques, the relative percent difference (RPD) was calculated between the sample and its duplicate. S&W can only evaluate RPDs if the results of the analysis for both the sample and its duplicate are greater than the LOQ or RL for a given analyte. The field-duplicate RPDs for detected analytes were within the project-specified data quality objective (DQO) of 30 percent for groundwater and 50 percent for soil, with the following exceptions.

- Eurofins TestAmerica 320-80903: RPD for PFOS exceeds the DQO for field duplicate pairs 21GST-SED-024 / 21GST-SED-124 and 21GST-DPSED-024 / 21GST-DPSED-124. Results for these samples are considered estimated and have been flagged 'J' for detected and 'UJ' for not-detected results in the table.
- Eurofins TestAmerica 320-80911: RPDs for PFOS exceeded the DQO for field duplicate pair 21GST-SW-024 / 21GST-SW-124. Results for these samples are considered estimations and have been flagged 'J' in the table. RPDs for PFOS, PFHxA, and PFHpA exceeded the DQO for field duplicate pair 21GST-SW-027 / 21GST-SW-127. Results for these samples are considered estimations and have been flagged 'J' in the table.
- Eurofins TestAmerica 320-81254: RPDs for PFOS exceeded the DQO for field duplicate pairs 21GST-MW15-04 / 21GST-MW15-14, 21GST-SB006-01 / 21GST-SB006-10, 21GST-SB009-01 / 21GST-SB009-10, and 21GST-SB011-02 / 21GST-SB011-12. Results for these samples are considered estimations and have been flagged 'J' in the table. RPD for PFHpA exceeded the DQO for field duplicate pair 21GST-SB007-01 / 21GST-SB007-10. Results for these samples are considered estimations and have been flagged 'J' in the table. RPDs for PFHxA, PFHpA, PFOA, PFTriA, PFTeA, PFBS, PFHxS, NMeFOSAA, and PFOS exceeded the DQO for field duplicate pair 21GST-SS-006 / 21GST-SS-106. Results for these samples are considered estimations and have been flagged 'J' in the table.
- SGS 1217257: RPDs for DRO and RRO exceeded the DQO and QC limits respectively in duplicate pair 21GST-SB007-01/21GST-SB007-10. Results for these samples are considered estimated and have been flagged 'J' for detected and 'UJ' for not-detected results in the table.

# DATA QUALITY SUMMARY

By working in general accordance with our proposed scope of services, S&W considers the samples collected for this project to be representative of site conditions at the locations and times they were obtained. Based on our QA review, no samples were rejected as unusable due to QC failures. In general, the quality of the analytical data for this project does not appear to have been compromised by analytical irregularities and is adequate for the purposes of our assessment.



### **Laboratory Report of Analysis**

To: Shannon & Wilson-Fairbanks

2355 Hill Rd.

Fairbanks, AK 99701 (907)479-0600

Report Number: 1217257
Client Project: SC Soils

Dear Kristen Freiburger,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Jennifer at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely, SGS North America Inc.

Jennifer Dawkins
Project Manager
Jennifer.Dawkins@sgs.com

Date

Print Date: 11/22/2021 2:49:35PM Results via Engage

SGS North America Inc.



### **Case Narrative**

SGS Client: Shannon & Wilson-Fairbanks SGS Project: 1217257 Project Name/Site: SC Soils Project Contact: Kristen Freiburger

Refer to sample receipt form for information on sample condition.

## 21GST-SB005-01 (1217257012) PS

8270D SIM - The PAH LOQs are elevated due to sample dilution. The sample was diluted due to the dark color of the extract.

# 21GST-SB005-02 (1217257013) PS

8270D SIM - PAH surrogate recovery for 2-methylnaphthalene-d10 does not meet QC criteria. There are no associated analytes detected above the LOQ in the parent sample.

## 21GST-SB011-01 (1217257021) PS

8270D SIM - The POEP ÁSU Ú • ÁæÞ Á Á | ^ çææ å Áš ` ^ Ág Á æફ ] | ^ Ás ā ' ŒĀ ; ÈÁV @ Á æફ ] | ^ Á, æ Ášā ` ^ Ág Á æ Ášā ` ^ Ág Ásæ Áš & | [ | ' Á, Ás@ Ásæ Ás č

\*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

Print Date: 11/22/2021 2:49:37PM



#### **Report of Manual Integrations** Laboratory ID Client Sample ID **Analytical Batch** <u>Analyte</u> Reason 8270D SIM (PAH) Benzo[k]fluoranthene RP 1647373 **LABREFQC** XMS12997 1647522 LABREFQC XMS13000 2-Methylnaphthalene SP 1647522 **LABREFQC** XMS13000 Fluoranthene SP

# Manual Integration Reason Code Descriptions

Code	Description
0	Original Chromatogram
M	Modified Chromatogram
SS	Skimmed surrogate
BLG	Closed baseline gap
RP	Reassign peak name
PIR	Pattern integration required
IT	Included tail
SP	Split peak
RSP	Removed split peak
FPS	Forced peak start/stop
BLC	Baseline correction
PNF	Peak not found by software

All DRO/RRO analysis are integrated per SOP.

Print Date: 11/22/2021 2:49:38PM



### **Laboratory Qualifiers**

Enclosed are the analytical results associated with the above work order. The results apply to the samples as received. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions.aspx">http://www.sgs.com/en/Terms-and-Conditions.aspx</a>. Attention is drawn to the limitation of liability, indenmification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the context or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & 17-021 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020B, 7470A, 7471B, 8015C, 8021B, 8082A, 8260D, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). SGS is only certified for the analytes listed on our Drinking Water Certification (DW methods: 200.8, 2130B, 2320B, 2510B, 300.0, 4500-CN-C,E, 4500-H-B, 4500-NO3-F, 4500-P-E and 524.2) and only those analytes will be reported to the State of Alaska for compliance. Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

\* The analyte has exceeded allowable regulatory or control limits.

! Surrogate out of control limits.

B Indicates the analyte is found in a blank associated with the sample.

CCV/CVA/CVB Continuing Calibration Verification
CCCV/CVC/CVCA/CVCB Closing Continuing Calibration Verification

CL Control Limit

DF Analytical Dilution Factor

DL Detection Limit (i.e., maximum method detection limit)
E The analyte result is above the calibrated range.

GT Greater Than
IB Instrument Blank

ICV Initial Calibration Verification
J The quantitation is an estimation.
LCS(D) Laboratory Control Spike (Duplicate)
LLQC/LLIQC Low Level Quantitation Check
LOD Limit of Detection (i.e., 1/2 of the LOQ)

LOQ Limit of Quantitation (i.e., reporting or practical quantitation limit)

LT Less Than MB Method Blank

MS(D) Matrix Spike (Duplicate)

ND Indicates the analyte is not detected.

RPD Relative Percent Difference
TNTC Too Numerous To Count

U Indicates the analyte was analyzed for but not detected.

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content.

All DRO/RRO analyses are integrated per SOP.

Print Date: 11/22/2021 2:49:40PM

|200 West Potter Drive, Anchorage, AK 99518 |t 907.562.2343 f 907.561.5301 www.us.sgs.com



Client Sample ID	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
21GST-SB002-01	1217257001	10/30/2021	11/02/2021	Soil/Solid (dry weight)
21GST-SB002-02	1217257002	10/30/2021	11/02/2021	Soil/Solid (dry weight)
21GST-SB001-01	1217257003	10/30/2021	11/02/2021	Soil/Solid (dry weight)
21GST-SB001-02	1217257004	10/30/2021	11/02/2021	Soil/Solid (dry weight)
21GST-SB009-01	1217257005	10/30/2021	11/02/2021	Soil/Solid (dry weight)
21GST-SB009-10	1217257006	10/30/2021	11/02/2021	Soil/Solid (dry weight)
21GST-SB009-02	1217257007	10/30/2021	11/02/2021	Soil/Solid (dry weight)
21GST-SB012-01	1217257008	10/30/2021	11/02/2021	Soil/Solid (dry weight)
21GST-SB012-02	1217257009	10/30/2021	11/02/2021	Soil/Solid (dry weight)

**Sample Summary** 

21031-30012-02	1217237009	10/30/2021	1 1/02/2021	Soli/Solia (ary weight)
21GST-SB013-01	1217257010	10/30/2021	11/02/2021	Soil/Solid (dry weight)
21GST-SB013-02	1217257011	10/30/2021	11/02/2021	Soil/Solid (dry weight)
21GST-SB005-01	1217257012	10/30/2021	11/02/2021	Soil/Solid (dry weight)
21GST-SB005-02	1217257013	10/30/2021	11/02/2021	Soil/Solid (dry weight)
21GST-SB007-01	1217257014	10/30/2021	11/02/2021	Soil/Solid (dry weight)
21GST-SB007-10	1217257015	10/30/2021	11/02/2021	Soil/Solid (dry weight)
21GST-SB007-02	1217257016	10/30/2021	11/02/2021	Soil/Solid (dry weight)
21GST-SB003-01	1217257017	10/31/2021	11/02/2021	Soil/Solid (dry weight)
21GST-SB003-02	1217257018	10/31/2021	11/02/2021	Soil/Solid (dry weight)
21GST-SB004-01	1217257019	10/31/2021	11/02/2021	Soil/Solid (dry weight)
21GST-SB004-02	1217257020	10/31/2021	11/02/2021	Soil/Solid (dry weight)
21GST-SB011-01	1217257021	10/31/2021	11/02/2021	Soil/Solid (dry weight)

10/31/2021

10/31/2021

10/30/2021

11/02/2021

11/02/2021

11/02/2021

Method Description

8270 D SIM (PAH)

AK102

Diesel/Residual Range Organics

AK103

Diesel/Residual Range Organics

AK101

Gasoline Range Organics (S)

SM21 2540G

Percent Solids SM2540G

1217257022

1217257023

1217257024

SW8260D Volatile Organic Compounds (S) FIELD EXT

21GST-SB011-12

21GST-SB011-02

Trip Blank

Soil/Solid (dry weight)

Soil/Solid (dry weight)

Soil/Solid (dry weight)



#### **Detectable Results Summary** Client Sample ID: 21GST-SB002-01 Lab Sample ID: 1217257001 Units Parameter Result Gasoline Range Organics 2.21J **Volatile Fuels** mg/kg Client Sample ID: 21GST-SB002-02 Lab Sample ID: 1217257002 <u>Parameter</u> Result **Units** Gasoline Range Organics **Volatile Fuels** 1.40J mg/kg Client Sample ID: 21GST-SB001-02 Lab Sample ID: 1217257004 Result **Units** <u>Parameter</u> 1.45J **Volatile Fuels** Gasoline Range Organics mg/kg Client Sample ID: 21GST-SB009-01 Lab Sample ID: 1217257005 <u>Parameter</u> Result **Units Volatile Fuels** Gasoline Range Organics 1.69J mg/kg Client Sample ID: 21GST-SB009-10 Lab Sample ID: 1217257006 Parameter Result Units Gasoline Range Organics 1.24J **Volatile Fuels** mg/kg Client Sample ID: 21GST-SB009-02 Lab Sample ID: 1217257007 Parameter Result Units Gasoline Range Organics 0.984J **Volatile Fuels** mg/kg Client Sample ID: 21GST-SB012-01 Lab Sample ID: 1217257008 Units Parameter Result Gasoline Range Organics 1.47J **Volatile Fuels** mg/kg Client Sample ID: 21GST-SB013-02 Lab Sample ID: 1217257011 Units Parameter Result **Volatile Fuels** Gasoline Range Organics 1.68J mg/kg Client Sample ID: 21GST-SB005-01 Lab Sample ID: 1217257012 <u>Parameter</u> Result **Units** Semivolatile Organic Fuels **Diesel Range Organics** 15.7J mg/kg Residual Range Organics 201 mg/kg Gasoline Range Organics 1.71J mg/kg **Volatile Fuels** Client Sample ID: 21GST-SB007-01 Lab Sample ID: 1217257014 Parameter Result Units **Diesel Range Organics** 26.3 Semivolatile Organic Fuels mg/kg Residual Range Organics 281 mg/kg **Volatile Fuels** Gasoline Range Organics 1.82J mg/kg Client Sample ID: 21GST-SB007-10 Lab Sample ID: 1217257015 Parameter Result Units **Diesel Range Organics** 10.4J mg/kg Semivolatile Organic Fuels **Volatile Fuels** Gasoline Range Organics 1.63J mg/kg Client Sample ID: 21GST-SB007-02 Lab Sample ID: 1217257016 <u>Parameter</u> <u>Units</u> Result Diesel Range Organics 13.0J mg/kg Semivolatile Organic Fuels

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Volatile Fuels

200 West Potter Drive, Anchorage, AK 99518 t 907.562.2343 f 907.561.5301 www.us.sgs.com

Gasoline Range Organics

mg/kg

1.60J



# **Detectable Results Summary**

Client Sample ID: 21GST-SB003-01	<u>Parameter</u> Diesel Range Organics Residual Range Organics	Result	<u>Units</u>
Lab Sample ID: 1217257017		13.2J	mg/kg
Semivolatile Organic Fuels		81.7J	mg/kg
Client Sample ID: 21GST-SB004-02 Lab Sample ID: 1217257020 Semivolatile Organic Fuels	<u>Parameter</u> Diesel Range Organics	Result 21.2J	<u>Units</u> mg/kg
Client Sample ID: 21GST-SB011-01	<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Lab Sample ID: 1217257021	Diesel Range Organics	146	mg/kg
Semivolatile Organic Fuels	Residual Range Organics	2380	mg/kg
Client Sample ID: 21GST-SB011-02 Lab Sample ID: 1217257023 Semivolatile Organic Fuels	<u>Parameter</u> Residual Range Organics	Result 53.3J	<u>Units</u> mg/kg

Print Date: 11/22/2021 2:49:42PM



Client Sample ID: 21GST-SB002-01

Client Project ID: **SC Soils**Lab Sample ID: 1217257001
Lab Project ID: 1217257

Collection Date: 10/30/21 09:35 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):91.9 Location:

## Results by Polynuclear Aromatics GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	DF	<u>Limits</u>	Date Analyzed
1-Methylnaphthalene	0.0136 U	0.0271	0.00677	mg/kg	1		11/12/21 00:36
2-Methylnaphthalene	0.0136 U	0.0271	0.00677	mg/kg	1		11/12/21 00:36
Acenaphthene	0.0136 U	0.0271	0.00677	mg/kg	1		11/12/21 00:36
Acenaphthylene	0.0136 U	0.0271	0.00677	mg/kg	1		11/12/21 00:36
Anthracene	0.0136 U	0.0271	0.00677	mg/kg	1		11/12/21 00:36
Benzo(a)Anthracene	0.0136 U	0.0271	0.00677	mg/kg	1		11/12/21 00:36
Benzo[a]pyrene	0.0136 U	0.0271	0.00677	mg/kg	1		11/12/21 00:36
Benzo[b]Fluoranthene	0.0136 U	0.0271	0.00677	mg/kg	1		11/12/21 00:36
Benzo[g,h,i]perylene	0.0136 U	0.0271	0.00677	mg/kg	1		11/12/21 00:36
Benzo[k]fluoranthene	0.0136 U	0.0271	0.00677	mg/kg	1		11/12/21 00:36
Chrysene	0.0136 U	0.0271	0.00677	mg/kg	1		11/12/21 00:36
Dibenzo[a,h]anthracene	0.0136 U	0.0271	0.00677	mg/kg	1		11/12/21 00:36
Fluoranthene	0.0136 U	0.0271	0.00677	mg/kg	1		11/12/21 00:36
Fluorene	0.0136 U	0.0271	0.00677	mg/kg	1		11/12/21 00:36
Indeno[1,2,3-c,d] pyrene	0.0136 U	0.0271	0.00677	mg/kg	1		11/12/21 00:36
Naphthalene	0.0108 U	0.0216	0.00541	mg/kg	1		11/12/21 00:36
Phenanthrene	0.0136 U	0.0271	0.00677	mg/kg	1		11/12/21 00:36
Pyrene	0.0136 U	0.0271	0.00677	mg/kg	1		11/12/21 00:36
Surrogates							
2-Methylnaphthalene-d10 (surr)	89.6	58-103		%	1		11/12/21 00:36
Fluoranthene-d10 (surr)	91.7	54-113		%	1		11/12/21 00:36

# **Batch Information**

Analytical Batch: XMS12995 Analytical Method: 8270D SIM (PAH)

Analyst: LAW

Analytical Date/Time: 11/12/21 00:36 Container ID: 1217257001-A Prep Batch: XXX45819 Prep Method: SW3550C Prep Date/Time: 11/04/21 09:26 Prep Initial Wt./Vol.: 22.617 g Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB002-01

Client Project ID: **SC Soils**Lab Sample ID: 1217257001
Lab Project ID: 1217257

Collection Date: 10/30/21 09:35 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):91.9 Location:

## Results by Semivolatile Organic Fuels

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Diesel Range Organics	10.9 U	21.7	9.76	mg/kg	1		11/04/21 16:08
Surrogates							
5a Androstane (surr)	89.2	50-150		%	1		11/04/21 16:08

### **Batch Information**

Analytical Batch: XFC16134 Analytical Method: AK102

Analyst: IVM

Analytical Date/Time: 11/04/21 16:08 Container ID: 1217257001-A Prep Batch: XXX45817
Prep Method: SW3550C
Prep Date/Time: 11/04/21 08:07
Prep Initial Wt./Vol.: 30.113 g
Prep Extract Vol: 5 mL

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Residual Range Organics	54.0 U	108	46.6	mg/kg	1		11/04/21 16:08
Surrogates							
n-Triacontane-d62 (surr)	85.2	50-150		%	1		11/04/21 16:08

## **Batch Information**

Analytical Batch: XFC16134 Analytical Method: AK103

Analyst: IVM

Analytical Date/Time: 11/04/21 16:08 Container ID: 1217257001-A Prep Batch: XXX45817 Prep Method: SW3550C Prep Date/Time: 11/04/21 08:07 Prep Initial Wt./Vol.: 30.113 g Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB002-01

Client Project ID: **SC Soils**Lab Sample ID: 1217257001
Lab Project ID: 1217257

Collection Date: 10/30/21 09:35 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):91.9 Location:

## Results by Volatile Fuels

Parameter	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	Allowable Limits	Date Analyzed
<del></del>					<u>DI</u>	LIIIIIIS	
Gasoline Range Organics	2.21 J	6.34	1.90	mg/kg	1		11/04/21 00:04
Surrogates							
4-Bromofluorobenzene (surr)	89.5	50-150		%	1		11/04/21 00:04

## **Batch Information**

Analytical Batch: VFC15927 Analytical Method: AK101

Analyst: IJV

Analytical Date/Time: 11/04/21 00:04 Container ID: 1217257001-B Prep Batch: VXX38138 Prep Method: SW5035A Prep Date/Time: 10/30/21 09:35 Prep Initial Wt./Vol.: 23.06 g Prep Extract Vol: 26.8671 mL



Client Sample ID: 21GST-SB002-01

Client Project ID: **SC Soils**Lab Sample ID: 1217257001
Lab Project ID: 1217257

Collection Date: 10/30/21 09:35 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):91.9 Location:

## Results by Volatile GC/MS

					<u>Allowable</u>	
Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
0.0159 U	0.0317	0.00989	mg/kg	1		11/04/21 00:50
0.0317 U	0.0634	0.0198	mg/kg	1		11/04/21 00:50
0.0317 U	0.0634	0.0198	mg/kg	1		11/04/21 00:50
0.0635 U	0.127	0.0380	mg/kg	1		11/04/21 00:50
0.0317 U	0.0634	0.0198	mg/kg	1		11/04/21 00:50
0.0950 U	0.190	0.0578	mg/kg	1		11/04/21 00:50
103	71-136		%	1		11/04/21 00:50
95.9	55-151		%	1		11/04/21 00:50
102	85-116		%	1		11/04/21 00:50
	0.0159 U 0.0317 U 0.0317 U 0.0635 U 0.0317 U 0.0950 U	0.0159 U 0.0317 0.0317 U 0.0634 0.0317 U 0.0634 0.0635 U 0.127 0.0317 U 0.0634 0.0950 U 0.190 103 71-136 95.9 55-151	0.0159 U       0.0317       0.00989         0.0317 U       0.0634       0.0198         0.0317 U       0.0634       0.0198         0.0635 U       0.127       0.0380         0.0317 U       0.0634       0.0198         0.0950 U       0.190       0.0578	0.0159 U       0.0317       0.00989       mg/kg         0.0317 U       0.0634       0.0198       mg/kg         0.0317 U       0.0634       0.0198       mg/kg         0.0635 U       0.127       0.0380       mg/kg         0.0317 U       0.0634       0.0198       mg/kg         0.0950 U       0.190       0.0578       mg/kg         103       71-136       %         95.9       55-151       %	0.0159 U       0.0317       0.00989       mg/kg       1         0.0317 U       0.0634       0.0198       mg/kg       1         0.0317 U       0.0634       0.0198       mg/kg       1         0.0635 U       0.127       0.0380       mg/kg       1         0.0317 U       0.0634       0.0198       mg/kg       1         0.0950 U       0.190       0.0578       mg/kg       1         103       71-136       %       1         95.9       55-151       %       1	Result Qual         LOQ/CL         DL         Units         DF         Limits           0.0159 U         0.0317         0.00989         mg/kg         1           0.0317 U         0.0634         0.0198         mg/kg         1           0.0317 U         0.0634         0.0198         mg/kg         1           0.0635 U         0.127         0.0380         mg/kg         1           0.0317 U         0.0634         0.0198         mg/kg         1           0.0950 U         0.190         0.0578         mg/kg         1           103         71-136         %         1           95.9         55-151         %         1

### **Batch Information**

Analytical Batch: VMS21353 Analytical Method: SW8260D

Analyst: JMG

Analytical Date/Time: 11/04/21 00:50 Container ID: 1217257001-B

Prep Batch: VXX38140 Prep Method: SW5035A Prep Date/Time: 10/30/21 09:35 Prep Initial Wt./Vol.: 23.06 g Prep Extract Vol: 26.8671 mL

Print Date: 11/22/2021 2:49:43PM

J flagging is activated



Client Sample ID: 21GST-SB002-02

Client Project ID: **SC Soils**Lab Sample ID: 1217257002
Lab Project ID: 1217257

Collection Date: 10/30/21 09:50 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):86.3 Location:

## Results by Polynuclear Aromatics GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
1-Methylnaphthalene	0.0144 U	0.0287	0.00718	mg/kg	1		11/12/21 00:57
2-Methylnaphthalene	0.0144 U	0.0287	0.00718	mg/kg	1		11/12/21 00:57
Acenaphthene	0.0144 U	0.0287	0.00718	mg/kg	1		11/12/21 00:57
Acenaphthylene	0.0144 U	0.0287	0.00718	mg/kg	1		11/12/21 00:57
Anthracene	0.0144 U	0.0287	0.00718	mg/kg	1		11/12/21 00:57
Benzo(a)Anthracene	0.0144 U	0.0287	0.00718	mg/kg	1		11/12/21 00:57
Benzo[a]pyrene	0.0144 U	0.0287	0.00718	mg/kg	1		11/12/21 00:57
Benzo[b]Fluoranthene	0.0144 U	0.0287	0.00718	mg/kg	1		11/12/21 00:57
Benzo[g,h,i]perylene	0.0144 U	0.0287	0.00718	mg/kg	1		11/12/21 00:57
Benzo[k]fluoranthene	0.0144 U	0.0287	0.00718	mg/kg	1		11/12/21 00:57
Chrysene	0.0144 U	0.0287	0.00718	mg/kg	1		11/12/21 00:57
Dibenzo[a,h]anthracene	0.0144 U	0.0287	0.00718	mg/kg	1		11/12/21 00:57
Fluoranthene	0.0144 U	0.0287	0.00718	mg/kg	1		11/12/21 00:57
Fluorene	0.0144 U	0.0287	0.00718	mg/kg	1		11/12/21 00:57
Indeno[1,2,3-c,d] pyrene	0.0144 U	0.0287	0.00718	mg/kg	1		11/12/21 00:57
Naphthalene	0.0115 U	0.0230	0.00574	mg/kg	1		11/12/21 00:57
Phenanthrene	0.0144 U	0.0287	0.00718	mg/kg	1		11/12/21 00:57
Pyrene	0.0144 U	0.0287	0.00718	mg/kg	1		11/12/21 00:57
Surrogates							
2-Methylnaphthalene-d10 (surr)	85.3	58-103		%	1		11/12/21 00:57
Fluoranthene-d10 (surr)	87.3	54-113		%	1		11/12/21 00:57

# **Batch Information**

Analytical Batch: XMS12995 Analytical Method: 8270D SIM (PAH)

Analyst: LAW

Analytical Date/Time: 11/12/21 00:57 Container ID: 1217257002-A Prep Batch: XXX45819
Prep Method: SW3550C
Prep Date/Time: 11/04/21 09:26
Prep Initial Wt./Vol.: 22.698 g
Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB002-02

Client Project ID: **SC Soils**Lab Sample ID: 1217257002
Lab Project ID: 1217257

Collection Date: 10/30/21 09:50 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):86.3 Location:

## Results by Semivolatile Organic Fuels

Parameter	Result Qual	LOQ/CL	DI	<u>Units</u>	DF	<u>Allowable</u> Limits	Date Analyzed
Diesel Range Organics	11.5 U	23.0	<u>DL</u> 10.3	mg/kg	1	LIIIIIIS	11/04/21 16:18
Diesei Kange Organics	11.5 0	23.0	10.5	mg/kg	'		11/04/21 10.10
Surrogates							
5a Androstane (surr)	84.9	50-150		%	1		11/04/21 16:18

### **Batch Information**

Analytical Batch: XFC16134 Analytical Method: AK102

Analyst: IVM

Analytical Date/Time: 11/04/21 16:18 Container ID: 1217257002-A Prep Batch: XXX45817 Prep Method: SW3550C Prep Date/Time: 11/04/21 08:07 Prep Initial Wt./Vol.: 30.266 g Prep Extract Vol: 5 mL

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Residual Range Organics	57.5 U	115	49.4	mg/kg	1		11/04/21 16:18
Surrogates							
n-Triacontane-d62 (surr)	81.3	50-150		%	1		11/04/21 16:18

## **Batch Information**

Analytical Batch: XFC16134 Analytical Method: AK103

Analyst: IVM

Analytical Date/Time: 11/04/21 16:18 Container ID: 1217257002-A Prep Batch: XXX45817 Prep Method: SW3550C Prep Date/Time: 11/04/21 08:07 Prep Initial Wt./Vol.: 30.266 g Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB002-02

Client Project ID: **SC Soils**Lab Sample ID: 1217257002
Lab Project ID: 1217257

Collection Date: 10/30/21 09:50 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):86.3 Location:

## Results by Volatile Fuels

Parameter Gasoline Range Organics	Result Qual	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	Allowable	<u>Date Analyzed</u>
	1.40 J	4.61	1.38	mg/kg	1	Limits	11/04/21 00:22
Surrogates 4-Bromofluorobenzene (surr)	90.3	50-150		%	1		11/04/21 00:22

## **Batch Information**

Analytical Batch: VFC15927 Analytical Method: AK101

Analyst: IJV

Analytical Date/Time: 11/04/21 00:22 Container ID: 1217257002-B Prep Batch: VXX38138 Prep Method: SW5035A Prep Date/Time: 10/30/21 09:50 Prep Initial Wt./Vol.: 37.981 g Prep Extract Vol: 30.2121 mL



Client Sample ID: 21GST-SB002-02

Client Project ID: **SC Soils**Lab Sample ID: 1217257002
Lab Project ID: 1217257

Collection Date: 10/30/21 09:50 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):86.3 Location:

## Results by Volatile GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Benzene	0.0115 U	0.0230	0.00719	mg/kg	1		11/04/21 01:05
Ethylbenzene	0.0231 U	0.0461	0.0144	mg/kg	1		11/04/21 01:05
o-Xylene	0.0231 U	0.0461	0.0144	mg/kg	1		11/04/21 01:05
P & M -Xylene	0.0461 U	0.0922	0.0277	mg/kg	1		11/04/21 01:05
Toluene	0.0231 U	0.0461	0.0144	mg/kg	1		11/04/21 01:05
Xylenes (total)	0.0690 U	0.138	0.0420	mg/kg	1		11/04/21 01:05
Surrogates							
1,2-Dichloroethane-D4 (surr)	97.1	71-136		%	1		11/04/21 01:05
4-Bromofluorobenzene (surr)	103	55-151		%	1		11/04/21 01:05
Toluene-d8 (surr)	103	85-116		%	1		11/04/21 01:05

### **Batch Information**

Analytical Batch: VMS21353 Analytical Method: SW8260D

Analyst: JMG

Analytical Date/Time: 11/04/21 01:05 Container ID: 1217257002-B Prep Batch: VXX38140 Prep Method: SW5035A Prep Date/Time: 10/30/21 09:50 Prep Initial Wt./Vol.: 37.981 g Prep Extract Vol: 30.2121 mL

Print Date: 11/22/2021 2:49:43PM

J flagging is activated



Client Sample ID: 21GST-SB001-01

Client Project ID: **SC Soils**Lab Sample ID: 1217257003
Lab Project ID: 1217257

Collection Date: 10/30/21 10:30 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):94.6 Location:

## Results by Polynuclear Aromatics GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	DF	<u>Limits</u>	Date Analyzed
1-Methylnaphthalene	0.0130 U	0.0259	0.00648	mg/kg	1		11/12/21 01:17
2-Methylnaphthalene	0.0130 U	0.0259	0.00648	mg/kg	1		11/12/21 01:17
Acenaphthene	0.0130 U	0.0259	0.00648	mg/kg	1		11/12/21 01:17
Acenaphthylene	0.0130 U	0.0259	0.00648	mg/kg	1		11/12/21 01:17
Anthracene	0.0130 U	0.0259	0.00648	mg/kg	1		11/12/21 01:17
Benzo(a)Anthracene	0.0130 U	0.0259	0.00648	mg/kg	1		11/12/21 01:17
Benzo[a]pyrene	0.0130 U	0.0259	0.00648	mg/kg	1		11/12/21 01:17
Benzo[b]Fluoranthene	0.0130 U	0.0259	0.00648	mg/kg	1		11/12/21 01:17
Benzo[g,h,i]perylene	0.0130 U	0.0259	0.00648	mg/kg	1		11/12/21 01:17
Benzo[k]fluoranthene	0.0130 U	0.0259	0.00648	mg/kg	1		11/12/21 01:17
Chrysene	0.0130 U	0.0259	0.00648	mg/kg	1		11/12/21 01:17
Dibenzo[a,h]anthracene	0.0130 U	0.0259	0.00648	mg/kg	1		11/12/21 01:17
Fluoranthene	0.0130 U	0.0259	0.00648	mg/kg	1		11/12/21 01:17
Fluorene	0.0130 U	0.0259	0.00648	mg/kg	1		11/12/21 01:17
Indeno[1,2,3-c,d] pyrene	0.0130 U	0.0259	0.00648	mg/kg	1		11/12/21 01:17
Naphthalene	0.0104 U	0.0207	0.00518	mg/kg	1		11/12/21 01:17
Phenanthrene	0.0130 U	0.0259	0.00648	mg/kg	1		11/12/21 01:17
Pyrene	0.0130 U	0.0259	0.00648	mg/kg	1		11/12/21 01:17
Surrogates							
2-Methylnaphthalene-d10 (surr)	88.1	58-103		%	1		11/12/21 01:17
Fluoranthene-d10 (surr)	91.5	54-113		%	1		11/12/21 01:17

### Batch Information

Analytical Batch: XMS12995 Analytical Method: 8270D SIM (PAH)

Analyst: LAW

Analytical Date/Time: 11/12/21 01:17 Container ID: 1217257003-A Prep Batch: XXX45819
Prep Method: SW3550C
Prep Date/Time: 11/04/21 09:26
Prep Initial Wt./Vol.: 22.958 g
Prep Extract Vol: 5 mL

Print Date: 11/22/2021 2:49:43PM

J flagging is activated



Client Sample ID: 21GST-SB001-01

Client Project ID: **SC Soils**Lab Sample ID: 1217257003
Lab Project ID: 1217257

Collection Date: 10/30/21 10:30 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):94.6 Location:

## Results by Semivolatile Organic Fuels

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	DL	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Diesel Range Organics	10.6 U	21.1	9.50	mg/kg	1		11/04/21 16:28
Surrogates							
5a Androstane (surr)	88.9	50-150		%	1		11/04/21 16:28

## **Batch Information**

Analytical Batch: XFC16134 Analytical Method: AK102

Analyst: IVM

Analytical Date/Time: 11/04/21 16:28 Container ID: 1217257003-A Prep Batch: XXX45817
Prep Method: SW3550C
Prep Date/Time: 11/04/21 08:07
Prep Initial Wt./Vol.: 30.047 g
Prep Extract Vol: 5 mL

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	53.0 U	106	45.4	mg/kg	1		11/04/21 16:28
Surrogates							
n-Triacontane-d62 (surr)	84.7	50-150		%	1		11/04/21 16:28

## **Batch Information**

Analytical Batch: XFC16134 Analytical Method: AK103

Analyst: IVM

Analytical Date/Time: 11/04/21 16:28 Container ID: 1217257003-A Prep Batch: XXX45817 Prep Method: SW3550C Prep Date/Time: 11/04/21 08:07 Prep Initial Wt./Vol.: 30.047 g Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB001-01

Client Project ID: **SC Soils**Lab Sample ID: 1217257003
Lab Project ID: 1217257

Collection Date: 10/30/21 10:30 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):94.6 Location:

## Results by Volatile Fuels

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Gasoline Range Organics	1.78 U	3.56	1.07	mg/kg	1		11/04/21 00:40
Surrogates							
4-Bromofluorobenzene (surr)	89.1	50-150		%	1		11/04/21 00:40

## **Batch Information**

Analytical Batch: VFC15927 Analytical Method: AK101

Analyst: IJV

Analytical Date/Time: 11/04/21 00:40 Container ID: 1217257003-B

Prep Batch: VXX38138 Prep Method: SW5035A Prep Date/Time: 10/30/21 10:30 Prep Initial Wt./Vol.: 40.377 g Prep Extract Vol: 27.1934 mL



Client Sample ID: 21GST-SB001-01

Client Project ID: **SC Soils**Lab Sample ID: 1217257003
Lab Project ID: 1217257

Collection Date: 10/30/21 10:30 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):94.6 Location:

## Results by Volatile GC/MS

					<u>Allowable</u>	
Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
0.00890 U	0.0178	0.00555	mg/kg	1		11/04/21 01:21
0.0178 U	0.0356	0.0111	mg/kg	1		11/04/21 01:21
0.0178 U	0.0356	0.0111	mg/kg	1		11/04/21 01:21
0.0356 U	0.0712	0.0214	mg/kg	1		11/04/21 01:21
0.0178 U	0.0356	0.0111	mg/kg	1		11/04/21 01:21
0.0535 U	0.107	0.0325	mg/kg	1		11/04/21 01:21
99.7	71-136		%	1		11/04/21 01:21
99.5	55-151		%	1		11/04/21 01:21
102	85-116		%	1		11/04/21 01:21
	0.00890 U 0.0178 U 0.0178 U 0.0356 U 0.0178 U 0.0535 U	0.00890 U 0.0178 0.0178 U 0.0356 0.0178 U 0.0356 0.0356 U 0.0712 0.0178 U 0.0356 0.0535 U 0.107 99.7 71-136 99.5 55-151	0.00890 U 0.0178 0.00555 0.0178 U 0.0356 0.0111 0.0178 U 0.0356 0.0111 0.0356 U 0.0712 0.0214 0.0178 U 0.0356 0.0111 0.0535 U 0.107 0.0325 99.7 71-136 99.5 55-151	0.00890 U       0.0178       0.00555       mg/kg         0.0178 U       0.0356       0.0111       mg/kg         0.0178 U       0.0356       0.0111       mg/kg         0.0356 U       0.0712       0.0214       mg/kg         0.0178 U       0.0356       0.0111       mg/kg         0.0535 U       0.107       0.0325       mg/kg         99.7       71-136       %         99.5       55-151       %	0.00890 U       0.0178       0.00555       mg/kg       1         0.0178 U       0.0356       0.0111       mg/kg       1         0.0178 U       0.0356       0.0111       mg/kg       1         0.0356 U       0.0712       0.0214       mg/kg       1         0.0178 U       0.0356       0.0111       mg/kg       1         0.0535 U       0.107       0.0325       mg/kg       1         99.7       71-136       %       1         99.5       55-151       %       1	Result Qual         LOQ/CL         DL         Units         DF         Limits           0.00890 U         0.0178         0.00555         mg/kg         1           0.0178 U         0.0356         0.0111         mg/kg         1           0.0178 U         0.0356         0.0111         mg/kg         1           0.0356 U         0.0712         0.0214         mg/kg         1           0.0178 U         0.0356         0.0111         mg/kg         1           0.0535 U         0.107         0.0325         mg/kg         1           99.7         71-136         %         1           99.5         55-151         %         1

### **Batch Information**

Analytical Batch: VMS21353 Analytical Method: SW8260D

Analyst: JMG

Analytical Date/Time: 11/04/21 01:21 Container ID: 1217257003-B

Prep Batch: VXX38140
Prep Method: SW5035A
Prep Date/Time: 10/30/21 10:30
Prep Initial Wt./Vol.: 40.377 g
Prep Extract Vol: 27.1934 mL



Client Sample ID: 21GST-SB001-02

Client Project ID: **SC Soils**Lab Sample ID: 1217257004
Lab Project ID: 1217257

Collection Date: 10/30/21 10:40 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):86.3 Location:

## Results by Polynuclear Aromatics GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
1-Methylnaphthalene	0.0143 U	0.0285	0.00713	mg/kg	1		11/15/21 17:37
2-Methylnaphthalene	0.0143 U	0.0285	0.00713	mg/kg	1		11/15/21 17:37
Acenaphthene	0.0143 U	0.0285	0.00713	mg/kg	1		11/15/21 17:37
Acenaphthylene	0.0143 U	0.0285	0.00713	mg/kg	1		11/15/21 17:37
Anthracene	0.0143 U	0.0285	0.00713	mg/kg	1		11/15/21 17:37
Benzo(a)Anthracene	0.0143 U	0.0285	0.00713	mg/kg	1		11/15/21 17:37
Benzo[a]pyrene	0.0143 U	0.0285	0.00713	mg/kg	1		11/15/21 17:37
Benzo[b]Fluoranthene	0.0143 U	0.0285	0.00713	mg/kg	1		11/15/21 17:37
Benzo[g,h,i]perylene	0.0143 U	0.0285	0.00713	mg/kg	1		11/15/21 17:37
Benzo[k]fluoranthene	0.0143 U	0.0285	0.00713	mg/kg	1		11/15/21 17:37
Chrysene	0.0143 U	0.0285	0.00713	mg/kg	1		11/15/21 17:37
Dibenzo[a,h]anthracene	0.0143 U	0.0285	0.00713	mg/kg	1		11/15/21 17:37
Fluoranthene	0.0143 U	0.0285	0.00713	mg/kg	1		11/15/21 17:37
Fluorene	0.0143 U	0.0285	0.00713	mg/kg	1		11/15/21 17:37
Indeno[1,2,3-c,d] pyrene	0.0143 U	0.0285	0.00713	mg/kg	1		11/15/21 17:37
Naphthalene	0.0114 U	0.0228	0.00570	mg/kg	1		11/15/21 17:37
Phenanthrene	0.0143 U	0.0285	0.00713	mg/kg	1		11/15/21 17:37
Pyrene	0.0143 U	0.0285	0.00713	mg/kg	1		11/15/21 17:37
Surrogates							
2-Methylnaphthalene-d10 (surr)	89	58-103		%	1		11/15/21 17:37
Fluoranthene-d10 (surr)	92.2	54-113		%	1		11/15/21 17:37

### Batch Information

Analytical Batch: XMS12997 Analytical Method: 8270D SIM (PAH)

Analyst: LAW

Analytical Date/Time: 11/15/21 17:37 Container ID: 1217257004-A Prep Batch: XXX45819
Prep Method: SW3550C
Prep Date/Time: 11/04/21 09:26
Prep Initial Wt./Vol.: 22.853 g
Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB001-02

Client Project ID: **SC Soils** Lab Sample ID: 1217257004 Lab Project ID: 1217257 Collection Date: 10/30/21 10:40 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):86.3 Location:

## Results by Semivolatile Organic Fuels

Parameter Diesel Range Organics	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	Allowable	<u>Date Analyzed</u>
	11.5 U	23.0	10.3	mg/kg	1	Limits	11/04/21 16:58
Surrogates 5a Androstane (surr)	95.4	50-150		%	1		11/04/21 16:58

### **Batch Information**

Analytical Batch: XFC16134 Analytical Method: AK102

Analyst: IVM

Analytical Date/Time: 11/04/21 16:58 Container ID: 1217257004-A Prep Batch: XXX45817
Prep Method: SW3550C
Prep Date/Time: 11/04/21 08:07
Prep Initial Wt./Vol.: 30.219 g
Prep Extract Vol: 5 mL

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Residual Range Organics	57.5 U	115	49.4	mg/kg	1		11/04/21 16:58
Surrogates							
n-Triacontane-d62 (surr)	91.1	50-150		%	1		11/04/21 16:58

## **Batch Information**

Analytical Batch: XFC16134 Analytical Method: AK103

Analyst: IVM

Analytical Date/Time: 11/04/21 16:58 Container ID: 1217257004-A Prep Batch: XXX45817 Prep Method: SW3550C Prep Date/Time: 11/04/21 08:07 Prep Initial Wt./Vol.: 30.219 g Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB001-02

Client Project ID: SC Soils Lab Sample ID: 1217257004 Lab Project ID: 1217257

Collection Date: 10/30/21 10:40 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):86.3 Location:

## Results by Volatile Fuels

Parameter	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.45 J	4.72	1.42	mg/kg	1		11/04/21 00:58
Surrogates							
4-Bromofluorobenzene (surr)	96	50-150		%	1		11/04/21 00:58

## **Batch Information**

Analytical Batch: VFC15927 Analytical Method: AK101

Analyst: IJV

Analytical Date/Time: 11/04/21 00:58 Container ID: 1217257004-B

Prep Batch: VXX38138 Prep Method: SW5035A Prep Date/Time: 10/30/21 10:40 Prep Initial Wt./Vol.: 36.872 g Prep Extract Vol: 30.034 mL



Client Sample ID: 21GST-SB001-02

Client Project ID: **SC Soils** Lab Sample ID: 1217257004 Lab Project ID: 1217257 Collection Date: 10/30/21 10:40 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):86.3 Location:

# Results by Volatile GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Benzene	0.0118 U	0.0236	0.00736	mg/kg	1		11/04/21 01:36
Ethylbenzene	0.0236 U	0.0472	0.0147	mg/kg	1		11/04/21 01:36
o-Xylene	0.0236 U	0.0472	0.0147	mg/kg	1		11/04/21 01:36
P & M -Xylene	0.0471 U	0.0943	0.0283	mg/kg	1		11/04/21 01:36
Toluene	0.0236 U	0.0472	0.0147	mg/kg	1		11/04/21 01:36
Xylenes (total)	0.0710 U	0.142	0.0430	mg/kg	1		11/04/21 01:36
Surrogates							
1,2-Dichloroethane-D4 (surr)	101	71-136		%	1		11/04/21 01:36
4-Bromofluorobenzene (surr)	98.3	55-151		%	1		11/04/21 01:36
Toluene-d8 (surr)	102	85-116		%	1		11/04/21 01:36

### **Batch Information**

Analytical Batch: VMS21353 Analytical Method: SW8260D

Analyst: JMG

Analytical Date/Time: 11/04/21 01:36 Container ID: 1217257004-B Prep Batch: VXX38140
Prep Method: SW5035A
Prep Date/Time: 10/30/21 10:40
Prep Initial Wt./Vol.: 36.872 g
Prep Extract Vol: 30.034 mL

Print Date: 11/22/2021 2:49:43PM

J flagging is activated



Client Sample ID: 21GST-SB009-01

Client Project ID: **SC Soils**Lab Sample ID: 1217257005
Lab Project ID: 1217257

Collection Date: 10/30/21 11:35 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):93.0 Location:

## Results by Polynuclear Aromatics GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
1-Methylnaphthalene	0.0134 U	0.0268	0.00669	mg/kg	1		11/15/21 17:57
2-Methylnaphthalene	0.0134 U	0.0268	0.00669	mg/kg	1		11/15/21 17:57
Acenaphthene	0.0134 U	0.0268	0.00669	mg/kg	1		11/15/21 17:57
Acenaphthylene	0.0134 U	0.0268	0.00669	mg/kg	1		11/15/21 17:57
Anthracene	0.0134 U	0.0268	0.00669	mg/kg	1		11/15/21 17:57
Benzo(a)Anthracene	0.0134 U	0.0268	0.00669	mg/kg	1		11/15/21 17:57
Benzo[a]pyrene	0.0134 U	0.0268	0.00669	mg/kg	1		11/15/21 17:57
Benzo[b]Fluoranthene	0.0134 U	0.0268	0.00669	mg/kg	1		11/15/21 17:57
Benzo[g,h,i]perylene	0.0134 U	0.0268	0.00669	mg/kg	1		11/15/21 17:57
Benzo[k]fluoranthene	0.0134 U	0.0268	0.00669	mg/kg	1		11/15/21 17:57
Chrysene	0.0134 U	0.0268	0.00669	mg/kg	1		11/15/21 17:57
Dibenzo[a,h]anthracene	0.0134 U	0.0268	0.00669	mg/kg	1		11/15/21 17:57
Fluoranthene	0.0134 U	0.0268	0.00669	mg/kg	1		11/15/21 17:57
Fluorene	0.0134 U	0.0268	0.00669	mg/kg	1		11/15/21 17:57
Indeno[1,2,3-c,d] pyrene	0.0134 U	0.0268	0.00669	mg/kg	1		11/15/21 17:57
Naphthalene	0.0107 U	0.0214	0.00535	mg/kg	1		11/15/21 17:57
Phenanthrene	0.0134 U	0.0268	0.00669	mg/kg	1		11/15/21 17:57
Pyrene	0.0134 U	0.0268	0.00669	mg/kg	1		11/15/21 17:57
Surrogates							
2-Methylnaphthalene-d10 (surr)	88.3	58-103		%	1		11/15/21 17:57
Fluoranthene-d10 (surr)	92.6	54-113		%	1		11/15/21 17:57

### Batch Information

Analytical Batch: XMS12997 Analytical Method: 8270D SIM (PAH)

Analyst: LAW

Analytical Date/Time: 11/15/21 17:57 Container ID: 1217257005-A Prep Batch: XXX45819
Prep Method: SW3550C
Prep Date/Time: 11/04/21 09:26
Prep Initial Wt./Vol.: 22.614 g
Prep Extract Vol: 5 mL

Print Date: 11/22/2021 2:49:43PM

J flagging is activated



Client Sample ID: 21GST-SB009-01

Client Project ID: **SC Soils**Lab Sample ID: 1217257005
Lab Project ID: 1217257

Collection Date: 10/30/21 11:35 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):93.0 Location:

## Results by Semivolatile Organic Fuels

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Diesel Range Organics	10.7 U	21.4	9.62	mg/kg	1		11/04/21 17:08
Surrogates							
5a Androstane (surr)	85.5	50-150		%	1		11/04/21 17:08

### **Batch Information**

Analytical Batch: XFC16134 Analytical Method: AK102

Analyst: IVM

Analytical Date/Time: 11/04/21 17:08 Container ID: 1217257005-A Prep Batch: XXX45817 Prep Method: SW3550C Prep Date/Time: 11/04/21 08:07 Prep Initial Wt./Vol.: 30.184 g Prep Extract Vol: 5 mL

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Residual Range Organics	53.5 U	107	46.0	mg/kg	1		11/04/21 17:08
Surrogates							
n-Triacontane-d62 (surr)	80.8	50-150		%	1		11/04/21 17:08

## **Batch Information**

Analytical Batch: XFC16134 Analytical Method: AK103

Analyst: IVM

Analytical Date/Time: 11/04/21 17:08 Container ID: 1217257005-A Prep Batch: XXX45817 Prep Method: SW3550C Prep Date/Time: 11/04/21 08:07 Prep Initial Wt./Vol.: 30.184 g Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB009-01

Client Project ID: SC Soils Lab Sample ID: 1217257005 Lab Project ID: 1217257

Collection Date: 10/30/21 11:35 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):93.0 Location:

## Results by Volatile Fuels

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Gasoline Range Organics	1.69 J	5.01	1.50	mg/kg	1		11/04/21 01:16
Surrogates							
4-Bromofluorobenzene (surr)	92.5	50-150		%	1		11/04/21 01:16

## **Batch Information**

Analytical Batch: VFC15927 Analytical Method: AK101

Analyst: IJV

Analytical Date/Time: 11/04/21 01:16 Container ID: 1217257005-B

Prep Batch: VXX38138 Prep Method: SW5035A Prep Date/Time: 10/30/21 11:35 Prep Initial Wt./Vol.: 29.047 g Prep Extract Vol: 27.0422 mL



Client Sample ID: 21GST-SB009-01

Client Project ID: **SC Soils**Lab Sample ID: 1217257005
Lab Project ID: 1217257

Collection Date: 10/30/21 11:35 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):93.0 Location:

# Results by Volatile GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Benzene	0.0125 U	0.0250	0.00781	mg/kg	1		11/04/21 01:52
Ethylbenzene	0.0251 U	0.0501	0.0156	mg/kg	1		11/04/21 01:52
o-Xylene	0.0251 U	0.0501	0.0156	mg/kg	1		11/04/21 01:52
P & M -Xylene	0.0500 U	0.100	0.0300	mg/kg	1		11/04/21 01:52
Toluene	0.0251 U	0.0501	0.0156	mg/kg	1		11/04/21 01:52
Xylenes (total)	0.0750 U	0.150	0.0457	mg/kg	1		11/04/21 01:52
Surrogates							
1,2-Dichloroethane-D4 (surr)	103	71-136		%	1		11/04/21 01:52
4-Bromofluorobenzene (surr)	97.9	55-151		%	1		11/04/21 01:52
Toluene-d8 (surr)	103	85-116		%	1		11/04/21 01:52

## **Batch Information**

Analytical Batch: VMS21353 Analytical Method: SW8260D

Analyst: JMG

Analytical Date/Time: 11/04/21 01:52 Container ID: 1217257005-B Prep Batch: VXX38140 Prep Method: SW5035A Prep Date/Time: 10/30/21 11:35 Prep Initial Wt./Vol.: 29.047 g Prep Extract Vol: 27.0422 mL



Client Sample ID: 21GST-SB009-10

Client Project ID: **SC Soils**Lab Sample ID: 1217257006
Lab Project ID: 1217257

Collection Date: 10/30/21 11:25 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):93.7 Location:

## Results by Polynuclear Aromatics GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
1-Methylnaphthalene	0.0133 U	0.0266	0.00664	mg/kg	1		11/15/21 18:18
2-Methylnaphthalene	0.0133 U	0.0266	0.00664	mg/kg	1		11/15/21 18:18
Acenaphthene	0.0133 U	0.0266	0.00664	mg/kg	1		11/15/21 18:18
Acenaphthylene	0.0133 U	0.0266	0.00664	mg/kg	1		11/15/21 18:18
Anthracene	0.0133 U	0.0266	0.00664	mg/kg	1		11/15/21 18:18
Benzo(a)Anthracene	0.0133 U	0.0266	0.00664	mg/kg	1		11/15/21 18:18
Benzo[a]pyrene	0.0133 U	0.0266	0.00664	mg/kg	1		11/15/21 18:18
Benzo[b]Fluoranthene	0.0133 U	0.0266	0.00664	mg/kg	1		11/15/21 18:18
Benzo[g,h,i]perylene	0.0133 U	0.0266	0.00664	mg/kg	1		11/15/21 18:18
Benzo[k]fluoranthene	0.0133 U	0.0266	0.00664	mg/kg	1		11/15/21 18:18
Chrysene	0.0133 U	0.0266	0.00664	mg/kg	1		11/15/21 18:18
Dibenzo[a,h]anthracene	0.0133 U	0.0266	0.00664	mg/kg	1		11/15/21 18:18
Fluoranthene	0.0133 U	0.0266	0.00664	mg/kg	1		11/15/21 18:18
Fluorene	0.0133 U	0.0266	0.00664	mg/kg	1		11/15/21 18:18
Indeno[1,2,3-c,d] pyrene	0.0133 U	0.0266	0.00664	mg/kg	1		11/15/21 18:18
Naphthalene	0.0106 U	0.0212	0.00531	mg/kg	1		11/15/21 18:18
Phenanthrene	0.0133 U	0.0266	0.00664	mg/kg	1		11/15/21 18:18
Pyrene	0.0133 U	0.0266	0.00664	mg/kg	1		11/15/21 18:18
Surrogates							
2-Methylnaphthalene-d10 (surr)	89.5	58-103		%	1		11/15/21 18:18
Fluoranthene-d10 (surr)	93.8	54-113		%	1		11/15/21 18:18

### Batch Information

Analytical Batch: XMS12997 Analytical Method: 8270D SIM (PAH)

Analyst: LAW

Analytical Date/Time: 11/15/21 18:18 Container ID: 1217257006-A Prep Batch: XXX45819
Prep Method: SW3550C
Prep Date/Time: 11/04/21 09:26
Prep Initial Wt./Vol.: 22.611 g
Prep Extract Vol: 5 mL



Client Sample ID: **21GST-SB009-10**Client Project ID: **SC Soils**Lab Sample ID: 1217257006

Lab Project ID: 1217257

Collection Date: 10/30/21 11:25 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):93.7 Location:

## Results by Semivolatile Organic Fuels

<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable</u> <u>Limits</u>	Date Analyzed
Diesel Range Organics	10.7 U	21.3	9.60	mg/kg	1		11/04/21 17:18
Surrogates							
5a Androstane (surr)	95.2	50-150		%	1		11/04/21 17:18

### **Batch Information**

Analytical Batch: XFC16134 Analytical Method: AK102

Analyst: IVM

Analytical Date/Time: 11/04/21 17:18 Container ID: 1217257006-A Prep Batch: XXX45817
Prep Method: SW3550C
Prep Date/Time: 11/04/21 08:07
Prep Initial Wt./Vol.: 30.007 g
Prep Extract Vol: 5 mL

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Residual Range Organics	53.5 U	107	45.9	mg/kg	1		11/04/21 17:18
Surrogates							
n-Triacontane-d62 (surr)	90	50-150		%	1		11/04/21 17:18

## **Batch Information**

Analytical Batch: XFC16134 Analytical Method: AK103

Analyst: IVM

Analytical Date/Time: 11/04/21 17:18 Container ID: 1217257006-A Prep Batch: XXX45817 Prep Method: SW3550C Prep Date/Time: 11/04/21 08:07 Prep Initial Wt./Vol.: 30.007 g Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB009-10

Client Project ID: SC Soils Lab Sample ID: 1217257006 Lab Project ID: 1217257

Collection Date: 10/30/21 11:25 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):93.7 Location:

## Results by Volatile Fuels

<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable</u> <u>Limits</u>	Date Analyzed
Gasoline Range Organics	1.24 J	4.06	1.22	mg/kg	1		11/04/21 01:34
Surrogates							
4-Bromofluorobenzene (surr)	88.8	50-150		%	1		11/04/21 01:34

## **Batch Information**

Analytical Batch: VFC15927 Analytical Method: AK101

Analyst: IJV

Analytical Date/Time: 11/04/21 01:34 Container ID: 1217257006-B

Prep Batch: VXX38138 Prep Method: SW5035A Prep Date/Time: 10/30/21 11:25 Prep Initial Wt./Vol.: 35.847 g Prep Extract Vol: 27.2639 mL



Client Sample ID: 21GST-SB009-10

Client Project ID: **SC Soils**Lab Sample ID: 1217257006
Lab Project ID: 1217257

Collection Date: 10/30/21 11:25 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):93.7 Location:

## Results by Volatile GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Benzene	0.0102 U	0.0203	0.00633	mg/kg	1		11/04/21 18:03
Ethylbenzene	0.0203 U	0.0406	0.0127	mg/kg	1		11/04/21 18:03
o-Xylene	0.0203 U	0.0406	0.0127	mg/kg	1		11/04/21 18:03
P & M -Xylene	0.0406 U	0.0812	0.0244	mg/kg	1		11/04/21 18:03
Toluene	0.0203 U	0.0406	0.0127	mg/kg	1		11/04/21 18:03
Xylenes (total)	0.0610 U	0.122	0.0370	mg/kg	1		11/04/21 18:03
Surrogates							
1,2-Dichloroethane-D4 (surr)	94.9	71-136		%	1		11/04/21 18:03
4-Bromofluorobenzene (surr)	105	55-151		%	1		11/04/21 18:03
Toluene-d8 (surr)	103	85-116		%	1		11/04/21 18:03

### **Batch Information**

Analytical Batch: VMS21351 Analytical Method: SW8260D

Analyst: MDT

Analytical Date/Time: 11/04/21 18:03 Container ID: 1217257006-B Prep Batch: VXX38142 Prep Method: SW5035A Prep Date/Time: 10/30/21 11:25 Prep Initial Wt./Vol.: 35.847 g Prep Extract Vol: 27.2639 mL



Client Sample ID: 21GST-SB009-02

Client Project ID: **SC Soils**Lab Sample ID: 1217257007
Lab Project ID: 1217257

Collection Date: 10/30/21 11:50 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):93.7 Location:

# Results by Polynuclear Aromatics GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
1-Methylnaphthalene	0.0132 U	0.0263	0.00658	mg/kg	1		11/12/21 09:46
2-Methylnaphthalene	0.0132 U	0.0263	0.00658	mg/kg	1		11/12/21 09:46
Acenaphthene	0.0132 U	0.0263	0.00658	mg/kg	1		11/12/21 09:46
Acenaphthylene	0.0132 U	0.0263	0.00658	mg/kg	1		11/12/21 09:46
Anthracene	0.0132 U	0.0263	0.00658	mg/kg	1		11/12/21 09:46
Benzo(a)Anthracene	0.0132 U	0.0263	0.00658	mg/kg	1		11/12/21 09:46
Benzo[a]pyrene	0.0132 U	0.0263	0.00658	mg/kg	1		11/12/21 09:46
Benzo[b]Fluoranthene	0.0132 U	0.0263	0.00658	mg/kg	1		11/12/21 09:46
Benzo[g,h,i]perylene	0.0132 U	0.0263	0.00658	mg/kg	1		11/12/21 09:46
Benzo[k]fluoranthene	0.0132 U	0.0263	0.00658	mg/kg	1		11/12/21 09:46
Chrysene	0.0132 U	0.0263	0.00658	mg/kg	1		11/12/21 09:46
Dibenzo[a,h]anthracene	0.0132 U	0.0263	0.00658	mg/kg	1		11/12/21 09:46
Fluoranthene	0.0132 U	0.0263	0.00658	mg/kg	1		11/12/21 09:46
Fluorene	0.0132 U	0.0263	0.00658	mg/kg	1		11/12/21 09:46
Indeno[1,2,3-c,d] pyrene	0.0132 U	0.0263	0.00658	mg/kg	1		11/12/21 09:46
Naphthalene	0.0106 U	0.0211	0.00526	mg/kg	1		11/12/21 09:46
Phenanthrene	0.0132 U	0.0263	0.00658	mg/kg	1		11/12/21 09:46
Pyrene	0.0132 U	0.0263	0.00658	mg/kg	1		11/12/21 09:46
Surrogates							
2-Methylnaphthalene-d10 (surr)	95.3	58-103		%	1		11/12/21 09:46
Fluoranthene-d10 (surr)	99.2	54-113		%	1		11/12/21 09:46

### Batch Information

Analytical Batch: XMS12996 Analytical Method: 8270D SIM (PAH)

Analyst: LAW

Analytical Date/Time: 11/12/21 09:46 Container ID: 1217257007-A Prep Batch: XXX45819
Prep Method: SW3550C
Prep Date/Time: 11/04/21 09:26
Prep Initial Wt./Vol.: 22.798 g
Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB009-02

Client Project ID: **SC Soils** Lab Sample ID: 1217257007 Lab Project ID: 1217257 Collection Date: 10/30/21 11:50 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):93.7 Location:

## Results by Semivolatile Organic Fuels

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Diesel Range Organics	10.7 U	21.3	9.57	mg/kg	1		11/04/21 17:28
Surrogates							
5a Androstane (surr)	98.3	50-150		%	1		11/04/21 17:28

### **Batch Information**

Analytical Batch: XFC16134 Analytical Method: AK102

Analyst: IVM

Analytical Date/Time: 11/04/21 17:28 Container ID: 1217257007-A Prep Batch: XXX45817 Prep Method: SW3550C Prep Date/Time: 11/04/21 08:07 Prep Initial Wt./Vol.: 30.09 g Prep Extract Vol: 5 mL

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Residual Range Organics	53.0 U	106	45.7	mg/kg	1		11/04/21 17:28
Surrogates							
n-Triacontane-d62 (surr)	93.9	50-150		%	1		11/04/21 17:28

## **Batch Information**

Analytical Batch: XFC16134 Analytical Method: AK103

Analyst: IVM

Analytical Date/Time: 11/04/21 17:28 Container ID: 1217257007-A Prep Batch: XXX45817 Prep Method: SW3550C Prep Date/Time: 11/04/21 08:07 Prep Initial Wt./Vol.: 30.09 g Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB009-02

Client Project ID: **SC Soils**Lab Sample ID: 1217257007
Lab Project ID: 1217257

Collection Date: 10/30/21 11:50 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):93.7 Location:

## Results by Volatile Fuels

<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.984 J	3.28	0.983	mg/kg	1		11/04/21 01:52
Surrogates							
4-Bromofluorobenzene (surr)	80.6	50-150		%	1		11/04/21 01:52

## **Batch Information**

Analytical Batch: VFC15927 Analytical Method: AK101

Analyst: IJV

Analytical Date/Time: 11/04/21 01:52 Container ID: 1217257007-B

Prep Batch: VXX38138
Prep Method: SW5035A
Prep Date/Time: 10/30/21 11:50
Prep Initial Wt./Vol.: 45.328 g
Prep Extract Vol: 27.834 mL



Client Sample ID: 21GST-SB009-02

Client Project ID: **SC Soils**Lab Sample ID: 1217257007
Lab Project ID: 1217257

Collection Date: 10/30/21 11:50 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):93.7 Location:

## Results by Volatile GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Benzene	0.00820 U	0.0164	0.00511	mg/kg	1		11/04/21 18:18
Ethylbenzene	0.0164 U	0.0328	0.0102	mg/kg	1		11/04/21 18:18
o-Xylene	0.0164 U	0.0328	0.0102	mg/kg	1		11/04/21 18:18
P & M -Xylene	0.0328 U	0.0655	0.0197	mg/kg	1		11/04/21 18:18
Toluene	0.0164 U	0.0328	0.0102	mg/kg	1		11/04/21 18:18
Xylenes (total)	0.0491 U	0.0983	0.0299	mg/kg	1		11/04/21 18:18
Surrogates							
1,2-Dichloroethane-D4 (surr)	95.6	71-136		%	1		11/04/21 18:18
4-Bromofluorobenzene (surr)	92.2	55-151		%	1		11/04/21 18:18
Toluene-d8 (surr)	102	85-116		%	1		11/04/21 18:18

### **Batch Information**

Analytical Batch: VMS21351 Analytical Method: SW8260D

Analyst: MDT

Analytical Date/Time: 11/04/21 18:18 Container ID: 1217257007-B Prep Batch: VXX38142 Prep Method: SW5035A Prep Date/Time: 10/30/21 11:50 Prep Initial Wt./Vol.: 45.328 g Prep Extract Vol: 27.834 mL

Print Date: 11/22/2021 2:49:43PM

J flagging is activated



Client Sample ID: 21GST-SB012-01

Client Project ID: **SC Soils**Lab Sample ID: 1217257008
Lab Project ID: 1217257

Collection Date: 10/30/21 13:25 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):89.1 Location:

## Results by Polynuclear Aromatics GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
1-Methylnaphthalene	0.0138 U	0.0277	0.00694	mg/kg	1		11/12/21 10:06
2-Methylnaphthalene	0.0138 U	0.0277	0.00694	mg/kg	1		11/12/21 10:06
Acenaphthene	0.0138 U	0.0277	0.00694	mg/kg	1		11/12/21 10:06
Acenaphthylene	0.0138 U	0.0277	0.00694	mg/kg	1		11/12/21 10:06
Anthracene	0.0138 U	0.0277	0.00694	mg/kg	1		11/12/21 10:06
Benzo(a)Anthracene	0.0138 U	0.0277	0.00694	mg/kg	1		11/12/21 10:06
Benzo[a]pyrene	0.0138 U	0.0277	0.00694	mg/kg	1		11/12/21 10:06
Benzo[b]Fluoranthene	0.0138 U	0.0277	0.00694	mg/kg	1		11/12/21 10:06
Benzo[g,h,i]perylene	0.0138 U	0.0277	0.00694	mg/kg	1		11/12/21 10:06
Benzo[k]fluoranthene	0.0138 U	0.0277	0.00694	mg/kg	1		11/12/21 10:06
Chrysene	0.0138 U	0.0277	0.00694	mg/kg	1		11/12/21 10:06
Dibenzo[a,h]anthracene	0.0138 U	0.0277	0.00694	mg/kg	1		11/12/21 10:06
Fluoranthene	0.0138 U	0.0277	0.00694	mg/kg	1		11/12/21 10:06
Fluorene	0.0138 U	0.0277	0.00694	mg/kg	1		11/12/21 10:06
Indeno[1,2,3-c,d] pyrene	0.0138 U	0.0277	0.00694	mg/kg	1		11/12/21 10:06
Naphthalene	0.0111 U	0.0222	0.00555	mg/kg	1		11/12/21 10:06
Phenanthrene	0.0138 U	0.0277	0.00694	mg/kg	1		11/12/21 10:06
Pyrene	0.0138 U	0.0277	0.00694	mg/kg	1		11/12/21 10:06
Surrogates							
2-Methylnaphthalene-d10 (surr)	87.3	58-103		%	1		11/12/21 10:06
Fluoranthene-d10 (surr)	94.8	54-113		%	1		11/12/21 10:06

### Batch Information

Analytical Batch: XMS12996 Analytical Method: 8270D SIM (PAH)

Analyst: LAW

Analytical Date/Time: 11/12/21 10:06 Container ID: 1217257008-A Prep Batch: XXX45819
Prep Method: SW3550C
Prep Date/Time: 11/04/21 09:26
Prep Initial Wt./Vol.: 22.743 g
Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB012-01

Client Project ID: **SC Soils**Lab Sample ID: 1217257008
Lab Project ID: 1217257

Collection Date: 10/30/21 13:25 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):89.1 Location:

## Results by Semivolatile Organic Fuels

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	DL	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Diesel Range Organics	11.1 U	22.2	10.0	mg/kg	1		11/04/21 17:38
Surrogates							
5a Androstane (surr)	81.4	50-150		%	1		11/04/21 17:38

## **Batch Information**

Analytical Batch: XFC16134 Analytical Method: AK102

Analyst: IVM

Analytical Date/Time: 11/04/21 17:38 Container ID: 1217257008-A Prep Batch: XXX45817
Prep Method: SW3550C
Prep Date/Time: 11/04/21 08:07
Prep Initial Wt./Vol.: 30.296 g
Prep Extract Vol: 5 mL

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Residual Range Organics	55.5 U	111	47.8	mg/kg	1		11/04/21 17:38
Surrogates							
n-Triacontane-d62 (surr)	77.2	50-150		%	1		11/04/21 17:38

## **Batch Information**

Analytical Batch: XFC16134 Analytical Method: AK103

Analyst: IVM

Analytical Date/Time: 11/04/21 17:38 Container ID: 1217257008-A Prep Batch: XXX45817 Prep Method: SW3550C Prep Date/Time: 11/04/21 08:07 Prep Initial Wt./Vol.: 30.296 g Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB012-01

Client Project ID: **SC Soils**Lab Sample ID: 1217257008
Lab Project ID: 1217257

Collection Date: 10/30/21 13:25 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):89.1 Location:

# Results by Volatile Fuels

Parameter	Result Qual	LOQ/CL	<u>DL</u>	Units	<u>DF</u>	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.47 J	4.41	1.32	mg/kg	1		11/04/21 02:28
Surrogates							
4-Bromofluorobenzene (surr)	95.8	50-150		%	1		11/04/21 02:28

## **Batch Information**

Analytical Batch: VFC15927 Analytical Method: AK101

Analyst: IJV

Analytical Date/Time: 11/04/21 02:28 Container ID: 1217257008-B Prep Batch: VXX38138
Prep Method: SW5035A
Prep Date/Time: 10/30/21 13:25
Prep Initial Wt./Vol.: 36.917 g
Prep Extract Vol: 29.0106 mL



Client Sample ID: 21GST-SB012-01

Client Project ID: **SC Soils**Lab Sample ID: 1217257008
Lab Project ID: 1217257

Collection Date: 10/30/21 13:25 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):89.1 Location:

## Results by Volatile GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Benzene	0.0110 U	0.0220	0.00688	mg/kg	1		11/04/21 18:34
Ethylbenzene	0.0221 U	0.0441	0.0138	mg/kg	1		11/04/21 18:34
o-Xylene	0.0221 U	0.0441	0.0138	mg/kg	1		11/04/21 18:34
P & M -Xylene	0.0441 U	0.0882	0.0264	mg/kg	1		11/04/21 18:34
Toluene	0.0221 U	0.0441	0.0138	mg/kg	1		11/04/21 18:34
Xylenes (total)	0.0660 U	0.132	0.0402	mg/kg	1		11/04/21 18:34
Surrogates							
1,2-Dichloroethane-D4 (surr)	98.9	71-136		%	1		11/04/21 18:34
4-Bromofluorobenzene (surr)	101	55-151		%	1		11/04/21 18:34
Toluene-d8 (surr)	103	85-116		%	1		11/04/21 18:34

### **Batch Information**

Analytical Batch: VMS21351 Analytical Method: SW8260D

Analyst: MDT

Analytical Date/Time: 11/04/21 18:34 Container ID: 1217257008-B Prep Batch: VXX38142 Prep Method: SW5035A Prep Date/Time: 10/30/21 13:25 Prep Initial Wt./Vol.: 36.917 g Prep Extract Vol: 29.0106 mL

Print Date: 11/22/2021 2:49:43PM

200 West Potter Drive Anchorage, AK 95518 t 907.562.2343 f 907.561.5301 www.us.sgs.com J flagging is activated



Client Sample ID: 21GST-SB012-02

Client Project ID: SC Soils Lab Sample ID: 1217257009 Lab Project ID: 1217257 Collection Date: 10/30/21 13:30 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):84.2 Location:

## Results by Polynuclear Aromatics GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
1-Methylnaphthalene	0.0147 U	0.0293	0.00732	mg/kg	1		11/12/21 10:26
2-Methylnaphthalene	0.0147 U	0.0293	0.00732	mg/kg	1		11/12/21 10:26
Acenaphthene	0.0147 U	0.0293	0.00732	mg/kg	1		11/12/21 10:26
Acenaphthylene	0.0147 U	0.0293	0.00732	mg/kg	1		11/12/21 10:26
Anthracene	0.0147 U	0.0293	0.00732	mg/kg	1		11/12/21 10:26
Benzo(a)Anthracene	0.0147 U	0.0293	0.00732	mg/kg	1		11/12/21 10:26
Benzo[a]pyrene	0.0147 U	0.0293	0.00732	mg/kg	1		11/12/21 10:26
Benzo[b]Fluoranthene	0.0147 U	0.0293	0.00732	mg/kg	1		11/12/21 10:26
Benzo[g,h,i]perylene	0.0147 U	0.0293	0.00732	mg/kg	1		11/12/21 10:26
Benzo[k]fluoranthene	0.0147 U	0.0293	0.00732	mg/kg	1		11/12/21 10:26
Chrysene	0.0147 U	0.0293	0.00732	mg/kg	1		11/12/21 10:26
Dibenzo[a,h]anthracene	0.0147 U	0.0293	0.00732	mg/kg	1		11/12/21 10:26
Fluoranthene	0.0147 U	0.0293	0.00732	mg/kg	1		11/12/21 10:26
Fluorene	0.0147 U	0.0293	0.00732	mg/kg	1		11/12/21 10:26
Indeno[1,2,3-c,d] pyrene	0.0147 U	0.0293	0.00732	mg/kg	1		11/12/21 10:26
Naphthalene	0.0117 U	0.0234	0.00586	mg/kg	1		11/12/21 10:26
Phenanthrene	0.0147 U	0.0293	0.00732	mg/kg	1		11/12/21 10:26
Pyrene	0.0147 U	0.0293	0.00732	mg/kg	1		11/12/21 10:26
Surrogates							
2-Methylnaphthalene-d10 (surr)	96.4	58-103		%	1		11/12/21 10:26
Fluoranthene-d10 (surr)	99	54-113		%	1		11/12/21 10:26

### Batch Information

Analytical Batch: XMS12996 Analytical Method: 8270D SIM (PAH)

Analyst: LAW

Analytical Date/Time: 11/12/21 10:26 Container ID: 1217257009-A Prep Batch: XXX45819
Prep Method: SW3550C
Prep Date/Time: 11/04/21 09:26
Prep Initial Wt./Vol.: 22.812 g
Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB012-02

Client Project ID: **SC Soils** Lab Sample ID: 1217257009 Lab Project ID: 1217257 Collection Date: 10/30/21 13:30 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):84.2 Location:

## Results by Semivolatile Organic Fuels

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	DL	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Diesel Range Organics	11.8 U	23.6	10.6	mg/kg	1		11/04/21 17:48
Surrogates							
5a Androstane (surr)	83.9	50-150		%	1		11/04/21 17:48

### **Batch Information**

Analytical Batch: XFC16134 Analytical Method: AK102

Analyst: IVM

Analytical Date/Time: 11/04/21 17:48 Container ID: 1217257009-A Prep Batch: XXX45817 Prep Method: SW3550C Prep Date/Time: 11/04/21 08:07 Prep Initial Wt./Vol.: 30.227 g Prep Extract Vol: 5 mL

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Residual Range Organics	59.0 U	118	50.7	mg/kg	1		11/04/21 17:48
Surrogates							
n-Triacontane-d62 (surr)	79.8	50-150		%	1		11/04/21 17:48

## **Batch Information**

Analytical Batch: XFC16134 Analytical Method: AK103

Analyst: IVM

Analytical Date/Time: 11/04/21 17:48 Container ID: 1217257009-A Prep Batch: XXX45817 Prep Method: SW3550C Prep Date/Time: 11/04/21 08:07 Prep Initial Wt./Vol.: 30.227 g Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB012-02

Client Project ID: SC Soils Lab Sample ID: 1217257009 Lab Project ID: 1217257

Collection Date: 10/30/21 13:30 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):84.2 Location:

## Results by Volatile Fuels

Parameter	Result Qual	LOQ/CL	DI	Llaita	DF	<u>Allowable</u> Limits	Date Analyzed
<u>Faiailletei</u>	ixesuit Quai	LUQ/UL	<u>DL</u>	<u>Units</u>	<u>DI</u>	LIIIIIIS	Date Analyzeu
Gasoline Range Organics	2.43 U	4.86	1.46	mg/kg	1		11/04/21 02:46
Surrogates							
4-Bromofluorobenzene (surr)	86.1	50-150		%	1		11/04/21 02:46

## **Batch Information**

Analytical Batch: VFC15927 Analytical Method: AK101

Analyst: IJV

Analytical Date/Time: 11/04/21 02:46 Container ID: 1217257009-B

Prep Batch: VXX38138 Prep Method: SW5035A Prep Date/Time: 10/30/21 13:30 Prep Initial Wt./Vol.: 37.937 g Prep Extract Vol: 31.0074 mL



Client Sample ID: 21GST-SB012-02

Client Project ID: **SC Soils** Lab Sample ID: 1217257009 Lab Project ID: 1217257 Collection Date: 10/30/21 13:30 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):84.2 Location:

## Results by Volatile GC/MS

ı							<u>Allowable</u>	
l	<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
	Benzene	0.0122 U	0.0243	0.00757	mg/kg	1		11/04/21 18:49
	Ethylbenzene	0.0243 U	0.0486	0.0151	mg/kg	1		11/04/21 18:49
	o-Xylene	0.0243 U	0.0486	0.0151	mg/kg	1		11/04/21 18:49
	P & M -Xylene	0.0485 U	0.0971	0.0291	mg/kg	1		11/04/21 18:49
	Toluene	0.0243 U	0.0486	0.0151	mg/kg	1		11/04/21 18:49
	Xylenes (total)	0.0730 U	0.146	0.0443	mg/kg	1		11/04/21 18:49
	Surrogates							
	1,2-Dichloroethane-D4 (surr)	97	71-136		%	1		11/04/21 18:49
	4-Bromofluorobenzene (surr)	92.7	55-151		%	1		11/04/21 18:49
	Toluene-d8 (surr)	103	85-116		%	1		11/04/21 18:49

### **Batch Information**

Analytical Batch: VMS21351 Analytical Method: SW8260D

Analyst: MDT

Analytical Date/Time: 11/04/21 18:49 Container ID: 1217257009-B Prep Batch: VXX38142 Prep Method: SW5035A Prep Date/Time: 10/30/21 13:30 Prep Initial Wt./Vol.: 37.937 g Prep Extract Vol: 31.0074 mL

Print Date: 11/22/2021 2:49:43PM

J flagging is activated



Client Sample ID: 21GST-SB013-01

Client Project ID: **SC Soils**Lab Sample ID: 1217257010
Lab Project ID: 1217257

Collection Date: 10/30/21 14:30 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):89.6 Location:

## Results by Polynuclear Aromatics GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
1-Methylnaphthalene	0.0138 U	0.0276	0.00690	mg/kg	1		11/12/21 10:47
2-Methylnaphthalene	0.0138 U	0.0276	0.00690	mg/kg	1		11/12/21 10:47
Acenaphthene	0.0138 U	0.0276	0.00690	mg/kg	1		11/12/21 10:47
Acenaphthylene	0.0138 U	0.0276	0.00690	mg/kg	1		11/12/21 10:47
Anthracene	0.0138 U	0.0276	0.00690	mg/kg	1		11/12/21 10:47
Benzo(a)Anthracene	0.0138 U	0.0276	0.00690	mg/kg	1		11/12/21 10:47
Benzo[a]pyrene	0.0138 U	0.0276	0.00690	mg/kg	1		11/12/21 10:47
Benzo[b]Fluoranthene	0.0138 U	0.0276	0.00690	mg/kg	1		11/12/21 10:47
Benzo[g,h,i]perylene	0.0138 U	0.0276	0.00690	mg/kg	1		11/12/21 10:47
Benzo[k]fluoranthene	0.0138 U	0.0276	0.00690	mg/kg	1		11/12/21 10:47
Chrysene	0.0138 U	0.0276	0.00690	mg/kg	1		11/12/21 10:47
Dibenzo[a,h]anthracene	0.0138 U	0.0276	0.00690	mg/kg	1		11/12/21 10:47
Fluoranthene	0.0138 U	0.0276	0.00690	mg/kg	1		11/12/21 10:47
Fluorene	0.0138 U	0.0276	0.00690	mg/kg	1		11/12/21 10:47
Indeno[1,2,3-c,d] pyrene	0.0138 U	0.0276	0.00690	mg/kg	1		11/12/21 10:47
Naphthalene	0.0111 U	0.0221	0.00552	mg/kg	1		11/12/21 10:47
Phenanthrene	0.0138 U	0.0276	0.00690	mg/kg	1		11/12/21 10:47
Pyrene	0.0138 U	0.0276	0.00690	mg/kg	1		11/12/21 10:47
Surrogates							
2-Methylnaphthalene-d10 (surr)	89.3	58-103		%	1		11/12/21 10:47
Fluoranthene-d10 (surr)	93.7	54-113		%	1		11/12/21 10:47

### Batch Information

Analytical Batch: XMS12996 Analytical Method: 8270D SIM (PAH)

Analyst: LAW

Analytical Date/Time: 11/12/21 10:47 Container ID: 1217257010-A Prep Batch: XXX45819
Prep Method: SW3550C
Prep Date/Time: 11/04/21 09:26
Prep Initial Wt./Vol.: 22.735 g
Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB013-01

Client Project ID: **SC Soils**Lab Sample ID: 1217257010
Lab Project ID: 1217257

Collection Date: 10/30/21 14:30 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):89.6 Location:

## Results by Semivolatile Organic Fuels

						<u>Allowable</u>		
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed	
Diesel Range Organics	11.2 U	22.3	10.0	mg/kg	1		11/04/21 18:08	
Surrogates								
5a Androstane (surr)	89.5	50-150		%	1		11/04/21 18:08	

### **Batch Information**

Analytical Batch: XFC16134 Analytical Method: AK102

Analyst: IVM

Analytical Date/Time: 11/04/21 18:08 Container ID: 1217257010-A Prep Batch: XXX45817
Prep Method: SW3550C
Prep Date/Time: 11/04/21 08:07
Prep Initial Wt./Vol.: 30.034 g
Prep Extract Vol: 5 mL

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Residual Range Organics	55.5 U	111	47.9	mg/kg	1		11/04/21 18:08
Surrogates							
n-Triacontane-d62 (surr)	84.7	50-150		%	1		11/04/21 18:08

## **Batch Information**

Analytical Batch: XFC16134 Analytical Method: AK103

Analyst: IVM

Analytical Date/Time: 11/04/21 18:08 Container ID: 1217257010-A Prep Batch: XXX45817 Prep Method: SW3550C Prep Date/Time: 11/04/21 08:07 Prep Initial Wt./Vol.: 30.034 g Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB013-01

Client Project ID: **SC Soils**Lab Sample ID: 1217257010
Lab Project ID: 1217257

Collection Date: 10/30/21 14:30 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):89.6 Location:

## Results by Volatile Fuels

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Gasoline Range Organics	2.35 U	4.69	1.41	mg/kg	1		11/04/21 03:04
Surrogates							
4-Bromofluorobenzene (surr)	84.9	50-150		%	1		11/04/21 03:04

## **Batch Information**

Analytical Batch: VFC15927 Analytical Method: AK101

Analyst: IJV

Analytical Date/Time: 11/04/21 03:04 Container ID: 1217257010-B Prep Batch: VXX38138 Prep Method: SW5035A Prep Date/Time: 10/30/21 14:30 Prep Initial Wt./Vol.: 33.927 g Prep Extract Vol: 28.5188 mL



Client Sample ID: 21GST-SB013-01

Client Project ID: **SC Soils**Lab Sample ID: 1217257010
Lab Project ID: 1217257

Collection Date: 10/30/21 14:30 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):89.6 Location:

## Results by Volatile GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Benzene	0.0117 U	0.0234	0.00732	mg/kg	1		11/04/21 19:05
Ethylbenzene	0.0234 U	0.0469	0.0146	mg/kg	1		11/04/21 19:05
o-Xylene	0.0234 U	0.0469	0.0146	mg/kg	1		11/04/21 19:05
P & M -Xylene	0.0469 U	0.0938	0.0281	mg/kg	1		11/04/21 19:05
Toluene	0.0234 U	0.0469	0.0146	mg/kg	1		11/04/21 19:05
Xylenes (total)	0.0705 U	0.141	0.0428	mg/kg	1		11/04/21 19:05
Surrogates							
1,2-Dichloroethane-D4 (surr)	101	71-136		%	1		11/04/21 19:05
4-Bromofluorobenzene (surr)	96.8	55-151		%	1		11/04/21 19:05
Toluene-d8 (surr)	102	85-116		%	1		11/04/21 19:05

### **Batch Information**

Analytical Batch: VMS21351 Analytical Method: SW8260D

Analyst: MDT

Analytical Date/Time: 11/04/21 19:05 Container ID: 1217257010-B Prep Batch: VXX38142 Prep Method: SW5035A Prep Date/Time: 10/30/21 14:30 Prep Initial Wt./Vol.: 33.927 g Prep Extract Vol: 28.5188 mL



Client Sample ID: 21GST-SB013-02

Client Project ID: **SC Soils**Lab Sample ID: 1217257011
Lab Project ID: 1217257

Collection Date: 10/30/21 14:35 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):86.7 Location:

## Results by Polynuclear Aromatics GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
1-Methylnaphthalene	0.0142 U	0.0284	0.00710	mg/kg	1		11/12/21 11:07
2-Methylnaphthalene	0.0142 U	0.0284	0.00710	mg/kg	1		11/12/21 11:07
Acenaphthene	0.0142 U	0.0284	0.00710	mg/kg	1		11/12/21 11:07
Acenaphthylene	0.0142 U	0.0284	0.00710	mg/kg	1		11/12/21 11:07
Anthracene	0.0142 U	0.0284	0.00710	mg/kg	1		11/12/21 11:07
Benzo(a)Anthracene	0.0142 U	0.0284	0.00710	mg/kg	1		11/12/21 11:07
Benzo[a]pyrene	0.0142 U	0.0284	0.00710	mg/kg	1		11/12/21 11:07
Benzo[b]Fluoranthene	0.0142 U	0.0284	0.00710	mg/kg	1		11/12/21 11:07
Benzo[g,h,i]perylene	0.0142 U	0.0284	0.00710	mg/kg	1		11/12/21 11:07
Benzo[k]fluoranthene	0.0142 U	0.0284	0.00710	mg/kg	1		11/12/21 11:07
Chrysene	0.0142 U	0.0284	0.00710	mg/kg	1		11/12/21 11:07
Dibenzo[a,h]anthracene	0.0142 U	0.0284	0.00710	mg/kg	1		11/12/21 11:07
Fluoranthene	0.0142 U	0.0284	0.00710	mg/kg	1		11/12/21 11:07
Fluorene	0.0142 U	0.0284	0.00710	mg/kg	1		11/12/21 11:07
Indeno[1,2,3-c,d] pyrene	0.0142 U	0.0284	0.00710	mg/kg	1		11/12/21 11:07
Naphthalene	0.0114 U	0.0227	0.00568	mg/kg	1		11/12/21 11:07
Phenanthrene	0.0142 U	0.0284	0.00710	mg/kg	1		11/12/21 11:07
Pyrene	0.0142 U	0.0284	0.00710	mg/kg	1		11/12/21 11:07
Surrogates							
2-Methylnaphthalene-d10 (surr)	88.1	58-103		%	1		11/12/21 11:07
Fluoranthene-d10 (surr)	92.4	54-113		%	1		11/12/21 11:07

# **Batch Information**

Analytical Batch: XMS12996 Analytical Method: 8270D SIM (PAH)

Analyst: LAW

Analytical Date/Time: 11/12/21 11:07 Container ID: 1217257011-A Prep Batch: XXX45819 Prep Method: SW3550C Prep Date/Time: 11/04/21 09:26 Prep Initial Wt./Vol.: 22.839 g Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB013-02

Client Project ID: **SC Soils**Lab Sample ID: 1217257011
Lab Project ID: 1217257

Collection Date: 10/30/21 14:35 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):86.7 Location:

## Results by Semivolatile Organic Fuels

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	<u>Limits</u>	Date Analyzed
Diesel Range Organics	11.4 U	22.8	10.3	mg/kg	1		11/05/21 17:59
Surrogates							
5a Androstane (surr)	86.7	50-150		%	1		11/05/21 17:59

### **Batch Information**

Analytical Batch: XFC16135 Analytical Method: AK102

Analyst: IVM

Analytical Date/Time: 11/05/21 17:59 Container ID: 1217257011-A Prep Batch: XXX45824
Prep Method: SW3550C
Prep Date/Time: 11/05/21 09:44
Prep Initial Wt./Vol.: 30.315 g
Prep Extract Vol: 5 mL

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Residual Range Organics	57.0 U	114	49.1	mg/kg	1		11/05/21 17:59
Surrogates							
n-Triacontane-d62 (surr)	87	50-150		%	1		11/05/21 17:59

## **Batch Information**

Analytical Batch: XFC16135 Analytical Method: AK103

Analyst: IVM

Analytical Date/Time: 11/05/21 17:59 Container ID: 1217257011-A Prep Batch: XXX45824 Prep Method: SW3550C Prep Date/Time: 11/05/21 09:44 Prep Initial Wt./Vol.: 30.315 g Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB013-02

Client Project ID: **SC Soils**Lab Sample ID: 1217257011
Lab Project ID: 1217257

Collection Date: 10/30/21 14:35 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):86.7 Location:

## Results by Volatile Fuels

<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	Allowable <u>Limits</u>	Date Analyzed
Gasoline Range Organics	1.68 J	4.36	1.31	mg/kg	1		11/04/21 03:23
Surrogates							
4-Bromofluorobenzene (surr)	87.2	50-150		%	1		11/04/21 03:23

## **Batch Information**

Analytical Batch: VFC15927 Analytical Method: AK101

Analyst: IJV

Analytical Date/Time: 11/04/21 03:23 Container ID: 1217257011-B Prep Batch: VXX38138 Prep Method: SW5035A Prep Date/Time: 10/30/21 14:35 Prep Initial Wt./Vol.: 40.131 g Prep Extract Vol: 30.3239 mL



Client Sample ID: 21GST-SB013-02

Client Project ID: **SC Soils**Lab Sample ID: 1217257011
Lab Project ID: 1217257

Collection Date: 10/30/21 14:35 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):86.7 Location:

## Results by Volatile GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Benzene	0.0109 U	0.0218	0.00680	mg/kg	1		11/04/21 19:20
Ethylbenzene	0.0218 U	0.0436	0.0136	mg/kg	1		11/04/21 19:20
o-Xylene	0.0218 U	0.0436	0.0136	mg/kg	1		11/04/21 19:20
P & M -Xylene	0.0435 U	0.0871	0.0261	mg/kg	1		11/04/21 19:20
Toluene	0.0218 U	0.0436	0.0136	mg/kg	1		11/04/21 19:20
Xylenes (total)	0.0655 U	0.131	0.0397	mg/kg	1		11/04/21 19:20
Surrogates							
1,2-Dichloroethane-D4 (surr)	102	71-136		%	1		11/04/21 19:20
4-Bromofluorobenzene (surr)	97.4	55-151		%	1		11/04/21 19:20
Toluene-d8 (surr)	103	85-116		%	1		11/04/21 19:20

### **Batch Information**

Analytical Batch: VMS21351 Analytical Method: SW8260D

Analyst: MDT

Analytical Date/Time: 11/04/21 19:20 Container ID: 1217257011-B

Prep Batch: VXX38142 Prep Method: SW5035A Prep Date/Time: 10/30/21 14:35 Prep Initial Wt./Vol.: 40.131 g Prep Extract Vol: 30.3239 mL

Print Date: 11/22/2021 2:49:43PM

J flagging is activated



Client Sample ID: 21GST-SB005-01

Client Project ID: SC Soils Lab Sample ID: 1217257012 Lab Project ID: 1217257 Collection Date: 10/30/21 15:10 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):92.5 Location:

## Results by Polynuclear Aromatics GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
1-Methylnaphthalene	0.135 U	0.269	0.0672	mg/kg	10		11/12/21 09:25
2-Methylnaphthalene	0.135 U	0.269	0.0672	mg/kg	10		11/12/21 09:25
Acenaphthene	0.135 U	0.269	0.0672	mg/kg	10		11/12/21 09:25
Acenaphthylene	0.135 U	0.269	0.0672	mg/kg	10		11/12/21 09:25
Anthracene	0.135 U	0.269	0.0672	mg/kg	10		11/12/21 09:25
Benzo(a)Anthracene	0.135 U	0.269	0.0672	mg/kg	10		11/12/21 09:25
Benzo[a]pyrene	0.135 U	0.269	0.0672	mg/kg	10		11/12/21 09:25
Benzo[b]Fluoranthene	0.135 U	0.269	0.0672	mg/kg	10		11/12/21 09:25
Benzo[g,h,i]perylene	0.135 U	0.269	0.0672	mg/kg	10		11/12/21 09:25
Benzo[k]fluoranthene	0.135 U	0.269	0.0672	mg/kg	10		11/12/21 09:25
Chrysene	0.135 U	0.269	0.0672	mg/kg	10		11/12/21 09:25
Dibenzo[a,h]anthracene	0.135 U	0.269	0.0672	mg/kg	10		11/12/21 09:25
Fluoranthene	0.135 U	0.269	0.0672	mg/kg	10		11/12/21 09:25
Fluorene	0.135 U	0.269	0.0672	mg/kg	10		11/12/21 09:25
Indeno[1,2,3-c,d] pyrene	0.135 U	0.269	0.0672	mg/kg	10		11/12/21 09:25
Naphthalene	0.108 U	0.215	0.0538	mg/kg	10		11/12/21 09:25
Phenanthrene	0.135 U	0.269	0.0672	mg/kg	10		11/12/21 09:25
Pyrene	0.135 U	0.269	0.0672	mg/kg	10		11/12/21 09:25
Surrogates							
2-Methylnaphthalene-d10 (surr)	85.5	58-103		%	10		11/12/21 09:25
Fluoranthene-d10 (surr)	92.4	54-113		%	10		11/12/21 09:25

### Batch Information

Analytical Batch: XMS12996 Analytical Method: 8270D SIM (PAH)

Analyst: LAW

Analytical Date/Time: 11/12/21 09:25 Container ID: 1217257012-A Prep Batch: XXX45819
Prep Method: SW3550C
Prep Date/Time: 11/04/21 09:26
Prep Initial Wt./Vol.: 22.617 g
Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB005-01

Client Project ID: **SC Soils**Lab Sample ID: 1217257012
Lab Project ID: 1217257

Collection Date: 10/30/21 15:10 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):92.5 Location:

## Results by Semivolatile Organic Fuels

Parameter Diesel Range Organics	Result Qual	<u>LOQ/CL</u> 21.4	<u>DL</u> 9.61	<u>Units</u> mg/kg	<u>DF</u> 1	Allowable Limits	<u>Date Analyzed</u> 11/05/21 18:09
Surrogates 5a Androstane (surr)	88.1	50-150		%	1		11/05/21 18:09

### **Batch Information**

Analytical Batch: XFC16135 Analytical Method: AK102

Analyst: IVM

Analytical Date/Time: 11/05/21 18:09 Container ID: 1217257012-A Prep Batch: XXX45824
Prep Method: SW3550C
Prep Date/Time: 11/05/21 09:44
Prep Initial Wt./Vol.: 30.377 g
Prep Extract Vol: 5 mL

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Residual Range Organics	201	107	45.9	mg/kg	1		11/05/21 18:09
Surrogates							
n-Triacontane-d62 (surr)	87.2	50-150		%	1		11/05/21 18:09

## **Batch Information**

Analytical Batch: XFC16135 Analytical Method: AK103

Analyst: IVM

Analytical Date/Time: 11/05/21 18:09 Container ID: 1217257012-A Prep Batch: XXX45824 Prep Method: SW3550C Prep Date/Time: 11/05/21 09:44 Prep Initial Wt./Vol.: 30.377 g Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB005-01

Client Project ID: **SC Soils**Lab Sample ID: 1217257012
Lab Project ID: 1217257

Collection Date: 10/30/21 15:10 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):92.5 Location:

## Results by Volatile Fuels

Parameter	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.71 J	5.42	1.62	mg/kg	1	Limito	11/04/21 03:41
Surrogates							
4-Bromofluorobenzene (surr)	90.9	50-150		%	1		11/04/21 03:41

## **Batch Information**

Analytical Batch: VFC15927 Analytical Method: AK101

Analyst: IJV

Analytical Date/Time: 11/04/21 03:41 Container ID: 1217257012-B

Prep Batch: VXX38138
Prep Method: SW5035A
Prep Date/Time: 10/30/21 15:10
Prep Initial Wt./Vol.: 26.972 g
Prep Extract Vol: 27.0216 mL



Client Sample ID: 21GST-SB005-01

Client Project ID: **SC Soils**Lab Sample ID: 1217257012
Lab Project ID: 1217257

Collection Date: 10/30/21 15:10 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):92.5 Location:

## Results by Volatile GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Benzene	0.0136 U	0.0271	0.00845	mg/kg	1		11/04/21 19:36
Ethylbenzene	0.0271 U	0.0542	0.0169	mg/kg	1		11/04/21 19:36
o-Xylene	0.0271 U	0.0542	0.0169	mg/kg	1		11/04/21 19:36
P & M -Xylene	0.0540 U	0.108	0.0325	mg/kg	1		11/04/21 19:36
Toluene	0.0271 U	0.0542	0.0169	mg/kg	1		11/04/21 19:36
Xylenes (total)	0.0810 U	0.162	0.0494	mg/kg	1		11/04/21 19:36
Surrogates							
1,2-Dichloroethane-D4 (surr)	97.9	71-136		%	1		11/04/21 19:36
4-Bromofluorobenzene (surr)	103	55-151		%	1		11/04/21 19:36
Toluene-d8 (surr)	104	85-116		%	1		11/04/21 19:36

### **Batch Information**

Analytical Batch: VMS21351 Analytical Method: SW8260D

Analyst: MDT

Analytical Date/Time: 11/04/21 19:36 Container ID: 1217257012-B Prep Batch: VXX38142 Prep Method: SW5035A Prep Date/Time: 10/30/21 15:10 Prep Initial Wt./Vol.: 26.972 g Prep Extract Vol: 27.0216 mL



Client Sample ID: 21GST-SB005-02

Client Project ID: **SC Soils**Lab Sample ID: 1217257013
Lab Project ID: 1217257

Collection Date: 10/30/21 15:15 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):84.1 Location:

## Results by Polynuclear Aromatics GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
1-Methylnaphthalene	0.0148 U	0.0295	0.00738	mg/kg	1		11/16/21 02:47
2-Methylnaphthalene	0.0148 U	0.0295	0.00738	mg/kg	1		11/16/21 02:47
Acenaphthene	0.0148 U	0.0295	0.00738	mg/kg	1		11/16/21 02:47
Acenaphthylene	0.0148 U	0.0295	0.00738	mg/kg	1		11/16/21 02:47
Anthracene	0.0148 U	0.0295	0.00738	mg/kg	1		11/16/21 02:47
Benzo(a)Anthracene	0.0148 U	0.0295	0.00738	mg/kg	1		11/16/21 02:47
Benzo[a]pyrene	0.0148 U	0.0295	0.00738	mg/kg	1		11/16/21 02:47
Benzo[b]Fluoranthene	0.0148 U	0.0295	0.00738	mg/kg	1		11/16/21 02:47
Benzo[g,h,i]perylene	0.0148 U	0.0295	0.00738	mg/kg	1		11/16/21 02:47
Benzo[k]fluoranthene	0.0148 U	0.0295	0.00738	mg/kg	1		11/16/21 02:47
Chrysene	0.0148 U	0.0295	0.00738	mg/kg	1		11/16/21 02:47
Dibenzo[a,h]anthracene	0.0148 U	0.0295	0.00738	mg/kg	1		11/16/21 02:47
Fluoranthene	0.0148 U	0.0295	0.00738	mg/kg	1		11/16/21 02:47
Fluorene	0.0148 U	0.0295	0.00738	mg/kg	1		11/16/21 02:47
Indeno[1,2,3-c,d] pyrene	0.0148 U	0.0295	0.00738	mg/kg	1		11/16/21 02:47
Naphthalene	0.0118 U	0.0236	0.00590	mg/kg	1		11/16/21 02:47
Phenanthrene	0.0148 U	0.0295	0.00738	mg/kg	1		11/16/21 02:47
Pyrene	0.0148 U	0.0295	0.00738	mg/kg	1		11/16/21 02:47
Surrogates							
2-Methylnaphthalene-d10 (surr)	105 *	58-103		%	1		11/16/21 02:47
Fluoranthene-d10 (surr)	109	54-113		%	1		11/16/21 02:47

### Batch Information

Analytical Batch: XMS12997 Analytical Method: 8270D SIM (PAH)

Analyst: LAW

Analytical Date/Time: 11/16/21 02:47 Container ID: 1217257013-A Prep Batch: XXX45825 Prep Method: SW3550C Prep Date/Time: 11/08/21 07:19 Prep Initial Wt./Vol.: 22.656 g Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB005-02

Client Project ID: **SC Soils**Lab Sample ID: 1217257013
Lab Project ID: 1217257

Collection Date: 10/30/21 15:15 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):84.1 Location:

## Results by Semivolatile Organic Fuels

Parameter Diesel Range Organics	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	Allowable	<u>Date Analyzed</u>
	11.9 U	23.8	10.7	mg/kg	1	Limits	11/05/21 18:19
Surrogates 5a Androstane (surr)	77.5	50-150		%	1		11/05/21 18:19

### **Batch Information**

Analytical Batch: XFC16135 Analytical Method: AK102

Analyst: IVM

Analytical Date/Time: 11/05/21 18:19 Container ID: 1217257013-A Prep Batch: XXX45824
Prep Method: SW3550C
Prep Date/Time: 11/05/21 09:44
Prep Initial Wt./Vol.: 30.021 g
Prep Extract Vol: 5 mL

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Residual Range Organics	59.5 U	119	51.1	mg/kg	1		11/05/21 18:19
Surrogates							
n-Triacontane-d62 (surr)	77.7	50-150		%	1		11/05/21 18:19

## **Batch Information**

Analytical Batch: XFC16135 Analytical Method: AK103

Analyst: IVM

Analytical Date/Time: 11/05/21 18:19 Container ID: 1217257013-A Prep Batch: XXX45824 Prep Method: SW3550C Prep Date/Time: 11/05/21 09:44 Prep Initial Wt./Vol.: 30.021 g Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB005-02

Client Project ID: **SC Soils**Lab Sample ID: 1217257013
Lab Project ID: 1217257

Collection Date: 10/30/21 15:15 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):84.1 Location:

## Results by Volatile Fuels

<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	Allowable <u>Limits</u>	Date Analyzed
Gasoline Range Organics	2.38 U	4.76	1.43	mg/kg	1		11/04/21 03:59
Surrogates							
4-Bromofluorobenzene (surr)	89.6	50-150		%	1		11/04/21 03:59

## **Batch Information**

Analytical Batch: VFC15927 Analytical Method: AK101

Analyst: IJV

Analytical Date/Time: 11/04/21 03:59 Container ID: 1217257013-B Prep Batch: VXX38138 Prep Method: SW5035A Prep Date/Time: 10/30/21 15:15 Prep Initial Wt./Vol.: 38.899 g Prep Extract Vol: 31.1688 mL



Client Sample ID: 21GST-SB005-02

Client Project ID: **SC Soils**Lab Sample ID: 1217257013
Lab Project ID: 1217257

Collection Date: 10/30/21 15:15 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):84.1 Location:

# Results by Volatile GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Benzene	0.0119 U	0.0238	0.00743	mg/kg	1		11/04/21 19:51
Ethylbenzene	0.0238 U	0.0476	0.0149	mg/kg	1		11/04/21 19:51
o-Xylene	0.0238 U	0.0476	0.0149	mg/kg	1		11/04/21 19:51
P & M -Xylene	0.0476 U	0.0952	0.0286	mg/kg	1		11/04/21 19:51
Toluene	0.0238 U	0.0476	0.0149	mg/kg	1		11/04/21 19:51
Xylenes (total)	0.0715 U	0.143	0.0434	mg/kg	1		11/04/21 19:51
Surrogates							
1,2-Dichloroethane-D4 (surr)	100	71-136		%	1		11/04/21 19:51
4-Bromofluorobenzene (surr)	99.2	55-151		%	1		11/04/21 19:51
Toluene-d8 (surr)	103	85-116		%	1		11/04/21 19:51

### **Batch Information**

Analytical Batch: VMS21351 Analytical Method: SW8260D

Analyst: MDT

Analytical Date/Time: 11/04/21 19:51 Container ID: 1217257013-B Prep Batch: VXX38142 Prep Method: SW5035A Prep Date/Time: 10/30/21 15:15 Prep Initial Wt./Vol.: 38.899 g Prep Extract Vol: 31.1688 mL



Client Sample ID: 21GST-SB007-01

Client Project ID: **SC Soils**Lab Sample ID: 1217257014
Lab Project ID: 1217257

Collection Date: 10/30/21 16:00 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):87.3 Location:

## Results by Polynuclear Aromatics GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	DF	<u>Limits</u> <u>Date</u>	<u>Analyzed</u>
1-Methylnaphthalene	0.0141 U	0.0282	0.00706	mg/kg	1	11/1	6/21 03:07
2-Methylnaphthalene	0.0141 U	0.0282	0.00706	mg/kg	1	11/1	6/21 03:07
Acenaphthene	0.0141 U	0.0282	0.00706	mg/kg	1	11/1	6/21 03:07
Acenaphthylene	0.0141 U	0.0282	0.00706	mg/kg	1	11/1	6/21 03:07
Anthracene	0.0141 U	0.0282	0.00706	mg/kg	1	11/1	6/21 03:07
Benzo(a)Anthracene	0.0141 U	0.0282	0.00706	mg/kg	1	11/1	6/21 03:07
Benzo[a]pyrene	0.0141 U	0.0282	0.00706	mg/kg	1	11/1	6/21 03:07
Benzo[b]Fluoranthene	0.0141 U	0.0282	0.00706	mg/kg	1	11/1	6/21 03:07
Benzo[g,h,i]perylene	0.0141 U	0.0282	0.00706	mg/kg	1	11/1	6/21 03:07
Benzo[k]fluoranthene	0.0141 U	0.0282	0.00706	mg/kg	1	11/1	6/21 03:07
Chrysene	0.0141 U	0.0282	0.00706	mg/kg	1	11/1	6/21 03:07
Dibenzo[a,h]anthracene	0.0141 U	0.0282	0.00706	mg/kg	1	11/1	6/21 03:07
Fluoranthene	0.0141 U	0.0282	0.00706	mg/kg	1	11/1	6/21 03:07
Fluorene	0.0141 U	0.0282	0.00706	mg/kg	1	11/1	6/21 03:07
Indeno[1,2,3-c,d] pyrene	0.0141 U	0.0282	0.00706	mg/kg	1	11/1	6/21 03:07
Naphthalene	0.0113 U	0.0226	0.00565	mg/kg	1	11/1	6/21 03:07
Phenanthrene	0.0141 U	0.0282	0.00706	mg/kg	1	11/1	6/21 03:07
Pyrene	0.0141 U	0.0282	0.00706	mg/kg	1	11/1	6/21 03:07
Surrogates							
2-Methylnaphthalene-d10 (surr)	93.3	58-103		%	1	11/1	6/21 03:07
Fluoranthene-d10 (surr)	98.2	54-113		%	1	11/1	6/21 03:07

### Batch Information

Analytical Batch: XMS12997 Analytical Method: 8270D SIM (PAH)

Analyst: LAW

Analytical Date/Time: 11/16/21 03:07 Container ID: 1217257014-A Prep Batch: XXX45825 Prep Method: SW3550C Prep Date/Time: 11/08/21 07:19 Prep Initial Wt./Vol.: 22.82 g Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB007-01

Client Project ID: **SC Soils**Lab Sample ID: 1217257014
Lab Project ID: 1217257

Collection Date: 10/30/21 16:00 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):87.3 Location:

## Results by Semivolatile Organic Fuels

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Diesel Range Organics	26.3	22.5	10.1	mg/kg	1		11/05/21 18:29
Surrogates							
5a Androstane (surr)	83.6	50-150		%	1		11/05/21 18:29

### **Batch Information**

Analytical Batch: XFC16135 Analytical Method: AK102

Analyst: IVM

Analytical Date/Time: 11/05/21 18:29 Container ID: 1217257014-A Prep Batch: XXX45824
Prep Method: SW3550C
Prep Date/Time: 11/05/21 09:44
Prep Initial Wt./Vol.: 30.492 g
Prep Extract Vol: 5 mL

						Allowable	
<u>Parameter</u>	<u>Result Qual</u>	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	281	113	48.5	mg/kg	1		11/05/21 18:29
Surrogates							
n-Triacontane-d62 (surr)	82.4	50-150		%	1		11/05/21 18:29

## **Batch Information**

Analytical Batch: XFC16135 Analytical Method: AK103

Analyst: IVM

Analytical Date/Time: 11/05/21 18:29 Container ID: 1217257014-A Prep Batch: XXX45824 Prep Method: SW3550C Prep Date/Time: 11/05/21 09:44 Prep Initial Wt./Vol.: 30.492 g Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB007-01

Client Project ID: **SC Soils**Lab Sample ID: 1217257014
Lab Project ID: 1217257

Collection Date: 10/30/21 16:00 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):87.3 Location:

## Results by Volatile Fuels

<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.82 J	6.05	1.82	mg/kg	1		11/04/21 04:17
Surrogates							
4-Bromofluorobenzene (surr)	88.1	50-150		%	1		11/04/21 04:17

## **Batch Information**

Analytical Batch: VFC15927 Analytical Method: AK101

Analyst: IJV

Analytical Date/Time: 11/04/21 04:17 Container ID: 1217257014-B Prep Batch: VXX38138 Prep Method: SW5035A Prep Date/Time: 10/30/21 16:00 Prep Initial Wt./Vol.: 26.882 g Prep Extract Vol: 28.4089 mL



Client Sample ID: 21GST-SB007-01

Client Project ID: **SC Soils**Lab Sample ID: 1217257014
Lab Project ID: 1217257

Collection Date: 10/30/21 16:00 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):87.3 Location:

## Results by Volatile GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Benzene	0.0152 U	0.0303	0.00944	mg/kg	1		11/04/21 20:07
Ethylbenzene	0.0302 U	0.0605	0.0189	mg/kg	1		11/04/21 20:07
o-Xylene	0.0302 U	0.0605	0.0189	mg/kg	1		11/04/21 20:07
P & M -Xylene	0.0605 U	0.121	0.0363	mg/kg	1		11/04/21 20:07
Toluene	0.0302 U	0.0605	0.0189	mg/kg	1		11/04/21 20:07
Xylenes (total)	0.0910 U	0.182	0.0552	mg/kg	1		11/04/21 20:07
Surrogates							
1,2-Dichloroethane-D4 (surr)	98.5	71-136		%	1		11/04/21 20:07
4-Bromofluorobenzene (surr)	101	55-151		%	1		11/04/21 20:07
Toluene-d8 (surr)	104	85-116		%	1		11/04/21 20:07

### **Batch Information**

Analytical Batch: VMS21351 Analytical Method: SW8260D

Analyst: MDT

Analytical Date/Time: 11/04/21 20:07 Container ID: 1217257014-B Prep Batch: VXX38142 Prep Method: SW5035A Prep Date/Time: 10/30/21 16:00 Prep Initial Wt./Vol.: 26.882 g Prep Extract Vol: 28.4089 mL

Print Date: 11/22/2021 2:49:43PM

J flagging is activated



Client Sample ID: 21GST-SB007-10

Client Project ID: **SC Soils**Lab Sample ID: 1217257015
Lab Project ID: 1217257

Collection Date: 10/30/21 15:50 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):90.2 Location:

## Results by Polynuclear Aromatics GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
1-Methylnaphthalene	0.0138 U	0.0277	0.00692	mg/kg	1		11/16/21 03:27
2-Methylnaphthalene	0.0138 U	0.0277	0.00692	mg/kg	1		11/16/21 03:27
Acenaphthene	0.0138 U	0.0277	0.00692	mg/kg	1		11/16/21 03:27
Acenaphthylene	0.0138 U	0.0277	0.00692	mg/kg	1		11/16/21 03:27
Anthracene	0.0138 U	0.0277	0.00692	mg/kg	1		11/16/21 03:27
Benzo(a)Anthracene	0.0138 U	0.0277	0.00692	mg/kg	1		11/16/21 03:27
Benzo[a]pyrene	0.0138 U	0.0277	0.00692	mg/kg	1		11/16/21 03:27
Benzo[b]Fluoranthene	0.0138 U	0.0277	0.00692	mg/kg	1		11/16/21 03:27
Benzo[g,h,i]perylene	0.0138 U	0.0277	0.00692	mg/kg	1		11/16/21 03:27
Benzo[k]fluoranthene	0.0138 U	0.0277	0.00692	mg/kg	1		11/16/21 03:27
Chrysene	0.0138 U	0.0277	0.00692	mg/kg	1		11/16/21 03:27
Dibenzo[a,h]anthracene	0.0138 U	0.0277	0.00692	mg/kg	1		11/16/21 03:27
Fluoranthene	0.0138 U	0.0277	0.00692	mg/kg	1		11/16/21 03:27
Fluorene	0.0138 U	0.0277	0.00692	mg/kg	1		11/16/21 03:27
Indeno[1,2,3-c,d] pyrene	0.0138 U	0.0277	0.00692	mg/kg	1		11/16/21 03:27
Naphthalene	0.0111 U	0.0221	0.00554	mg/kg	1		11/16/21 03:27
Phenanthrene	0.0138 U	0.0277	0.00692	mg/kg	1		11/16/21 03:27
Pyrene	0.0138 U	0.0277	0.00692	mg/kg	1		11/16/21 03:27
Surrogates							
2-Methylnaphthalene-d10 (surr)	91.9	58-103		%	1		11/16/21 03:27
Fluoranthene-d10 (surr)	97.5	54-113		%	1		11/16/21 03:27

# **Batch Information**

Analytical Batch: XMS12997 Analytical Method: 8270D SIM (PAH)

Analyst: LAW

Analytical Date/Time: 11/16/21 03:27 Container ID: 1217257015-A Prep Batch: XXX45825 Prep Method: SW3550C Prep Date/Time: 11/08/21 07:19 Prep Initial Wt./Vol.: 22.53 g Prep Extract Vol: 5 mL



Client Sample ID: **21GST-SB007-10**Client Project ID: **SC Soils**Lab Sample ID: 1217257015
Lab Project ID: 1217257

Collection Date: 10/30/21 15:50 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):90.2 Location:

## Results by Semivolatile Organic Fuels

<u>Parameter</u> Diesel Range Organics	Result Qual 10.4 J	LOQ/CL 22.0	<u>DL</u> 9.91	<u>Units</u> mg/kg	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u> 11/05/21 18:39
Surrogates							
5a Androstane (surr)	77.4	50-150		%	1		11/05/21 18:39

### **Batch Information**

Analytical Batch: XFC16135 Analytical Method: AK102

Analyst: IVM

Analytical Date/Time: 11/05/21 18:39 Container ID: 1217257015-A Prep Batch: XXX45824
Prep Method: SW3550C
Prep Date/Time: 11/05/21 09:44
Prep Initial Wt./Vol.: 30.206 g
Prep Extract Vol: 5 mL

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Residual Range Organics	55.0 U	110	47.3	mg/kg	1		11/05/21 18:39
Surrogates							
n-Triacontane-d62 (surr)	76.4	50-150		%	1		11/05/21 18:39

## Batch Information

Analytical Batch: XFC16135 Analytical Method: AK103

Analyst: IVM

Analytical Date/Time: 11/05/21 18:39 Container ID: 1217257015-A Prep Batch: XXX45824 Prep Method: SW3550C Prep Date/Time: 11/05/21 09:44 Prep Initial Wt./Vol.: 30.206 g Prep Extract Vol: 5 mL



Client Sample ID: **21GST-SB007-10**Client Project ID: **SC Soils**Lab Sample ID: 1217257015

Lab Project ID: 1217257

Collection Date: 10/30/21 15:50 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):90.2 Location:

## Results by Volatile Fuels

<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	Allowable	<u>Date Analyzed</u>
Gasoline Range Organics	1.63 J	5.07	1.52	mg/kg	1	Limits	11/04/21 04:35
Surrogates 4-Bromofluorobenzene (surr)	88.9	50-150		%	1		11/04/21 04:35

## **Batch Information**

Analytical Batch: VFC15927 Analytical Method: AK101

Analyst: IJV

Analytical Date/Time: 11/04/21 04:35 Container ID: 1217257015-B Prep Batch: VXX38138 Prep Method: SW5035A Prep Date/Time: 10/30/21 15:50 Prep Initial Wt./Vol.: 30.608 g Prep Extract Vol: 27.9962 mL



Client Sample ID: 21GST-SB007-10

Client Project ID: **SC Soils**Lab Sample ID: 1217257015
Lab Project ID: 1217257

Collection Date: 10/30/21 15:50 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):90.2 Location:

## Results by Volatile GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Benzene	0.0127 U	0.0253	0.00791	mg/kg	1		11/04/21 20:22
Ethylbenzene	0.0254 U	0.0507	0.0158	mg/kg	1		11/04/21 20:22
o-Xylene	0.0254 U	0.0507	0.0158	mg/kg	1		11/04/21 20:22
P & M -Xylene	0.0505 U	0.101	0.0304	mg/kg	1		11/04/21 20:22
Toluene	0.0254 U	0.0507	0.0158	mg/kg	1		11/04/21 20:22
Xylenes (total)	0.0760 U	0.152	0.0462	mg/kg	1		11/04/21 20:22
Surrogates							
1,2-Dichloroethane-D4 (surr)	101	71-136		%	1		11/04/21 20:22
4-Bromofluorobenzene (surr)	96.5	55-151		%	1		11/04/21 20:22
Toluene-d8 (surr)	103	85-116		%	1		11/04/21 20:22

### **Batch Information**

Analytical Batch: VMS21351 Analytical Method: SW8260D

Analyst: MDT

Analytical Date/Time: 11/04/21 20:22 Container ID: 1217257015-B Prep Batch: VXX38142 Prep Method: SW5035A Prep Date/Time: 10/30/21 15:50 Prep Initial Wt./Vol.: 30.608 g Prep Extract Vol: 27.9962 mL

Print Date: 11/22/2021 2:49:43PM

J flagging is activated



Client Sample ID: 21GST-SB007-02

Client Project ID: **SC Soils**Lab Sample ID: 1217257016
Lab Project ID: 1217257

Collection Date: 10/30/21 16:05 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):86.2 Location:

## Results by Polynuclear Aromatics GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	DF	<u>Limits</u>	Date Analyzed
1-Methylnaphthalene	0.0144 U	0.0289	0.00722	mg/kg	1		11/16/21 03:48
2-Methylnaphthalene	0.0144 U	0.0289	0.00722	mg/kg	1		11/16/21 03:48
Acenaphthene	0.0144 U	0.0289	0.00722	mg/kg	1		11/16/21 03:48
Acenaphthylene	0.0144 U	0.0289	0.00722	mg/kg	1		11/16/21 03:48
Anthracene	0.0144 U	0.0289	0.00722	mg/kg	1		11/16/21 03:48
Benzo(a)Anthracene	0.0144 U	0.0289	0.00722	mg/kg	1		11/16/21 03:48
Benzo[a]pyrene	0.0144 U	0.0289	0.00722	mg/kg	1		11/16/21 03:48
Benzo[b]Fluoranthene	0.0144 U	0.0289	0.00722	mg/kg	1		11/16/21 03:48
Benzo[g,h,i]perylene	0.0144 U	0.0289	0.00722	mg/kg	1		11/16/21 03:48
Benzo[k]fluoranthene	0.0144 U	0.0289	0.00722	mg/kg	1		11/16/21 03:48
Chrysene	0.0144 U	0.0289	0.00722	mg/kg	1		11/16/21 03:48
Dibenzo[a,h]anthracene	0.0144 U	0.0289	0.00722	mg/kg	1		11/16/21 03:48
Fluoranthene	0.0144 U	0.0289	0.00722	mg/kg	1		11/16/21 03:48
Fluorene	0.0144 U	0.0289	0.00722	mg/kg	1		11/16/21 03:48
Indeno[1,2,3-c,d] pyrene	0.0144 U	0.0289	0.00722	mg/kg	1		11/16/21 03:48
Naphthalene	0.0116 U	0.0231	0.00578	mg/kg	1		11/16/21 03:48
Phenanthrene	0.0144 U	0.0289	0.00722	mg/kg	1		11/16/21 03:48
Pyrene	0.0144 U	0.0289	0.00722	mg/kg	1		11/16/21 03:48
Surrogates							
2-Methylnaphthalene-d10 (surr)	92.4	58-103		%	1		11/16/21 03:48
Fluoranthene-d10 (surr)	95.4	54-113		%	1		11/16/21 03:48

### Batch Information

Analytical Batch: XMS12997 Analytical Method: 8270D SIM (PAH)

Analyst: LAW

Analytical Date/Time: 11/16/21 03:48 Container ID: 1217257016-A Prep Batch: XXX45825 Prep Method: SW3550C Prep Date/Time: 11/08/21 07:19 Prep Initial Wt./Vol.: 22.586 g Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB007-02

Client Project ID: **SC Soils**Lab Sample ID: 1217257016
Lab Project ID: 1217257

Collection Date: 10/30/21 16:05 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):86.2 Location:

## Results by Semivolatile Organic Fuels

Parameter	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	Allowable Limits	Date Analyzed
Diesel Range Organics  Surrogates	13.0 J	22.9	10.3	mg/kg	1		11/05/21 18:49
5a Androstane (surr)	86.1	50-150		%	1		11/05/21 18:49

### **Batch Information**

Analytical Batch: XFC16135 Analytical Method: AK102

Analyst: IVM

Analytical Date/Time: 11/05/21 18:49 Container ID: 1217257016-A Prep Batch: XXX45824
Prep Method: SW3550C
Prep Date/Time: 11/05/21 09:44
Prep Initial Wt./Vol.: 30.386 g
Prep Extract Vol: 5 mL

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Residual Range Organics	57.5 U	115	49.2	mg/kg	1		11/05/21 18:49
Surrogates							
n-Triacontane-d62 (surr)	85.8	50-150		%	1		11/05/21 18:49

## **Batch Information**

Analytical Batch: XFC16135 Analytical Method: AK103

Analyst: IVM

Analytical Date/Time: 11/05/21 18:49 Container ID: 1217257016-A Prep Batch: XXX45824 Prep Method: SW3550C Prep Date/Time: 11/05/21 09:44 Prep Initial Wt./Vol.: 30.386 g Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB007-02

Client Project ID: **SC Soils**Lab Sample ID: 1217257016
Lab Project ID: 1217257

Collection Date: 10/30/21 16:05 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):86.2 Location:

## Results by Volatile Fuels

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Gasoline Range Organics	1.60 J	5.20	1.56	mg/kg	1		11/04/21 04:53
Surrogates							
4-Bromofluorobenzene (surr)	93.6	50-150		%	1		11/04/21 04:53

## **Batch Information**

Analytical Batch: VFC15927 Analytical Method: AK101

Analyst: IJV

Analytical Date/Time: 11/04/21 04:53 Container ID: 1217257016-B Prep Batch: VXX38138 Prep Method: SW5035A Prep Date/Time: 10/30/21 16:05 Prep Initial Wt./Vol.: 32.932 g Prep Extract Vol: 29.5397 mL



Client Sample ID: 21GST-SB007-02

Client Project ID: **SC Soils**Lab Sample ID: 1217257016
Lab Project ID: 1217257

Collection Date: 10/30/21 16:05 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):86.2 Location:

## Results by Volatile GC/MS

					<u>Allowable</u>	
Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
0.0130 U	0.0260	0.00812	mg/kg	1		11/04/21 20:37
0.0260 U	0.0520	0.0162	mg/kg	1		11/04/21 20:37
0.0260 U	0.0520	0.0162	mg/kg	1		11/04/21 20:37
0.0520 U	0.104	0.0312	mg/kg	1		11/04/21 20:37
0.0260 U	0.0520	0.0162	mg/kg	1		11/04/21 20:37
0.0780 U	0.156	0.0474	mg/kg	1		11/04/21 20:37
102	71-136		%	1		11/04/21 20:37
102	55-151		%	1		11/04/21 20:37
103	85-116		%	1		11/04/21 20:37
	0.0130 U 0.0260 U 0.0260 U 0.0520 U 0.0260 U 0.0780 U	0.0130 U 0.0260 0.0260 U 0.0520 0.0260 U 0.0520 0.0520 U 0.104 0.0260 U 0.0520 0.0780 U 0.156 102 71-136 102 55-151	0.0130 U 0.0260 0.00812 0.0260 U 0.0520 0.0162 0.0260 U 0.0520 0.0162 0.0520 U 0.104 0.0312 0.0260 U 0.0520 0.0162 0.0780 U 0.156 0.0474 102 71-136 102 55-151	0.0130 U 0.0260 0.00812 mg/kg 0.0260 U 0.0520 0.0162 mg/kg 0.0260 U 0.0520 0.0162 mg/kg 0.0520 U 0.104 0.0312 mg/kg 0.0260 U 0.0520 0.0162 mg/kg 0.0260 U 0.0520 0.0162 mg/kg 0.0780 U 0.156 0.0474 mg/kg	0.0130 U       0.0260       0.00812       mg/kg       1         0.0260 U       0.0520       0.0162       mg/kg       1         0.0260 U       0.0520       0.0162       mg/kg       1         0.0520 U       0.104       0.0312       mg/kg       1         0.0260 U       0.0520       0.0162       mg/kg       1         0.0780 U       0.156       0.0474       mg/kg       1         102       71-136       %       1         102       55-151       %       1	Result Qual         LOQ/CL         DL         Units         DF         Limits           0.0130 U         0.0260         0.00812         mg/kg         1           0.0260 U         0.0520         0.0162         mg/kg         1           0.0260 U         0.0520         0.0162         mg/kg         1           0.0520 U         0.104         0.0312         mg/kg         1           0.0260 U         0.0520         0.0162         mg/kg         1           0.0780 U         0.156         0.0474         mg/kg         1           102         71-136         %         1           102         55-151         %         1

### **Batch Information**

Analytical Batch: VMS21351 Analytical Method: SW8260D

Analyst: MDT

Analytical Date/Time: 11/04/21 20:37 Container ID: 1217257016-B Prep Batch: VXX38142 Prep Method: SW5035A Prep Date/Time: 10/30/21 16:05 Prep Initial Wt./Vol.: 32.932 g Prep Extract Vol: 29.5397 mL

Print Date: 11/22/2021 2:49:43PM

J flagging is activated



Client Sample ID: 21GST-SB003-01

Client Project ID: **SC Soils**Lab Sample ID: 1217257017
Lab Project ID: 1217257

Collection Date: 10/31/21 11:35 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):81.1 Location:

## Results by Polynuclear Aromatics GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	DF	<u>Limits</u>	Date Analyzed
1-Methylnaphthalene	0.0153 U	0.0305	0.00762	mg/kg	1		11/16/21 04:08
2-Methylnaphthalene	0.0153 U	0.0305	0.00762	mg/kg	1		11/16/21 04:08
Acenaphthene	0.0153 U	0.0305	0.00762	mg/kg	1		11/16/21 04:08
Acenaphthylene	0.0153 U	0.0305	0.00762	mg/kg	1		11/16/21 04:08
Anthracene	0.0153 U	0.0305	0.00762	mg/kg	1		11/16/21 04:08
Benzo(a)Anthracene	0.0153 U	0.0305	0.00762	mg/kg	1		11/16/21 04:08
Benzo[a]pyrene	0.0153 U	0.0305	0.00762	mg/kg	1		11/16/21 04:08
Benzo[b]Fluoranthene	0.0153 U	0.0305	0.00762	mg/kg	1		11/16/21 04:08
Benzo[g,h,i]perylene	0.0153 U	0.0305	0.00762	mg/kg	1		11/16/21 04:08
Benzo[k]fluoranthene	0.0153 U	0.0305	0.00762	mg/kg	1		11/16/21 04:08
Chrysene	0.0153 U	0.0305	0.00762	mg/kg	1		11/16/21 04:08
Dibenzo[a,h]anthracene	0.0153 U	0.0305	0.00762	mg/kg	1		11/16/21 04:08
Fluoranthene	0.0153 U	0.0305	0.00762	mg/kg	1		11/16/21 04:08
Fluorene	0.0153 U	0.0305	0.00762	mg/kg	1		11/16/21 04:08
Indeno[1,2,3-c,d] pyrene	0.0153 U	0.0305	0.00762	mg/kg	1		11/16/21 04:08
Naphthalene	0.0122 U	0.0244	0.00609	mg/kg	1		11/16/21 04:08
Phenanthrene	0.0153 U	0.0305	0.00762	mg/kg	1		11/16/21 04:08
Pyrene	0.0153 U	0.0305	0.00762	mg/kg	1		11/16/21 04:08
Surrogates							
2-Methylnaphthalene-d10 (surr)	83.8	58-103		%	1		11/16/21 04:08
Fluoranthene-d10 (surr)	86.5	54-113		%	1		11/16/21 04:08
Fluoranthene-u to (Surr)	0.00	34-113		70	ı		11/10/21 04.08

### Batch Information

Analytical Batch: XMS12997 Analytical Method: 8270D SIM (PAH)

Analyst: LAW

Analytical Date/Time: 11/16/21 04:08 Container ID: 1217257017-A Prep Batch: XXX45825 Prep Method: SW3550C Prep Date/Time: 11/08/21 07:19 Prep Initial Wt./Vol.: 22.75 g Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB003-01

Client Project ID: **SC Soils**Lab Sample ID: 1217257017
Lab Project ID: 1217257

Collection Date: 10/31/21 11:35 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):81.1 Location:

## Results by Semivolatile Organic Fuels

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Diesel Range Organics	13.2 J	24.3	11.0	mg/kg	1		11/05/21 18:59
Surrogates							
5a Androstane (surr)	83	50-150		%	1		11/05/21 18:59

## **Batch Information**

Analytical Batch: XFC16135 Analytical Method: AK102

Analyst: IVM

Analytical Date/Time: 11/05/21 18:59 Container ID: 1217257017-A Prep Batch: XXX45824
Prep Method: SW3550C
Prep Date/Time: 11/05/21 09:44
Prep Initial Wt./Vol.: 30.381 g
Prep Extract Vol: 5 mL

						Allowable	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	81.7 J	122	52.3	mg/kg	1		11/05/21 18:59
Surrogates							
n-Triacontane-d62 (surr)	82.8	50-150		%	1		11/05/21 18:59

## **Batch Information**

Analytical Batch: XFC16135 Analytical Method: AK103

Analyst: IVM

Analytical Date/Time: 11/05/21 18:59 Container ID: 1217257017-A Prep Batch: XXX45824 Prep Method: SW3550C Prep Date/Time: 11/05/21 09:44 Prep Initial Wt./Vol.: 30.381 g Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB003-01

Client Project ID: SC Soils Lab Sample ID: 1217257017 Lab Project ID: 1217257 Collection Date: 10/31/21 11:35 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):81.1 Location:

## Results by Volatile Fuels

Damanadan	D It O I	1.00/01	DI	1.1	DE	Allowable	Data Analomad
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Gasoline Range Organics	3.18 U	6.35	1.90	mg/kg	1		11/04/21 05:11
Surrogates							
4-Bromofluorobenzene (surr)	88.4	50-150		%	1		11/04/21 05:11
i Bromondorosonizono (barr)	00.1	00 100		, ,	•		1 1/0 1/2 / 00:11

## **Batch Information**

Analytical Batch: VFC15927 Analytical Method: AK101

Analyst: IJV

Analytical Date/Time: 11/04/21 05:11 Container ID: 1217257017-B

Prep Batch: VXX38138 Prep Method: SW5035A Prep Date/Time: 10/31/21 11:35 Prep Initial Wt./Vol.: 29.71 g Prep Extract Vol: 30.602 mL



Client Sample ID: 21GST-SB003-01

Client Project ID: **SC Soils**Lab Sample ID: 1217257017
Lab Project ID: 1217257

Collection Date: 10/31/21 11:35 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):81.1 Location:

## Results by Volatile GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Benzene	0.0159 U	0.0317	0.00990	mg/kg	1		11/04/21 20:53
Ethylbenzene	0.0318 U	0.0635	0.0198	mg/kg	1		11/04/21 20:53
o-Xylene	0.0318 U	0.0635	0.0198	mg/kg	1		11/04/21 20:53
P & M -Xylene	0.0635 U	0.127	0.0381	mg/kg	1		11/04/21 20:53
Toluene	0.0318 U	0.0635	0.0198	mg/kg	1		11/04/21 20:53
Xylenes (total)	0.0950 U	0.190	0.0579	mg/kg	1		11/04/21 20:53
Surrogates							
1,2-Dichloroethane-D4 (surr)	98.9	71-136		%	1		11/04/21 20:53
4-Bromofluorobenzene (surr)	100	55-151		%	1		11/04/21 20:53
Toluene-d8 (surr)	103	85-116		%	1		11/04/21 20:53

## **Batch Information**

Analytical Batch: VMS21351 Analytical Method: SW8260D

Analyst: MDT

Analytical Date/Time: 11/04/21 20:53 Container ID: 1217257017-B Prep Batch: VXX38142 Prep Method: SW5035A Prep Date/Time: 10/31/21 11:35 Prep Initial Wt./Vol.: 29.71 g Prep Extract Vol: 30.602 mL



Client Sample ID: 21GST-SB003-02

Client Project ID: **SC Soils**Lab Sample ID: 1217257018
Lab Project ID: 1217257

Collection Date: 10/31/21 11:40 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):83.8 Location:

## Results by Polynuclear Aromatics GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	DF	<u>Limits</u>	Date Analyzed
1-Methylnaphthalene	0.0147 U	0.0294	0.00736	mg/kg	1		11/16/21 04:28
2-Methylnaphthalene	0.0147 U	0.0294	0.00736	mg/kg	1		11/16/21 04:28
Acenaphthene	0.0147 U	0.0294	0.00736	mg/kg	1		11/16/21 04:28
Acenaphthylene	0.0147 U	0.0294	0.00736	mg/kg	1		11/16/21 04:28
Anthracene	0.0147 U	0.0294	0.00736	mg/kg	1		11/16/21 04:28
Benzo(a)Anthracene	0.0147 U	0.0294	0.00736	mg/kg	1		11/16/21 04:28
Benzo[a]pyrene	0.0147 U	0.0294	0.00736	mg/kg	1		11/16/21 04:28
Benzo[b]Fluoranthene	0.0147 U	0.0294	0.00736	mg/kg	1		11/16/21 04:28
Benzo[g,h,i]perylene	0.0147 U	0.0294	0.00736	mg/kg	1		11/16/21 04:28
Benzo[k]fluoranthene	0.0147 U	0.0294	0.00736	mg/kg	1		11/16/21 04:28
Chrysene	0.0147 U	0.0294	0.00736	mg/kg	1		11/16/21 04:28
Dibenzo[a,h]anthracene	0.0147 U	0.0294	0.00736	mg/kg	1		11/16/21 04:28
Fluoranthene	0.0147 U	0.0294	0.00736	mg/kg	1		11/16/21 04:28
Fluorene	0.0147 U	0.0294	0.00736	mg/kg	1		11/16/21 04:28
Indeno[1,2,3-c,d] pyrene	0.0147 U	0.0294	0.00736	mg/kg	1		11/16/21 04:28
Naphthalene	0.0118 U	0.0236	0.00589	mg/kg	1		11/16/21 04:28
Phenanthrene	0.0147 U	0.0294	0.00736	mg/kg	1		11/16/21 04:28
Pyrene	0.0147 U	0.0294	0.00736	mg/kg	1		11/16/21 04:28
Surrogates							
2-Methylnaphthalene-d10 (surr)	83	58-103		%	1		11/16/21 04:28
Fluoranthene-d10 (surr)	88.3	54-113		%	1		11/16/21 04:28

### Batch Information

Analytical Batch: XMS12997 Analytical Method: 8270D SIM (PAH)

Analyst: LAW

Analytical Date/Time: 11/16/21 04:28 Container ID: 1217257018-A Prep Batch: XXX45825 Prep Method: SW3550C Prep Date/Time: 11/08/21 07:19 Prep Initial Wt./Vol.: 22.789 g Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB003-02

Client Project ID: **SC Soils**Lab Sample ID: 1217257018
Lab Project ID: 1217257

Collection Date: 10/31/21 11:40 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):83.8 Location:

## Results by Semivolatile Organic Fuels

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	DL	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Diesel Range Organics	11.8 U	23.6	10.6	mg/kg	1		11/12/21 12:48
Surrogates							
5a Androstane (surr)	84.9	50-150		%	1		11/12/21 12:48

## **Batch Information**

Analytical Batch: XFC16147 Analytical Method: AK102

Analyst: IVM

Analytical Date/Time: 11/12/21 12:48 Container ID: 1217257018-A Prep Batch: XXX45846 Prep Method: SW3550C Prep Date/Time: 11/11/21 07:45 Prep Initial Wt./Vol.: 30.377 g Prep Extract Vol: 5 mL

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Residual Range Organics	59.0 U	118	50.7	mg/kg	1		11/12/21 12:48
Surrogates							
n-Triacontane-d62 (surr)	84.2	50-150		%	1		11/12/21 12:48

## **Batch Information**

Analytical Batch: XFC16147 Analytical Method: AK103

Analyst: IVM

Analytical Date/Time: 11/12/21 12:48 Container ID: 1217257018-A Prep Batch: XXX45846 Prep Method: SW3550C Prep Date/Time: 11/11/21 07:45 Prep Initial Wt./Vol.: 30.377 g Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB003-02

Client Project ID: **SC Soils**Lab Sample ID: 1217257018
Lab Project ID: 1217257

Collection Date: 10/31/21 11:40 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):83.8 Location:

## Results by Volatile Fuels

Parameter	Result Qual	LOQ/CL	<u>DL</u>	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	2.42 U	4.83	1.45	mg/kg	1		11/04/21 05:29
Surrogates							
4-Bromofluorobenzene (surr)	92.8	50-150		%	1		11/04/21 05:29

## **Batch Information**

Analytical Batch: VFC15927 Analytical Method: AK101

Analyst: IJV

Analytical Date/Time: 11/04/21 05:29 Container ID: 1217257018-B Prep Batch: VXX38138
Prep Method: SW5035A
Prep Date/Time: 10/31/21 11:40
Prep Initial Wt./Vol.: 38.63 g
Prep Extract Vol: 31.2498 mL



Client Sample ID: 21GST-SB003-02

Client Project ID: **SC Soils**Lab Sample ID: 1217257018
Lab Project ID: 1217257

Collection Date: 10/31/21 11:40 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):83.8 Location:

# Results by Volatile GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Benzene	0.0121 U	0.0241	0.00753	mg/kg	1		11/04/21 21:08
Ethylbenzene	0.0241 U	0.0483	0.0151	mg/kg	1		11/04/21 21:08
o-Xylene	0.0241 U	0.0483	0.0151	mg/kg	1		11/04/21 21:08
P & M -Xylene	0.0483 U	0.0965	0.0290	mg/kg	1		11/04/21 21:08
Toluene	0.0241 U	0.0483	0.0151	mg/kg	1		11/04/21 21:08
Xylenes (total)	0.0725 U	0.145	0.0440	mg/kg	1		11/04/21 21:08
Surrogates							
1,2-Dichloroethane-D4 (surr)	100	71-136		%	1		11/04/21 21:08
4-Bromofluorobenzene (surr)	102	55-151		%	1		11/04/21 21:08
Toluene-d8 (surr)	103	85-116		%	1		11/04/21 21:08

### **Batch Information**

Analytical Batch: VMS21351 Analytical Method: SW8260D

Analyst: MDT

Analytical Date/Time: 11/04/21 21:08 Container ID: 1217257018-B Prep Batch: VXX38142
Prep Method: SW5035A
Prep Date/Time: 10/31/21 11:40
Prep Initial Wt./Vol.: 38.63 g
Prep Extract Vol: 31.2498 mL



Client Sample ID: 21GST-SB004-01

Client Project ID: **SC Soils**Lab Sample ID: 1217257019
Lab Project ID: 1217257

Collection Date: 10/31/21 11:05 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):82.1 Location:

## Results by Polynuclear Aromatics GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
1-Methylnaphthalene	0.0152 U	0.0303	0.00757	mg/kg	1		11/16/21 04:49
2-Methylnaphthalene	0.0152 U	0.0303	0.00757	mg/kg	1		11/16/21 04:49
Acenaphthene	0.0152 U	0.0303	0.00757	mg/kg	1		11/16/21 04:49
Acenaphthylene	0.0152 U	0.0303	0.00757	mg/kg	1		11/16/21 04:49
Anthracene	0.0152 U	0.0303	0.00757	mg/kg	1		11/16/21 04:49
Benzo(a)Anthracene	0.0152 U	0.0303	0.00757	mg/kg	1		11/16/21 04:49
Benzo[a]pyrene	0.0152 U	0.0303	0.00757	mg/kg	1		11/16/21 04:49
Benzo[b]Fluoranthene	0.0152 U	0.0303	0.00757	mg/kg	1		11/16/21 04:49
Benzo[g,h,i]perylene	0.0152 U	0.0303	0.00757	mg/kg	1		11/16/21 04:49
Benzo[k]fluoranthene	0.0152 U	0.0303	0.00757	mg/kg	1		11/16/21 04:49
Chrysene	0.0152 U	0.0303	0.00757	mg/kg	1		11/16/21 04:49
Dibenzo[a,h]anthracene	0.0152 U	0.0303	0.00757	mg/kg	1		11/16/21 04:49
Fluoranthene	0.0152 U	0.0303	0.00757	mg/kg	1		11/16/21 04:49
Fluorene	0.0152 U	0.0303	0.00757	mg/kg	1		11/16/21 04:49
Indeno[1,2,3-c,d] pyrene	0.0152 U	0.0303	0.00757	mg/kg	1		11/16/21 04:49
Naphthalene	0.0121 U	0.0242	0.00605	mg/kg	1		11/16/21 04:49
Phenanthrene	0.0152 U	0.0303	0.00757	mg/kg	1		11/16/21 04:49
Pyrene	0.0152 U	0.0303	0.00757	mg/kg	1		11/16/21 04:49
Surrogates							
2-Methylnaphthalene-d10 (surr)	92.7	58-103		%	1		11/16/21 04:49
Fluoranthene-d10 (surr)	97.6	54-113		%	1		11/16/21 04:49

# **Batch Information**

Analytical Batch: XMS12997 Analytical Method: 8270D SIM (PAH)

Analyst: LAW

Analytical Date/Time: 11/16/21 04:49 Container ID: 1217257019-A Prep Batch: XXX45825 Prep Method: SW3550C Prep Date/Time: 11/08/21 07:19 Prep Initial Wt./Vol.: 22.647 g Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB004-01

Client Project ID: **SC Soils**Lab Sample ID: 1217257019
Lab Project ID: 1217257

Collection Date: 10/31/21 11:05 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):82.1 Location:

## Results by Semivolatile Organic Fuels

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	<u>Limits</u>	Date Analyzed
Diesel Range Organics	12.2 U	24.4	11.0	mg/kg	1		11/12/21 12:57
Surrogates							
5a Androstane (surr)	86.4	50-150		%	1		11/12/21 12:57

### **Batch Information**

Analytical Batch: XFC16147 Analytical Method: AK102

Analyst: IVM

Analytical Date/Time: 11/12/21 12:57 Container ID: 1217257019-A Prep Batch: XXX45846 Prep Method: SW3550C Prep Date/Time: 11/11/21 07:45 Prep Initial Wt./Vol.: 30.018 g Prep Extract Vol: 5 mL

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Residual Range Organics	61.0 U	122	52.4	mg/kg	1		11/12/21 12:57
Surrogates							
n-Triacontane-d62 (surr)	84.5	50-150		%	1		11/12/21 12:57

## **Batch Information**

Analytical Batch: XFC16147 Analytical Method: AK103

Analyst: IVM

Analytical Date/Time: 11/12/21 12:57 Container ID: 1217257019-A Prep Batch: XXX45846 Prep Method: SW3550C Prep Date/Time: 11/11/21 07:45 Prep Initial Wt./Vol.: 30.018 g Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB004-01

Client Project ID: **SC Soils**Lab Sample ID: 1217257019
Lab Project ID: 1217257

Collection Date: 10/31/21 11:05 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):82.1 Location:

## Results by Volatile Fuels

<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	Units	<u>DF</u>	Allowable Limits	Date Analyzed
Gasoline Range Organics	2.63 U	5.25	1.57	mg/kg	1		11/04/21 05:47
Surrogates							
4-Bromofluorobenzene (surr)	94.6	50-150		%	1		11/04/21 05:47

## **Batch Information**

Analytical Batch: VFC15927 Analytical Method: AK101

Analyst: IJV

Analytical Date/Time: 11/04/21 05:47 Container ID: 1217257019-B

Prep Batch: VXX38138 Prep Method: SW5035A Prep Date/Time: 10/31/21 11:05 Prep Initial Wt./Vol.: 36.683 g Prep Extract Vol: 31.5794 mL



Client Sample ID: 21GST-SB004-01

Client Project ID: **SC Soils**Lab Sample ID: 1217257019
Lab Project ID: 1217257

Collection Date: 10/31/21 11:05 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):82.1 Location:

## Results by Volatile GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Benzene	0.0131 U	0.0262	0.00818	mg/kg	1		11/04/21 21:23
Ethylbenzene	0.0262 U	0.0525	0.0164	mg/kg	1		11/04/21 21:23
o-Xylene	0.0262 U	0.0525	0.0164	mg/kg	1		11/04/21 21:23
P & M -Xylene	0.0525 U	0.105	0.0315	mg/kg	1		11/04/21 21:23
Toluene	0.0262 U	0.0525	0.0164	mg/kg	1		11/04/21 21:23
Xylenes (total)	0.0785 U	0.157	0.0478	mg/kg	1		11/04/21 21:23
Surrogates							
1,2-Dichloroethane-D4 (surr)	98.9	71-136		%	1		11/04/21 21:23
4-Bromofluorobenzene (surr)	109	55-151		%	1		11/04/21 21:23
Toluene-d8 (surr)	104	85-116		%	1		11/04/21 21:23

### **Batch Information**

Analytical Batch: VMS21351 Analytical Method: SW8260D

Analyst: MDT

Analytical Date/Time: 11/04/21 21:23 Container ID: 1217257019-B Prep Batch: VXX38142 Prep Method: SW5035A Prep Date/Time: 10/31/21 11:05 Prep Initial Wt./Vol.: 36.683 g Prep Extract Vol: 31.5794 mL

Print Date: 11/22/2021 2:49:43PM

J flagging is activated



Client Sample ID: 21GST-SB004-02

Client Project ID: **SC Soils** Lab Sample ID: 1217257020 Lab Project ID: 1217257 Collection Date: 10/31/21 11:10 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):85.4 Location:

## Results by Polynuclear Aromatics GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
1-Methylnaphthalene	0.0146 U	0.0292	0.00729	mg/kg	1		11/16/21 12:33
2-Methylnaphthalene	0.0146 U	0.0292	0.00729	mg/kg	1		11/16/21 12:33
Acenaphthene	0.0146 U	0.0292	0.00729	mg/kg	1		11/16/21 12:33
Acenaphthylene	0.0146 U	0.0292	0.00729	mg/kg	1		11/16/21 12:33
Anthracene	0.0146 U	0.0292	0.00729	mg/kg	1		11/16/21 12:33
Benzo(a)Anthracene	0.0146 U	0.0292	0.00729	mg/kg	1		11/16/21 12:33
Benzo[a]pyrene	0.0146 U	0.0292	0.00729	mg/kg	1		11/16/21 12:33
Benzo[b]Fluoranthene	0.0146 U	0.0292	0.00729	mg/kg	1		11/16/21 12:33
Benzo[g,h,i]perylene	0.0146 U	0.0292	0.00729	mg/kg	1		11/16/21 12:33
Benzo[k]fluoranthene	0.0146 U	0.0292	0.00729	mg/kg	1		11/16/21 12:33
Chrysene	0.0146 U	0.0292	0.00729	mg/kg	1		11/16/21 12:33
Dibenzo[a,h]anthracene	0.0146 U	0.0292	0.00729	mg/kg	1		11/16/21 12:33
Fluoranthene	0.0146 U	0.0292	0.00729	mg/kg	1		11/16/21 12:33
Fluorene	0.0146 U	0.0292	0.00729	mg/kg	1		11/16/21 12:33
Indeno[1,2,3-c,d] pyrene	0.0146 U	0.0292	0.00729	mg/kg	1		11/16/21 12:33
Naphthalene	0.0117 U	0.0233	0.00583	mg/kg	1		11/16/21 12:33
Phenanthrene	0.0146 U	0.0292	0.00729	mg/kg	1		11/16/21 12:33
Pyrene	0.0146 U	0.0292	0.00729	mg/kg	1		11/16/21 12:33
Surrogates							
2-Methylnaphthalene-d10 (surr)	82.5	58-103		%	1		11/16/21 12:33
Fluoranthene-d10 (surr)	85	54-113		%	1		11/16/21 12:33

### Batch Information

Analytical Batch: XMS13000 Analytical Method: 8270D SIM (PAH)

Analyst: LAW

Analytical Date/Time: 11/16/21 12:33 Container ID: 1217257020-A Prep Batch: XXX45847 Prep Method: SW3550C Prep Date/Time: 11/11/21 09:27 Prep Initial Wt./Vol.: 22.588 g Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB004-02

Client Project ID: **SC Soils**Lab Sample ID: 1217257020
Lab Project ID: 1217257

Collection Date: 10/31/21 11:10 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):85.4 Location:

## Results by Semivolatile Organic Fuels

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Diesel Range Organics	21.2 J	23.1	10.4	mg/kg	1		11/12/21 13:07
Surrogates							
5a Androstane (surr)	83.2	50-150		%	1		11/12/21 13:07

### **Batch Information**

Analytical Batch: XFC16147 Analytical Method: AK102

Analyst: IVM

Analytical Date/Time: 11/12/21 13:07 Container ID: 1217257020-A Prep Batch: XXX45846 Prep Method: SW3550C Prep Date/Time: 11/11/21 07:45 Prep Initial Wt./Vol.: 30.386 g Prep Extract Vol: 5 mL

<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	Allowable <u>Limits</u>	Date Analyzed
Residual Range Organics	58.0 U	116	49.7	mg/kg	1		11/12/21 13:07
Surrogates n-Triacontane-d62 (surr)	81.4	50-150		%	1		11/12/21 13:07

## **Batch Information**

Analytical Batch: XFC16147 Analytical Method: AK103

Analyst: IVM

Analytical Date/Time: 11/12/21 13:07 Container ID: 1217257020-A Prep Batch: XXX45846 Prep Method: SW3550C Prep Date/Time: 11/11/21 07:45 Prep Initial Wt./Vol.: 30.386 g Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB004-02

Client Project ID: **SC Soils**Lab Sample ID: 1217257020
Lab Project ID: 1217257

Collection Date: 10/31/21 11:10 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):85.4 Location:

## Results by Volatile Fuels

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Gasoline Range Organics	2.48 U	4.97	1.49	mg/kg	1		11/04/21 06:05
Surrogates							
4-Bromofluorobenzene (surr)	88.9	50-150		%	1		11/04/21 06:05

## **Batch Information**

Analytical Batch: VFC15927 Analytical Method: AK101

Analyst: IJV

Analytical Date/Time: 11/04/21 06:05 Container ID: 1217257020-B Prep Batch: VXX38138
Prep Method: SW5035A
Prep Date/Time: 10/31/21 11:10
Prep Initial Wt./Vol.: 35.601 g
Prep Extract Vol: 30.2046 mL



Client Sample ID: 21GST-SB004-02

Client Project ID: **SC Soils**Lab Sample ID: 1217257020
Lab Project ID: 1217257

Collection Date: 10/31/21 11:10 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):85.4 Location:

## Results by Volatile GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Benzene	0.0124 U	0.0248	0.00775	mg/kg	1		11/04/21 21:39
Ethylbenzene	0.0249 U	0.0497	0.0155	mg/kg	1		11/04/21 21:39
o-Xylene	0.0249 U	0.0497	0.0155	mg/kg	1		11/04/21 21:39
P & M -Xylene	0.0497 U	0.0994	0.0298	mg/kg	1		11/04/21 21:39
Toluene	0.0249 U	0.0497	0.0155	mg/kg	1		11/04/21 21:39
Xylenes (total)	0.0745 U	0.149	0.0453	mg/kg	1		11/04/21 21:39
Surrogates							
1,2-Dichloroethane-D4 (surr)	103	71-136		%	1		11/04/21 21:39
4-Bromofluorobenzene (surr)	100	55-151		%	1		11/04/21 21:39
Toluene-d8 (surr)	103	85-116		%	1		11/04/21 21:39

### **Batch Information**

Analytical Batch: VMS21351 Analytical Method: SW8260D

Analyst: MDT

Analytical Date/Time: 11/04/21 21:39 Container ID: 1217257020-B Prep Batch: VXX38142 Prep Method: SW5035A Prep Date/Time: 10/31/21 11:10 Prep Initial Wt./Vol.: 35.601 g Prep Extract Vol: 30.2046 mL

Print Date: 11/22/2021 2:49:43PM

J flagging is activated



Client Sample ID: 21GST-SB011-01

Client Project ID: **SC Soils**Lab Sample ID: 1217257021
Lab Project ID: 1217257

Collection Date: 10/31/21 14:15 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):91.9 Location:

## Results by Polynuclear Aromatics GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	DF	<u>Limits</u>	Date Analyzed
1-Methylnaphthalene	0.136 U	0.271	0.0677	mg/kg	10		11/17/21 21:28
2-Methylnaphthalene	0.136 U	0.271	0.0677	mg/kg	10		11/17/21 21:28
Acenaphthene	0.136 U	0.271	0.0677	mg/kg	10		11/17/21 21:28
Acenaphthylene	0.136 U	0.271	0.0677	mg/kg	10		11/17/21 21:28
Anthracene	0.136 U	0.271	0.0677	mg/kg	10		11/17/21 21:28
Benzo(a)Anthracene	0.136 U	0.271	0.0677	mg/kg	10		11/17/21 21:28
Benzo[a]pyrene	0.136 U	0.271	0.0677	mg/kg	10		11/17/21 21:28
Benzo[b]Fluoranthene	0.136 U	0.271	0.0677	mg/kg	10		11/17/21 21:28
Benzo[g,h,i]perylene	0.136 U	0.271	0.0677	mg/kg	10		11/17/21 21:28
Benzo[k]fluoranthene	0.136 U	0.271	0.0677	mg/kg	10		11/17/21 21:28
Chrysene	0.136 U	0.271	0.0677	mg/kg	10		11/17/21 21:28
Dibenzo[a,h]anthracene	0.136 U	0.271	0.0677	mg/kg	10		11/17/21 21:28
Fluoranthene	0.136 U	0.271	0.0677	mg/kg	10		11/17/21 21:28
Fluorene	0.136 U	0.271	0.0677	mg/kg	10		11/17/21 21:28
Indeno[1,2,3-c,d] pyrene	0.136 U	0.271	0.0677	mg/kg	10		11/17/21 21:28
Naphthalene	0.109 U	0.217	0.0542	mg/kg	10		11/17/21 21:28
Phenanthrene	0.136 U	0.271	0.0677	mg/kg	10		11/17/21 21:28
Pyrene	0.136 U	0.271	0.0677	mg/kg	10		11/17/21 21:28
Surrogates							
2-Methylnaphthalene-d10 (surr)	87.1	58-103		%	10		11/17/21 21:28
Fluoranthene-d10 (surr)	92.8	54-113		%	10		11/17/21 21:28

#### Batch Information

Analytical Batch: XMS13001 Analytical Method: 8270D SIM (PAH)

Analyst: LAW

Analytical Date/Time: 11/17/21 21:28 Container ID: 1217257021-A Prep Batch: XXX45847 Prep Method: SW3550C Prep Date/Time: 11/11/21 09:27 Prep Initial Wt./Vol.: 22.605 g Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB011-01

Client Project ID: SC Soils Lab Sample ID: 1217257021 Lab Project ID: 1217257

Collection Date: 10/31/21 14:15 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):91.9 Location:

## Results by Semivolatile Organic Fuels

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Diesel Range Organics	146	86.4	38.9	mg/kg	4		11/12/21 13:37
Surrogates							
5a Androstane (surr)	90.4	50-150		%	4		11/12/21 13:37

#### **Batch Information**

Analytical Batch: XFC16147 Analytical Method: AK102

Analyst: IVM

Analytical Date/Time: 11/12/21 13:37 Container ID: 1217257021-A

Prep Batch: XXX45846 Prep Method: SW3550C Prep Date/Time: 11/11/21 07:45 Prep Initial Wt./Vol.: 30.238 g Prep Extract Vol: 5 mL

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Residual Range Organics	2380	432	186	mg/kg	4		11/12/21 13:37
Surrogates							
n-Triacontane-d62 (surr)	98.8	50-150		%	4		11/12/21 13:37

## Batch Information

Analytical Batch: XFC16147 Analytical Method: AK103

Analyst: IVM

Analytical Date/Time: 11/12/21 13:37 Container ID: 1217257021-A

Prep Batch: XXX45846 Prep Method: SW3550C Prep Date/Time: 11/11/21 07:45 Prep Initial Wt./Vol.: 30.238 g Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB011-01

Client Project ID: **SC Soils**Lab Sample ID: 1217257021
Lab Project ID: 1217257

Collection Date: 10/31/21 14:15 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):91.9 Location:

## Results by Volatile Fuels

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Gasoline Range Organics	3.07 U	6.14	1.84	mg/kg	1		11/04/21 22:00
Surrogates							
4-Bromofluorobenzene (surr)	78.7	50-150		%	1		11/04/21 22:00

## **Batch Information**

Analytical Batch: VFC15930 Analytical Method: AK101

Analyst: IJV

Analytical Date/Time: 11/04/21 22:00 Container ID: 1217257021-B

Prep Batch: VXX38144 Prep Method: SW5035A Prep Date/Time: 10/31/21 14:15 Prep Initial Wt./Vol.: 23.895 g Prep Extract Vol: 26.9432 mL



Client Sample ID: 21GST-SB011-01

Client Project ID: SC Soils Lab Sample ID: 1217257021 Lab Project ID: 1217257 Collection Date: 10/31/21 14:15 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):91.9 Location:

## Results by Volatile GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Benzene	0.0154 U	0.0307	0.00957	mg/kg	1		11/04/21 21:54
Ethylbenzene	0.0307 U	0.0614	0.0191	mg/kg	1		11/04/21 21:54
o-Xylene	0.0307 U	0.0614	0.0191	mg/kg	1		11/04/21 21:54
P & M -Xylene	0.0615 U	0.123	0.0368	mg/kg	1		11/04/21 21:54
Toluene	0.0307 U	0.0614	0.0191	mg/kg	1		11/04/21 21:54
Xylenes (total)	0.0920 U	0.184	0.0560	mg/kg	1		11/04/21 21:54
Surrogates							
1,2-Dichloroethane-D4 (surr)	99.7	71-136		%	1		11/04/21 21:54
4-Bromofluorobenzene (surr)	97.8	55-151		%	1		11/04/21 21:54
Toluene-d8 (surr)	104	85-116		%	1		11/04/21 21:54

#### **Batch Information**

Analytical Batch: VMS21351 Analytical Method: SW8260D

Analyst: MDT

Analytical Date/Time: 11/04/21 21:54 Container ID: 1217257021-B Prep Batch: VXX38142 Prep Method: SW5035A Prep Date/Time: 10/31/21 14:15 Prep Initial Wt./Vol.: 23.895 g Prep Extract Vol: 26.9432 mL

Print Date: 11/22/2021 2:49:43PM

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Client Sample ID: 21GST-SB011-12

Client Project ID: **SC Soils**Lab Sample ID: 1217257022
Lab Project ID: 1217257

Collection Date: 10/31/21 14:25 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):89.9 Location:

## Results by Polynuclear Aromatics GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
1-Methylnaphthalene	0.0138 U	0.0276	0.00691	mg/kg	1		11/16/21 12:54
2-Methylnaphthalene	0.0138 U	0.0276	0.00691	mg/kg	1		11/16/21 12:54
Acenaphthene	0.0138 U	0.0276	0.00691	mg/kg	1		11/16/21 12:54
Acenaphthylene	0.0138 U	0.0276	0.00691	mg/kg	1		11/16/21 12:54
Anthracene	0.0138 U	0.0276	0.00691	mg/kg	1		11/16/21 12:54
Benzo(a)Anthracene	0.0138 U	0.0276	0.00691	mg/kg	1		11/16/21 12:54
Benzo[a]pyrene	0.0138 U	0.0276	0.00691	mg/kg	1		11/16/21 12:54
Benzo[b]Fluoranthene	0.0138 U	0.0276	0.00691	mg/kg	1		11/16/21 12:54
Benzo[g,h,i]perylene	0.0138 U	0.0276	0.00691	mg/kg	1		11/16/21 12:54
Benzo[k]fluoranthene	0.0138 U	0.0276	0.00691	mg/kg	1		11/16/21 12:54
Chrysene	0.0138 U	0.0276	0.00691	mg/kg	1		11/16/21 12:54
Dibenzo[a,h]anthracene	0.0138 U	0.0276	0.00691	mg/kg	1		11/16/21 12:54
Fluoranthene	0.0138 U	0.0276	0.00691	mg/kg	1		11/16/21 12:54
Fluorene	0.0138 U	0.0276	0.00691	mg/kg	1		11/16/21 12:54
Indeno[1,2,3-c,d] pyrene	0.0138 U	0.0276	0.00691	mg/kg	1		11/16/21 12:54
Naphthalene	0.0111 U	0.0221	0.00553	mg/kg	1		11/16/21 12:54
Phenanthrene	0.0138 U	0.0276	0.00691	mg/kg	1		11/16/21 12:54
Pyrene	0.0138 U	0.0276	0.00691	mg/kg	1		11/16/21 12:54
Surrogates							
2-Methylnaphthalene-d10 (surr)	89.6	58-103		%	1		11/16/21 12:54
Fluoranthene-d10 (surr)	92.2	54-113		%	1		11/16/21 12:54

# **Batch Information**

Analytical Batch: XMS13000 Analytical Method: 8270D SIM (PAH)

Analyst: LAW

Analytical Date/Time: 11/16/21 12:54 Container ID: 1217257022-A Prep Batch: XXX45847 Prep Method: SW3550C Prep Date/Time: 11/11/21 09:27 Prep Initial Wt./Vol.: 22.651 g Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB011-12

Client Project ID: **SC Soils**Lab Sample ID: 1217257022
Lab Project ID: 1217257

Collection Date: 10/31/21 14:25 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):89.9 Location:

## Results by Semivolatile Organic Fuels

Parameter	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	DF	<u>Allowable</u> Limits	Date Analyzed
Diesel Range Organics	11.1 U	22.1	9.93	mg/kg	1		11/12/21 13:48
Surrogates							
5a Androstane (surr)	93.8	50-150		%	1		11/12/21 13:48

#### **Batch Information**

Analytical Batch: XFC16147 Analytical Method: AK102

Analyst: IVM

Analytical Date/Time: 11/12/21 13:48 Container ID: 1217257022-A Prep Batch: XXX45846 Prep Method: SW3550C Prep Date/Time: 11/11/21 07:45 Prep Initial Wt./Vol.: 30.247 g Prep Extract Vol: 5 mL

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Residual Range Organics	55.0 U	110	47.4	mg/kg	1		11/12/21 13:48
Surrogates							
n-Triacontane-d62 (surr)	88.4	50-150		%	1		11/12/21 13:48

# **Batch Information**

Analytical Batch: XFC16147 Analytical Method: AK103

Analyst: IVM

Analytical Date/Time: 11/12/21 13:48 Container ID: 1217257022-A Prep Batch: XXX45846 Prep Method: SW3550C Prep Date/Time: 11/11/21 07:45 Prep Initial Wt./Vol.: 30.247 g Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB011-12

Client Project ID: SC Soils Lab Sample ID: 1217257022 Lab Project ID: 1217257

Collection Date: 10/31/21 14:25 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):89.9 Location:

## Results by Volatile Fuels

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Gasoline Range Organics	3.20 U	6.40	1.92	mg/kg	1		11/04/21 22:18
Surrogates							
4-Bromofluorobenzene (surr)	83.8	50-150		%	1		11/04/21 22:18

## **Batch Information**

Analytical Batch: VFC15930 Analytical Method: AK101

Analyst: IJV

Analytical Date/Time: 11/04/21 22:18 Container ID: 1217257022-B

Prep Batch: VXX38144 Prep Method: SW5035A Prep Date/Time: 10/31/21 14:25 Prep Initial Wt./Vol.: 23.809 g Prep Extract Vol: 27.4065 mL



Client Sample ID: 21GST-SB011-12

Client Project ID: **SC Soils**Lab Sample ID: 1217257022
Lab Project ID: 1217257

Collection Date: 10/31/21 14:25 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):89.9 Location:

## Results by Volatile GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Benzene	0.0160 U	0.0320	0.00999	mg/kg	1		11/04/21 22:10
Ethylbenzene	0.0320 U	0.0640	0.0200	mg/kg	1		11/04/21 22:10
o-Xylene	0.0320 U	0.0640	0.0200	mg/kg	1		11/04/21 22:10
P & M -Xylene	0.0640 U	0.128	0.0384	mg/kg	1		11/04/21 22:10
Toluene	0.0320 U	0.0640	0.0200	mg/kg	1		11/04/21 22:10
Xylenes (total)	0.0960 U	0.192	0.0584	mg/kg	1		11/04/21 22:10
Surrogates							
1,2-Dichloroethane-D4 (surr)	102	71-136		%	1		11/04/21 22:10
4-Bromofluorobenzene (surr)	101	55-151		%	1		11/04/21 22:10
Toluene-d8 (surr)	104	85-116		%	1		11/04/21 22:10

#### **Batch Information**

Analytical Batch: VMS21351 Analytical Method: SW8260D

Analyst: MDT

Analytical Date/Time: 11/04/21 22:10 Container ID: 1217257022-B Prep Batch: VXX38142 Prep Method: SW5035A Prep Date/Time: 10/31/21 14:25 Prep Initial Wt./Vol.: 23.809 g Prep Extract Vol: 27.4065 mL

Print Date: 11/22/2021 2:49:43PM

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Client Sample ID: 21GST-SB011-02

Client Project ID: **SC Soils**Lab Sample ID: 1217257023
Lab Project ID: 1217257

Collection Date: 10/31/21 14:35 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):94.0 Location:

## Results by Polynuclear Aromatics GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	DF	<u>Limits</u>	Date Analyzed
1-Methylnaphthalene	0.0133 U	0.0265	0.00661	mg/kg	1		11/16/21 13:14
2-Methylnaphthalene	0.0133 U	0.0265	0.00661	mg/kg	1		11/16/21 13:14
Acenaphthene	0.0133 U	0.0265	0.00661	mg/kg	1		11/16/21 13:14
Acenaphthylene	0.0133 U	0.0265	0.00661	mg/kg	1		11/16/21 13:14
Anthracene	0.0133 U	0.0265	0.00661	mg/kg	1		11/16/21 13:14
Benzo(a)Anthracene	0.0133 U	0.0265	0.00661	mg/kg	1		11/16/21 13:14
Benzo[a]pyrene	0.0133 U	0.0265	0.00661	mg/kg	1		11/16/21 13:14
Benzo[b]Fluoranthene	0.0133 U	0.0265	0.00661	mg/kg	1		11/16/21 13:14
Benzo[g,h,i]perylene	0.0133 U	0.0265	0.00661	mg/kg	1		11/16/21 13:14
Benzo[k]fluoranthene	0.0133 U	0.0265	0.00661	mg/kg	1		11/16/21 13:14
Chrysene	0.0133 U	0.0265	0.00661	mg/kg	1		11/16/21 13:14
Dibenzo[a,h]anthracene	0.0133 U	0.0265	0.00661	mg/kg	1		11/16/21 13:14
Fluoranthene	0.0133 U	0.0265	0.00661	mg/kg	1		11/16/21 13:14
Fluorene	0.0133 U	0.0265	0.00661	mg/kg	1		11/16/21 13:14
Indeno[1,2,3-c,d] pyrene	0.0133 U	0.0265	0.00661	mg/kg	1		11/16/21 13:14
Naphthalene	0.0106 U	0.0212	0.00529	mg/kg	1		11/16/21 13:14
Phenanthrene	0.0133 U	0.0265	0.00661	mg/kg	1		11/16/21 13:14
Pyrene	0.0133 U	0.0265	0.00661	mg/kg	1		11/16/21 13:14
Surrogates							
2-Methylnaphthalene-d10 (surr)	89.3	58-103		%	1		11/16/21 13:14
Fluoranthene-d10 (surr)	92.6	54-113		%	1		11/16/21 13:14

#### Batch Information

Analytical Batch: XMS13000 Analytical Method: 8270D SIM (PAH)

Analyst: LAW

Analytical Date/Time: 11/16/21 13:14 Container ID: 1217257023-A Prep Batch: XXX45847 Prep Method: SW3550C Prep Date/Time: 11/11/21 09:27 Prep Initial Wt./Vol.: 22.609 g Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB011-02

Client Project ID: **SC Soils**Lab Sample ID: 1217257023
Lab Project ID: 1217257

Collection Date: 10/31/21 14:35 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):94.0 Location:

## Results by Semivolatile Organic Fuels

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	DL	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Diesel Range Organics	10.6 U	21.1	9.48	mg/kg	1		11/12/21 13:58
Surrogates							
5a Androstane (surr)	95.9	50-150		%	1		11/12/21 13:58

#### **Batch Information**

Analytical Batch: XFC16147 Analytical Method: AK102

Analyst: IVM

Analytical Date/Time: 11/12/21 13:58 Container ID: 1217257023-A Prep Batch: XXX45846 Prep Method: SW3550C Prep Date/Time: 11/11/21 07:45 Prep Initial Wt./Vol.: 30.292 g Prep Extract Vol: 5 mL

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Residual Range Organics	53.3 J	105	45.3	mg/kg	1		11/12/21 13:58
Surrogates							
n-Triacontane-d62 (surr)	91.4	50-150		%	1		11/12/21 13:58

## **Batch Information**

Analytical Batch: XFC16147 Analytical Method: AK103

Analyst: IVM

Analytical Date/Time: 11/12/21 13:58 Container ID: 1217257023-A Prep Batch: XXX45846 Prep Method: SW3550C Prep Date/Time: 11/11/21 07:45 Prep Initial Wt./Vol.: 30.292 g Prep Extract Vol: 5 mL



Client Sample ID: 21GST-SB011-02

Client Project ID: **SC Soils**Lab Sample ID: 1217257023
Lab Project ID: 1217257

Collection Date: 10/31/21 14:35 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):94.0 Location:

## Results by Volatile Fuels

<u>Parameter</u>	Result Qual	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	Allowable	<u>Date Analyzed</u>
Gasoline Range Organics	2.72 U	5.44	1.63	mg/kg	1	Limits	11/04/21 22:36
Surrogates 4-Bromofluorobenzene (surr)	81.8	50-150		%	1		11/04/21 22:36

## **Batch Information**

Analytical Batch: VFC15930 Analytical Method: AK101

Analyst: IJV

Analytical Date/Time: 11/04/21 22:36 Container ID: 1217257023-B Prep Batch: VXX38144 Prep Method: SW5035A Prep Date/Time: 10/31/21 14:35 Prep Initial Wt./Vol.: 25.957 g Prep Extract Vol: 26.5466 mL



Client Sample ID: 21GST-SB011-02

Client Project ID: **SC Soils**Lab Sample ID: 1217257023
Lab Project ID: 1217257

Collection Date: 10/31/21 14:35 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%):94.0 Location:

## Results by Volatile GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Benzene	0.0136 U	0.0272	0.00848	mg/kg	1		11/04/21 22:25
Ethylbenzene	0.0272 U	0.0544	0.0170	mg/kg	1		11/04/21 22:25
o-Xylene	0.0272 U	0.0544	0.0170	mg/kg	1		11/04/21 22:25
P & M -Xylene	0.0545 U	0.109	0.0326	mg/kg	1		11/04/21 22:25
Toluene	0.0272 U	0.0544	0.0170	mg/kg	1		11/04/21 22:25
Xylenes (total)	0.0815 U	0.163	0.0496	mg/kg	1		11/04/21 22:25
Surrogates							
1,2-Dichloroethane-D4 (surr)	102	71-136		%	1		11/04/21 22:25
4-Bromofluorobenzene (surr)	91.8	55-151		%	1		11/04/21 22:25
Toluene-d8 (surr)	103	85-116		%	1		11/04/21 22:25

#### **Batch Information**

Analytical Batch: VMS21351 Analytical Method: SW8260D

Analyst: MDT

Analytical Date/Time: 11/04/21 22:25 Container ID: 1217257023-B Prep Batch: VXX38142 Prep Method: SW5035A Prep Date/Time: 10/31/21 14:35 Prep Initial Wt./Vol.: 25.957 g Prep Extract Vol: 26.5466 mL



#### Results of Trip Blank

Client Sample ID: **Trip Blank**Client Project ID: **SC Soils**Lab Sample ID: 1217257024
Lab Project ID: 1217257

Collection Date: 10/30/21 09:35 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%): Location:

## Results by Volatile Fuels

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Gasoline Range Organics	1.28 U	2.57	0.771	mg/kg	1		11/03/21 14:45
Surrogates							
4-Bromofluorobenzene (surr)	96	50-150		%	1		11/03/21 14:45

## **Batch Information**

Analytical Batch: VFC15927 Analytical Method: AK101

Analyst: IJV

Analytical Date/Time: 11/03/21 14:45 Container ID: 1217257024-A Prep Batch: VXX38137 Prep Method: SW5035A Prep Date/Time: 10/30/21 09:35 Prep Initial Wt./Vol.: 48.607 g Prep Extract Vol: 25 mL



#### Results of Trip Blank

Client Sample ID: **Trip Blank** Client Project ID: **SC Soils** Lab Sample ID: 1217257024 Lab Project ID: 1217257 Collection Date: 10/30/21 09:35 Received Date: 11/02/21 08:56 Matrix: Soil/Solid (dry weight)

Solids (%): Location:

## Results by Volatile GC/MS

						<u>Allowable</u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Benzene	0.00645 U	0.0129	0.00401	mg/kg	1		11/04/21 17:32
Ethylbenzene	0.0129 U	0.0257	0.00802	mg/kg	1		11/04/21 17:32
o-Xylene	0.0129 U	0.0257	0.00802	mg/kg	1		11/04/21 17:32
P & M -Xylene	0.0257 U	0.0514	0.0154	mg/kg	1		11/04/21 17:32
Toluene	0.0129 U	0.0257	0.00802	mg/kg	1		11/04/21 17:32
Xylenes (total)	0.0386 U	0.0771	0.0235	mg/kg	1		11/04/21 17:32
Surrogates							
1,2-Dichloroethane-D4 (surr)	101	71-136		%	1		11/04/21 17:32
4-Bromofluorobenzene (surr)	102	55-151		%	1		11/04/21 17:32
Toluene-d8 (surr)	102	85-116		%	1		11/04/21 17:32

#### **Batch Information**

Analytical Batch: VMS21351 Analytical Method: SW8260D

Analyst: MDT

Analytical Date/Time: 11/04/21 17:32 Container ID: 1217257024-A Prep Batch: VXX38142 Prep Method: SW5035A Prep Date/Time: 10/30/21 09:35 Prep Initial Wt./Vol.: 48.607 g Prep Extract Vol: 25 mL



Blank ID: MB for HBN 1828034 [SPT/11427]

Blank Lab ID: 1645560

QC for Samples:

1217257001, 1217257002, 1217257003, 1217257004, 1217257005, 1217257006, 1217257007, 1217257008, 1217257007, 1217257008, 1217257007, 1217257008, 1217257007, 1217257008, 1217257007, 1217257008, 1217257007, 1217257008, 1217257007, 1217257008, 1217257007, 1217

Matrix: Soil/Solid (dry weight)

Results by SM21 2540G

 Parameter
 Results
 LOQ/CL
 DL
 Units

 Total Solids
 100
 %

#### **Batch Information**

Analytical Batch: SPT11427 Analytical Method: SM21 2540G

Instrument: Analyst: TMM

Analytical Date/Time: 11/2/2021 5:15:00PM

Print Date: 11/22/2021 2:49:48PM



Original Sample ID: 1217190001 Duplicate Sample ID: 1645561

QC for Samples: 1217257001

Analysis Date: 11/02/2021 17:15 Matrix: Soil/Solid (dry weight)

# Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	RPD (%)	RPD CL
Total Solids	81.6	80.3	%	1.60	(< 15 )

## **Batch Information**

Analytical Batch: SPT11427 Analytical Method: SM21 2540G

Instrument: Analyst: TMM

Print Date: 11/22/2021 2:49:50PM



Original Sample ID: 1217257001 Analysis Date: 11/02/2021 17:15

Duplicate Sample ID: 1645562 Matrix: Soil/Solid (dry weight)

QC for Samples:

 $1217257001,\,1217257002,\,1217257003,\,1217257004,\,1217257005,\,1217257006,\,1217257007$ 

# Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	RPD (%)	RPD CL
Total Solids	91.9	91.7	%	0.17	(< 15 )

## **Batch Information**

Analytical Batch: SPT11427 Analytical Method: SM21 2540G

Instrument: Analyst: TMM

Print Date: 11/22/2021 2:49:50PM



Original Sample ID: 1217257007 Analysis Date: 11/02/2021 17:15

Duplicate Sample ID: 1645563 Matrix: Soil/Solid (dry weight)

QC for Samples:

 $1217257002,\,1217257003,\,1217257004,\,1217257005,\,1217257006,\,1217257007,\,1217257008$ 

# Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	RPD (%)	RPD CL
Total Solids	93.7	92.3	%	1.50	(< 15 )

## **Batch Information**

Analytical Batch: SPT11427 Analytical Method: SM21 2540G

Instrument: Analyst: TMM

Print Date: 11/22/2021 2:49:50PM



Blank ID: MB for HBN 1828113 [SPT/11428]

Blank Lab ID: 1645876

QC for Samples:

1217257009, 1217257010, 1217257011, 1217257012, 1217257013, 1217257014, 1217257015, 1217257016, 1217257017, 1217257019, 1217

Matrix: Soil/Solid (dry weight)

1217257018, 1217257019, 1217257020, 1217257021, 1217257022, 1217257023

Results by SM21 2540G

 Parameter
 Results
 LOQ/CL
 DL
 Units

 Total Solids
 99.9
 %

**Batch Information** 

Analytical Batch: SPT11428 Analytical Method: SM21 2540G

Instrument: Analyst: TMM

Analytical Date/Time: 11/3/2021 5:05:00PM

Print Date: 11/22/2021 2:49:54PM



Original Sample ID: 1217250001 Analysis Date: 11/03/2021 17:05
Duplicate Sample ID: 1645877 Matrix: Soil/Solid (dry weight)

QC for Samples:

 $1217257009,\,1217257010,\,1217257011,\,1217257012,\,1217257013,\,1217257014,\,1217257015,\,1217257016$ 

# Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	RPD (%)	RPD CL
Total Solids	98.3	98.1	%	0.17	(< 15 )

#### **Batch Information**

Analytical Batch: SPT11428 Analytical Method: SM21 2540G

Instrument: Analyst: TMM

Print Date: 11/22/2021 2:49:55PM



Original Sample ID: 1217257016 Analysis Date: 11/03/2021 17:05
Duplicate Sample ID: 1645878 Matrix: Soil/Solid (dry weight)

QC for Samples:

 $1217257009,\,1217257010,\,1217257011,\,1217257012,\,1217257013,\,1217257014,\,1217257015,\,1217257016,\\$ 

 $1217257017,\,1217257018,\,1217257019,\,1217257020,\,1217257021,\,1217257022,\,1217257023$ 

## Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	RPD (%)	RPD CL
Total Solids	86.2	85.6	%	0.66	(< 15)

## **Batch Information**

Analytical Batch: SPT11428 Analytical Method: SM21 2540G

Instrument: Analyst: TMM

Print Date: 11/22/2021 2:49:55PM



Blank ID: MB for HBN 1828103 [VXX/38137]

Blank Lab ID: 1645813

QC for Samples: 1217257024

Matrix: Soil/Solid (dry weight)

## Results by AK101

ParameterResultsLOQ/CLDLUnitsGasoline Range Organics1.25U2.500.750mg/kg

**Surrogates** 

4-Bromofluorobenzene (surr) 89.6 50-150 %

## **Batch Information**

Analytical Batch: VFC15927
Analytical Method: AK101

Instrument: Agilent 7890 PID/FID

Analyst: IJV

Analytical Date/Time: 11/3/2021 12:23:00PM

Prep Batch: VXX38137 Prep Method: SW5035A

Prep Date/Time: 11/3/2021 6:00:00AM

Prep Initial Wt./Vol.: 50 g Prep Extract Vol: 25 mL

Print Date: 11/22/2021 2:49:58PM



## **Blank Spike Summary**

Blank Spike ID: LCS for HBN 1217257 [VXX38137]

Blank Spike Lab ID: 1645814 Date Analyzed: 11/03/2021 11:47

QC for Samples: 1217257024

Spike Duplicate ID: LCSD for HBN 1217257

[VXX38137]

Spike Duplicate Lab ID: 1645815 Matrix: Soil/Solid (dry weight)

# Results by **AK101**

			_							
	Е	Blank Spike	(mg/kg)	S	pike Duplic	ate (mg/kg)				
<u>Parameter</u>	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL	
Gasoline Range Organics	12.5	13.6	109	12.5	13.4	107	(60-120)	1.60	(< 20 )	
Surrogates										
4-Bromofluorobenzene (surr)	1.25		98	1.25		95	(50-150)	2.70		

#### **Batch Information**

Analytical Batch: VFC15927 Analytical Method: AK101 Instrument: Agilent 7890 PID/FID

Analyst: IJV

Prep Batch: VXX38137
Prep Method: SW5035A

Prep Date/Time: 11/03/2021 06:00

Spike Init Wt./Vol.: 12.5 mg/Kg Extract Vol: 25 mL Dupe Init Wt./Vol.: 12.5 mg/Kg Extract Vol: 25 mL

Print Date: 11/22/2021 2:50:01PM



Blank ID: MB for HBN 1828104 [VXX/38138]

Blank Lab ID: 1645816

QC for Samples:

1217257001, 1217257002, 1217257003, 1217257004, 1217257005, 1217257006, 1217257007, 1217257008, 1217257009, 1217257010, 1217257011, 1217257012, 1217257013, 1217257014, 1217257015, 1217257016, 1217257017, 1217257018, 1217

Matrix: Soil/Solid (dry weight)

1217257019, 1217257020

Results by AK101

ParameterResultsLOQ/CLDLUnitsGasoline Range Organics0.804J2.500.750mg/kg

**Surrogates** 

4-Bromofluorobenzene (surr) 91.3 50-150 %

**Batch Information** 

Analytical Batch: VFC15927 Prep Batch: VXX38138
Analytical Method: AK101 Prep Method: SW5035A

Instrument: Agilent 7890 PID/FID Prep Date/Time: 11/3/2021 6:00:00AM

Analyst: IJV Prep Initial Wt./Vol.: 50 g Analytical Date/Time: 11/3/2021 11:46:00PM Prep Extract Vol: 25 mL

Print Date: 11/22/2021 2:50:03PM



### **Blank Spike Summary**

Blank Spike ID: LCS for HBN 1217257 [VXX38138]

Blank Spike Lab ID: 1645817

Date Analyzed: 11/03/2021 23:10

Spike Duplicate ID: LCSD for HBN 1217257

[VXX38138]

Spike Duplicate Lab ID: 1645818 Matrix: Soil/Solid (dry weight)

QC for Samples: 1217257001, 1217257002, 1217257003, 1217257004, 1217257005, 1217257006, 1217257007,

 $1217257008,\,1217257009,\,1217257010,\,1217257011,\,1217257012,\,1217257013,\,1217257014,$ 

 $1217257015,\, 1217257016,\, 1217257017,\, 1217257018,\, 1217257019,\, 1217257020$ 

#### Results by **AK101**

/										
l		E	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)				
l	<u>Parameter</u>	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
	Gasoline Range Organics	12.5	13.5	108	12.5	13.4	107	(60-120)	1.10	(< 20 )
	Surrogates									
ı	4-Bromofluorobenzene (surr)	1.25		99	1.25		99	(50-150)	0.20	

#### **Batch Information**

Analytical Batch: VFC15927
Analytical Method: AK101

Instrument: Agilent 7890 PID/FID

Analyst: IJV

Prep Batch: VXX38138
Prep Method: SW5035A

Prep Date/Time: 11/03/2021 06:00

Spike Init Wt./Vol.: 12.5 mg/Kg Extract Vol: 25 mL Dupe Init Wt./Vol.: 12.5 mg/Kg Extract Vol: 25 mL

Print Date: 11/22/2021 2:50:05PM



Blank ID: MB for HBN 1828108 [VXX/38140]

Blank Lab ID: 1645829

QC for Samples:

1217257001, 1217257002, 1217257003, 1217257004, 1217257005

Matrix: Soil/Solid (dry weight)

## Results by SW8260D

<u>Parameter</u>	Results	LOQ/CL	<u>DL</u>	<u>Units</u>
Benzene	0.00625U	0.0125	0.00390	mg/kg
Ethylbenzene	0.0125U	0.0250	0.00780	mg/kg
o-Xylene	0.0125U	0.0250	0.00780	mg/kg
P & M -Xylene	0.0250U	0.0500	0.0150	mg/kg
Toluene	0.0125U	0.0250	0.00780	mg/kg
Xylenes (total)	0.0375U	0.0750	0.0228	mg/kg
Surrogates				
1,2-Dichloroethane-D4 (surr)	99.4	71-136		%
4-Bromofluorobenzene (surr)	98.7	55-151		%
Toluene-d8 (surr)	103	85-116		%

## **Batch Information**

Analytical Batch: VMS21353 Analytical Method: SW8260D

Instrument: VRA Agilent GC/MS 7890B/5977A

Analyst: JMG

Analytical Date/Time: 11/3/2021 5:32:00PM

Prep Batch: VXX38140 Prep Method: SW5035A

Prep Date/Time: 11/3/2021 6:00:00AM

Prep Initial Wt./Vol.: 50 g Prep Extract Vol: 25 mL

Print Date: 11/22/2021 2:50:07PM



### **Blank Spike Summary**

Blank Spike ID: LCS for HBN 1217257 [VXX38140]

Blank Spike Lab ID: 1645830 Date Analyzed: 11/03/2021 17:48

Matrix: Soil/Solid (dry weight)

QC for Samples: 1217257001, 1217257002, 1217257003, 1217257004, 1217257005

# Results by SW8260D

Blank Spike (mg/kg)									
<u>Parameter</u>	Spike	Result	Rec (%)						
Benzene	0.750	0.749	100						
Ethylbenzene	0.750	0.762	102						
o-Xylene	0.750	0.778	104						
P & M -Xylene	1.50	1.53	102						
Toluene	0.750	0.766	102						
Xylenes (total)	2.25	2.31	103						
Surrogates									
1,2-Dichloroethane-D4 (surr)	0.750		100						
4-Bromofluorobenzene (surr)	0.750		91						
Toluene-d8 (surr)	0.750		102						

#### **Batch Information**

Analytical Batch: VMS21353
Analytical Method: SW8260D

Instrument: VRA Agilent GC/MS 7890B/5977A

Analyst: JMG

Prep Batch: VXX38140
Prep Method: SW5035A

Prep Date/Time: 11/03/2021 06:00

Spike Init Wt./Vol.: 0.750 mg/Kg Extract Vol: 25 mL

Dupe Init Wt./Vol.: Extract Vol:

Print Date: 11/22/2021 2:50:10PM



#### **Matrix Spike Summary**

 Original Sample ID: 1646307
 Analysis Date: 11/03/2021 20:11

 MS Sample ID: 1646313 MS
 Analysis Date: 11/03/2021 18:39

 MSD Sample ID: 1646314 MSD
 Analysis Date: 11/03/2021 18:54

 Matrix: Solid/Soil (Wet Weight)

QC for Samples: 1217257001, 1217257002, 1217257003, 1217257004, 1217257005

## Results by SW8260D

		Matrix Spike (mg/kg)		Spike Duplicate (mg/kg)						
<u>Parameter</u>	<u>Sample</u>	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Benzene	0.00630U	0.890	0.900	101	0.890	0.894	100	77-121	0.69	(< 20)
Ethylbenzene	0.0127U	0.890	0.906	102	0.890	0.918	103	76-122	1.30	(< 20)
o-Xylene	0.0127U	0.890	0.944	106	0.890	0.949	107	77-123	0.60	(< 20)
P & M -Xylene	0.0253U	1.78	1.81	102	1.78	1.84	103	77-124	1.40	(< 20)
Toluene	0.00998J	0.890	0.923	103	0.890	0.931	103	77-121	0.80	(< 20)
Xylenes (total)	0.0379U	2.67	2.76	103	2.67	2.79	104	78-124	1.10	(< 20 )
Surrogates										
1,2-Dichloroethane-D4 (surr)		0.890	0.884	99	0.890	0.883	99	71-136	0.21	
4-Bromofluorobenzene (surr)		1.26	1.21	96	1.26	1.19	94	55-151	1.30	
Toluene-d8 (surr)		0.890	0.912	102	0.890	0.920	103	85-116	0.86	

#### **Batch Information**

Analytical Batch: VMS21353 Analytical Method: SW8260D

Instrument: VRA Agilent GC/MS 7890B/5977A

Analyst: JMG

Analytical Date/Time: 11/3/2021 6:39:00PM

Prep Batch: VXX38140

Prep Method: Vol. Extraction SW8260 Field Extracted L

Prep Date/Time: 11/3/2021 6:00:00AM

Prep Initial Wt./Vol.: 49.45g Prep Extract Vol: 29.27mL

Print Date: 11/22/2021 2:50:11PM



Blank ID: MB for HBN 1828140 [VXX/38142]

Blank Lab ID: 1646064

QC for Samples:

 $1217257006,\ 1217257007,\ 1217257008,\ 1217257009,\ 1217257010,\ 1217257011,\ 1217257012,\ 1217257013,\ 1217257014,\ 1217257015,\ 1217257016,\ 1217257017,\ 1217257018,\ 1217257019,\ 1217257020,\ 1217257021,\ 1217257022,\ 1217257023,$ 

1217257024

## Results by SW8260D

<u>Parameter</u>	<u>Results</u>	LOQ/CL	<u>DL</u>	<u>Units</u>
Benzene	0.00625U	0.0125	0.00390	mg/kg
Ethylbenzene	0.0125U	0.0250	0.00780	mg/kg
o-Xylene	0.0125U	0.0250	0.00780	mg/kg
P & M -Xylene	0.0250U	0.0500	0.0150	mg/kg
Toluene	0.0125U	0.0250	0.00780	mg/kg
Xylenes (total)	0.0375U	0.0750	0.0228	mg/kg
Surrogates				
1,2-Dichloroethane-D4 (surr)	101	71-136		%
4-Bromofluorobenzene (surr)	96.5	55-151		%
Toluene-d8 (surr)	103	85-116		%

## **Batch Information**

Analytical Batch: VMS21351 Analytical Method: SW8260D

Instrument: VRA Agilent GC/MS 7890B/5977A

Analyst: MDT

Analytical Date/Time: 11/4/2021 2:45:00PM

Prep Batch: VXX38142 Prep Method: SW5035A

Prep Date/Time: 11/4/2021 6:00:00AM

Matrix: Soil/Solid (dry weight)

Prep Initial Wt./Vol.: 50 g Prep Extract Vol: 25 mL

Print Date: 11/22/2021 2:50:12PM



#### **Blank Spike Summary**

Blank Spike ID: LCS for HBN 1217257 [VXX38142]

Blank Spike Lab ID: 1646065 Date Analyzed: 11/04/2021 15:01

Matrix: Soil/Solid (dry weight)

QC for Samples: 1217257006, 1217257007, 1217257008, 1217257009, 1217257010, 1217257011, 1217257012,

1217257013, 1217257014, 1217257015, 1217257016, 1217257017, 1217257018, 1217257019,

1217257020, 1217257021, 1217257022, 1217257023, 1217257024

# Results by SW8260D

Blank Spike (mg/kg)									
<u>Parameter</u>	Spike	Result	Rec (%)						
Benzene	0.750	0.743	99						
Ethylbenzene	0.750	0.749	100						
o-Xylene	0.750	0.785	105						
P & M -Xylene	1.50	1.52	101						
Toluene	0.750	0.763	102						
Xylenes (total)	2.25	2.30	102						
Surrogates									
1,2-Dichloroethane-D4 (surr)	0.750		100						
4-Bromofluorobenzene (surr)	0.750		92						
Toluene-d8 (surr)	0.750		103						

#### **Batch Information**

Analytical Batch: VMS21351
Analytical Method: SW8260D

Instrument: VRA Agilent GC/MS 7890B/5977A

Analyst: MDT

Prep Batch: VXX38142
Prep Method: SW5035A

Prep Date/Time: 11/04/2021 06:00

Spike Init Wt./Vol.: 0.750 mg/Kg Extract Vol: 25 mL

Dupe Init Wt./Vol.: Extract Vol:

Print Date: 11/22/2021 2:50:15PM



#### **Matrix Spike Summary**

 Original Sample ID: 1646066
 Analysis Date: 11/04/2021 19:05

 MS Sample ID: 1646067 MS
 Analysis Date: 11/04/2021 16:15

 MSD Sample ID: 1646068 MSD
 Analysis Date: 11/04/2021 16:30

 Matrix: Solid/Soil (Wet Weight)

QC for Samples: 1217257006, 1217257007, 1217257008, 1217257009, 1217257010, 1217257011, 1217257012,

1217257013, 1217257014, 1217257015, 1217257016, 1217257017, 1217257018, 1217257019,

1217257020, 1217257021, 1217257022, 1217257023, 1217257024

## Results by SW8260D

		Matrix Spike (mg/kg)		Spike Duplicate (mg/kg)						
<u>Parameter</u>	Sample	Spike	Result	Rec (%)	<u>Spike</u>	Result	Rec (%)	CL	RPD (%)	RPD CL
Benzene	0.00920U	1.11	1.12	101	1.11	1.11	101	77-121	0.53	(< 20)
Ethylbenzene	0.0184U	1.11	1.14	103	1.11	1.12	101	76-122	2.10	(< 20)
o-Xylene	0.0184U	1.11	1.17	106	1.11	1.16	105	77-123	0.79	(< 20)
P & M -Xylene	0.0369U	2.21	2.27	103	2.21	2.23	101	77-124	1.80	(< 20)
Toluene	0.0184U	1.11	1.15	104	1.11	1.13	103	77-121	1.50	(< 20)
Xylenes (total)	0.0555U	3.32	3.43	104	3.32	3.38	102	78-124	1.40	(< 20 )
Surrogates										
1,2-Dichloroethane-D4 (surr)		1.11	1.10	99	1.11	1.09	99	71-136	0.27	
4-Bromofluorobenzene (surr)		1.84	1.60	87	1.84	1.60	87	55-151	0.14	
Toluene-d8 (surr)		1.11	1.14	103	1.11	1.13	102	85-116	1.00	

#### **Batch Information**

Analytical Batch: VMS21351 Analytical Method: SW8260D

Instrument: VRA Agilent GC/MS 7890B/5977A

Analyst: MDT

Analytical Date/Time: 11/4/2021 4:15:00PM

Prep Batch: VXX38142

Prep Method: Vol. Extraction SW8260 Field Extracted L

Prep Date/Time: 11/4/2021 6:00:00AM

Prep Initial Wt./Vol.: 33.93g Prep Extract Vol: 25.00mL

Print Date: 11/22/2021 2:50:16PM



Blank ID: MB for HBN 1828142 [VXX/38144]

Blank Lab ID: 1646072

QC for Samples:

1217257021, 1217257022, 1217257023

Matrix: Soil/Solid (dry weight)

## Results by AK101

ParameterResultsLOQ/CLDLUnitsGasoline Range Organics1.25U2.500.750mg/kg

**Surrogates** 

4-Bromofluorobenzene (surr) 87.2 50-150 %

## **Batch Information**

Analytical Batch: VFC15930 Prep Batch: VXX38144
Analytical Method: AK101 Prep Method: SW5035A

Instrument: Agilent 7890 PID/FID Prep Date/Time: 11/4/2021 6:00:00AM

Analyst: IJV Prep Initial Wt./Vol.: 50 g
Analytical Date/Time: 11/4/2021 2:11:00PM Prep Extract Vol: 25 mL

Print Date: 11/22/2021 2:50:18PM



### **Blank Spike Summary**

Blank Spike ID: LCS for HBN 1217257 [VXX38144]

Blank Spike Lab ID: 1646073 Date Analyzed: 11/04/2021 13:34 Spike Duplicate ID: LCSD for HBN 1217257

[VXX38144]

Spike Duplicate Lab ID: 1646074 Matrix: Soil/Solid (dry weight)

QC for Samples: 1217257021, 1217257022, 1217257023

# Results by **AK101**

	E	Blank Spike	(mg/kg)	S	pike Duplic	ate (mg/kg)			
<u>Parameter</u>	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Gasoline Range Organics	12.5	12.7	101	12.5	13.0	104	(60-120)	2.20	(< 20 )
Surrogates									
4-Bromofluorobenzene (surr)	1.25		93	1.25		95	(50-150)	2.00	

#### **Batch Information**

Analytical Batch: VFC15930 Analytical Method: AK101 Instrument: Agilent 7890 PID/FID

Analyst: IJV

Prep Batch: VXX38144
Prep Method: SW5035A

Prep Date/Time: 11/04/2021 06:00

Spike Init Wt./Vol.: 12.5 mg/Kg Extract Vol: 25 mL Dupe Init Wt./Vol.: 12.5 mg/Kg Extract Vol: 25 mL

Print Date: 11/22/2021 2:50:20PM



Blank ID: MB for HBN 1828084 [XXX/45817]

Blank Lab ID: 1645750

QC for Samples:

1217257001, 1217257002, 1217257003, 1217257004, 1217257005, 1217257006, 1217257007, 1217257008, 1217257009,

Matrix: Soil/Solid (dry weight)

1217257010

Results by AK102

 Parameter
 Results
 LOQ/CL
 DL
 Units

 Diesel Range Organics
 10.0U
 20.0
 9.00
 mg/kg

**Surrogates** 

5a Androstane (surr) 103 60-120 %

**Batch Information** 

Analytical Batch: XFC16134 Prep Batch: XXX45817
Analytical Method: AK102 Prep Method: SW3550C

Instrument: Agilent 7890B R Prep Date/Time: 11/4/2021 8:07:03AM

Analyst: IVM Prep Initial Wt./Vol.: 30 g Analytical Date/Time: 11/4/2021 1:48:00PM Prep Extract Vol: 5 mL

Print Date: 11/22/2021 2:50:22PM



### **Blank Spike Summary**

Blank Spike ID: LCS for HBN 1217257 [XXX45817]

Blank Spike Lab ID: 1645751 Date Analyzed: 11/04/2021 13:58 Spike Duplicate ID: LCSD for HBN 1217257

[XXX45817]

Spike Duplicate Lab ID: 1645752 Matrix: Soil/Solid (dry weight)

QC for Samples: 1217257001, 1217257002, 1217257003, 1217257004, 1217257005, 1217257006, 1217257007,

1217257008, 1217257009, 1217257010

# Results by AK102

	E	Blank Spike	(mg/kg)	S	pike Duplic	ate (mg/kg)			
<u>Parameter</u>	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Diesel Range Organics	667	613	92	667	618	93	(75-125)	0.79	(< 20 )
Surrogates									
5a Androstane (surr)	16.7		96	16.7		97	(60-120)	1.20	

#### **Batch Information**

Analytical Batch: XFC16134 Analytical Method: AK102 Instrument: Agilent 7890B R

Analyst: IVM

Prep Batch: XXX45817
Prep Method: SW3550C

Prep Date/Time: 11/04/2021 08:07

Spike Init Wt./Vol.: 667 mg/kg Extract Vol: 5 mL Dupe Init Wt./Vol.: 667 mg/kg Extract Vol: 5 mL

Print Date: 11/22/2021 2:50:25PM



Blank ID: MB for HBN 1828084 [XXX/45817]

Blank Lab ID: 1645750

QC for Samples:

1217257001, 1217257002, 1217257003, 1217257004, 1217257005, 1217257006, 1217257007, 1217257008, 1217257009,

Matrix: Soil/Solid (dry weight)

1217257010

Results by AK103

ParameterResultsLOQ/CLDLUnitsResidual Range Organics50.0U10043.0mg/kg

**Surrogates** 

n-Triacontane-d62 (surr) 99.6 60-120 %

**Batch Information** 

Analytical Batch: XFC16134 Prep Batch: XXX45817
Analytical Method: AK103 Prep Method: SW3550C

Instrument: Agilent 7890B R Prep Date/Time: 11/4/2021 8:07:03AM

Analyst: IVM Prep Initial Wt./Vol.: 30 g Analytical Date/Time: 11/4/2021 1:48:00PM Prep Extract Vol: 5 mL

Print Date: 11/22/2021 2:50:27PM



Blank Spike ID: LCS for HBN 1217257 [XXX45817]

Blank Spike Lab ID: 1645751 Date Analyzed: 11/04/2021 13:58 Spike Duplicate ID: LCSD for HBN 1217257

[XXX45817]

Spike Duplicate Lab ID: 1645752 Matrix: Soil/Solid (dry weight)

1217257001, 1217257002, 1217257003, 1217257004, 1217257005, 1217257006, 1217257007, QC for Samples:

1217257008, 1217257009, 1217257010

# Results by AK103

	E	Blank Spike	(mg/kg)	S	pike Duplic	ate (mg/kg)			
<u>Parameter</u>	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Residual Range Organics	667	596	90	667	598	90	(60-120)	0.20	(< 20 )
Surrogates									
n-Triacontane-d62 (surr)	16.7		89	16.7		90	(60-120)	0.38	

#### **Batch Information**

Analytical Batch: XFC16134 Analytical Method: AK103 Instrument: Agilent 7890B R

Analyst: IVM

Prep Batch: XXX45817 Prep Method: SW3550C

Prep Date/Time: 11/04/2021 08:07

Spike Init Wt./Vol.: 667 mg/kg Extract Vol: 5 mL Dupe Init Wt./Vol.: 667 mg/kg Extract Vol: 5 mL

Print Date: 11/22/2021 2:50:30PM



#### **Method Blank**

Blank ID: MB for HBN 1828090 [XXX/45819]

Blank Lab ID: 1645765

QC for Samples:

1217257001, 1217257002, 1217257003, 1217257004, 1217257005, 1217257006, 1217257007, 1217257008, 1217257009, 1217

1217257010, 1217257011, 1217257012

# Results by 8270D SIM (PAH)

<u>Parameter</u>	Results	LOQ/CL	<u>DL</u>	<u>Units</u>
1-Methylnaphthalene	0.0125U	0.0250	0.00625	mg/kg
2-Methylnaphthalene	0.0125U	0.0250	0.00625	mg/kg
Acenaphthene	0.0125U	0.0250	0.00625	mg/kg
Acenaphthylene	0.0125U	0.0250	0.00625	mg/kg
Anthracene	0.0125U	0.0250	0.00625	mg/kg
Benzo(a)Anthracene	0.0125U	0.0250	0.00625	mg/kg
Benzo[a]pyrene	0.0125U	0.0250	0.00625	mg/kg
Benzo[b]Fluoranthene	0.0125U	0.0250	0.00625	mg/kg
Benzo[g,h,i]perylene	0.0125U	0.0250	0.00625	mg/kg
Benzo[k]fluoranthene	0.0125U	0.0250	0.00625	mg/kg
Chrysene	0.0125U	0.0250	0.00625	mg/kg
Dibenzo[a,h]anthracene	0.0125U	0.0250	0.00625	mg/kg
Fluoranthene	0.0125U	0.0250	0.00625	mg/kg
Fluorene	0.0125U	0.0250	0.00625	mg/kg
Indeno[1,2,3-c,d] pyrene	0.0125U	0.0250	0.00625	mg/kg
Naphthalene	0.0100U	0.0200	0.00500	mg/kg
Phenanthrene	0.0125U	0.0250	0.00625	mg/kg
Pyrene	0.0125U	0.0250	0.00625	mg/kg
Surrogates				
2-Methylnaphthalene-d10 (surr)	81.7	58-103		%
Fluoranthene-d10 (surr)	85	54-113		%

# **Batch Information**

Analytical Batch: XMS12995 Analytical Method: 8270D SIM (PAH)

Instrument: SVA Agilent 780/5975 GC/MS

Analyst: LAW

Analytical Date/Time: 11/11/2021 8:31:00PM

Prep Batch: XXX45819 Prep Method: SW3550C

Prep Date/Time: 11/4/2021 9:26:15AM

Matrix: Soil/Solid (dry weight)

Prep Initial Wt./Vol.: 22.5 g Prep Extract Vol: 5 mL

Print Date: 11/22/2021 2:50:32PM



Blank Spike ID: LCS for HBN 1217257 [XXX45819]

Blank Spike Lab ID: 1645766 Date Analyzed: 11/11/2021 20:51

Matrix: Soil/Solid (dry weight)

QC for Samples: 1217257001, 1217257002, 1217257003, 1217257004, 1217257005, 1217257006, 1217257007,

 $1217257008,\,1217257009,\,1217257010,\,1217257011,\,1217257012$ 

# Results by 8270D SIM (PAH)

	Blank Spike (mg/kg)											
<u>Parameter</u>	<u>Spike</u>	Result	Rec (%)	CL								
1-Methylnaphthalene	0.111	0.102	92	( 43-111 )								
2-Methylnaphthalene	0.111	0.104	93	( 39-114 )								
Acenaphthene	0.111	0.102	92	( 44-111 )								
Acenaphthylene	0.111	0.101	91	(39-116)								
Anthracene	0.111	0.101	91	( 50-114 )								
Benzo(a)Anthracene	0.111	0.101	91	( 54-122 )								
Benzo[a]pyrene	0.111	0.0986	89	( 50-125 )								
Benzo[b]Fluoranthene	0.111	0.104	94	( 53-128 )								
Benzo[g,h,i]perylene	0.111	0.0998	90	( 49-127 )								
Benzo[k]fluoranthene	0.111	0.104	94	( 56-123 )								
Chrysene	0.111	0.104	93	( 57-118 )								
Dibenzo[a,h]anthracene	0.111	0.101	91	( 50-129 )								
Fluoranthene	0.111	0.104	94	( 55-119 )								
Fluorene	0.111	0.102	92	( 47-114 )								
Indeno[1,2,3-c,d] pyrene	0.111	0.101	91	( 49-130 )								
Naphthalene	0.111	0.102	92	( 38-111 )								
Phenanthrene	0.111	0.101	91	( 49-113 )								
Pyrene	0.111	0.103	93	( 55-117 )								
Surrogates												
2-Methylnaphthalene-d10 (surr)	0.111		96	( 58-103 )								
Fluoranthene-d10 (surr)	0.111		97	( 54-113 )								

### **Batch Information**

Analytical Batch: XMS12995 Analytical Method: 8270D SIM (PAH) Instrument: SVA Agilent 780/5975 GC/MS

Analyst: LAW

Prep Batch: XXX45819
Prep Method: SW3550C

Prep Date/Time: 11/04/2021 09:26

Spike Init Wt./Vol.: 0.111 mg/Kg Extract Vol: 5 mL

Dupe Init Wt./Vol.: Extract Vol:

Print Date: 11/22/2021 2:50:35PM



#### **Matrix Spike Summary**

 Original Sample ID: 1217190003
 Analysis Date: 11/11/2021 22:13

 MS Sample ID: 1645767 MS
 Analysis Date: 11/11/2021 22:34

 MSD Sample ID: 1645768 MSD
 Analysis Date: 11/11/2021 22:54

 Matrix: Soil/Solid (dry weight)

QC for Samples: 1217257001, 1217257002, 1217257003, 1217257004, 1217257005, 1217257006, 1217257007,

1217257008, 1217257009, 1217257010, 1217257011, 1217257012

#### Results by 8270D SIM (PAH)

			_							
		Mat	rix Spike (n	ng/kg)	Spike	Duplicate	(mg/kg)			
<u>Parameter</u>	<u>Sample</u>	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1-Methylnaphthalene	0.0159U	0.141	0.126	90	0.141	0.119	85	43-111	6.00	(< 20 )
2-Methylnaphthalene	0.0159U	0.141	0.128	92	0.141	0.120	85	39-114	7.40	(< 20)
Acenaphthene	0.0159U	0.141	0.128	91	0.141	0.119	85	44-111	7.00	(< 20)
Acenaphthylene	0.0159U	0.141	0.131	93	0.141	0.123	87	39-116	6.50	(< 20)
Anthracene	0.0159U	0.141	0.133	95	0.141	0.126	90	50-114	5.30	(< 20)
Benzo(a)Anthracene	0.0159U	0.141	0.129	92	0.141	0.122	87	54-122	6.20	(< 20)
Benzo[a]pyrene	0.0159U	0.141	0.132	94	0.141	0.122	87	50-125	7.40	(< 20)
Benzo[b]Fluoranthene	0.0159U	0.141	0.136	96	0.141	0.124	88	53-128	9.00	(< 20)
Benzo[g,h,i]perylene	0.0159U	0.141	0.116	83	0.141	0.107	77	49-127	7.70	(< 20)
Benzo[k]fluoranthene	0.0159U	0.141	0.135	96	0.141	0.127	90	56-123	6.10	(< 20)
Chrysene	0.0159U	0.141	0.132	94	0.141	0.123	87	57-118	7.10	(< 20)
Dibenzo[a,h]anthracene	0.0159U	0.141	0.126	90	0.141	0.116	83	50-129	7.80	(< 20)
Fluoranthene	0.0159U	0.141	0.135	96	0.141	0.124	88	55-119	8.30	(< 20)
Fluorene	0.0159U	0.141	0.133	95	0.141	0.126	90	47-114	6.10	(< 20)
Indeno[1,2,3-c,d] pyrene	0.0159U	0.141	0.123	88	0.141	0.114	82	49-130	7.40	(< 20)
Naphthalene	0.0127U	0.141	0.124	89	0.141	0.116	83	38-111	7.00	(< 20)
Phenanthrene	0.0159U	0.141	0.127	91	0.141	0.121	86	49-113	5.10	(< 20)
Pyrene	0.0159U	0.141	0.133	95	0.141	0.125	89	55-117	6.40	(< 20 )
Surrogates										
2-Methylnaphthalene-d10 (surr)		0.141	0.131	93	0.141	0.120	86	58-103	8.00	
Fluoranthene-d10 (surr)		0.141	0.133	95	0.141	0.125	89	54-113	6.60	

#### **Batch Information**

Analytical Batch: XMS12995 Analytical Method: 8270D SIM (PAH) Instrument: SVA Agilent 780/5975 GC/MS

Analyst: LAW

Analytical Date/Time: 11/11/2021 10:34:00PM

Prep Batch: XXX45819

Prep Method: Sonication Extr Soil 8270 PAH SIM 5ml

Prep Date/Time: 11/4/2021 9:26:15AM

Prep Initial Wt./Vol.: 22.61g Prep Extract Vol: 5.00mL

Print Date: 11/22/2021 2:50:36PM



#### **Method Blank**

Blank ID: MB for HBN 1828137 [XXX/45824]

Blank Lab ID: 1646046

QC for Samples:

1217257011, 1217257012, 1217257013, 1217257014, 1217257015, 1217257016, 1217257017

Results by AK102

 Parameter
 Results
 LOQ/CL
 DL
 Units

 Diesel Range Organics
 10.0U
 20.0
 9.00
 mg/kg

Matrix: Soil/Solid (dry weight)

**Surrogates** 

5a Androstane (surr) 84.1 60-120 %

**Batch Information** 

Analytical Batch: XFC16135 Prep Batch: XXX45824
Analytical Method: AK102 Prep Method: SW3550C

Instrument: Agilent 7890B F Prep Date/Time: 11/5/2021 9:44:10AM

Analyst: IVM Prep Initial Wt./Vol.: 30 g
Analytical Date/Time: 11/5/2021 2:08:00PM Prep Extract Vol: 5 mL

Print Date: 11/22/2021 2:50:38PM



Blank Spike ID: LCS for HBN 1217257 [XXX45824]

Blank Spike Lab ID: 1646047 Date Analyzed: 11/05/2021 14:18 Spike Duplicate ID: LCSD for HBN 1217257

[XXX45824]

Spike Duplicate Lab ID: 1646048 Matrix: Soil/Solid (dry weight)

QC for Samples: 1217257011, 1217257012, 1217257013, 1217257014, 1217257015, 1217257016, 1217257017

# Results by **AK102**

	E	Blank Spike	(mg/kg)	S	pike Duplic	ate (mg/kg)			
<u>Parameter</u>	<u>Spike</u>	Result	Rec (%)	<u>Spike</u>	Result	Rec (%)	<u>CL</u>	RPD (%)	RPD CL
Diesel Range Organics	667	590	89	667	564	85	(75-125)	4.40	(< 20 )
Surrogates									
5a Androstane (surr)	16.7		91	16.7		89	(60-120)	2.60	

#### **Batch Information**

Analytical Batch: XFC16135 Analytical Method: AK102 Instrument: Agilent 7890B F

Analyst: IVM

Prep Batch: XXX45824
Prep Method: SW3550C

Prep Date/Time: 11/05/2021 09:44

Spike Init Wt./Vol.: 667 mg/kg Extract Vol: 5 mL Dupe Init Wt./Vol.: 667 mg/kg Extract Vol: 5 mL

Print Date: 11/22/2021 2:50:40PM



#### **Method Blank**

Blank ID: MB for HBN 1828137 [XXX/45824]

Blank Lab ID: 1646046

QC for Samples:

1217257011, 1217257012, 1217257013, 1217257014, 1217257015, 1217257016, 1217257017

Results by AK103

ParameterResultsLOQ/CLDLUnitsResidual Range Organics50.0U10043.0mg/kg

Matrix: Soil/Solid (dry weight)

**Surrogates** 

n-Triacontane-d62 (surr) 86.4 60-120 %

**Batch Information** 

Analytical Batch: XFC16135 Prep Batch: XXX45824
Analytical Method: AK103 Prep Method: SW3550C

Instrument: Agilent 7890B F Prep Date/Time: 11/5/2021 9:44:10AM

Analyst: IVM Prep Initial Wt./Vol.: 30 g
Analytical Date/Time: 11/5/2021 2:08:00PM Prep Extract Vol: 5 mL

Print Date: 11/22/2021 2:50:42PM



Blank Spike ID: LCS for HBN 1217257 [XXX45824]

Blank Spike Lab ID: 1646047 Date Analyzed: 11/05/2021 14:18

1646047

[XXX45824]

Spike Duplicate Lab ID: 1646048 Matrix: Soil/Solid (dry weight)

Spike Duplicate ID: LCSD for HBN 1217257

QC for Samples: 1217257011, 1217257012, 1217257013, 1217257014, 1217257015, 1217257016, 1217257017

# Results by AK103

•			_							
	E	Blank Spike	(mg/kg)	S	pike Duplic	ate (mg/kg)				
<u>Parameter</u>	<u>Spike</u>	Result	Rec (%)	<u>Spike</u>	Result	Rec (%)	CL	RPD (%)	RPD CL	
Residual Range Organics	667	638	96	667	626	94	(60-120)	1.90	(< 20 )	
Surrogates										
n-Triacontane-d62 (surr)	16.7		89	16.7		88	(60-120)	1.30		

#### **Batch Information**

Analytical Batch: XFC16135 Analytical Method: AK103 Instrument: Agilent 7890B F

Analyst: IVM

Prep Batch: XXX45824
Prep Method: SW3550C

Prep Date/Time: 11/05/2021 09:44

Spike Init Wt./Vol.: 667 mg/kg Extract Vol: 5 mL Dupe Init Wt./Vol.: 667 mg/kg Extract Vol: 5 mL

Print Date: 11/22/2021 2:50:45PM



#### **Method Blank**

Blank ID: MB for HBN 1828148 [XXX/45825]

Blank Lab ID: 1646106

QC for Samples:

1217257013, 1217257014, 1217257015, 1217257016, 1217257017, 1217257018, 1217257019

# Results by 8270D SIM (PAH)

<u>Parameter</u>	Results	LOQ/CL	<u>DL</u>	<u>Units</u>
1-Methylnaphthalene	0.0125U	0.0250	0.00625	mg/kg
2-Methylnaphthalene	0.0125U	0.0250	0.00625	mg/kg
Acenaphthene	0.0125U	0.0250	0.00625	mg/kg
Acenaphthylene	0.0125U	0.0250	0.00625	mg/kg
Anthracene	0.0125U	0.0250	0.00625	mg/kg
Benzo(a)Anthracene	0.0125U	0.0250	0.00625	mg/kg
Benzo[a]pyrene	0.0125U	0.0250	0.00625	mg/kg
Benzo[b]Fluoranthene	0.0125U	0.0250	0.00625	mg/kg
Benzo[g,h,i]perylene	0.0125U	0.0250	0.00625	mg/kg
Benzo[k]fluoranthene	0.0125U	0.0250	0.00625	mg/kg
Chrysene	0.0125U	0.0250	0.00625	mg/kg
Dibenzo[a,h]anthracene	0.0125U	0.0250	0.00625	mg/kg
Fluoranthene	0.0125U	0.0250	0.00625	mg/kg
Fluorene	0.0125U	0.0250	0.00625	mg/kg
Indeno[1,2,3-c,d] pyrene	0.0125U	0.0250	0.00625	mg/kg
Naphthalene	0.0100U	0.0200	0.00500	mg/kg
Phenanthrene	0.0125U	0.0250	0.00625	mg/kg
Pyrene	0.0125U	0.0250	0.00625	mg/kg
Surrogates				
2-Methylnaphthalene-d10 (surr)	95.1	58-103		%
Fluoranthene-d10 (surr)	98.6	54-113		%

# **Batch Information**

Analytical Batch: XMS12997

Analytical Method: 8270D SIM (PAH)

Instrument: SVA Agilent 780/5975 GC/MS

Analyst: LAW

Analytical Date/Time: 11/15/2021 8:40:00PM

Prep Batch: XXX45825 Prep Method: SW3550C

Prep Date/Time: 11/8/2021 7:19:33AM

Matrix: Soil/Solid (dry weight)

Prep Initial Wt./Vol.: 22.5 g Prep Extract Vol: 5 mL

Print Date: 11/22/2021 2:50:47PM



Blank Spike ID: LCS for HBN 1217257 [XXX45825]

Blank Spike Lab ID: 1646107 Date Analyzed: 11/15/2021 21:01

Matrix: Soil/Solid (dry weight)

QC for Samples: 1217257013, 1217257014, 1217257015, 1217257016, 1217257017, 1217257018, 1217257019

# Results by 8270D SIM (PAH)

, , ,				
	E	Blank Spike	(mg/kg)	
<u>Parameter</u>	Spike	Result	Rec (%)	
1-Methylnaphthalene	0.111	0.107	97	
2-Methylnaphthalene	0.111	0.109	98	
Acenaphthene	0.111	0.107	96	
Acenaphthylene	0.111	0.105	95	
Anthracene	0.111	0.105	94	
Benzo(a)Anthracene	0.111	0.109	98	
Benzo[a]pyrene	0.111	0.101	91	
Benzo[b]Fluoranthene	0.111	0.112	101	
Benzo[g,h,i]perylene	0.111	0.107	97	
Benzo[k]fluoranthene	0.111	0.114	102	
Chrysene	0.111	0.112	101	
Dibenzo[a,h]anthracene	0.111	0.110	99	
Fluoranthene	0.111	0.114	103	
Fluorene	0.111	0.109	98	
Indeno[1,2,3-c,d] pyrene	0.111	0.109	98	
Naphthalene	0.111	0.107	96	
Phenanthrene	0.111	0.107	97	
Pyrene	0.111	0.112	101	
Surrogates				
2-Methylnaphthalene-d10 (surr)	0.111		100	
Fluoranthene-d10 (surr)	0.111		102	

### **Batch Information**

Analytical Batch: XMS12997 Analytical Method: 8270D SIM (PAH) Instrument: SVA Agilent 780/5975 GC/MS

Analyst: LAW

Prep Batch: XXX45825 Prep Method: SW3550C

Prep Date/Time: 11/08/2021 07:19

Spike Init Wt./Vol.: 0.111 mg/Kg Extract Vol: 5 mL

Dupe Init Wt./Vol.: Extract Vol:

Print Date: 11/22/2021 2:50:50PM



#### **Matrix Spike Summary**

 Original Sample ID: 1647373
 Analysis Date: 11/16/2021 0:44

 MS Sample ID: 1646294 MS
 Analysis Date: 11/16/2021 1:05

 MSD Sample ID: 1646295 MSD
 Analysis Date: 11/16/2021 1:25

 Matrix: Soil/Solid (dry weight)

QC for Samples: 1217257013, 1217257014, 1217257015, 1217257016, 1217257017, 1217257018, 1217257019

#### Results by 8270D SIM (PAH)

		Mat	rix Spike (n	ng/kg)	Spike	Duplicate	(mg/kg)			
<u>Parameter</u>	<u>Sample</u>	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1-Methylnaphthalene	0.0124U	0.111	0.125	113 *	0.110	0.113	102	43-111	10.20	(< 20)
2-Methylnaphthalene	0.0124U	0.111	0.126	114	0.110	0.115	104	39-114	9.00	(< 20)
Acenaphthene	0.0124U	0.111	0.135	122 *	0.110	0.131	118 *	44-111	3.50	(< 20)
Acenaphthylene	0.0124U	0.111	0.129	117 *	0.110	0.118	107	39-116	9.20	(< 20)
Anthracene	0.0164J	0.111	0.231	194 *	0.110	0.250	212 *	50-114	8.20	(< 20)
Benzo(a)Anthracene	0.0145J	0.111	0.210	177 *	0.110	0.251	214 *	54-122	17.70	(< 20)
Benzo[a]pyrene	0.0127J	0.111	0.196	166 *	0.110	0.222	189 *	50-125	12.20	(< 20)
Benzo[b]Fluoranthene	0.0165J	0.111	0.208	173 *	0.110	0.239	202 *	53-128	13.70	(< 20)
Benzo[g,h,i]perylene	0.00662J	0.111	0.158	137 *	0.110	0.166	144 *	49-127	4.60	(< 20)
Benzo[k]fluoranthene	0.0124U	0.111	0.174	158 *	0.110	0.180	163 *	56-123	3.30	(< 20)
Chrysene	0.0144J	0.111	0.207	175 *	0.110	0.234	199 *	57-118	12.10	(< 20)
Dibenzo[a,h]anthracene	0.0124U	0.111	0.132	119	0.110	0.126	114	50-129	4.30	(< 20)
Fluoranthene	0.0379	0.111	0.381	310 *	0.110	0.543	458 *	55-119	35.10	(< 20 )
Fluorene	0.0124U	0.111	0.141	128 *	0.110	0.139	126 *	47-114	1.40	(< 20)
Indeno[1,2,3-c,d] pyrene	0.0124U	0.111	0.160	145 *	0.110	0.166	151 *	49-130	3.80	(< 20)
Naphthalene	0.0100U	0.111	0.123	111	0.110	0.114	103	38-111	8.00	(< 20)
Phenanthrene	0.0153J	0.111	0.262	223 *	0.110	0.302	259 *	49-113	13.90	(< 20)
Pyrene	0.0285	0.111	0.311	255 *	0.110	0.418	353 *	55-117	29.60	< (< 20 )
Surrogates										
2-Methylnaphthalene-d10 (surr)		0.111	0.124	112 *	0.110	0.116	105 *	58-103	6.40	
Fluoranthene-d10 (surr)		0.111	0.127	115 *	0.110	0.121	109	54-113	5.20	

#### **Batch Information**

Analytical Batch: XMS12997 Analytical Method: 8270D SIM (PAH) Instrument: SVA Agilent 780/5975 GC/MS

Analyst: LAW

Analytical Date/Time: 11/16/2021 1:05:00AM

Prep Batch: XXX45825

Prep Method: Sonication Extr Soil 8270 PAH SIM 5ml

Prep Date/Time: 11/8/2021 7:19:33AM

Prep Initial Wt./Vol.: 22.60g Prep Extract Vol: 5.00mL

Print Date: 11/22/2021 2:50:51PM



#### **Method Blank**

Blank ID: MB for HBN 1828375 [XXX/45846]

Blank Lab ID: 1646826

QC for Samples:

1217257018, 1217257019, 1217257020, 1217257021, 1217257022, 1217257023

Results by AK102

ParameterResultsLOQ/CLDLUnitsDiesel Range Organics10.0U20.09.00mg/kg

Matrix: Soil/Solid (dry weight)

**Surrogates** 

5a Androstane (surr) 89.8 60-120 %

**Batch Information** 

Analytical Batch: XFC16147 Prep Batch: XXX45846
Analytical Method: AK102 Prep Method: SW3550C

Instrument: Agilent 7890B R Prep Date/Time: 11/11/2021 7:45:46AM

Analyst: IVM Prep Initial Wt./Vol.: 30 g
Analytical Date/Time: 11/12/2021 10:30:00AM Prep Extract Vol: 5 mL

Print Date: 11/22/2021 2:50:52PM



Blank Spike ID: LCS for HBN 1217257 [XXX45846]

Blank Spike Lab ID: 1646827 Date Analyzed: 11/12/2021 10:40 Spike Duplicate ID: LCSD for HBN 1217257

[XXX45846]

Spike Duplicate Lab ID: 1646828 Matrix: Soil/Solid (dry weight)

QC for Samples: 1217257018, 1217257019, 1217257020, 1217257021, 1217257022, 1217257023

# Results by **AK102**

	E	Blank Spike	(mg/kg)	S	Spike Duplic	ate (mg/kg)			
<u>Parameter</u>	<u>Spike</u>	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Diesel Range Organics	667	602	90	667	608	91	(75-125)	0.96	(< 20 )
Surrogates									
5a Androstane (surr)	16.7		100	16.7		101	(60-120)	0.74	

#### **Batch Information**

Analytical Batch: XFC16147 Analytical Method: AK102 Instrument: Agilent 7890B R

Analyst: IVM

Prep Batch: XXX45846
Prep Method: SW3550C

Prep Date/Time: 11/11/2021 07:45

Spike Init Wt./Vol.: 667 mg/kg Extract Vol: 5 mL Dupe Init Wt./Vol.: 667 mg/kg Extract Vol: 5 mL

Print Date: 11/22/2021 2:50:54PM



#### **Method Blank**

Blank ID: MB for HBN 1828375 [XXX/45846]

Blank Lab ID: 1646826

QC for Samples:

1217257018, 1217257019, 1217257020, 1217257021, 1217257022, 1217257023

Results by AK103

ParameterResultsLOQ/CLDLUnitsResidual Range Organics50.0U10043.0mg/kg

Matrix: Soil/Solid (dry weight)

**Surrogates** 

n-Triacontane-d62 (surr) 87.8 60-120 %

**Batch Information** 

Analytical Batch: XFC16147 Prep Batch: XXX45846
Analytical Method: AK103 Prep Method: SW3550C

Instrument: Agilent 7890B R Prep Date/Time: 11/11/2021 7:45:46AM

Analyst: IVM Prep Initial Wt./Vol.: 30 g
Analytical Date/Time: 11/12/2021 10:30:00AM Prep Extract Vol.: 5 mL

Print Date: 11/22/2021 2:50:57PM



Blank Spike ID: LCS for HBN 1217257 [XXX45846]

Blank Spike Lab ID: 1646827 Date Analyzed: 11/12/2021 10:40 Spike Duplicate ID: LCSD for HBN 1217257

[XXX45846]

Spike Duplicate Lab ID: 1646828 Matrix: Soil/Solid (dry weight)

QC for Samples: 1217257018, 1217257019, 1217257020, 1217257021, 1217257022, 1217257023

# Results by **AK103**

	E	Blank Spike	(mg/kg)	S	Spike Duplic	ate (mg/kg)			
<u>Parameter</u>	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Residual Range Organics	667	604	91	667	610	92	(60-120)	1.10	(< 20 )
Surrogates									
n-Triacontane-d62 (surr)	16.7		92	16.7		96	(60-120)	4.80	

#### **Batch Information**

Analytical Batch: XFC16147 Analytical Method: AK103

Instrument: Agilent 7890B R

Analyst: IVM

Prep Batch: XXX45846 Prep Method: SW3550C

Prep Date/Time: 11/11/2021 07:45

Spike Init Wt./Vol.: 667 mg/kg Extract Vol: 5 mL Dupe Init Wt./Vol.: 667 mg/kg Extract Vol: 5 mL

Print Date: 11/22/2021 2:50:59PM



#### **Method Blank**

Blank ID: MB for HBN 1828377 [XXX/45847]

Blank Lab ID: 1646834

QC for Samples:

1217257020, 1217257021, 1217257022, 1217257023

Matrix: Soil/Solid (dry weight)

# Results by 8270D SIM (PAH)

<u>Parameter</u>	Results	LOQ/CL	<u>DL</u>	<u>Units</u>
1-Methylnaphthalene	0.0125U	0.0250	0.00625	mg/kg
2-Methylnaphthalene	0.0125U	0.0250	0.00625	mg/kg
Acenaphthene	0.0125U	0.0250	0.00625	mg/kg
Acenaphthylene	0.0125U	0.0250	0.00625	mg/kg
Anthracene	0.0125U	0.0250	0.00625	mg/kg
Benzo(a)Anthracene	0.0125U	0.0250	0.00625	mg/kg
Benzo[a]pyrene	0.0125U	0.0250	0.00625	mg/kg
Benzo[b]Fluoranthene	0.0125U	0.0250	0.00625	mg/kg
Benzo[g,h,i]perylene	0.0125U	0.0250	0.00625	mg/kg
Benzo[k]fluoranthene	0.0125U	0.0250	0.00625	mg/kg
Chrysene	0.0125U	0.0250	0.00625	mg/kg
Dibenzo[a,h]anthracene	0.0125U	0.0250	0.00625	mg/kg
Fluoranthene	0.0125U	0.0250	0.00625	mg/kg
Fluorene	0.0125U	0.0250	0.00625	mg/kg
Indeno[1,2,3-c,d] pyrene	0.0125U	0.0250	0.00625	mg/kg
Naphthalene	0.0100U	0.0200	0.00500	mg/kg
Phenanthrene	0.0125U	0.0250	0.00625	mg/kg
Pyrene	0.0125U	0.0250	0.00625	mg/kg
Surrogates				
2-Methylnaphthalene-d10 (surr)	95.1	58-103		%
Fluoranthene-d10 (surr)	98.4	54-113		%

# **Batch Information**

Analytical Batch: XMS13000 Analytical Method: 8270D SIM (PAH)

Instrument: SVA Agilent 780/5975 GC/MS

Analyst: LAW

Analytical Date/Time: 11/16/2021 11:53:00AM

Prep Batch: XXX45847 Prep Method: SW3550C

Prep Date/Time: 11/11/2021 9:27:27AM

Prep Initial Wt./Vol.: 22.5 g Prep Extract Vol: 5 mL

Print Date: 11/22/2021 2:51:00PM



Blank Spike ID: LCS for HBN 1217257 [XXX45847]

Blank Spike Lab ID: 1646835 Date Analyzed: 11/16/2021 12:13

Matrix: Soil/Solid (dry weight)

QC for Samples: 1217257020, 1217257021, 1217257022, 1217257023

# Results by 8270D SIM (PAH)

	E	Blank Spike	(mg/kg)	
<u>Parameter</u>	Spike	Result	Rec (%)	<u>CL</u>
1-Methylnaphthalene	0.111	0.101	91	(43-111)
2-Methylnaphthalene	0.111	0.104	94	(39-114)
Acenaphthene	0.111	0.101	91	(44-111)
Acenaphthylene	0.111	0.0997	90	(39-116)
Anthracene	0.111	0.100	90	(50-114)
Benzo(a)Anthracene	0.111	0.100	90	(54-122)
Benzo[a]pyrene	0.111	0.0989	89	(50-125)
Benzo[b]Fluoranthene	0.111	0.105	95	(53-128)
Benzo[g,h,i]perylene	0.111	0.104	94	(49-127)
Benzo[k]fluoranthene	0.111	0.106	95	(56-123)
Chrysene	0.111	0.104	94	(57-118)
Dibenzo[a,h]anthracene	0.111	0.107	96	(50-129)
Fluoranthene	0.111	0.104	94	(55-119)
Fluorene	0.111	0.100	90	(47-114)
Indeno[1,2,3-c,d] pyrene	0.111	0.106	95	(49-130)
Naphthalene	0.111	0.103	93	(38-111)
Phenanthrene	0.111	0.100	90	(49-113)
Pyrene	0.111	0.103	93	( 55-117 )
Surrogates				
2-Methylnaphthalene-d10 (surr)	0.111		92	(58-103)
Fluoranthene-d10 (surr)	0.111		91	( 54-113 )

### **Batch Information**

Analytical Batch: XMS13000 Analytical Method: 8270D SIM (PAH) Instrument: SVA Agilent 780/5975 GC/MS

Analyst: LAW

Prep Batch: XXX45847
Prep Method: SW3550C

Prep Date/Time: 11/11/2021 09:27

Spike Init Wt./Vol.: 0.111 mg/Kg Extract Vol: 5 mL

Dupe Init Wt./Vol.: Extract Vol:

Print Date: 11/22/2021 2:51:03PM



# **Matrix Spike Summary**

Original Sample ID: 1647522 MS Sample ID: 1646836 MS MSD Sample ID: 1646837 MSD Analysis Date: 11/16/2021 16:59 Analysis Date: 11/16/2021 17:19 Analysis Date: 11/16/2021 17:39 Matrix: Solid/Soil (Wet Weight)

QC for Samples: 1217257020, 1217257021, 1217257022, 1217257023

#### Results by 8270D SIM (PAH)

Tresults by 0270D Silvi (i Air)										
		Matrix Spike (mg/kg)		Spike Duplicate (mg/kg)						
<u>Parameter</u>	<u>Sample</u>	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1-Methylnaphthalene	0.110	0.111	0.230	108	0.110	0.191	74	43-111	18.40	(< 20)
2-Methylnaphthalene	0.00960J	0.111	0.107	88	0.110	0.102	84	39-114	4.90	(< 20)
Acenaphthene	0.0124U	0.111	0.106	96	0.110	0.0998	91	44-111	6.50	(< 20)
Acenaphthylene	0.0124U	0.111	0.104	94	0.110	0.0999	91	39-116	3.90	(< 20)
Anthracene	0.0124U	0.111	0.107	97	0.110	0.102	93	50-114	4.80	(< 20)
Benzo(a)Anthracene	0.0124U	0.111	0.106	95	0.110	0.0983	90	54-122	7.30	(< 20)
Benzo[a]pyrene	0.0124U	0.111	0.112	101	0.110	0.103	94	50-125	8.20	(< 20)
Benzo[b]Fluoranthene	0.0124U	0.111	0.113	102	0.110	0.105	95	53-128	7.60	(< 20)
Benzo[g,h,i]perylene	0.0124U	0.111	0.110	100	0.110	0.100	92	49-127	9.40	(< 20)
Benzo[k]fluoranthene	0.0124U	0.111	0.112	101	0.110	0.104	95	56-123	7.40	(< 20)
Chrysene	0.0124U	0.111	0.107	97	0.110	0.0996	91	57-118	7.50	(< 20)
Dibenzo[a,h]anthracene	0.0124U	0.111	0.112	101	0.110	0.104	95	50-129	6.60	(< 20)
Fluoranthene	0.0124U	0.111	0.111	101	0.110	0.101	92	55-119	10.00	(< 20)
Fluorene	0.00724J	0.111	0.112	94	0.110	0.103	87	47-114	8.00	(< 20)
Indeno[1,2,3-c,d] pyrene	0.0124U	0.111	0.112	101	0.110	0.104	95	49-130	7.10	(< 20)
Naphthalene	0.0471	0.111	0.151	94	0.110	0.128	74	38-111	16.50	(< 20)
Phenanthrene	0.00700J	0.111	0.111	94	0.110	0.103	87	49-113	7.50	(< 20)
Pyrene	0.00755J	0.111	0.117	99	0.110	0.103	87	55-117	12.30	(< 20)
Surrogates										
_		0.111	0.102	92	0.110	0.0959	87	58-103	6.20	
2-Methylnaphthalene-d10 (surr) Fluoranthene-d10 (surr)		0.111	0.102	92	0.110	0.0959	88	54-113	6.50	
Fluoranthene-u 10 (Suff)		0.111	0.103	93	0.110	0.0909	00	54-113	0.50	

#### **Batch Information**

Analytical Batch: XMS13000 Analytical Method: 8270D SIM (PAH) Instrument: SVA Agilent 780/5975 GC/MS

Analyst: LAW

Analytical Date/Time: 11/16/2021 5:19:00PM

Prep Batch: XXX45847

Prep Method: Sonication Extr Soil 8270 PAH SIM 5ml

Prep Date/Time: 11/11/2021 9:27:27AM

Prep Initial Wt./Vol.: 22.54g Prep Extract Vol: 5.00mL

Print Date: 11/22/2021 2:51:04PM

# **Chain of Custody Record**

575358 seurofins Environment Testing

					TestAmerica
	Regulatory Progra	am: DW NPDES	RCRA Other:	·	TAL-8210
Client Contact	Project Manager: P	in Danskins	Site Contact: Kister T	Pelbye Date:	COC No:
Company Name: Shannon & Wilson, K.	Tel/Email:		Lab Contact:	Carrier:	of COCs
Address:	Analysis Turn	naround Time	<u> </u>		Sampler:
City/State/Zip:	CALENDAR DAYS	☐ WORKING DAYS			For Lab Use Only:
Phone:	TAT if different from E	Below	三回の公元	1217257	Walk-in Client:
Fax:	2 wee	eks	以びは	1231	Lab Sampling:
Project Name: SC SO \ S		ek /	7 4 5		
Site:	2 day	ys /			Job / SDG No.:
P O #	1 day	<u>y</u>	MS. MSD (YN MS. MSD (YN MS. MSD (YN MS	,	·
		Sample 7			
	Sample Sample (C	C=Comp, # of	Perform Perfor		
Sample Identification	Date Time G	G=Grab) Matrix Cont.			Sample Specific Notes:
2165T-3B002-01	10/30/21 0935	G So:12			(AB)
016 4-68000-00	0950	1 12			
21651-58002-02		1 2		<del></del>	(2AB)
81021-28001-01	1030	<del></del>		<del>++++++++</del>	ZAB
21G5T-5B001-02	1040	1   2			428
2165T-SB009-01	1/1135	2			(SAB)
2165T-SB009-10	1125	12			(AB)
016-ST-SR009-02	1150	1 2	XXXX		ZAD
01 (ST-STS012-01	1325	1 2	VVVV		(PAB)
2) (5 SD 612 SD	1330	1   2		<del>++++++++</del>	~
2165T-513012-02	<del>                                      </del>	1   2		+++++++++	(PAB)
31921-28013-01	1430				(JOAB)
2165T-SB013-02	1435	2			(IIAB)
2/GST-SROB-01	1010	1 12			(12 AB)
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3;	5=NaOH; 6= Other				
Possible Hazard Identification:	o List any EDA Wasta Cos	doe for the community in the	Sample Disposal ( A fee	e may be assessed if samples are retain	ned longer than 1 month)
Are any samples from a listed EPA Hazardous Waste? Pleas	e List any EPA waste Cod	ies for the sample in the			•
Comments Section if the lab is to dispose of the sample.  Non-Hazard  Flammable  Skin Irritant	Poison B	Unknown	Return to Client	☐ Disposal by Lab ☐ Archive for_	Manaka
Special Instructions/QC Requirements & Comments:				Disposal by Lab	Months
oposiai monasiono, qui risquinomo	Prohle	#347128 91	<b>1</b>		•
Custody Seals Intact: Yes No	Custody Seal No.:		Cooler Temp.	(°C): Obs'd: Corr'd:	Therm ID No.:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
h	30	11-1-21 1300			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory h	Omnany:	Doto/Time:
Tomagaioned by.			Received in Laboratory b	y: un Company:  SSS	Date/Time: 12/2 0856

ANC: IFIRS

1.0' D60

# **Chain of Custody Record**

Address:

575360 **\$\pi** eurofins

Environment Testing

Client Contact	Regulatory Program: Project Manager:		RCRA Other:	Date:		COC No:
ompany Name:	Tel/Email:		ab Contact:	Carrier:		a of COCs
Idress:	Analysis Turnaround					Sampler:
ty/State/Zip:		RKING DAYS	1 (N) (N) (N) (N) (N) (N) (N) (N) (N) (N)		' ' '	For Lab Use Only:
none:	TAT if different from Below			121725	7	Walk-in Client:
	2 weeks	ĺĝ	コングレージ	121120	•	Lab Sampling:
oject Name:	1 week	>	I DAMO I			
te:	2 days	98	W V V V V V V V V V V V V V V V V V V V		<b>III</b>	Job / SDG No.:
0#	1 day			I Maria ( trans trans trans trans		· · · · · · · · · · · · · · · · · · ·
	Sample Type		A HA			
	Sample Sample (C=Comp,	# of   9	Perform PA PA			Occasio Occasio Natara
Sample Identification	Date Time G=Grab)					Sample Specific Notes:
31GST-SB005-02	10/30/21/15/15	501 2				(JAB)
11GST-SB007-01	1600	12	XXXX			IYAD
21GST-SB007-10	1550	2	XXXX			(15AD)
2) GST-SB007-02	V 1605 V	12	XXXX			(IGAB)
21 GST-58003-01	10-31-11 1135	12	TXVVX			(1748)
21GST-SB003 -02	1 1140	2				(IPAD)
		2				
2165T-SB004-01	1105	<del>                                     </del>				(19AB)
2165T-5B004 - 02	1110	12				EOAB
1GST-SBOII-01	HIS	2				(21AB)
21GST-SB011-12	1425	2				22AD)
LIGST-SBOIL -02	1435	2				(22AB)
Trip Blank	10/21	W	<del>                                      </del>		24/13	Va. alarea di Maril
eservation Used: 1= lce, 2= HCl; 3= H2SO4; 4=HN	03; 5=NaOH; 6= Other	<u>. 131</u> 111 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				
ossible Hazard Identification: e any samples from a listed EPA Hazardous Waste? F	lease List any EPA Waste Codes for t	the sample in the	Sample Disposal ( A f	ee may be assessed if sam	ples are retaine	ed longer than 1 month)
omments Section if the lab is to dispose of the sample.	icase Eist any Ei 77 vvaste codes for t	are earripie in are				
Non-Hazard Flammable Skin Irritan	Poison B Unkno	own	Return to Client	Disposal by Lab	Archive for_	Months
pecial Instructions/QC Requirements & Comments:			,			
Custody Seals Intact: Yes No	Custody Seal No.:		Cooler Tem	p. (°C): Obs'd: Co	r'd:	Therm ID No.:
linquished by:		Date/Time:	Received by:	Company		Date/Time:
What was a second of the secon	Company:	1H-21 BOO				
elinquished by:	Company:	Date/Time:	Received by:	Company		Date/Time:
elinquished by:	Company:	Date/Time:	Received in Laboratory	by: W Company		Date/Time:
			Millie Sell	Sas Company	•	11/02/21 19856

027-9031 9843

# Alert Expeditors Inc.

#414352

Citywide Delivery • 440-3351 8421 Flamingo Drive • Anchorage, Alaska 99502

Date /	Alannan G	
From	Manuan - M	11134
To	make to to the	Andrew
Collect 🗇	Prepay □	Advance Charges
Job # 5/1/ (1	PO# /1 503	1- 9843
	**	
To compare	10/2 X2	
		:
THE APPRE		
	September 1	
Shipped Signature	The second secon	
Received By:	Total (	Charge



e-Sample Receipt Form

SGS Workorder #:

1217257



Review Criteria	Condition (Yes,	No, N/A	Exception	ons Noted below	ı
Chain of Custody / Temperature Requir			/A Exemption permitte	ed if sampler hand car	rries/delivers.
Were Custody Seals intact? Note # & le	ocation Yes	1F,1B			
COC accompanied sa	mples? Yes				
DOD: Were samples received in COC corresponding of	oolers? N/A				
N/A **Exemption permitted if of	chilled & colle	cted <8 hou	rs ago, or for samples	where chilling is not r	equired
Temperature blank compliant* (i.e., 0-6 °C afte	r CF)? Yes	Cooler ID:	1	@ <b>1.0</b> °C Th	nerm. ID: D60
		Cooler ID:		@ °C Th	nerm. ID:
If samples received without a temperature blank, the "cooler temperature" will documented instead & "COOLER TEMP" will be noted to the right. "ambient" or "chi		Cooler ID:		@ °C Th	nerm. ID:
be noted if neither is available.	illed Will	Cooler ID:		@ °C Th	nerm. ID:
		Cooler ID:		@ °C Th	nerm. ID:
*If >6°C, were samples collected <8 hours	ago? N/A				_
If <0°C, were sample containers ice	froo?				
ii <0 C, were sample containers ice	N/A				
Note: Identify containers received at non-compliant temperature.	ature .				
Use form FS-0029 if more space is no	eeded.				
Holding Time / Documentation / Sample Condition Re	auiromonto	Note: Defeat	o form F 002 "Comple Cui	dall for appoiling halding ti	m.c.
Were samples received within holding		Note. Refer t	o loitii F-065 Sample Gui	de for specific holding th	mes.
Word damples reserved within moraling	,				
Do samples match COC** (i.e.,sample IDs,dates/times colle	cted)? Yes				
**Note: If times differ <1hr, record details & login per CO	1				
***Note: If sample information on containers differs from COC, SGS will default to C					
Were analytical requests clear? (i.e., method is specified for an	alvses Yes				
with multiple option for analysis (Ex: BTEX, N					
		N	/A ***Exemption perm	itted for metals (e.g,2	200.8/6020B).
Were proper containers (type/mass/volume/preservative***)	used? Yes	"		-	
Volatile / LL-Hg Requ	uirements				
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with san	nples? N/A				
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6	6mm)? N/A				
Were all soil VOAs field extracted with MeOH-	+BFB? N/A				
Note to Client: Any "No", answer above indicates nor	n-compliance	with standa	rd procedures and may	impact data quality.	
Additional	I notes (if a	pplicable)	:		



# **Sample Containers and Preservatives**

Container Id	<u>Preservative</u>	Container Condition	<u>Container Id</u>	<u>Preservative</u>	<u>Container</u> <u>Condition</u>
1217257001-A	No Preservative Required	OK			
1217257001-A 1217257001-B	Methanol field pres. 4 C	OK			
1217257001-B 1217257002-A	No Preservative Required	OK			
1217257002 A	Methanol field pres. 4 C	OK			
1217257002-B 1217257003-A	No Preservative Required	OK			
1217257003-A 1217257003-B	Methanol field pres. 4 C	OK			
1217257003-B 1217257004-A	No Preservative Required	OK			
1217257004-A 1217257004-B	Methanol field pres. 4 C	OK			
1217257004-В 1217257005-А	No Preservative Required	OK OK			
	Methanol field pres. 4 C				
1217257005-B	No Preservative Required	OK			
1217257006-A	Methanol field pres. 4 C	OK			
1217257006-B	No Preservative Required	OK			
1217257007-A	Methanol field pres. 4 C	OK			
1217257007-B	•	OK			
1217257008-A	No Preservative Required	OK			
1217257008-B	Methanol field pres. 4 C	OK			
1217257009-A	No Preservative Required	OK			
1217257009-B	Methanol field pres. 4 C	OK			
1217257010-A	No Preservative Required	OK			
1217257010-B	Methanol field pres. 4 C	OK			
1217257011-A	No Preservative Required	OK			
1217257011-B	Methanol field pres. 4 C	OK			
1217257012-A	No Preservative Required	OK			
1217257012-B	Methanol field pres. 4 C	OK			
1217257013-A	No Preservative Required	OK			
1217257013-B	Methanol field pres. 4 C	OK			
1217257014-A	No Preservative Required	OK			
1217257014-B	Methanol field pres. 4 C	OK			
1217257015-A	No Preservative Required	OK			
1217257015-B	Methanol field pres. 4 C	OK			
1217257016-A	No Preservative Required	OK			
1217257016-B	Methanol field pres. 4 C	OK			
1217257017-A	No Preservative Required	OK			
1217257017-B	Methanol field pres. 4 C	OK			
1217257018-A	No Preservative Required	OK			
1217257018-B	Methanol field pres. 4 C	OK			
1217257019-A	No Preservative Required	OK			
1217257019-B	Methanol field pres. 4 C	OK			
1217257020-A	No Preservative Required	OK			
1217257020-B	Methanol field pres. 4 C	OK			
1217257021-A	No Preservative Required	OK			
1217257021-B	Methanol field pres. 4 C	OK			
1217257022-A	No Preservative Required	OK			
1217257022-B	Methanol field pres. 4 C	OK			
1217257023-A	No Preservative Required	OK			
1217257023-B	Methanol field pres. 4 C	OK			
1217257024-A	Methanol field pres. 4 C	ОК			
1217257024-B	Methanol field pres. 4 C	OK			

 Container Id
 Preservative
 Container
 Container Id
 Preservative
 Container

 Condition
 Condition
 Condition

#### **Container Condition Glossary**

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

- OK The container was received at an acceptable pH for the analysis requested.
- BU The container was received with headspace greater than 6mm.
- DM The container was received damaged.
- FR The container was received frozen and not usable for Bacteria or BOD analyses.
- IC The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.
- NC- The container provided was not preserved or was under-preserved. The method does not allow for additional preservative added after collection.
- PA The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.
- PH The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.
- QN Insufficient sample quantity provided.

# **Laboratory Data Review Checklist**

Complete	ed By:
Justin	n Risley
Title:	
Engi	neering Staff
Date:	
Nove	ember 24, 2021
Consulta	nt Firm:
Shan	non & Wilson, Inc.
Laborato	ry Name:
SGS	
Laborato	ory Report Number:
1217	257
Laborato	ory Report Date:
Nove	ember 22, 2021
CS Site 1	Name:
DOT	&PF Gustavus Airport Statewide PFAS
ADEC F	ile Number:
2569	.38.033
Hazard I	dentification Number:
2698	1

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1	1217257
Labo	oratory Report Date:
1	November 22, 2021
CS S	Site Name:
I	DOT&PF Gustavus Airport Statewide PFAS
ľ	Note: Any N/A or No box checked must have an explanation in the comments box.
	<u>Laboratory</u>
	a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?
	Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:
	Analyses were performed by SGS North America Inc. in Anchorage, AK
	b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?
	Yes $\square$ No $\square$ N/A $\boxtimes$ Comments:
	Samples were not transferred to another "network" laboratory or sub-contracted to an alternate laboratory.
2. <u>c</u>	Chain of Custody (CoC)
	a. CoC information completed, signed, and dated (including released/received by)?
	Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:
	b. Correct analyses requested?
	Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:
3. <u>I</u>	Laboratory Sample Receipt Documentation
	a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?
	Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:
	b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?
	Yes⊠ No□ N/A□ Comments:

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c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?
Yes No N/A Comments:
The sample receipt form notes that the samples arrived in good condition.
d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?
$Yes \square No \square N/A \boxtimes Comments:$
No discrepancies were documented by the lab.
e. Data quality or usability affected?
Comments:
Data quality and/or usability are not affected; see above.
4. Case Narrative
a. Present and understandable?
Yes⊠ No□ N/A□ Comments:
b. Discrepancies, errors, or QC failures identified by the lab?
Yes□ No⊠ N/A□ Comments:
<ul> <li>21GST-SB005-01 (1217257012) PS</li> <li>8270D SIM - The PAH LOQs are elevated due to sample dilution. The sample was diluted due to the dark color of the extract.</li> </ul>
<ul> <li>21GST-SB005-02 (1217257013) PS</li> <li>8270D SIM - PAH surrogate recovery for 2-methylnaphthalene-d10 does not meet QC criteria. There are no associated analytes detected above the LOQ in the parent sample.</li> <li>21GST-SB011-01 (1217257021) PS</li> </ul>
8270D SIM - The PAH LOQs are elevated due to sample dilution. The sample was diluted due to the dark color of the extract.
c. Were all corrective actions documented?
Yes $\square$ No $\square$ N/A $\boxtimes$ Comments:
Corrective actions not required.

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d. What is the effect on data quality/usability according to the case narrative?
Comments:
Case narrative does not discuss effect on data quality, it only discusses discrepancies. Data quality issues mentioned in the case narrative are discussed above in Section 4.b. or elsewhere within this DEC checklist.
5. <u>Samples Results</u>
a. Correct analyses performed/reported as requested on COC?
$Yes \boxtimes No \square N/A \square$ Comments:
b. All applicable holding times met?
$Yes \boxtimes No \square N/A \square$ Comments:
c. All soils reported on a dry weight basis?
$Yes \boxtimes No \square N/A \square$ Comments:
d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?
$Yes \square No \boxtimes N/A \square$ Comments:
The detection limits for naphthalene in project samples 21GST-SB005-01 and 21GST-SB011-01 are above the cleanup level. These results are noted in the analytical table. These analytes may not be detected, if present, at their respective cleanup level.
e. Data quality or usability affected?
See above.

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6. QC Samples
a. Method Blank
i. One method blank reported per matrix, analysis and 20 samples?
Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:
<ul><li>ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?</li><li>Yes⊠ No□ N/A□ Comments:</li></ul>
However, GRO were detected in the method blank associated with preparatory batch VXX38138.
Project samples 21GST-SB002-01, 21GST-SB002-02, 21GST-SB001-02, 21GST-SB009-01, 21GST-SB009-10, 21GST-SB009-02, 21GST-SB012-01, 21GST-SB013-02, 21GST-SB005-01, 21GST-SB007-01, 21GST-SB007-10, and 21GST-SB007-02 contained concentrations of GRO reported below the LOQ. These results are considered not detected flagged 'UB' at the respective LOQ.
Project samples 21GST-SB001-01, 21GST-SB012-02, 21GST-SB013-01, 21GST-SB005-02, 21GST-SB003-01, 21GST-SB003-02, 21GST-SB004-01, and 21GST-SB004-02 did not contain detections of GRO. These results do not require any qualifications.
iii. If above LOQ or project specified objectives, what samples are affected?  Comments:
Not applicable, see above.
iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?  Yes⊠ No□ N/A□ Comments:
See above.
v. Data quality or usability affected?  Comments:

Data quality and/or usability are affected; see above.

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b. Laboratory Control Sample/Duplicate (LCS/LCSD)					
<ul> <li>i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)</li> </ul>					
Yes⊠ No□ N/A□ Comments:					
LCS/LCSD were reported for methods AK101, AK102, and AK103. LCS were reported for methods SW8260D and 8270D SIM (PAH).					
ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?					
$Yes \square No \square N/A \boxtimes Comments:$					
Metals and/or inorganics were not analyzed as part of this work order.					
iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)					
$Yes \boxtimes No \square N/A \square$ Comments:					
iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from LCS/LCSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)					
$Yes \boxtimes No \square N/A \square$ Comments:					
v. If %R or RPD is outside of acceptable limits, what samples are affected?  Comments:					
No samples are affected. Method accuracy and precision were demonstrated to be within acceptance criteria.					
vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?					
$Yes \square No \square N/A \boxtimes Comments:$					
No samples are affected; see above.					

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vii. Data quality or usability affected? (Use comment box to explain.)  Comments:					
The data quality and usability were not affected.					
<ul> <li>c. Matrix Spike/Matrix Spike Duplicate (MS/MSD)</li> <li>Note: Leave blank if not required for project</li> <li>i. Organics – One MS/MSD reported per matrix, analysis and 20 samples?</li> </ul>					
<ol> <li>Organics – One MS/MSD reported per matrix, analysis and 20 samples?</li> <li>Yes⊠ No□ N/A□ Comments:</li> </ol>					
MS/MSD samples were reported for methods 8270D SIM (PAH) and SW8260D.					
<ul> <li>ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?</li> <li>Yes□ No□ N/A⊠ Comments:</li> </ul>					
Metals and/or inorganics were not analyzed as a part of this work order.					
iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits an project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)					
Yes No⊠ N/A Comments:  Percent recovery for the majority of analytes in the MS/MSD associated with PAH preparatory batch XXX45825 were outside laboratory quality control limits. However, the parent sample is not a part of the project set; therefore, the results are not affected and qualification is not required.					
iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)					
Yes□ No⊠ N/A□ Comments:					
The RPD for some of the analytes in the MS/MSD associated with preparatory batch XXX45825 were above laboratory quality control limits. However, the parent sample is not a part of the project set; therefore, the results are not affected and qualification is not required.					
v. If %R or RPD is outside of acceptable limits, what samples are affected?  Comments:					
See above.					

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Labor	ratory Report Date:				
N	ovember 22, 2021				
CS Si	te Name:				
D	DOT&PF Gustavus Airport Statewide PFAS				
	vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?  Yes No N/A Comments:  See above.				
vii. Data quality or usability affected? (Use comment box to explain.)  Comments:					
	N/A; see above.				
	<ul> <li>d. Surrogates – Organics Only or Isotope Dilution Analytes (IDA) – Isotope Dilution Methods Only</li> <li>i. Are surrogate/IDA recoveries reported for organic analyses – field, QC and laboratory samples?</li> <li>Yes⊠ No□ N/A□ Comments:</li> </ul>				
	ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)				
	Yes□ No⊠ N/A□ Comments:				
	Percent recovery of the surrogates in the MS/MSD associated with preparatory batch XXX45825 were above laboratory quality control limits. However, the parent sample is not a part of the project set; therefore, the results are not affected, and qualification is not required.				
	Percent recovery of the surrogate 2-methylnaphthalene-d10 was above laboratory control limits in project sample <i>21GST-SB005-02</i> . However, no analytes were detected in the sample; therefore, the results are not affected, qualification is not required.				
	iii. Do the sample results with failed surrogate/IDA recoveries have data flags? If so, are the data flags clearly defined?				
$Yes \boxtimes No \square N/A \square$ Comments:  See above.					
	No; see above.				

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e. Trip Blanks				
i. One trip blank reported per matrix, analysis and for each cooler containing volatile sample (If not, enter explanation below.)				
Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:				
ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)				
Yes⊠ No□ N/A□ Comments:				
Only one cooler was used to transport the samples.				
iii. All results less than LOQ and project specified objectives?				
Yes $\square$ No $\square$ N/A $\boxtimes$ Comments:				
See above.				
iv. If above LOQ or project specified objectives, what samples are affected?  Comments:				
No samples were affected; see above.				
v. Data quality or usability affected?  Comments:				
See above.				
f. Field Duplicate				
i. One field duplicate submitted per matrix, analysis and 10 project samples?				
Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:				
ii. Submitted blind to lab?				
Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:				
The field duplicate samples 21GST-SB007-01/21GST-SB007-10, 21GST-SB011-02/21GST-SB011-12 and 21GST-SB009-01/21GST-SB009-10 were submitted with this work order.				

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DOT&PF Gustavus Airport Statewide PFAS					
iii. Precision – All relative percent differences (RPD) less than specified project objectives? (Recommended: 30% water, 50% soil)					
Yes□ No⊠ N/A□ Comments:  The RPD for DRO in field duplicate pair 21GST-SB007-01/21GST-SB007-10 is above the DQO. The results are considered estimated with no direction of bias and have been flagged 'J' in the analytical database.  RRO were detected above the LOQ in one field duplicate sample but not detected in the other for duplicate sample pair 21GST-SB007-01/21GST-SB007-10. Due to this RPD failure, these results are considered estimated with no direction of bias and have been flagged 'J' for the detected result and 'UJ' for the not-detected result.					
iv. Data quality or usability affected? (Use the comment box to explain why or why not.)  Comments:					
See above.					
<ul> <li>g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below)?</li> <li>Yes□ No□ N/A⋈ Comments:</li> </ul>					
Samples for this project are not collected with reusable equipment, therefore a practical potential for equipment based cross-contamination does not exist.					
<ul> <li>i. All results less than LOQ and project specified objectives?</li> <li>Yes□ No□ N/A⊠ Comments:</li> </ul>					
See above.					
ii. If above LOQ or project specified objectives, what samples are affected?  Comments:					
No samples affected; see above.					

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La	boratory Report Date:					
	November 22, 2021					
CS Site Name:						
	DOT&PF Gustavus Airport Statev	vide PFAS				
	iii. Data quality or usabil	ity affected?  Comments:				
	Data quality and/or usability w	rere not affected; see above.				
7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)						
a. Defined and appropriate?						
	Yes□ No□ N/A⊠	Comments:				
	No additional data flags/qualif	iers are required				



# **Environment Testing America**

# **ANALYTICAL REPORT**

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

Laboratory Job ID: 320-80903-1 Client Project/Site: SG Soils WO#1

For:

Shannon & Wilson, Inc 2355 Hill Rd. Fairbanks, Alaska 99709-5244

Attn: Kristen Freiburger

Authorized for release by:

Vani altimo

11/5/2021 2:34:38 PM
David Alltucker, Project Manager I

(916)374-4383

David.Alltucker@Eurofinset.com

LINKS

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Visit us at: www.eurofinsus.com/Env The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Client: Shannon & Wilson, Inc Project/Site: SG Soils WO#1 Laboratory Job ID: 320-80903-1

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#### **Definitions/Glossary**

Client: Shannon & Wilson, Inc Job ID: 320-80903-1

Project/Site: SG Soils WO#1

#### **Qualifiers**

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_	ار	٧I	J

Qualifier Qualifier Description

Value is EMPC (estimated maximum possible concentration).

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

**General Chemistry** 

Qualifier Qualifier Description

F3 Duplicate RPD exceeds the control limit

#### **Glossary**

Abbreviation These commonly used abbreviations may or may not be present in this report.

Eisted under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery
CFL Contains Free Liquid
CFU Colony Forming Unit
CNF Contains No Free Liquid

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL Detection Limit (DoD/DOE)

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision Level Concentration (Radiochemistry)

EDL Estimated Detection Limit (Dioxin)

LOD Limit of Detection (DoD/DOE)

LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level"

MDA Minimum Detectable Activity (Radiochemistry)

MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit
ML Minimum Level (Dioxin)
MPN Most Probable Number
MQL Method Quantitation Limit

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent POS Positive / Present

PQL Practical Quantitation Limit

PRES Presumptive
QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

TNTC Too Numerous To Count

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Eurofins TestAmerica, Sacramento

#### **Case Narrative**

Client: Shannon & Wilson, Inc Project/Site: SG Soils WO#1

Job ID: 320-80903-1

Laboratory: Eurofins TestAmerica, Sacramento

**Narrative** 

Job Narrative 320-80903-1

#### Receipt

The samples were received on 10/27/2021 12:25 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.6° C, 2.0° C and 2.6° C.

#### **LCMS**

Method EPA 537(Mod): The "I" qualifier means the transition mass ratio for the indicated analyte was outside the established ratio limits. The qualitative identification of the analyte has some degree of uncertainty. However, analyst judgment was used to positively identify the analyte.

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

#### **General Chemistry**

Method Moisture: The sample duplicate (DUP) precision for analytical batch 320-537918 was outside control limits. Sample non-homogeneity is suspected, as sample matrix was sand with rocks.. Samples were not re-extracted and reanalyzed because the moisture content for the parent sample and its duplicate was less than 10%. The relative percent difference (RPD) for solids is within acceptable limits. 21GST-MW13-01 (320-80903-1) and (320-80903-A-1 DU)

Method Moisture: The sample duplicate (DUP) precision for analytical batch 320-537919 was outside control limits. Sample non-homogeneity is suspected. Sample matrix was wet sand with pebbles. The relative percent difference (RPD) for solids is within acceptable limits. Data is being reported. 21GST-SED-005 (320-80903-20) and (320-80903-A-20 DU)

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

#### **Organic Prep**

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

Job ID: 320-80903-1

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## **Detection Summary**

Project/Site: SG Soils WO#1						000 10.	020 00000 1
Client Sample ID: 21GST-M	W13-01					Lab Sample ID: 32	0-80903-1
No Detections.							
Client Sample ID: 21GST-M	W13-02					Lab Sample ID: 32	0-80903-2
No Detections.							
Client Sample ID: 21GST-M	W13-03					Lab Sample ID: 32	0-80903-3
No Detections.						•	
Client Sample ID: 21GST-M	W13-04					Lab Sample ID: 32	0-80903-4
Analyte		Qualifier	RL	MDL	Unit	Dil Fac D Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.047		0.26		ug/Kg	1	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.093	J	0.26	0.057	ug/Kg	1 🌣 EPA 537(Mod)	Total/NA
Client Sample ID: 21GST-M	W13-05					Lab Sample ID: 32	0-80903-5
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac D Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.10	J	0.20	0.043	ug/Kg	1 🌣 EPA 537(Mod)	Total/NA
Client Sample ID: 21GST-M	W13-07					Lab Sample ID: 32	0-80903-6
No Detections.							
Client Sample ID: 21GST-MV	W13-12					Lab Sample ID: 32	0-80903-7
No Detections.							
Client Sample ID: 21GST-MV	W23-01					Lab Sample ID: 32	0-80903-8
No Detections.							
Client Sample ID: 21GST-MV	W23-02					Lab Sample ID: 32	0-80903-9
No Detections.							
Client Sample ID: 21GST-M	W17-01					Lab Sample ID: 320	-80903-10
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac D Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.094	J	0.24	0.052	ug/Kg	1 🛱 EPA 537(Mod)	Total/NA
Client Sample ID: 21GST-M	W17-02					Lab Sample ID: 320	-80903-11
No Detections.							
Client Sample ID: 21GST-M	W25-01					Lab Sample ID: 320	-80903-12
No Detections.							
Client Sample ID: 21GST-M	W25-02					Lab Sample ID: 320	-80903-13
No Detections.							
Client Sample ID: 21GST-SE	ED-010					Lab Sample ID: 320	-80903-14
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac D Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.82	I	0.26	0.055	ug/Kg	1 🌣 EPA 537(Mod)	Total/NA
Client Sample ID: 21GST-SE	D-008					Lab Sample ID: 320	-80903-15
No Detections.							

This Detection Summary does not include radiochemical test results.

Client: Shannon & Wilson, Inc

Eurofins TestAmerica, Sacramento

Job ID: 320-80903-1

Client: Shannon & Wilson, Inc Job ID: 320-80903-1

Project/Site: SG Soils WO#1

Client Sample ID: 21GST-SED-024

Lab Sample ID: 320-80903-16

Analyte Result Qualifier RL MDL Unit Dil Fac D Method Prep Type
Perfluorooctanesulfonic acid (PFOS) 0.15 J I 0.24 0.051 ug/Kg 1 x EPA 537(Mod) Total/NA

Client Sample ID: 21GST-DPSED-024 Lab Sample ID: 320-80903-17

Analyte Result Qualifier RL MDL Unit Dil Fac D Method Prep Type
Perfluorooctanesulfonic acid (PFOS) 0.47 I 0.23 0.050 ug/Kg 1 vg/Kg EPA 537(Mod) Total/NA

Client Sample ID: 21GST-SED-124 Lab Sample ID: 320-80903-18

Client Sample ID: 21GST-DPSED-124 Lab Sample ID: 320-80903-19

No Detections.

Client Sample ID: 21GST-SED-005 Lab Sample ID: 320-80903-20

No Detections.

Client Sample ID: 21GST-SED-004 Lab Sample ID: 320-80903-21

No Detections.

Client Sample ID: 21GST-SED-006 Lab Sample ID: 320-80903-22

Result Qualifier **MDL** Unit Dil Fac D Method RL **Prep Type** 0.21 Perfluorohexanesulfonic acid (PFHxS) 0.052 J 0.030 ug/Kg 1 EPA 537(Mod) Total/NA Perfluorooctanesulfonic acid (PFOS) 0.62 I 1 # EPA 537(Mod) Total/NA 0.21 0.045 ug/Kg

Client Sample ID: 21GST-SED-007 Lab Sample ID: 320-80903-23

No Detections.

Client Sample ID: 21GST-SED-011 Lab Sample ID: 320-80903-24

AnalyteResultQualifierRLMDLUnitDil FacDMethodPrep TypePerfluorohexanesulfonic acid (PFHxS)0.12J0.250.036ug/Kg1☼EPA 537(Mod)Total/NA

Client Sample ID: 21GST-DPSED-011 Lab Sample ID: 320-80903-25

No Detections.

Client Sample ID: 21GST-SED-017 Lab Sample ID: 320-80903-26

**Analyte** Result Qualifier RL MDL Unit Dil Fac D Method **Prep Type** Perfluorohexanoic acid (PFHxA) 0.093 J 0.26 0.040 ug/Kg 1 ☼ EPA 537(Mod) Total/NA Perfluorohexanesulfonic acid (PFHxS) 0.038 ug/Kg 1 # EPA 537(Mod) Total/NA 0.31 0.26 Perfluorooctanesulfonic acid (PFOS) 0.056 ug/Kg 1 ☼ EPA 537(Mod) 2.5 0.26 Total/NA

Client Sample ID: 21GST-DPSED-017 Lab Sample ID: 320-80903-27

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.090	J	0.23	0.035	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.18	J	0.23	0.033	ug/Kg	1	₽	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.6		0.23	0.048	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

11/5/2021

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## **Detection Summary**

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Client: Shannon & Wilson, Inc Project/Site: SG Soils WO#1			-	Job ID:	320-80903-1
Client Sample ID: 21GST-SE	D-019			Lab Sample ID: 320	0-80903-28
No Detections.					
Client Sample ID: 21GST-SE	D-016			Lab Sample ID: 320	0-80903-29
No Detections.					
Client Sample ID: 21GST-SE	D-013			Lab Sample ID: 320	0-80903-30
No Detections.					
Client Sample ID: 21GST-SE	D-014			Lab Sample ID: 320	0-80903-31
No Detections.					
Client Sample ID: 21GST-SE	D-015			Lab Sample ID: 320	0-80903-32
Analyte	Result Qualifier	RL	MDL Unit	Dil Fac D Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.92 I	0.35	0.074 ug/Kg	1 🛱 EPA 537(Mod)	Total/NA
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	0.059 J	0.35	0.040 ug/Kg	1 ☆ EPA 537(Mod)	Total/NA
Client Sample ID: 21GST-SE	D-018			Lab Sample ID: 320	0-80903-33
No Detections.					
Client Sample ID: 21GST-SE	D-118			Lab Sample ID: 320	0-80903-34
No Detections.					
Client Sample ID: 21GST-SE	D-020			Lab Sample ID: 320	0-80903-35
No Detections.					
Client Sample ID: 21GST-SE	D-021			Lab Sample ID: 320	0-80903-36
No Detections.					
Client Sample ID: 21GST-DP	SED-020			Lab Sample ID: 320	0-80903-37
No Detections.					
Client Sample ID: 21GST-DP	SED-021			Lab Sample ID: 320	0-80903-38
No Detections.					
Client Sample ID: 21GST-SE	D-012			Lab Sample ID: 320	0-80903-39
No Detections.					
Client Sample ID: 21GST-SE	D-022			Lab Sample ID: 320	0-80903-40
No Detections.					
Client Sample ID: 21GST-SE	D-009			Lab Sample ID: 320	0-80903-41
No Detections.					
Client Sample ID: 21GST-DP	SED-009			Lab Sample ID: 320	0-80903-42

This Detection Summary does not include radiochemical test results.

No Detections.

Eurofins TestAmerica, Sacramento

11/5/2021

#### **Detection Summary**

Project/Site: SG Soils WO#1 Lab Sample ID: 320-80903-43 Client Sample ID: 21GST-SED-023 No Detections. Lab Sample ID: 320-80903-44 Client Sample ID: 21GST-DPSED-023 No Detections. Client Sample ID: 21GST-SED-030 Lab Sample ID: 320-80903-45 No Detections. Client Sample ID: 21GST-SED-028 Lab Sample ID: 320-80903-46 No Detections. Client Sample ID: 21GST-DPSED-028 Lab Sample ID: 320-80903-47 No Detections. Client Sample ID: 21GST-SED-029 Lab Sample ID: 320-80903-48 No Detections. Client Sample ID: 21GST-SED-027 Lab Sample ID: 320-80903-49 MDL Unit Result Qualifier RLDil Fac D Method Prep Type Perfluorooctanesulfonic acid (PFOS) 0.27 1 🌣 EPA 537(Mod) 0.26 JI 0.059 ug/Kg Total/NA Client Sample ID: 21GST-SED-026 Lab Sample ID: 320-80903-50 Analyte Result Qualifier RL **MDL** Unit Dil Fac D Method **Prep Type** Perfluorooctanesulfonic acid (PFOS) 0.14 J I 0.25 0.054 ug/Kg 1 EPA 537(Mod) Total/NA Client Sample ID: 21GST-SED-025 Lab Sample ID: 320-80903-51 No Detections. Client Sample ID: 21GST-SED-127 Lab Sample ID: 320-80903-52

RL

0.28

MDL Unit

0.060 ug/Kg

Dil Fac D Method

1 EPA 537(Mod)

Result Qualifier

0.76 I

Client: Shannon & Wilson, Inc

Analyte

Perfluorooctanesulfonic acid (PFOS)

Job ID: 320-80903-1

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**Prep Type** 

Total/NA

Client: Shannon & Wilson, Inc Job ID: 320-80903-1

Project/Site: SG Soils WO#1

Client Sample ID: 21GST-MW13-01 Lab Sample ID: 320-80903-1

Date Collected: 10/19/21 11:10 **Matrix: Solid** Date Received: 10/27/21 12:25 Percent Solids: 93.2

13C2 PFHxA	Method: EPA 537(Mod) - PFAS Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorotoclanola caid (PFDA)   ND   0.20   0.054   ug/Kg   0.1029/21 04:15   10/29/21 21:00	Perfluorohexanoic acid (PFHxA)	ND		0.20	0.032	ug/Kg	<del>-</del>	10/29/21 04:15	10/29/21 21:00	1
Perfluoronananic acid (PFDA)   ND   0.20   0.022   UgiKg   0.102921 04:15   10/29/21 21:00	Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.039	ug/Kg	₽	10/29/21 04:15	10/29/21 21:00	1
Perfluorodecanoic acid (PFDA)   ND   0.20   0.049   ug/Kg   0   10/29/21 04:15   10/29/21 21:00   Perfluoroundecanoic acid (PFDA)   ND   0.20   0.033   ug/Kg   0   10/29/21 04:15   10/29/21 21:00   Perfluorotridecanoic acid (PFDA)   ND   0.20   0.030   ug/Kg   0   10/29/21 04:15   10/29/21 21:00   Perfluorotridecanoic acid (PFTA)   ND   0.20   0.021   ug/Kg   0   10/29/21 04:15   10/29/21 21:00   Perfluorotridecanoic acid (PFTA)   ND   0.20   0.038   ug/Kg   0   10/29/21 04:15   10/29/21 21:00   Perfluorotetradecanoic acid (PFTA)   ND   0.20   0.039   ug/Kg   0   10/29/21 04:15   10/29/21 21:00   Perfluorotetradecanoic acid (PFTAS)   ND   0.20   0.039   ug/Kg   0   10/29/21 04:15   10/29/21 21:00   Perfluorotexanesulfonic acid (PFTAS)   ND   0.20   0.044   ug/Kg   0   10/29/21 04:15   10/29/21 21:00   Perfluorocatanesulfonic acid (PFTAS)   ND   0.20   0.044   ug/Kg   0   10/29/21 04:15   10/29/21 21:00   Perfluorocatanesulfonic acid (PFOS)   ND   0.20   0.049   ug/Kg   0   10/29/21 04:15   10/29/21 21:00   Perfluorocatanesulfonic acid (PFOS)   ND   0.20   0.049   ug/Kg   0   10/29/21 04:15   10/29/21 21:00   Perfluorocatanesulfonic acid   ND   0.20   0.049   ug/Kg   0   10/29/21 04:15   10/29/21 21:00   Perfluorocatanesulfonic acid   ND   0.20   0.049   ug/Kg   0   10/29/21 04:15   10/29/21 21:00   Perfluorocatanesulfonic acid   ND   0.20   0.049   ug/Kg   0   10/29/21 04:15   10/29/21 21:00   Perfluorocatanesulfonic acid   ND   0.20   0.049   ug/Kg   0   10/29/21 04:15   10/29/21 21:00   Perfluorocatanesulfonic acid   ND   0.20   0.049   ug/Kg   0   10/29/21 04:15   10/29/21 21:00   Perfluorocatanesulfonic acid   ND   0.20   0.049   ug/Kg   0   10/29/21 04:15   10/29/21 21:00   Perfluorocatanesulfonic acid   ND   0.20   0.049   ug/Kg   0   10/29/21 04:15   10/29/21 21:00   Perfluorocatanesulfonic acid   ND   0.20   0.049   ug/Kg   0   10/29/21 04:15   10/29/21 21:00   Perfluorocatanesulfonic acid   ND   0.20   0.049   ug/Kg   0   10/29/21 04:15   10/29/21 21:00   Perfluorocatanesulfonic acid   ND   0.20   0.	Perfluorooctanoic acid (PFOA)	ND		0.20	0.054	ug/Kg	₽	10/29/21 04:15	10/29/21 21:00	1
Perfluoroundecanoic acid (PFUnA)   ND   0.20   0.043   ug/Kg   0   10/29/21 04:15   10/29/21 21:00   Perfluorotodecanoic acid (PFDA)   ND   0.20   0.030   ug/Kg   0   10/29/21 04:15   10/29/21 21:00   Perfluorotodecanoic acid (PFTA)   ND   0.20   0.021   ug/Kg   0   10/29/21 04:15   10/29/21 21:00   Perfluorobutanesulfonic acid (PFBS)   ND   0.20   0.038   ug/Kg   0   10/29/21 04:15   10/29/21 21:00   Perfluorobutanesulfonic acid (PFBS)   ND   0.20   0.039   ug/Kg   0   10/29/21 04:15   10/29/21 21:00   Perfluorocanesulfonic acid (PFBS)   ND   0.20   0.039   ug/Kg   0   10/29/21 04:15   10/29/21 21:00   Perfluorocanesulfonic acid (PFBS)   ND   0.20   0.044   ug/Kg   0   10/29/21 04:15   10/29/21 21:00   Perfluorocanesulfonic acid (PFDS)   ND   0.20   0.044   ug/Kg   0   10/29/21 04:15   10/29/21 21:00   Perfluorocanesulfonic acid (PFDSA)   N-methylperfluorocatanesulfonic acid (PFDSA)   N-methylperfluorocatanesulfoniamidoa   ND   0.20   0.049   ug/Kg   0   10/29/21 04:15   10/29/21 21:00   Perfluorocatanesulfoniamidoa   ND   0.20   0.049   ug/Kg   0   10/29/21 04:15   10/29/21 21:00   Perfluorocatanesulfoniamidoa   ND   0.20   0.040   ug/Kg   0   10/29/21 04:15   10/29/21 21:00   Perfluoropropylene Oxide Dimer   ND   0.20   0.042   ug/Kg   0   10/29/21 04:15   10/29/21 21:00   Perfluoropropylene Oxide Dimer   ND   0.20   0.042   ug/Kg   0   10/29/21 04:15   10/29/21 21:00   Perfluoropropylene Oxide Dimer   ND   0.20   0.042   ug/Kg   0   10/29/21 04:15   10/29/21 21:00   Perfluoropropylene Oxide Dimer   ND   0.20   0.042   ug/Kg   0   10/29/21 04:15   10/29/21 21:00   Perpard	Perfluorononanoic acid (PFNA)	ND		0.20	0.022	ug/Kg	₽	10/29/21 04:15	10/29/21 21:00	1
Perfluorododecanoic acid (PFDoA)   ND   0.20   0.030 ug/Kg   0.10/29/21 04:15   10/29/21 21:00	Perfluorodecanoic acid (PFDA)	ND		0.20	0.049	ug/Kg	₽	10/29/21 04:15	10/29/21 21:00	1
Perfluorotridecanoic acid (PFTriA)   ND   0.20   0.201 ug/Kg   0 10/29/21 04:15 10/29/21 21:00	Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.043	ug/Kg	₽	10/29/21 04:15	10/29/21 21:00	1
Perfluorotetradecanoic acid (PFTEA)   ND   0.20   0.038   ug/Kg   0   10/29/21 04:15   10/29/21 21:00	Perfluorododecanoic acid (PFDoA)	ND		0.20	0.030	ug/Kg	₽	10/29/21 04:15	10/29/21 21:00	1
Perfluorobutanesulfonic acid (PFBS)   ND   0.20   0.039   ug/Kg   01/29/21 04:15   10/29/21 21:00	Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.021	ug/Kg	₽	10/29/21 04:15	10/29/21 21:00	1
Perfluorohexanesulfonic acid (PFHxS)   ND   0.20   0.029   ug/Kg   0 10/29/21 04:15   10/29/21 21:00	Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.038	ug/Kg	₩	10/29/21 04:15	10/29/21 21:00	1
Perfluorooctanesulfonic acid (PFOS)   ND   0.20   0.044   ug/Kg   0.10/29/21 04:15   10/29/21 21:00	Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.039	ug/Kg	₽	10/29/21 04:15	10/29/21 21:00	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA) N-bethylperfluorooctanesulfonamidoac ND 0.20 0.049 ug/Kg 0 10/29/21 04:15 10/29/21 21:00 etic acid (NEFOSAA) 9-Chlorohexadecafluoro-3-oxanonan ND 0.20 0.036 ug/Kg 0 10/29/21 04:15 10/29/21 21:00 e-1-sulfonic acid Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxanundecan e-1-sulfonic acid ND 0.20 0.032 ug/Kg 0 10/29/21 04:15 10/29/21 21:00 ND 0.20 0.032 ug/Kg 0 10/29/21 04:15 10/29/21 21:00 ND 0.20 0.032 ug/Kg 0 10/29/21 04:15 10/29/21 21:00 ND 0.20 0.040 ug/Kg 0 10/29/21 04:15 10/29/21 21:00 ND 0.20 0.040 ug/Kg 0 10/29/21 04:15 10/29/21 21:00 ND ND 0.20 0.040 ug/Kg 0 10/29/21 04:15 10/29/21 21:00 ND NSotope Dilution NSotope Dilution NSOTOPHIA	Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.029	ug/Kg	₩	10/29/21 04:15	10/29/21 21:00	1
cetic acid (NMeFOSAA) N-ethylperfluorooctanesulfonamidoac etic acid (NELFOSAA) 9-Chlorohexadecafluoro-3-oxanonan el-sulfonic acid (NELFOSAA) 9-Chlorohexadecafluoro-3-oxanonan el-sulfonic acid (NELFOSAA) 9-Chlorohexadecafluoro-3-oxanonan el-sulfonic acid (NEPO-DA) 11-Chloroeixosafluoro-3-oxanudecan el-sulfonic acid (ND 0.20 0.032 ug/Kg 0.10/29/21 04:15 10/29/21 21:00 el-sulfonic acid (ND 0.20 0.032 ug/Kg 0.10/29/21 04:15 10/29/21 21:00 el-sulfonic acid (ND 0.20 0.032 ug/Kg 0.10/29/21 04:15 10/29/21 21:00 el-sulfonic acid (ND 0.20 0.032 ug/Kg 0.10/29/21 04:15 10/29/21 21:00 el-sulfonic acid (ND 0.20 0.040 ug/Kg 0.10/29/21 04:15 10/29/21 21:00 el-sulfonic acid (ND 0.20 0.040 ug/Kg 0.10/29/21 04:15 10/29/21 21:00 el-sulfonic acid (ND 0.20 0.040 ug/Kg 0.10/29/21 04:15 10/29/21 21:00 el-sulfonic acid (ND 0.20 0.040 ug/Kg 0.10/29/21 04:15 10/29/21 21:00 el-sulfonic acid (ND 0.20 0.040 ug/Kg 0.10/29/21 04:15 10/29/21 21:00 el-sulfonic acid (ND 0.20 0.040 ug/Kg 0.10/29/21 04:15 10/29/21 21:00 el-sulfonic acid (ND 0.20 0.040 ug/Kg 0.10/29/21 04:15 10/29/21 21:00 el-sulfonic acid (ND 0.20 0.040 ug/Kg 0.10/29/21 04:15 10/29/21 21:00 el-sulfonic acid (ND 0.20 0.040 ug/Kg 0.10/29/21 04:15 10/29/21 21:00 el-sulfonic acid (ND 0.20 0.040 ug/Kg 0.10/29/21 04:15 10/29/21 21:00 el-sulfonic acid (ND 0.20 0.040 ug/Kg 0.10/29/21 04:15 10/29/21 21:00 el-sulfonic acid (ND 0.20 0.040 ug/Kg 0.10/29/21 04:15 10/29/21 21:00 el-sulfonic acid (ND 0.20 0.040 ug/Kg 0.10/29/21 04:15 10/29/21 21:00 el-sulfonic acid (ND 0.20 0.040 ug/Kg 0.10/29/21 04:15 10/29/21 21:00 el-sulfonic acid (ND 0.20 0.040 ug/Kg 0.10/29/21 04:15 10/29/21 21:00 el-sulfonic acid (ND 0.20 0.20 0.040 ug/Kg 0.10/29/21 04:15 10/29/21 21:00 el-sulfonic acid (ND 0.20 0.20 0.20 ug/Kg 0.10/29/21 04:15 10/29/21 21:00 el-sulfonic acid (ND 0.20 0.20 0.20 0.20 0.20 ug/Kg 0.10/29/21 04:15 10/29/21 21:00 el-sulfonic acid (ND 0.20 0.20 0.20 0.20 0.20 0.20 ug/Kg 0.20 0.20 0.20 ug/Kg 0.20 0.20 ug/Kg 0.20 0.20 ug/Kg 0.20 0.20 0.20 ug/Kg 0.20 0.20 ug/Kg 0.20 0.20 ug/Kg 0.20 ug/Kg 0.20 ug/Kg	Perfluorooctanesulfonic acid (PFOS)	ND		0.20	0.044	ug/Kg	₩	10/29/21 04:15	10/29/21 21:00	1
## etic acid (NEIFOSAA)  9-Chlorohexadecafluoro-3-oxanonan PC	* .	ND		0.20	0.023	ug/Kg	₩	10/29/21 04:15	10/29/21 21:00	1
e-1-sulfonic acid Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (ADONA)  Isotope Dilution  Isotope Dil		ND		0.20	0.049	ug/Kg	₩	10/29/21 04:15	10/29/21 21:00	1
Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid (ADONA)  Isotope Dilution    ND        ND		ND		0.20	0.036	ug/Kg	≎	10/29/21 04:15	10/29/21 21:00	1
e-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid 4,8-Dioxa-4H-perfluorononanoic acid 4,8-Dioxa-4H		ND		0.20	0.042	ug/Kg	₩	10/29/21 04:15	10/29/21 21:00	1
Sotope Dilution   %Recovery   Qualifier   Limits   Prepared   Analyzed   Dilution   10/29/21 04:15   10/29/21 21:00   10/29/21 04:15   10/29/21 04:15   10/29/21 04:15   10/29/21 04:15   10/29/21 04:15   10/29/21 04:15   10/29/21 04:15   10/29/21 04:15   10/29/21 04:15   10/29/21 04:15   10/29/21 04:15   10/29/21 04:15   10/29/21 04:15   10/29/21 04:15   10/29/21 04:15   10/29/21 04:15   10/29/21 04:15   10/29/21 04:15   10/29/21 04:15   10/29		ND		0.20	0.032	ug/Kg	≎	10/29/21 04:15	10/29/21 21:00	1
13C2 PFHxA	•	ND		0.20	0.040	ug/Kg	₩	10/29/21 04:15	10/29/21 21:00	1
13C4 PFHpA 84 50 - 150 10/29/21 04:15 10/29/21 21:00 13C4 PFOA 95 50 - 150 10/29/21 04:15 10/29/21 21:00 13C5 PFNA 96 50 - 150 10/29/21 04:15 10/29/21 21:00 13C2 PFDA 95 50 - 150 10/29/21 04:15 10/29/21 21:00 13C2 PFUnA 86 50 - 150 10/29/21 04:15 10/29/21 21:00 13C2 PFDoA 91 50 - 150 10/29/21 04:15 10/29/21 21:00 13C2 PFDoA 91 50 - 150 10/29/21 04:15 10/29/21 21:00 13C2 PFDoA 91 50 - 150 10/29/21 04:15 10/29/21 21:00 13C2 PFTeDA 86 50 - 150 10/29/21 04:15 10/29/21 21:00 13C3 PFBS 98 50 - 150 10/29/21 04:15 10/29/21 21:00 13C3 PFBS 98 50 - 150 10/29/21 04:15 10/29/21 21:00 13C3 PFBS 98 50 - 150 10/29/21 04:15 10/29/21 21:00 13C4 PFOS 90 50 - 150 10/29/21 04:15 10/29/21 21:00 03-NMeFOSAA 87 50 - 150 10/29/21 04:15 10/29/21 21:00 03-NMeFOSAA 89 50 - 150 10/29/21 04:15 10/29/21 21:00 13C3 HFPO-DA 79 50 - 150 10/29/21 04:15 10/29/21 21:00 13C3 HFPO-DA 79 50 - 150 10/29/21 04:15 10/29/21 21:00 10/29/21 04:15 10/29/21 21:00 10/29/21 04:15 10/29/21 21:00 10/29/21 04:15 10/29/21 21:00 10/29/21 04:15 10/29/21 21:00 10/29/21 04:15 10/29/21 21:00 10/29/21 04:15 10/29/21 12:00 10/29/21 04:15 10/29/21 04:15 10/29/21 12:00 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29	Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA 95 50 - 150 10/29/21 04:15 10/29/21 21:00 13C5 PFNA 96 50 - 150 10/29/21 04:15 10/29/21 21:00 13C2 PFDA 95 50 - 150 10/29/21 04:15 10/29/21 21:00 13C2 PFUAA 86 50 - 150 10/29/21 04:15 10/29/21 21:00 13C2 PFDAA 91 50 - 150 10/29/21 04:15 10/29/21 21:00 13C2 PFDAA 91 50 - 150 10/29/21 04:15 10/29/21 21:00 13C2 PFDAA 86 50 - 150 10/29/21 04:15 10/29/21 21:00 13C2 PFTeDA 86 50 - 150 10/29/21 04:15 10/29/21 21:00 13C3 PFBS 98 50 - 150 10/29/21 04:15 10/29/21 21:00 13C3 PFBS 98 50 - 150 10/29/21 04:15 10/29/21 21:00 13C4 PFOS 90 50 - 150 10/29/21 04:15 10/29/21 21:00 13C4 PFOS 90 50 - 150 10/29/21 04:15 10/29/21 21:00 13C4 PFOS 90 50 - 150 10/29/21 04:15 10/29/21 21:00 13C4 PFOS 90 50 - 150 10/29/21 04:15 10/29/21 21:00 13C4 PFOSAA 87 50 - 150 10/29/21 04:15 10/29/21 21:00 13C4 PFOSAA 89 50 - 150 10/29/21 04:15 10/29/21 21:00 13C4 PFOSAA 89 50 - 150 10/29/21 04:15 10/29/21 21:00 13C4 PFODA 79 50 - 150 10/29/21 04:15 10/29/21 21:00 13C4 PFODA 79 50 - 150 10/29/21 04:15 10/29/21 21:00 13C4 PFODA 79 50 - 150 10/29/21 04:15 10/29/21 21:00 13C4 PFODA 79 50 - 150 10/29/21 04:15 10/29/21 21:00 13C4 PFODA 79 50 - 150 10/29/21 04:15 10/29/21 21:00 13C4 PFODA 79 50 - 150 10/29/21 04:15 10/29/21 21:00 13C4 PFODA 79 50 - 150 10/29/21 04:15 10/29/21 21:00 13C4 PFODA 79 50 - 150 10/29/21 04:15 10/29/21 21:00 13C4 PFODA 79 50 - 150 10/29/21 04:15 10/29/21 21:00 13C4 PFODA 79 50 - 150 10/29/21 04:15 10/29/21 21:00 13C4 PFODA 79 50 - 150 10/29/21 04:15 10/29/21 21:00 13C4 PFODA 79 50 - 150 10/29/21 04:15 10/29/21 21:00 13C4 PFODA 79 50 - 150 10/29/21 04:15 10/29/21 21:00 13C4 PFODA 79 50 - 150 10/29/21 04:15 10/29/21 21:00 13C4 PFODA 79 50 - 150 10/29/21 04:15 10/29/21 21:00 13C4 PFODA 79 10/29/21 04:15 10/29/21 21:00 13C4 PFODA 79 10/29/21 04:15 10/29/21 04:15 10/29/21 21:00 13C4 PFODA 79 10/29/21 04:15 10/29/21 04:15 10/29/21 21:00 13C4 PFODA 79 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15	13C2 PFHxA	79		50 - 150				10/29/21 04:15	10/29/21 21:00	1
13C5 PFNA 96 50 - 150 10/29/21 04:15 10/29/21 21:00 13C2 PFDA 95 50 - 150 10/29/21 04:15 10/29/21 21:00 13C2 PFUnA 86 50 - 150 10/29/21 04:15 10/29/21 21:00 13C2 PFDoA 91 50 - 150 10/29/21 04:15 10/29/21 21:00 13C2 PFDoA 86 50 - 150 10/29/21 04:15 10/29/21 21:00 13C2 PFTeDA 86 50 - 150 10/29/21 04:15 10/29/21 21:00 13C3 PFBS 98 50 - 150 10/29/21 04:15 10/29/21 21:00 13C3 PFBS 85 50 - 150 10/29/21 04:15 10/29/21 21:00 13C4 PFOS 90 50 - 150 10/29/21 04:15 10/29/21 21:00 13C4 PFOS 90 50 - 150 10/29/21 04:15 10/29/21 21:00 13C4 PFOS 90 50 - 150 10/29/21 04:15 10/29/21 21:00 10/29/21 04:15 10/29/21 12:00 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15	13C4 PFHpA	84		50 - 150				10/29/21 04:15	10/29/21 21:00	1
13C2 PFDA 95 50 - 150 10/29/21 04:15 10/29/21 21:00 13C2 PFUnA 86 50 - 150 10/29/21 04:15 10/29/21 21:00 13C2 PFDoA 91 50 - 150 10/29/21 04:15 10/29/21 21:00 13C2 PFTeDA 86 50 - 150 10/29/21 04:15 10/29/21 21:00 13C3 PFBS 98 50 - 150 10/29/21 04:15 10/29/21 21:00 13C3 PFBS 85 50 - 150 10/29/21 04:15 10/29/21 21:00 18O2 PFHxS 85 50 - 150 10/29/21 04:15 10/29/21 21:00 13C4 PFOS 90 50 - 150 10/29/21 04:15 10/29/21 21:00 03-NMeFOSAA 87 50 - 150 10/29/21 04:15 10/29/21 21:00 05-NEIFOSAA 89 50 - 150 10/29/21 04:15 10/29/21 21:00 13C3 HFPO-DA 79 50 - 150 10/29/21 04:15 10/29/21 21:00 10/29/21 04:15 10/29/21 12:00 10/29/21 04:15 10/29/21 12:00 10/29/21 04:15 10/29/21 12:00 10/29/21 04:15 10/29/21 12:00 10/29/21 04:15 10/29/21 12:00 10/29/21 04:15 10/29/21 12:00 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/2	13C4 PFOA	95		50 - 150				10/29/21 04:15	10/29/21 21:00	1
13C2 PFUnA       86       50 - 150       10/29/21 04:15 10/29/21 21:00         13C2 PFDoA       91       50 - 150       10/29/21 04:15 10/29/21 21:00         13C2 PFTeDA       86       50 - 150       10/29/21 04:15 10/29/21 21:00         13C3 PFBS       98       50 - 150       10/29/21 04:15 10/29/21 21:00         18O2 PFHxS       85       50 - 150       10/29/21 04:15 10/29/21 21:00         13C4 PFOS       90       50 - 150       10/29/21 04:15 10/29/21 21:00         d3-NMeFOSAA       87       50 - 150       10/29/21 04:15 10/29/21 21:00         d5-NEtFOSAA       89       50 - 150       10/29/21 04:15 10/29/21 21:00         13C3 HFPO-DA       79       50 - 150       10/29/21 04:15 10/29/21 21:00         General Chemistry         Analyte       Result       Qualifier       RL       MDL       Unit       D       Prepared       Analyzed       Dil         Percent Moisture       6.8       0.1       0.1       0.1       0.1       0.1       0.1       10/29/21 12:18	13C5 PFNA	96		50 - 150				10/29/21 04:15	10/29/21 21:00	1
13C2 PFDoA 91 50 - 150 10/29/21 04:15 10/29/21 21:00 13C2 PFTeDA 86 50 - 150 10/29/21 04:15 10/29/21 21:00 13C3 PFBS 98 50 - 150 10/29/21 04:15 10/29/21 21:00 18O2 PFHxS 85 50 - 150 10/29/21 04:15 10/29/21 21:00 13C4 PFOS 90 50 - 150 10/29/21 04:15 10/29/21 21:00 d3-NMeFOSAA 87 50 - 150 10/29/21 04:15 10/29/21 21:00 d5-NEtFOSAA 89 50 - 150 10/29/21 04:15 10/29/21 21:00 13C3 HFPO-DA 79 50 - 150 10/29/21 04:15 10/29/21 21:00 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15	13C2 PFDA	95		50 - 150				10/29/21 04:15	10/29/21 21:00	1
13C2 PFTeDA 86 50 - 150 10/29/21 04:15 10/29/21 21:00 13C3 PFBS 98 50 - 150 10/29/21 04:15 10/29/21 21:00 18O2 PFHxS 85 50 - 150 10/29/21 04:15 10/29/21 21:00 13C4 PFOS 90 50 - 150 10/29/21 04:15 10/29/21 21:00 d3-NMeFOSAA 87 50 - 150 10/29/21 04:15 10/29/21 21:00 d5-NEtFOSAA 89 50 - 150 10/29/21 04:15 10/29/21 21:00 d5-NEtFOSAA 89 50 - 150 10/29/21 04:15 10/29/21 21:00 13C3 HFPO-DA 79 50 - 150 10/29/21 04:15 10/29/21 21:00 10/29/21 21:00 10/29/21 04:15 10/29/21 21:00 10/29/21 04:15 10/29/21 21:00 10/29/21 04:15 10/29/21 21:00 10/29/21 04:15 10/29/21 21:00 10/29/21 04:15 10/29/21 21:00 10/29/21 04:15 10/29/21 21:00 10/29/21 21:00 10/29/21 04:15 10/29/21 21:00 10/29/21 04:15 10/29/21 21:00 10/29/21 04:15 10/29/21 21:00 10/29/21 04:15 10/29/21 21:00 10/29/21 04:15 10/29/21 21:00 10/29/21 04:15 10/29/21 21:00 10/29/21 04:15 10/29/21 21:00 10/29/21 04:15 10/29/21 21:00 10/29/21 04:15 10/29/21 21:00 10/29/21 04:15 10/29/21 21:00 10/29/21 04:15 10/29/21 21:00 10/29/21 04:15 10/29/21 21:00 10/29/21 04:15 10/29/21 21:00 10/29/21 04:15 10/29/21 21:00 10/29/21 04:15 10/29/21 21:00 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:1	13C2 PFUnA	86		50 - 150				10/29/21 04:15	10/29/21 21:00	1
13C3 PFBS 98 50 - 150 10/29/21 04:15 10/29/21 21:00 18O2 PFHxS 85 50 - 150 10/29/21 04:15 10/29/21 21:00 13C4 PFOS 90 50 - 150 10/29/21 04:15 10/29/21 21:00 d3-NMeFOSAA 87 50 - 150 10/29/21 04:15 10/29/21 21:00 d5-NEtFOSAA 89 50 - 150 10/29/21 04:15 10/29/21 21:00 13C3 HFPO-DA 79 50 - 150 10/29/21 04:15 10/29/21 21:00  General Chemistry Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Percent Moisture 6.8 0.1 0.1 %	13C2 PFDoA	91		50 - 150				10/29/21 04:15	10/29/21 21:00	1
1802 PFHxS     85     50 - 150     10/29/21 04:15 10/29/21 21:00       13C4 PFOS     90     50 - 150     10/29/21 04:15 10/29/21 21:00       d3-NMeFOSAA     87     50 - 150     10/29/21 04:15 10/29/21 21:00       d5-NEtFOSAA     89     50 - 150     10/29/21 04:15 10/29/21 21:00       13C3 HFPO-DA     79     50 - 150     10/29/21 04:15 10/29/21 21:00       General Chemistry       Analyte     Result Qualifier     RL     MDL Unit     D Prepared     Analyzed     Dil       Percent Moisture     6.8     0.1     0.1     %     10/28/21 12:18	13C2 PFTeDA	86		50 - 150				10/29/21 04:15	10/29/21 21:00	1
13C4 PFOS 90 50 - 150 10/29/21 04:15 10/29/21 21:00 d3-NMeFOSAA 87 50 - 150 10/29/21 04:15 10/29/21 21:00 d5-NEtFOSAA 89 50 - 150 10/29/21 04:15 10/29/21 21:00 10/29/21 04:15 10/29/21 04	13C3 PFBS	98		50 - 150				10/29/21 04:15	10/29/21 21:00	1
d3-NMeFOSAA     87     50 - 150     10/29/21 04:15 10/29/21 21:00       d5-NEtFOSAA     89     50 - 150     10/29/21 04:15 10/29/21 21:00       13C3 HFPO-DA     79     50 - 150     10/29/21 04:15 10/29/21 21:00       General Chemistry       Analyte     Result     Qualifier     RL     MDL     Unit     D     Prepared     Analyzed     Dil       Percent Moisture     6.8     0.1     0.1     %     10/28/21 12:18	1802 PFHxS	85		50 - 150				10/29/21 04:15	10/29/21 21:00	1
d5-NEtFOSAA     89     50 - 150     10/29/21 04:15 10/29/21 21:00       13C3 HFPO-DA     79     50 - 150     10/29/21 04:15 10/29/21 21:00       General Chemistry       Analyte     Result Qualifier     RL MDL Unit D Prepared Analyzed Dil       Percent Moisture     6.8     0.1     0.1     %     10/28/21 12:18	13C4 PFOS	90		50 <sub>-</sub> 150				10/29/21 04:15	10/29/21 21:00	1
13C3 HFPO-DA   79   50 - 150   10/29/21 04:15   10/29/21 21:00	d3-NMeFOSAA	87		50 - 150				10/29/21 04:15	10/29/21 21:00	1
General Chemistry Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Percent Moisture 6.8 0.1 0.1 % 10/28/21 12:18	d5-NEtFOSAA	89		50 - 150				10/29/21 04:15	10/29/21 21:00	1
Analyte Result Qualifier RL MDL Unit D Percent Moisture RL 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	13C3 HFPO-DA	79		50 - 150				10/29/21 04:15	10/29/21 21:00	1
Percent Moisture 6.8 0.1 0.1 % 10/28/21 12:18			<b>.</b>				_			
			Qualifier				D	Prepared	•	Dil Fac
Percent Solids 93.2 0.1 0.1 % 10/28/21 12:18		6.8 93.2								1

Client: Shannon & Wilson, Inc Job ID: 320-80903-1

Project/Site: SG Soils WO#1

Client Sample ID: 21GST-MW13-02 Lab Sample ID: 320-80903-2

Date Collected: 10/19/21 11:40 **Matrix: Solid** Date Received: 10/27/21 12:25 Percent Solids: 80.4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.24	0.037	ug/Kg	— <u></u>	10/29/21 04:15	10/29/21 21:32	
Perfluoroheptanoic acid (PFHpA)	ND		0.24	0.045	ug/Kg	☼	10/29/21 04:15	10/29/21 21:32	1
Perfluorooctanoic acid (PFOA)	ND		0.24	0.063	ug/Kg	≎	10/29/21 04:15	10/29/21 21:32	1
Perfluorononanoic acid (PFNA)	ND		0.24	0.026	ug/Kg	₩	10/29/21 04:15	10/29/21 21:32	1
Perfluorodecanoic acid (PFDA)	ND		0.24	0.057	ug/Kg	≎	10/29/21 04:15	10/29/21 21:32	1
Perfluoroundecanoic acid (PFUnA)	ND		0.24	0.050	ug/Kg	₽	10/29/21 04:15	10/29/21 21:32	1
Perfluorododecanoic acid (PFDoA)	ND		0.24	0.036	ug/Kg	₽	10/29/21 04:15	10/29/21 21:32	1
Perfluorotridecanoic acid (PFTriA)	ND		0.24	0.025	ug/Kg	≎	10/29/21 04:15	10/29/21 21:32	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.24	0.044	ug/Kg	₽	10/29/21 04:15	10/29/21 21:32	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.24	0.045	ug/Kg	₽	10/29/21 04:15	10/29/21 21:32	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.24	0.034	ug/Kg	₩	10/29/21 04:15	10/29/21 21:32	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.24	0.051	ug/Kg	₩	10/29/21 04:15	10/29/21 21:32	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.24	0.027	ug/Kg	₽	10/29/21 04:15	10/29/21 21:32	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.24		ug/Kg	₩	10/29/21 04:15	10/29/21 21:32	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.24	0.042	ug/Kg	₩	10/29/21 04:15	10/29/21 21:32	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.24	0.049	ug/Kg	₩	10/29/21 04:15	10/29/21 21:32	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.24	0.037	ug/Kg	₩	10/29/21 04:15	10/29/21 21:32	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.24	0.046	ug/Kg	₩	10/29/21 04:15	10/29/21 21:32	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	88		50 - 150				10/29/21 04:15	10/29/21 21:32	1
13C4 PFHpA	92		50 - 150				10/29/21 04:15	10/29/21 21:32	1
13C4 PFOA	99		50 - 150				10/29/21 04:15	10/29/21 21:32	1
13C5 PFNA	101		50 - 150				10/29/21 04:15	10/29/21 21:32	1
13C2 PFDA	94		50 - 150				10/29/21 04:15	10/29/21 21:32	1
13C2 PFUnA	98		50 - 150				10/29/21 04:15	10/29/21 21:32	1
13C2 PFDoA	95		50 - 150				10/29/21 04:15	10/29/21 21:32	1
13C2 PFTeDA	102		50 - 150				10/29/21 04:15	10/29/21 21:32	1
13C3 PFBS	106		50 - 150				10/29/21 04:15	10/29/21 21:32	1
1802 PFHxS	93		50 - 150				10/29/21 04:15	10/29/21 21:32	1
13C4 PFOS	103		50 <sub>-</sub> 150				10/29/21 04:15	10/29/21 21:32	1
d3-NMeFOSAA	95		50 <sub>-</sub> 150				10/29/21 04:15	10/29/21 21:32	1
d5-NEtFOSAA	88		50 <sub>-</sub> 150				10/29/21 04:15	10/29/21 21:32	1
13C3 HFPO-DA	82		50 - 150					10/29/21 21:32	1
General Chemistry									
Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	19.6		0.1	0.1	%			10/28/21 12:18	1
Percent Solids	80.4		0.1	0.1	0.4			10/28/21 12:18	1

Client: Shannon & Wilson, Inc Job ID: 320-80903-1

Project/Site: SG Soils WO#1

Client Sample ID: 21GST-MW13-03 Lab Sample ID: 320-80903-3

Date Collected: 10/19/21 13:00 **Matrix: Solid** Date Received: 10/27/21 12:25 Percent Solids: 88.3

Perfluorohexanolic acid (PFHA)   ND	: EPA 537(Mod) - PFAS fo		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorotoctanolic acid (PFDA)   ND   0.21   0.056   ug/Kg   3   10/29/21 04:15   10/29/21 21:42	nexanoic acid (PFHxA)	ND		0.21	0.033	ug/Kg	<u></u>	10/29/21 04:15	10/29/21 21:42	1
Perfluoronanonic acid (PFNA)   ND   0.21   0.023   ug/kg   0   10/29/21 04:15   10/29/21 14:142   Perfluorodecanoic acid (PFDA)   ND   0.21   0.051   ug/kg   0   10/29/21 04:15   10/29/21 14:142   Perfluorodecanoic acid (PFDA)   ND   0.21   0.044   ug/kg   0   10/29/21 04:15   10/29/21 14:142   Perfluorodecanoic acid (PFDA)   ND   0.21   0.032   ug/kg   0   10/29/21 04:15   10/29/21 12:142   Perfluorodidecanoic acid (PFDA)   ND   0.21   0.032   ug/kg   0   10/29/21 04:15   10/29/21 12:142   Perfluorobidaceanoic acid (PFDA)   ND   0.21   0.039   ug/kg   0   10/29/21 04:15   10/29/21 12:142   Perfluorobidaceanoic acid (PFDA)   ND   0.21   0.039   ug/kg   0   10/29/21 04:15   10/29/21 12:142   Perfluorobidanesulfonic acid (PFBS)   ND   0.21   0.040   ug/kg   0   10/29/21 04:15   10/29/21 12:142   Perfluorobexanesulfonic acid (PFDS)   ND   0.21   0.040   ug/kg   0   10/29/21 04:15   10/29/21 12:142   Perfluorobexanesulfonic acid (PFDS)   ND   0.21   0.040   ug/kg   0   10/29/21 04:15   10/29/21 12:142   Perfluorobexanesulfonamidoa   ND   0.21   0.051   ug/kg   0   10/29/21 04:15   10/29/21 12:142   Perfluorobexadecalfloro-3-oxanonan   ND   0.21   0.031   ug/kg   0   10/29/21 04:15   10/29/21 12:142   Perfluorobexadecalfloro-3-oxanonan   ND   0.21   0.031   ug/kg   0   10/29/21 04:15   10/29/21 12:142   Perfluorobexadecalfloro-3-oxanonan   ND   0.21   0.031   ug/kg   0   10/29/21 04:15   10/29/21 12:142   Perfluorobexadecalfloro-3-oxanonan   ND   0.21   0.031   ug/kg   0   10/29/21 04:15   10/29/21 12:142   Perfluorobexadecalfloro-3-oxanonan   ND   0.21   0.031   ug/kg   0   10/29/21 04:15   10/29/21 12:142   Perfluorobexadecalfloro-3-oxanonan   ND   0.21   0.031   ug/kg   0   10/29/21 04:15   10/29/21 12:142   Perfluorobexadecalfloro-3-oxanonan   ND   0.21   0.041   ug/kg   0   10/29/21 04:15   10/29/21 12:142   Perfluorobexadecalfloro-3-oxanonan   ND   0.21   0.041   ug/kg   0   10/29/21 04:15   10/29/21 12:142   Perfluorobexadecalfloro-3-oxanonan   ND   0.21   0.041   ug/kg   0   10/29/21 04:15   10/29/21 04:15	neptanoic acid (PFHpA)	ND		0.21	0.040	ug/Kg	₽	10/29/21 04:15	10/29/21 21:42	1
Perfluoroundecanoic acid (PFDA)   ND   0.21   0.051   ug/Kg   0   10/29/21 04:15   10/29/21 21:42	octanoic acid (PFOA)	ND		0.21	0.056	ug/Kg	₽	10/29/21 04:15	10/29/21 21:42	1
Perfluoroundecanoic acid (PFUnA)   ND   0.21   0.044   ug/Kg   0   10/29/21 04:15   10/29/21 21:42	nonanoic acid (PFNA)	ND		0.21	0.023	ug/Kg	₽	10/29/21 04:15	10/29/21 21:42	1
Perfluorododecanoic acid (PFDA)   ND   0.21   0.032   ug/Kg   10/29/21 04:15   10/29/21 21:42	decanoic acid (PFDA)	ND		0.21	0.051	ug/Kg	₽	10/29/21 04:15	10/29/21 21:42	1
Perfluorotridecanoic acid (PFTriA)   ND   0.21   0.022   ug/Kg   31   10/29/21   04:15   10/29/21   21:42     Perfluorotetradecanoic acid (PFTeA)   ND   0.21   0.039   ug/Kg   31   10/29/21   04:15   10/29/21   21:42     Perfluorotetradecanoic acid (PFTeA)   ND   0.21   0.040   ug/Kg   31   10/29/21   04:15   10/29/21   21:42     Perfluorotetradecanoic acid (PFDKS)   ND   0.21   0.040   ug/Kg   31   10/29/21   04:15   10/29/21   21:42     Perfluorotetradesulfonic acid (PFOS)   ND   0.21   0.040   ug/Kg   31   10/29/21   04:15   10/29/21   21:42     Perfluorotetradesulfonamidoa   ND   0.21   0.051   ug/Kg   31   10/29/21   04:15   10/29/21   21:42     Perfluorotetradesulfonamidoa   ND   0.21   0.051   ug/Kg   31   10/29/21   04:15   10/29/21   21:42     Perfluorotetradesulfonamidoa   ND   0.21   0.037   ug/Kg   31   10/29/21   04:15   10/29/21   21:42     Perfluorotetradecafluoro-3-oxanonan   ND   0.21   0.043   ug/Kg   31   10/29/21   04:15   10/29/21   21:42     Perfluorotetradecafluoro-3-oxanonan   ND   0.21   0.043   ug/Kg   31   10/29/21   04:15   10/29/21   21:42     Perfluorotetradecafluoro-3-oxanonan   ND   0.21   0.043   ug/Kg   31   10/29/21   04:15   10/29/21   21:42     Perfluorotetradecafluoro-3-oxanonan   ND   0.21   0.043   ug/Kg   31   10/29/21   04:15   10/29/21   21:42     Perfluorotetradecafluoro-3-oxanonan   ND   0.21   0.043   ug/Kg   31   10/29/21   04:15   10/29/21   21:42     Perfluorotetradecafluoro-3-oxanonan   ND   0.21   0.043   ug/Kg   31   10/29/21   04:15   10/29/21   21:42     Perfluorotetradecafluoro-3-oxanonan   ND   0.21   0.043   ug/Kg   31   10/29/21   04:15   10/29/21   21:42     Perfluorotetradecafluoro-3-oxanonan   ND   0.21   0.043   ug/Kg   31   10/29/21   04:15   10/29/21   21:42     Perfluorotetradecafluoro-3-oxanonan   ND   0.21   0.043   ug/Kg   31   10/29/21   04:15   10/29/21   21:42     Perfluorotetradecafluoro-3-oxanonan   ND   0.21   0.043   ug/Kg   31   ug/Kg   31   10/29/21   04:15   10/29/21   12:42     Perfluorotetradecafluoro-3-oxanonan   0.04   0.043   u	undecanoic acid (PFUnA)	ND		0.21	0.044	ug/Kg	₩	10/29/21 04:15	10/29/21 21:42	1
Perfluorotetradecanoic acid (PFTeA)   ND   0.21   0.039   ug/Kg   10/29/21 04:15   10/29/21 21:42	dodecanoic acid (PFDoA)	ND		0.21	0.032	ug/Kg	₽	10/29/21 04:15	10/29/21 21:42	1
Perfluorobutanesulfonic acid (PFBS)   ND   0.21   0.040   ug/Kg   0 10/29/21 04:15   10/29/21 21:42	ridecanoic acid (PFTriA)	ND		0.21	0.022	ug/Kg	₩	10/29/21 04:15	10/29/21 21:42	1
Perfluorohexanesulfonic acid (PFHxS)   ND   0.21   0.031   ug/Kg   0 10/29/21 04:15   10/29/21 21:42	etradecanoic acid (PFTeA)	ND		0.21	0.039	ug/Kg	₩	10/29/21 04:15	10/29/21 21:42	1
Perfluorocotanesulfonic acid (PFOS)   ND   0.21   0.046   ug/Kg   10/29/21 04:15   10/29/21 21:42	outanesulfonic acid (PFBS)	ND		0.21	0.040	ug/Kg	₩	10/29/21 04:15	10/29/21 21:42	1
N-methylperfluorooctanesulfonamidoa cetic acid (MNEFOSAA) N-bethylperfluorooctanesulfonamidoac cetic acid (MNEFOSAA) N-bethylperfluorooctanesulfonamidoac cetic acid (MNEFOSAA) N-bethylperfluorooctanesulfonamidoac cetic acid (NEIFOSAA) 9-Chilorohexadecafluoro-3-oxanonan	nexanesulfonic acid (PFHxS)	ND		0.21	0.031	ug/Kg	₩	10/29/21 04:15	10/29/21 21:42	1
cetic acid (NMeFOSAA) N-ethylperfluorocateasulfonamidoac etic acid (NEFOSAA) 9-Chlorohexadecafluoro-3-oxanonan ND 0.21 0.21 0.037 ug/Kg 010/29/21 04:15 10/29/21 21:42 etic acid (NEFOSAA) 9-Chlorohexadecafluoro-3-oxanonan ND 0.21 0.037 ug/Kg 010/29/21 04:15 10/29/21 21:42 etic acid (NEFODA) 9-Chlorohexadecafluoro-3-oxanonan ND 0.21 0.043 ug/Kg 010/29/21 04:15 10/29/21 21:42 eti-sulfonic acid ND 0.21 0.033 ug/Kg 010/29/21 04:15 10/29/21 21:42 eti-sulfonic acid ND 0.21 0.033 ug/Kg 010/29/21 04:15 10/29/21 21:42 eti-sulfonic acid NB 0.21 0.041 ug/Kg 010/29/21 04:15 10/29/21 21:42 eti-sulfonic acid NB 0.21 0.041 ug/Kg 010/29/21 04:15 10/29/21 21:42 eti-sulfonic acid NB 0.21 0.041 ug/Kg 010/29/21 04:15 10/29/21 21:42 eti-sulfonic acid NB 0.21 0.041 ug/Kg 010/29/21 04:15 10/29/21 21:42 eti-sulfonic acid NB 0.21 0.041 ug/Kg 010/29/21 04:15 10/29/21 21:42 eti-sulfonic acid NB 0.21 0.041 ug/Kg 010/29/21 04:15 10/29/21 21:42 eti-sulfonic acid NB 0.21 0.21 0.041 ug/Kg 010/29/21 04:15 10/29/21 21:42 eti-sulfonic acid NB 0.21 0.20 0.21 04:15 10/29/21 21:42 eti-sulfonic acid NB 0.22 0.22 04:15 10/29/21 04:15 10/29/21 21:42 13C2 PFHAA 94 50.150 10/29/21 04:15 10/29/21 21:42 13C2 PFDA 99 50.150 10/29/21 04:15 10/29/21 21:42 13C2 PFDAA 98 50.150 10/29/21 04:15 10/29/21 12:42 13C2 PFDAA 98 50.150 10/29/21 04:15 10/29/21 12:42 13C2 PFDAA 99 50.150 10/29/21 04:15 10/29/21 12:42 13C2 PFBBS 104 50.150 10/29/21 04:15 10/29/21 12:42 13C2 PFBBS 104 50.150 10/29/21 04:15 10/29/21 12:42 13C2 PFBBS 104 50.150 10/29/21 04:15 10/29/21 12:42 13C2 PFBBS 104 50.150 10/29/21 04:15 10/29/21 12:42 13C2 PFBBS 104 50.150 10/29/21 04:15 10/29/21 12:42 13C2 PFBBS 104 50.150 10/29/21 04:15 10/29/21 12:42 13C2 PFBBS 104 50.150 10/29/21 04:15 10/29/21 12:42 13C2 PFBBS 104 50.150 10/29/21 04:15 10/29/21 04:15 10/29/21 12:42 13C2 PFBBS 104 50.150 10/29/21 04:15 10/29/21 04:15 10/29/21 12:42 13C2 PFBBS 104 50.150 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04	octanesulfonic acid (PFOS)	ND		0.21	0.046	ug/Kg	≎	10/29/21 04:15	10/29/21 21:42	1
etic acid (NEIFOSAA) 9-Chlorohexadecafluoro-3-oxanonan 9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxanundecan e-1-sulfonic acid Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxanundecan e-1-sulfonic acid 4-8-Dioxa-3H-perfluorononanoic acid (ABONA)  Isotope Dilution Isotope D		ND		0.21	0.024	ug/Kg	₩	10/29/21 04:15	10/29/21 21:42	1
e-1-sulfonic acid Hexafluoropropylene Oxide Dimer AD		ND		0.21	0.051	ug/Kg	₩	10/29/21 04:15	10/29/21 21:42	1
Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaundecan ND 0.21 0.033 ug/Kg 0.10/29/21 04:15 10/29/21 21:42 e-1-sulfonic acid 4.8-Dioxa-3H-perfluorononanoic acid (ND 0.21 0.041 ug/Kg 0.10/29/21 04:15 10/29/21 21:42 (ADONA)  Isotope Dilution %Recovery Qualifier Limits Prepared 10/29/21 04:15 10/29/21 21:42 (ADONA)  Isotope Dilution %Recovery Qualifier Limits Prepared 10/29/21 04:15 10/29/21 21:42 (ADONA)  Isotope Dilution 9/4 50.150 Prepared 10/29/21 04:15 10/29/21 21:42 (ADONA)  Isotope Dilution 9/4 50.150 Prepared 10/29/21 04:15 10/29/21 21:42 (ADONA)  Isotope Dilution 9/4 50.150 Prepared 10/29/21 04:15 10/29/21 21:42 (ADONA)  Isotope Dilution 9/4 50.150 Prepared 10/29/21 04:15 10/29/21 21:42 (ADONA)  Isotope Dilution 9/4 50.150 Prepared 10/29/21 04:15 10/29/21 21:42 (ADONA)  Isotope Dilution 9/4 50.150 Prepared 10/29/21 04:15 10/29/21 21:42 (ADONA)  Isotope Dilution 9/4 50.150 Prepared 10/29/21 04:15 10/29/21 21:42 (ADONA)  Isotope Dilution 9/4 50.150 Prepared 10/29/21 04:15 10/29/21 21:42 (ADONA)  Isotope Dilution 9/4 50.150 Prepared Prepared 10/29/21 04:15 10/29/21 21:42 (ADONA)  Isotope Dilution 9/4 50.150 Prepared Prepared Prepared Prepared Prepared 10/29/21 04:15 10/29/21 21:42 (ADONA)  Isotope Dilution 9/4 50.150 Prepared P		ND		0.21	0.037	ug/Kg	☼	10/29/21 04:15	10/29/21 21:42	1
e-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid (ADONA)    Solitic   S		ND		0.21	0.043	ug/Kg	₩	10/29/21 04:15	10/29/21 21:42	1
Sotope Dilution   %Recovery   Qualifier   Limits   Prepared   Analyzed   13C2 PFHXA   94   50 - 150   10/29/21 04:15   10/29/21 04:15   10/29/21 21:42   13C4 PFHpA   100   50 - 150   10/29/21 04:15   10/29/21 21:42   13C4 PFOA   101   50 - 150   10/29/21 04:15   10/29/21 21:42   13C5 PFNA   98   50 - 150   10/29/21 04:15   10/29/21 21:42   13C2 PFDA   92   50 - 150   10/29/21 04:15   10/29/21 21:42   13C2 PFDA   96   50 - 150   10/29/21 04:15   10/29/21 21:42   13C2 PFDA   88   50 - 150   10/29/21 04:15   10/29/21 21:42   13C2 PFDA   93   50 - 150   10/29/21 04:15   10/29/21 21:42   13C2 PFDA   93   50 - 150   10/29/21 04:15   10/29/21 21:42   13C2 PFEDA   93   50 - 150   10/29/21 04:15   10/29/21 21:42   13C3 PFBS   104   50 - 150   10/29/21 04:15   10/29/21 21:42   13C3 PFBS   99   50 - 150   10/29/21 04:15   10/29/21 21:42   13C4 PFOS   98   50 - 150   10/29/21 04:15   10/29/21 21:42   13C4 PFOS   98   50 - 150   10/29/21 04:15   10/29/21 21:42   13C4 PFOS   98   50 - 150   10/29/21 04:15   10/29/21 21:42   13C4 PFOS   98   50 - 150   10/29/21 04:15   10/29/21 21:42   13C4 PFOS   98   50 - 150   10/29/21 04:15   10/29/21 21:42   13C4 PFOS   98   50 - 150   10/29/21 04:15   10/29/21 21:42   13C4 PFOS   98   50 - 150   10/29/21 04:15   10/29/21 21:42   13C4 PFOS   98   50 - 150   10/29/21 04:15   10/29/21 21:42   13C4 PFOS   98   50 - 150   10/29/21 04:15   10/29/21 21:42   13C4 PFOS   10/29/21 04:15   10/29/21 14:42   13C4 PFOS   10/29/21 04:15   10/29/21 14:42   13C4 PFOS   10/29/21 04:15   10/29/21 14:42   13C4 PFOS   10/29/21 04:15   10/		ND		0.21	0.033	ug/Kg	☼	10/29/21 04:15	10/29/21 21:42	1
13C2 PFHxA 94 50 - 150 10/29/21 04:15 10/29/21 04:15 10/29/21 21:42 13C4 PFHpA 100 50 - 150 10/29/21 04:15 10/2	•	ND		0.21	0.041	ug/Kg	₩	10/29/21 04:15	10/29/21 21:42	1
13C4 PFHpA 100 50 - 150 10/29/21 04:15 10/29/21 21:42 13C4 PFOA 101 50 - 150 10/29/21 04:15 10/29/21 21:42 13C5 PFNA 98 50 - 150 10/29/21 04:15 10/29/21 21:42 13C2 PFDA 92 50 - 150 10/29/21 04:15 10/29/21 21:42 13C2 PFUnA 96 50 - 150 10/29/21 04:15 10/29/21 21:42 13C2 PFDA 88 50 - 150 10/29/21 04:15 10/29/21 21:42 13C2 PFDA 93 50 - 150 10/29/21 04:15 10/29/21 21:42 13C2 PFTeDA 93 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 PFBS 104 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 PFBS 104 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 PFBS 104 50 - 150 10/29/21 04:15 10/29/21 21:42 13C4 PFOS 98 50 - 150 10/29/21 04:15 10/29/21 21:42 13C4 PFOS 98 50 - 150 10/29/21 04:15 10/29/21 21:42 13C4 PFOS 98 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 PFBS 10/29/21 04:15 10/29/21 04:15 10/29/21 21:42 13C3 PFDSAA 99 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 PFDSAA 99 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 PFDSAA 99 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 PFDSAA 99 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 PFDSAA 99 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 PFDSAA 99 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 PFDSAA 99 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 PFDSAA 99 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 PFDSAA 99 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 PFDSAA 99 FPDSAA 99 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 PFDSAA 99	Dilution S	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA     101     50 - 150     10/29/21 04:15     10/29/21 21:42       13C5 PFNA     98     50 - 150     10/29/21 04:15     10/29/21 21:42       13C2 PFDA     92     50 - 150     10/29/21 04:15     10/29/21 21:42       13C2 PFUnA     96     50 - 150     10/29/21 04:15     10/29/21 21:42       13C2 PFDOA     88     50 - 150     10/29/21 04:15     10/29/21 21:42       13C2 PFTEDA     93     50 - 150     10/29/21 04:15     10/29/21 21:42       13C3 PFBS     104     50 - 150     10/29/21 04:15     10/29/21 21:42       18O2 PFHxS     99     50 - 150     10/29/21 04:15     10/29/21 21:42       13C4 PFOS     98     50 - 150     10/29/21 04:15     10/29/21 21:42       d3-NMeFOSAA     93     50 - 150     10/29/21 04:15     10/29/21 21:42       d5-NEtFOSAA     90     50 - 150     10/29/21 04:15     10/29/21 21:42       13C3 HFPO-DA     94     50 - 150     10/29/21 04:15     10/29/21 21:42       General Chemistry       Analyte     Result     Qualifier     RL     MDL Unit     D     Prepared     Analyzed	<del>l</del> xA	94		50 - 150				10/29/21 04:15	10/29/21 21:42	1
13C5 PFNA 98 50 - 150 10/29/21 04:15 10/29/21 21:42 13C2 PFDA 92 50 - 150 10/29/21 04:15 10/29/21 21:42 13C2 PFUnA 96 50 - 150 10/29/21 04:15 10/29/21 21:42 13C2 PFDoA 88 50 - 150 10/29/21 04:15 10/29/21 21:42 13C2 PFTeDA 93 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 PFBS 104 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 PFBS 99 50 - 150 10/29/21 04:15 10/29/21 21:42 13C4 PFOS 98 50 - 150 10/29/21 04:15 10/29/21 21:42 13C4 PFOS 98 50 - 150 10/29/21 04:15 10/29/21 21:42 13C4 PFOS 98 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 NMEFOSAA 90 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 NMEFOSAA 90 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 NMEFO-DA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 NMEFO-DA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 NMEFO-DA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 NMEFO-DA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 NMEFO-DA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 NMEFO-DA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 NMEFO-DA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 NMEFO-DA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 NMEFO-DA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 NMEFO-DA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 NMEFO-DA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 NMEFO-DA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 NMEFO-DA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 NMEFO-DA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 NMEFO-DA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 NMEFO-DA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 NMEFO-DA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 NMEFO-DA 10/29/21 04:15 10/29/21 21:42 13C3 NMEFO-DA 10/29/21 04:15 10/29/21 21:42 13C3 NMEFO-DA 10/29/21 04:15 10/29/21 21:42 13C3 NMEFO-DA 10/29/21 04:15 10/29/21 21:42 13C3 NMEFO-DA 10/29/21 04:15 10/29/21 21:42 13C3 NMEFO-DA 10/29/21 04:15 10/29/21 21:42 13C3 NMEFO-DA 10/29/21 04:15 10/29/21 21:42 13C3 NMEFO-DA 10/29/21 04:15 10/29/21 21:42 13C3 NMEFO-DA 10/29/21 04:15 10/29/21 21:42 13C3 NMEFO-DA 10/29/21 04:15 10/29/21 21:42 13C3 NMEFO-DA 10/	<del>l</del> pA	100		50 - 150				10/29/21 04:15	10/29/21 21:42	1
13C2 PFDA 92 50 - 150 10/29/21 04:15 10/29/21 21:42 13C2 PFUnA 96 50 - 150 10/29/21 04:15 10/29/21 21:42 13C2 PFDoA 88 50 - 150 10/29/21 04:15 10/29/21 21:42 13C2 PFTeDA 93 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 PFBS 104 50 - 150 10/29/21 04:15 10/29/21 21:42 18O2 PFHxS 99 50 - 150 10/29/21 04:15 10/29/21 21:42 13C4 PFOS 98 50 - 150 10/29/21 04:15 10/29/21 21:42 13C4 PFOS 98 50 - 150 10/29/21 04:15 10/29/21 21:42 13C4 PFOS 98 50 - 150 10/29/21 04:15 10/29/21 21:42 13C4 PFOSAA 93 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 HFPO-DA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 HFPO-DA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 HFPO-DA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 HFPO-DA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 HFPO-DA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 HFPO-DA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 HFPO-DA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 HFPO-DA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 HFPO-DA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 HFPO-DA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 HFPO-DA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 HFPO-DA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 HFPO-DA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 HFPO-DA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 HFPO-DA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 HFPO-DA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 HFPO-DA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 HFPO-DA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 HFPO-DA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 HFPO-DA 10/29/21 04:15 10/29/21 21:42 13C3 HFPO-DA 10/29/21 04:15 10/29/21 21:42 13C3 HFPO-DA 10/29/21 04:15 10/29/21 21:42 13C3 HFPO-DA 10/29/21 04:15 10/29/21 21:42 13C3 HFPO-DA 10/29/21 04:15 10/29/21 21:42 13C3 HFPO-DA 10/29/21 04:15 10/29/21 21:42 13C3 HFPO-DA 10/29/21 04:15 10/29/21 21:42 13C3 HFPO-DA 10/29/21 04:15 10/29/21 21:42 13C4 13C4 13C4 13C4 13C4 13C4 13C4 13C4	DA .	101		50 - 150				10/29/21 04:15	10/29/21 21:42	1
13C2 PFUnA 96 50 - 150 10/29/21 04:15 10/29/21 21:42 13C2 PFDoA 88 50 - 150 10/29/21 04:15 10/29/21 21:42 13C2 PFTeDA 93 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 PFBS 104 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 PFBS 104 50 - 150 10/29/21 04:15 10/29/21 21:42 18O2 PFHxS 99 50 - 150 10/29/21 04:15 10/29/21 21:42 13C4 PFOS 98 50 - 150 10/29/21 04:15 10/29/21 21:42 d3-NMeFOSAA 93 50 - 150 10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 90 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 HFPO-DA 94 50 - 150 10/29/21 04:15 10/29/21 21:42  General Chemistry Analyte Result Qualifier RL MDL Unit D Prepared Analyzed	<b>VA</b>	98		50 - 150				10/29/21 04:15	10/29/21 21:42	1
13C2 PFDoA 88 50 - 150 10/29/21 04:15 10/29/21 21:42 13C2 PFTeDA 93 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 PFBS 104 50 - 150 10/29/21 04:15 10/29/21 21:42 18O2 PFHxS 99 50 - 150 10/29/21 04:15 10/29/21 21:42 13C4 PFOS 98 50 - 150 10/29/21 04:15 10/29/21 21:42 d3-NMeFOSAA 93 50 - 150 10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 90 50 - 150 10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 95  10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 96  10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 97  10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 98  10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 99  10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 94  10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 95  10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 96  10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 97  10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 98  10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 99  10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 99  10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 99  10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 99  10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 99  10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 99  10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 99  10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 99  10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 99  10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 99  10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 99  10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 99  10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 99  10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 99  10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 99  10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 99  10/29/21 04:15 10/29/21 21:42 d5-NETFOSAA 99  10/29/21 04:15 10/29/21 21:42 d5-NETFOSAA 99  10/29/21 04:15 10/29/21 21:42 d5-NETFOSAA 99  10/29/21 04:15 10/29/21 21:42 d5-NETFOSAA 99  10/29/21 04:15 10/29/21 21:42 d5-NETFOSAA 99  10/29/21 04:15 10/29/21 21:42 d5-NETFOSAA 99  10/29/21 04:15 10/29/21 21:42 d5-NETFOSAA 99  10/29/21 04:15 10/29/21 21:42 d5-NETFOSAA 99  10/29/21 04:15 10/29/21 21:42 d	DA .	92		50 - 150				10/29/21 04:15	10/29/21 21:42	1
13C2 PFTeDA 93 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 PFBS 104 50 - 150 10/29/21 04:15 10/29/21 21:42 18O2 PFHxS 99 50 - 150 10/29/21 04:15 10/29/21 21:42 13C4 PFOS 98 50 - 150 10/29/21 04:15 10/29/21 21:42 d3-NMeFOSAA 93 50 - 150 10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 90 50 - 150 10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 d5-NETFOSAA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 d5-NETFOSAA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 d5-NETFOSAA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 d5-NETFOSAA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 d5-NETFOSAA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 d5-NETFOSAA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 d5-NETFOSAA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 d5-NETFOSAA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 d5-NETFOSAA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 d5-NETFOSAA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 d5-NETFOSAA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 d5-NETFOSAA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 d5-NETFOSAA 94 60 - 150 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 1	JnA	96		50 - 150				10/29/21 04:15	10/29/21 21:42	1
13C3 PFBS     104     50 - 150     10/29/21 04:15     10/29/21 21:42       18O2 PFHxS     99     50 - 150     10/29/21 04:15     10/29/21 21:42       13C4 PFOS     98     50 - 150     10/29/21 04:15     10/29/21 21:42       d3-NMeFOSAA     93     50 - 150     10/29/21 04:15     10/29/21 21:42       d5-NEtFOSAA     90     50 - 150     10/29/21 04:15     10/29/21 21:42       13C3 HFPO-DA     94     50 - 150     10/29/21 04:15     10/29/21 21:42       General Chemistry       Analyte     Result Qualifier     RL     MDL Unit     D     Prepared     Analyzed	DoA	88		50 - 150				10/29/21 04:15	10/29/21 21:42	1
1802 PFHxS     99     50 - 150     10/29/21 04:15     10/29/21 21:42       13C4 PFOS     98     50 - 150     10/29/21 04:15     10/29/21 21:42       d3-NMeFOSAA     93     50 - 150     10/29/21 04:15     10/29/21 21:42       d5-NEtFOSAA     90     50 - 150     10/29/21 04:15     10/29/21 21:42       13C3 HFPO-DA     94     50 - 150     10/29/21 04:15     10/29/21 21:42       General Chemistry       Analyte     Result Qualifier     RL     MDL Unit     D     Prepared     Analyzed	<sup>T</sup> eDA	93		50 - 150				10/29/21 04:15	10/29/21 21:42	1
13C4 PFOS 98 50 - 150 10/29/21 04:15 10/29/21 21:42 d3-NMeFOSAA 93 50 - 150 10/29/21 04:15 10/29/21 21:42 d5-NEtFOSAA 90 50 - 150 10/29/21 04:15 10/29/21 21:42 13C3 HFPO-DA 94 50 - 150 10/29/21 04:15 10/29/21 21:42 10/29/21 21:42 10/29/21 04:15 10/29/21 21:42 10/29/21 04:15 10/29/21 21:42 10/29/21 04:15 10/29/21 21:42 10/29/21 04:15 10/29/21 21:42 10/29/21 04:15 10/29/21 21:42 10/29/21 04:15 10/29/21 04:15 10/29/21 21:42 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 04:15 10/29/21 21:42 10/29/21 04:15 1	3S	104		50 - 150				10/29/21 04:15	10/29/21 21:42	1
d3-NMeFOSAA     93     50 - 150     10/29/21 04:15     10/29/21 21:42       d5-NEtFOSAA     90     50 - 150     10/29/21 04:15     10/29/21 21:42       13C3 HFPO-DA     94     50 - 150     10/29/21 04:15     10/29/21 21:42       General Chemistry       Analyte     Result     Qualifier     RL     MDL     Unit     D     Prepared     Analyzed	1xS	99		50 - 150				10/29/21 04:15	10/29/21 21:42	1
d5-NEtFOSAA     90     50 - 150     10/29/21 04:15 10/29/21 21:42       13C3 HFPO-DA     94     50 - 150     10/29/21 04:15 10/29/21 21:42       General Chemistry       Analyte     Result Qualifier     RL     MDL Unit     D Prepared     Analyzed	os	98		50 - 150				10/29/21 04:15	10/29/21 21:42	1
13C3 HFPO-DA 94 50 - 150 10/29/21 04:15 10/29/21 21:42    General Chemistry   Analyte   Result   Qualifier   RL   MDL   Unit   D   Prepared   Analyzed	OSAA	93		50 - 150				10/29/21 04:15	10/29/21 21:42	1
General Chemistry Analyte Result Qualifier RL MDL Unit D Prepared Analyzed	SAA	90		50 - 150				10/29/21 04:15	10/29/21 21:42	1
Analyte Result Qualifier RL MDL Unit D Prepared Analyzed	PO-DA	94		50 - 150				10/29/21 04:15	10/29/21 21:42	1
	l Chemistry	_					_	_		
<b>Percent Moisture</b> 11.7 0.1 0.1 % 10/28/21 12:18			Qualifier				D	Prepared	•	Dil Fac
<b>Percent Solids</b> 88.3 0.1 0.1 % 10/28/21 12:18										1

Client: Shannon & Wilson, Inc Job ID: 320-80903-1

Project/Site: SG Soils WO#1

Client Sample ID: 21GST-MW13-04 Lab Sample ID: 320-80903-4

Date Collected: 10/19/21 13:30 **Matrix: Solid** Percent Solids: 70.7 Date Received: 10/27/21 12:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Perfluorohexanoic acid (PFHxA)	ND		0.26	0.041	ug/Kg	☆	10/29/21 04:15	10/29/21 21:53	
Perfluoroheptanoic acid (PFHpA)	ND		0.26	0.050	ug/Kg	☼	10/29/21 04:15	10/29/21 21:53	1
Perfluorooctanoic acid (PFOA)	ND		0.26	0.070	ug/Kg	₩	10/29/21 04:15	10/29/21 21:53	1
Perfluorononanoic acid (PFNA)	ND		0.26	0.029	ug/Kg	₩	10/29/21 04:15	10/29/21 21:53	1
Perfluorodecanoic acid (PFDA)	ND		0.26	0.063	ug/Kg	≎	10/29/21 04:15	10/29/21 21:53	1
Perfluoroundecanoic acid (PFUnA)	ND		0.26	0.055	ug/Kg	₽	10/29/21 04:15	10/29/21 21:53	1
Perfluorododecanoic acid (PFDoA)	ND		0.26	0.040	ug/Kg	₽	10/29/21 04:15	10/29/21 21:53	1
Perfluorotridecanoic acid (PFTriA)	ND		0.26	0.028	ug/Kg	₽	10/29/21 04:15	10/29/21 21:53	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.26	0.049	ug/Kg	☼	10/29/21 04:15	10/29/21 21:53	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.26	0.050	ug/Kg	₩	10/29/21 04:15	10/29/21 21:53	1
Perfluorohexanesulfonic acid (PFHxS)	0.047	J	0.26	0.038	ug/Kg	₩	10/29/21 04:15	10/29/21 21:53	1
Perfluorooctanesulfonic acid (PFOS)	0.093	J	0.26	0.057	ug/Kg	₩	10/29/21 04:15	10/29/21 21:53	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.26		ug/Kg	₩	10/29/21 04:15	10/29/21 21:53	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.26	0.063	ug/Kg	₩	10/29/21 04:15	10/29/21 21:53	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.26	0.046	ug/Kg	₩	10/29/21 04:15	10/29/21 21:53	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.26	0.054	ug/Kg	₩	10/29/21 04:15	10/29/21 21:53	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.26	0.041	ug/Kg	₩	10/29/21 04:15	10/29/21 21:53	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.26	0.051	ug/Kg	₩	10/29/21 04:15	10/29/21 21:53	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	82		50 - 150				10/29/21 04:15	10/29/21 21:53	1
13C4 PFHpA	86		50 - 150				10/29/21 04:15	10/29/21 21:53	1
13C4 PFOA	95		50 - 150				10/29/21 04:15	10/29/21 21:53	1
13C5 PFNA	91		50 - 150				10/29/21 04:15	10/29/21 21:53	1
13C2 PFDA	88		50 - 150				10/29/21 04:15	10/29/21 21:53	1
13C2 PFUnA	84		50 - 150				10/29/21 04:15	10/29/21 21:53	1
13C2 PFDoA	83		50 - 150				10/29/21 04:15	10/29/21 21:53	1
13C2 PFTeDA	86		50 <sub>-</sub> 150				10/29/21 04:15	10/29/21 21:53	1
13C3 PFBS	91		50 <sub>-</sub> 150				10/29/21 04:15	10/29/21 21:53	1
18O2 PFHxS	83		50 - 150				10/29/21 04:15	10/29/21 21:53	1
13C4 PFOS	93		50 <sub>-</sub> 150					10/29/21 21:53	1
d3-NMeFOSAA	83		50 - 150					10/29/21 21:53	1
d5-NEtFOSAA	80		50 <sub>-</sub> 150					10/29/21 21:53	
13C3 HFPO-DA	86		50 - 150				10/29/21 04:15	10/29/21 21:53	1
General Chemistry		<b>.</b>				_			<b></b> -
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	29.3		0.1	0.1				10/28/21 12:18	1
Percent Solids	70.7		0.1	0.1	%			10/28/21 12:18	1

Eurofins TestAmerica, Sacramento

Client: Shannon & Wilson, Inc Job ID: 320-80903-1

Project/Site: SG Soils WO#1

**Percent Solids** 

Client Sample ID: 21GST-MW13-05 Lab Sample ID: 320-80903-5

Date Collected: 10/19/21 14:10 **Matrix: Solid** Date Received: 10/27/21 12:25 Percent Solids: 91.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.031	ug/Kg	— <u></u>	10/29/21 04:15	10/29/21 22:03	
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.038	ug/Kg	≎	10/29/21 04:15	10/29/21 22:03	
Perfluorooctanoic acid (PFOA)	ND		0.20	0.053	ug/Kg	≎	10/29/21 04:15	10/29/21 22:03	
Perfluorononanoic acid (PFNA)	ND		0.20	0.022	ug/Kg	₩	10/29/21 04:15	10/29/21 22:03	
Perfluorodecanoic acid (PFDA)	ND		0.20	0.048	ug/Kg	≎	10/29/21 04:15	10/29/21 22:03	
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.042	ug/Kg	₩	10/29/21 04:15	10/29/21 22:03	
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.030	ug/Kg	≎	10/29/21 04:15	10/29/21 22:03	
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.021	ug/Kg	≎	10/29/21 04:15	10/29/21 22:03	
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.037	ug/Kg	⇔	10/29/21 04:15	10/29/21 22:03	
Perfluorobutanesulfonic acid (PFBS)	ND		0.20		ug/Kg	≎	10/29/21 04:15	10/29/21 22:03	
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20		ug/Kg	₽	10/29/21 04:15	10/29/21 22:03	
Perfluorooctanesulfonic acid	0.10	J	0.20	0.043	ug/Kg	₩	10/29/21 04:15	10/29/21 22:03	
(PFOS)					0 0				
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg	₩	10/29/21 04:15	10/29/21 22:03	
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.20	0.048	ug/Kg	₩	10/29/21 04:15	10/29/21 22:03	
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.20	0.035	ug/Kg	₩	10/29/21 04:15	10/29/21 22:03	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.20	0.041	ug/Kg	₩	10/29/21 04:15	10/29/21 22:03	
11-Chloroeicosafluoro-3-oxaundecan	ND		0.20	0.031	ug/Kg	₽	10/29/21 04:15	10/29/21 22:03	
e-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.039	ug/Kg	₩	10/29/21 04:15	10/29/21 22:03	
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	80		50 - 150				10/29/21 04:15	10/29/21 22:03	
13C4 PFHpA	88		50 - 150				10/29/21 04:15	10/29/21 22:03	
13C4 PFOA	97		50 - 150				10/29/21 04:15	10/29/21 22:03	
13C5 PFNA	97		50 - 150				10/29/21 04:15	10/29/21 22:03	
13C2 PFDA	89		50 - 150				10/29/21 04:15	10/29/21 22:03	
13C2 PFUnA	96		50 - 150				10/29/21 04:15	10/29/21 22:03	
13C2 PFDoA	98		50 - 150				10/29/21 04:15	10/29/21 22:03	
13C2 PFTeDA	100		50 - 150				10/29/21 04:15	10/29/21 22:03	
13C3 PFBS	95		50 <sub>-</sub> 150				10/29/21 04:15	10/29/21 22:03	
1802 PFHxS	87		50 - 150				10/29/21 04:15	10/29/21 22:03	
13C4 PFOS	97		50 - 150				10/29/21 04:15	10/29/21 22:03	
d3-NMeFOSAA	86		50 <sub>-</sub> 150					10/29/21 22:03	
d5-NEtFOSAA	92		50 - 150					10/29/21 22:03	
13C3 HFPO-DA	96		50 - 150					10/29/21 22:03	
General Chemistry									
Analyte	Pocult	Qualifier	RL	MDI	Unit	D	Prepared	Analyzed	Dil Fa
Percent Moisture	8.4	Qualifier	0.1	0.1		=	riepaieu	10/28/21 12:18	Diria

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0.1

91.6

0.1 %

10/28/21 12:18

Client: Shannon & Wilson, Inc Job ID: 320-80903-1

Project/Site: SG Soils WO#1

Client Sample ID: 21GST-MW13-07 Lab Sample ID: 320-80903-6

Date Collected: 10/19/21 16:45 **Matrix: Solid** Date Received: 10/27/21 12:25 Percent Solids: 77.4

Method: EPA 537(Mod) - PFAS				BAD!	Unit	_	Dropered	A not-reed	DU Fee
Analyte		Qualifier	RL	MDL		— <u> </u>	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.25		ug/Kg			10/29/21 22:13	1
Perfluoroheptanoic acid (PFHpA)	ND		0.25		ug/Kg	<b>*</b>		10/29/21 22:13	1
Perfluorooctanoic acid (PFOA)	ND		0.25		ug/Kg			10/29/21 22:13	1
Perfluorononanoic acid (PFNA)	ND		0.25		ug/Kg	<b>*</b>		10/29/21 22:13	1
Perfluorodecanoic acid (PFDA)	ND		0.25		ug/Kg	₩		10/29/21 22:13	1
Perfluoroundecanoic acid (PFUnA)	ND		0.25		ug/Kg	<del>.</del>		10/29/21 22:13	1
Perfluorododecanoic acid (PFDoA)	ND		0.25		ug/Kg	₩		10/29/21 22:13	1
Perfluorotridecanoic acid (PFTriA)	ND		0.25		ug/Kg	₩		10/29/21 22:13	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.25		ug/Kg	<b>*</b>	10/29/21 04:15	10/29/21 22:13	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.25	0.048	ug/Kg	☼	10/29/21 04:15	10/29/21 22:13	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.25	0.037	ug/Kg	≎	10/29/21 04:15	10/29/21 22:13	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.25	0.054	ug/Kg	₩	10/29/21 04:15	10/29/21 22:13	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.25	0.029	ug/Kg	₩	10/29/21 04:15	10/29/21 22:13	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.25	0.061	ug/Kg	₩	10/29/21 04:15	10/29/21 22:13	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.25	0.044	ug/Kg	₩	10/29/21 04:15	10/29/21 22:13	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.052	ug/Kg	₽	10/29/21 04:15	10/29/21 22:13	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.25	0.039	ug/Kg	₽	10/29/21 04:15	10/29/21 22:13	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.25	0.049	ug/Kg	₩	10/29/21 04:15	10/29/21 22:13	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	90		50 - 150				10/29/21 04:15	10/29/21 22:13	1
13C4 PFHpA	92		50 - 150				10/29/21 04:15	10/29/21 22:13	1
13C4 PFOA	97		50 - 150				10/29/21 04:15	10/29/21 22:13	1
13C5 PFNA	97		50 - 150				10/29/21 04:15	10/29/21 22:13	1
13C2 PFDA	93		50 - 150				10/29/21 04:15	10/29/21 22:13	1
13C2 PFUnA	88		50 <sub>-</sub> 150				10/29/21 04:15	10/29/21 22:13	1
13C2 PFDoA	89		50 - 150				10/29/21 04:15	10/29/21 22:13	1
13C2 PFTeDA	96		50 <sub>-</sub> 150				10/29/21 04:15	10/29/21 22:13	1
13C3 PFBS	102		50 <sub>-</sub> 150				10/29/21 04:15	10/29/21 22:13	1
1802 PFHxS	90		50 - 150					10/29/21 22:13	1
13C4 PFOS	99		50 <sub>-</sub> 150					10/29/21 22:13	1
d3-NMeFOSAA	90		50 <sub>-</sub> 150					10/29/21 22:13	. 1
d5-NEtFOSAA	87		50 - 150					10/29/21 22:13	
13C3 HFPO-DA	92		50 - 150					10/29/21 22:13	1
General Chemistry									
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Percent Moisture	22.6	_	0.1	0.1	%	_	_	10/28/21 12:18	1
Percent Solids	77.4		0.1	0.1	%			10/28/21 12:18	1

Client: Shannon & Wilson, Inc Job ID: 320-80903-1

Project/Site: SG Soils WO#1

Client Sample ID: 21GST-MW13-12 Lab Sample ID: 320-80903-7

Analyte	Result Q	ualifier	RL MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.23 0.036	ug/Kg	<del></del>	10/29/21 04:15	10/29/21 22:45	
Perfluoroheptanoic acid (PFHpA)	ND		0.23 0.045	ug/Kg	₽	10/29/21 04:15	10/29/21 22:45	
Perfluorooctanoic acid (PFOA)	ND		0.23 0.062	ug/Kg	≎	10/29/21 04:15	10/29/21 22:45	
Perfluorononanoic acid (PFNA)	ND		0.23 0.026	ug/Kg	₽	10/29/21 04:15	10/29/21 22:45	1
Perfluorodecanoic acid (PFDA)	ND		0.23 0.056	ug/Kg	≎	10/29/21 04:15	10/29/21 22:45	
Perfluoroundecanoic acid (PFUnA)	ND		0.23 0.049	ug/Kg	₽	10/29/21 04:15	10/29/21 22:45	1
Perfluorododecanoic acid (PFDoA)	ND		0.23 0.035	ug/Kg	≎	10/29/21 04:15	10/29/21 22:45	
Perfluorotridecanoic acid (PFTriA)	ND		0.23 0.025	ug/Kg	≎	10/29/21 04:15	10/29/21 22:45	
Perfluorotetradecanoic acid (PFTeA)	ND		0.23 0.043	ug/Kg	₽	10/29/21 04:15	10/29/21 22:45	•
Perfluorobutanesulfonic acid (PFBS)	ND		0.23 0.045	ug/Kg	₽	10/29/21 04:15	10/29/21 22:45	
Perfluorohexanesulfonic acid (PFHxS)	ND		0.23 0.034	ug/Kg	₽	10/29/21 04:15	10/29/21 22:45	•
Perfluorooctanesulfonic acid (PFOS)	ND		0.23 0.050	ug/Kg	₽	10/29/21 04:15	10/29/21 22:45	•
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.23 0.027	ug/Kg	₩	10/29/21 04:15	10/29/21 22:45	,
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.23 0.056	ug/Kg	₩	10/29/21 04:15	10/29/21 22:45	•
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.23 0.041	ug/Kg	₩	10/29/21 04:15	10/29/21 22:45	•
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23 0.048	ug/Kg	₽	10/29/21 04:15	10/29/21 22:45	
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.23 0.036	ug/Kg	₩	10/29/21 04:15	10/29/21 22:45	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23 0.046	ug/Kg	₽	10/29/21 04:15	10/29/21 22:45	•
Isotope Dilution	%Recovery Q	ualifier Limi	its			Prepared	Analyzed	Dil Fa
13C2 PFHxA	88	50 -	150			10/29/21 04:15	10/29/21 22:45	-
13C4 PFHpA	91	50 -	150			10/29/21 04:15	10/29/21 22:45	
13C4 PFOA	96	50 -	150			10/29/21 04:15	10/29/21 22:45	
13C5 PFNA	97	50 -	150			10/29/21 04:15	10/29/21 22:45	
13C2 PFDA	94	50 -	150			10/29/21 04:15	10/29/21 22:45	
13C2 PFUnA	93	50 -	150			10/29/21 04:15	10/29/21 22:45	
13C2 PFDoA	97	50 -	150			10/29/21 04:15	10/29/21 22:45	
13C2 PFTeDA	99	50 -	150			10/29/21 04:15	10/29/21 22:45	
13C3 PFBS	103	50 -	150			10/29/21 04:15	10/29/21 22:45	
18O2 PFHxS	91	50 -	150			10/29/21 04:15	10/29/21 22:45	
13C4 PFOS	100	50 -	150			10/29/21 04:15	10/29/21 22:45	-
d3-NMeFOSAA	85	50 -	150			10/29/21 04:15	10/29/21 22:45	
d5-NEtFOSAA	87	50 -	150			10/29/21 04:15	10/29/21 22:45	
13C3 HFPO-DA	103	50 -	150			10/29/21 04:15	10/29/21 22:45	
General Chemistry								
	B " -		DI	1111	_			
Analyte Percent Moisture	Result Q	ualifier		Unit %	<u>D</u>	Prepared	Analyzed 10/28/21 12:18	Dil Fac

11/5/2021

Client: Shannon & Wilson, Inc Job ID: 320-80903-1 Project/Site: SG Soils WO#1

Client Sample ID: 21GST-MW23-01

Lab Sample ID: 320-80903-8 Date Collected: 10/20/21 10:35 **Matrix: Solid** 

Date Received: 10/27/21 12:25 Percent Solids: 81.7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.24	0.038	ug/Kg	<u></u>	10/29/21 04:15	10/29/21 22:55	1
Perfluoroheptanoic acid (PFHpA)	ND		0.24	0.046	ug/Kg	₩	10/29/21 04:15	10/29/21 22:55	1
Perfluorooctanoic acid (PFOA)	ND		0.24	0.064	ug/Kg	₩	10/29/21 04:15	10/29/21 22:55	1
Perfluorononanoic acid (PFNA)	ND		0.24	0.027	ug/Kg	₩	10/29/21 04:15	10/29/21 22:55	1
Perfluorodecanoic acid (PFDA)	ND		0.24	0.058	ug/Kg	₩	10/29/21 04:15	10/29/21 22:55	1
Perfluoroundecanoic acid (PFUnA)	ND		0.24	0.051	ug/Kg	₩	10/29/21 04:15	10/29/21 22:55	1
Perfluorododecanoic acid (PFDoA)	ND		0.24	0.036	ug/Kg	₩	10/29/21 04:15	10/29/21 22:55	1
Perfluorotridecanoic acid (PFTriA)	ND		0.24	0.025	ug/Kg	₩	10/29/21 04:15	10/29/21 22:55	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.24	0.045	ug/Kg	₩	10/29/21 04:15	10/29/21 22:55	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.24	0.046	ug/Kg	₩	10/29/21 04:15	10/29/21 22:55	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.24	0.035	ug/Kg	₩	10/29/21 04:15	10/29/21 22:55	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.24	0.052	ug/Kg	₩	10/29/21 04:15	10/29/21 22:55	1
N-methylperfluorooctanesulfonamidoa	ND		0.24	0.028	ug/Kg		10/29/21 04:15	10/29/21 22:55	1
cetic acid (NMeFOSAA)									
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.24		ug/Kg	₽	10/29/21 04:15	10/29/21 22:55	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.24	0.042	ug/Kg	≎	10/29/21 04:15	10/29/21 22:55	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.24	0.050	ug/Kg	₽	10/29/21 04:15	10/29/21 22:55	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.24	0.038	ug/Kg	₽	10/29/21 04:15	10/29/21 22:55	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.24	0.047	ug/Kg	₩	10/29/21 04:15	10/29/21 22:55	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	83		50 - 150				10/29/21 04:15	10/29/21 22:55	1
13C4 PFHpA	91		50 - 150				10/29/21 04:15	10/29/21 22:55	1
13C4 PFOA	93		50 - 150				10/29/21 04:15	10/29/21 22:55	1
13C5 PFNA	89		50 - 150				10/29/21 04:15	10/29/21 22:55	1
13C2 PFDA	86		50 - 150				10/29/21 04:15	10/29/21 22:55	1
13C2 PFUnA	86		50 - 150				10/29/21 04:15	10/29/21 22:55	1
13C2 PFDoA	88		50 - 150				10/29/21 04:15	10/29/21 22:55	1
13C2 PFTeDA	91		50 - 150				10/29/21 04:15	10/29/21 22:55	1
13C3 PFBS	95		50 - 150				10/29/21 04:15	10/29/21 22:55	1
1802 PFHxS	86		50 <sub>-</sub> 150				10/29/21 04:15	10/29/21 22:55	
13C4 PFOS	96		50 <sub>-</sub> 150				10/29/21 04:15	10/29/21 22:55	1
d3-NMeFOSAA	94		50 <sub>-</sub> 150				10/29/21 04:15	10/29/21 22:55	1
d5-NEtFOSAA	90		50 <sub>-</sub> 150				10/29/21 04:15	10/29/21 22:55	1
13C3 HFPO-DA	90		50 - 150				10/29/21 04:15	10/29/21 22:55	1
General Chemistry									
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Percent Moisture	18.3		0.1	0.1	%			10/28/21 12:18	1
Percent Solids	81.7		0.1	0.1	0.1			10/28/21 12:18	1

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Client: Shannon & Wilson, Inc Job ID: 320-80903-1

Project/Site: SG Soils WO#1

Client Sample ID: 21GST-MW23-02 Lab Sample ID: 320-80903-9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.25	0.039	ug/Kg	₩	10/29/21 04:15	10/29/21 23:05	•
Perfluoroheptanoic acid (PFHpA)	ND		0.25	0.048	ug/Kg	☼	10/29/21 04:15	10/29/21 23:05	1
Perfluorooctanoic acid (PFOA)	ND		0.25	0.067	ug/Kg	≎	10/29/21 04:15	10/29/21 23:05	1
Perfluorononanoic acid (PFNA)	ND		0.25	0.028	ug/Kg	₩	10/29/21 04:15	10/29/21 23:05	1
Perfluorodecanoic acid (PFDA)	ND		0.25	0.061	ug/Kg	≎	10/29/21 04:15	10/29/21 23:05	1
Perfluoroundecanoic acid (PFUnA)	ND		0.25	0.053	ug/Kg	₽	10/29/21 04:15	10/29/21 23:05	1
Perfluorododecanoic acid (PFDoA)	ND		0.25	0.038	ug/Kg	₽	10/29/21 04:15	10/29/21 23:05	1
Perfluorotridecanoic acid (PFTriA)	ND		0.25	0.027	ug/Kg	≎	10/29/21 04:15	10/29/21 23:05	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.25	0.047	ug/Kg	₩	10/29/21 04:15	10/29/21 23:05	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.25	0.048	ug/Kg	₽	10/29/21 04:15	10/29/21 23:05	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.25	0.037	ug/Kg	₩	10/29/21 04:15	10/29/21 23:05	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.25	0.055	ug/Kg	₩	10/29/21 04:15	10/29/21 23:05	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.25	0.029	ug/Kg	₩	10/29/21 04:15	10/29/21 23:05	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.25		ug/Kg	₩	10/29/21 04:15	10/29/21 23:05	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.25	0.044	ug/Kg	₽	10/29/21 04:15	10/29/21 23:05	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.052	ug/Kg		10/29/21 04:15	10/29/21 23:05	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.25	0.039	ug/Kg	₩	10/29/21 04:15	10/29/21 23:05	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.25	0.050	ug/Kg	₩	10/29/21 04:15	10/29/21 23:05	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	84		50 - 150				10/29/21 04:15	10/29/21 23:05	1
13C4 PFHpA	95		50 - 150				10/29/21 04:15	10/29/21 23:05	1
13C4 PFOA	97		50 - 150				10/29/21 04:15	10/29/21 23:05	1
13C5 PFNA	93		50 - 150				10/29/21 04:15	10/29/21 23:05	1
13C2 PFDA	87		50 - 150				10/29/21 04:15	10/29/21 23:05	1
13C2 PFUnA	87		50 - 150				10/29/21 04:15	10/29/21 23:05	1
13C2 PFDoA	88		50 - 150				10/29/21 04:15	10/29/21 23:05	1
13C2 PFTeDA	102		50 - 150				10/29/21 04:15	10/29/21 23:05	1
13C3 PFBS	99		50 - 150				10/29/21 04:15	10/29/21 23:05	1
1802 PFHxS	92		50 - 150				10/29/21 04:15	10/29/21 23:05	1
13C4 PFOS	95		50 <sub>-</sub> 150				10/29/21 04:15	10/29/21 23:05	1
d3-NMeFOSAA	92		50 <sub>-</sub> 150					10/29/21 23:05	1
d5-NEtFOSAA	93		50 - 150				10/29/21 04:15	10/29/21 23:05	1
13C3 HFPO-DA	87		50 - 150					10/29/21 23:05	1
General Chemistry									
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	26.4		0.1	0.1	%	_		10/28/21 12:18	1
Percent Solids	73.6		0.1	0.1	0/_			10/28/21 12:18	1

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11/5/2021

Client: Shannon & Wilson, Inc Job ID: 320-80903-1

Project/Site: SG Soils WO#1

**Percent Solids** 

Client Sample ID: 21GST-MW17-01 Lab Sample ID: 320-80903-10

Date Collected: 10/22/21 12:15

Date Received: 10/27/21 12:25

Matrix: Solid
Percent Solids: 78.1

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Perfluorohexanoic acid (PFHxA)	ND	0.24	0.037	ug/Kg	<u></u>	10/29/21 04:15	10/29/21 23:16	
Perfluoroheptanoic acid (PFHpA)	ND	0.24	0.046	ug/Kg	₽	10/29/21 04:15	10/29/21 23:16	
Perfluorooctanoic acid (PFOA)	ND	0.24	0.064	ug/Kg	₩	10/29/21 04:15	10/29/21 23:16	
Perfluorononanoic acid (PFNA)	ND	0.24	0.027	ug/Kg	₽	10/29/21 04:15	10/29/21 23:16	
Perfluorodecanoic acid (PFDA)	ND	0.24	0.058	ug/Kg	₩	10/29/21 04:15	10/29/21 23:16	
Perfluoroundecanoic acid (PFUnA)	ND	0.24	0.051	ug/Kg	₩	10/29/21 04:15	10/29/21 23:16	
Perfluorododecanoic acid (PFDoA)	ND	0.24	0.036	ug/Kg	₽	10/29/21 04:15	10/29/21 23:16	
Perfluorotridecanoic acid (PFTriA)	ND	0.24	0.025	ug/Kg	₩	10/29/21 04:15	10/29/21 23:16	
Perfluorotetradecanoic acid (PFTeA)	ND	0.24	0.045	ug/Kg	₩	10/29/21 04:15	10/29/21 23:16	
Perfluorobutanesulfonic acid (PFBS)	ND	0.24	0.046	ug/Kg	₩	10/29/21 04:15	10/29/21 23:16	
Perfluorohexanesulfonic acid (PFHxS)	ND	0.24	0.035	ug/Kg	≎	10/29/21 04:15	10/29/21 23:16	
Perfluorooctanesulfonic acid (PFOS)	0.094 J	0.24	0.052	ug/Kg	₩	10/29/21 04:15	10/29/21 23:16	•
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND	0.24	0.028	ug/Kg	₩	10/29/21 04:15	10/29/21 23:16	
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND	0.24	0.058	ug/Kg	₩	10/29/21 04:15	10/29/21 23:16	•
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND	0.24		ug/Kg	₩	10/29/21 04:15	10/29/21 23:16	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	0.24		ug/Kg	₩	10/29/21 04:15	10/29/21 23:16	•
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND	0.24		ug/Kg	₩	10/29/21 04:15	10/29/21 23:16	,
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.24	0.047	ug/Kg	₩	10/29/21 04:15	10/29/21 23:16	•
lsotope Dilution	%Recovery Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	94	50 - 150				10/29/21 04:15	10/29/21 23:16	
13C4 PFHpA	96	50 - 150				10/29/21 04:15	10/29/21 23:16	
13C4 PFOA	99	50 - 150				10/29/21 04:15	10/29/21 23:16	
13C5 PFNA	99	50 - 150				10/29/21 04:15	10/29/21 23:16	
13C2 PFDA	94	50 - 150				10/29/21 04:15	10/29/21 23:16	
13C2 PFUnA	93	50 - 150				10/29/21 04:15	10/29/21 23:16	
13C2 PFDoA	95	50 - 150				10/29/21 04:15	10/29/21 23:16	
13C2 PFTeDA	98	50 - 150				10/29/21 04:15	10/29/21 23:16	
13C3 PFBS	100	50 <sub>-</sub> 150				10/29/21 04:15	10/29/21 23:16	
1802 PFHxS	92	50 - 150				10/29/21 04:15	10/29/21 23:16	
13C4 PFOS	98	50 - 150				10/29/21 04:15	10/29/21 23:16	
d3-NMeFOSAA	98	50 - 150				10/29/21 04:15	10/29/21 23:16	
d5-NEtFOSAA	95	50 - 150					10/29/21 23:16	
13C3 HFPO-DA	91	50 - 150				10/29/21 04:15	10/29/21 23:16	
General Chemistry						_		
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Percent Moisture	21.9	0.1	0.1				10/28/21 12:18	•

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11/5/2021

10/28/21 12:18

0.1

78.1

0.1 %

Client: Shannon & Wilson, Inc Job ID: 320-80903-1

Project/Site: SG Soils WO#1

Client Sample ID: 21GST-MW17-02 Lab Sample ID: 320-80903-11

Date Collected: 10/22/21 13:35 **Matrix: Solid** Date Received: 10/27/21 12:25 Percent Solids: 75.8

Method: EPA 537(Mod) - PFAS				MD.	l lmi4	_	Duamanad	المساد دا	Dil Es -
Analyte		Qualifier	RL	MDL		— <u> </u>	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.25		ug/Kg	₩	10/29/21 04:15		1
Perfluoroheptanoic acid (PFHpA)	ND		0.25		ug/Kg	<b>‡</b>		10/29/21 23:26	1
Perfluorooctanoic acid (PFOA)	ND		0.25		ug/Kg	<u></u>	10/29/21 04:15		1
Perfluorononanoic acid (PFNA)	ND		0.25		ug/Kg	**	10/29/21 04:15		1
Perfluorodecanoic acid (PFDA)	ND		0.25		ug/Kg	₩		10/29/21 23:26	1
Perfluoroundecanoic acid (PFUnA)	ND		0.25		ug/Kg	<del>.</del>		10/29/21 23:26	1
Perfluorododecanoic acid (PFDoA)	ND		0.25		ug/Kg	₩		10/29/21 23:26	1
Perfluorotridecanoic acid (PFTriA)	ND		0.25		ug/Kg	₩		10/29/21 23:26	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.25		ug/Kg	<b>#</b>		10/29/21 23:26	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.25		ug/Kg	₩	10/29/21 04:15	10/29/21 23:26	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.25		ug/Kg	₩	10/29/21 04:15	10/29/21 23:26	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.25		ug/Kg			10/29/21 23:26	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.25	0.029	ug/Kg	₽	10/29/21 04:15	10/29/21 23:26	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.25		ug/Kg	₽	10/29/21 04:15	10/29/21 23:26	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.25	0.044	ug/Kg	₩	10/29/21 04:15	10/29/21 23:26	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.051	ug/Kg	₽	10/29/21 04:15	10/29/21 23:26	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.25	0.039	ug/Kg	₽	10/29/21 04:15	10/29/21 23:26	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.25	0.049	ug/Kg	₩	10/29/21 04:15	10/29/21 23:26	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	88		50 - 150				10/29/21 04:15	10/29/21 23:26	1
13C4 PFHpA	91		50 - 150				10/29/21 04:15	10/29/21 23:26	1
13C4 PFOA	99		50 - 150				10/29/21 04:15	10/29/21 23:26	1
13C5 PFNA	100		50 - 150				10/29/21 04:15	10/29/21 23:26	1
13C2 PFDA	96		50 - 150				10/29/21 04:15	10/29/21 23:26	1
13C2 PFUnA	90		50 - 150				10/29/21 04:15	10/29/21 23:26	1
13C2 PFDoA	98		50 - 150				10/29/21 04:15	10/29/21 23:26	1
13C2 PFTeDA	99		50 <sub>-</sub> 150				10/29/21 04:15	10/29/21 23:26	1
13C3 PFBS	101		50 <sub>-</sub> 150				10/29/21 04:15	10/29/21 23:26	1
1802 PFHxS	90		50 <sub>-</sub> 150				10/29/21 04:15	10/29/21 23:26	1
13C4 PFOS	101		50 - 150				10/29/21 04:15	10/29/21 23:26	1
d3-NMeFOSAA	98		50 - 150				10/29/21 04:15	10/29/21 23:26	1
d5-NEtFOSAA	91		50 <sub>-</sub> 150				10/29/21 04:15	10/29/21 23:26	1
13C3 HFPO-DA	91		50 - 150					10/29/21 23:26	1
General Chemistry									
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Percent Moisture	24.2		0.1	0.1				10/28/21 12:18	1
Percent Solids	<b>75.8</b>		0.1	0.1	%			10/28/21 12:18	1

Client: Shannon & Wilson, Inc Job ID: 320-80903-1 Project/Site: SG Soils WO#1

Client Sample ID: 21GST-MW25-01

Lab Sample ID: 320-80903-12 Date Collected: 10/23/21 09:25 **Matrix: Solid** 

Date Received: 10/27/21 12:25 Percent Solids: 80.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.23	0.035	ug/Kg	<del></del>	10/29/21 04:15	10/29/21 23:37	
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.043	ug/Kg	₽	10/29/21 04:15	10/29/21 23:37	•
Perfluorooctanoic acid (PFOA)	ND		0.23	0.060	ug/Kg	₽	10/29/21 04:15	10/29/21 23:37	
Perfluorononanoic acid (PFNA)	ND		0.23	0.025	ug/Kg	₽	10/29/21 04:15	10/29/21 23:37	
Perfluorodecanoic acid (PFDA)	ND		0.23	0.054	ug/Kg	₽	10/29/21 04:15	10/29/21 23:37	•
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.048	ug/Kg	₽	10/29/21 04:15	10/29/21 23:37	•
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.034	ug/Kg	₩	10/29/21 04:15	10/29/21 23:37	
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.024	ug/Kg	₽	10/29/21 04:15	10/29/21 23:37	•
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.042	ug/Kg	₩	10/29/21 04:15	10/29/21 23:37	
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.043	ug/Kg	₽	10/29/21 04:15	10/29/21 23:37	
Perfluorohexanesulfonic acid (PFHxS)	ND		0.23	0.033	ug/Kg	₩	10/29/21 04:15	10/29/21 23:37	
Perfluorooctanesulfonic acid (PFOS)	ND		0.23	0.049	ug/Kg	₩	10/29/21 04:15	10/29/21 23:37	
N-methylperfluorooctanesulfonamidoa	ND		0.23	0.026	ug/Kg	₽	10/29/21 04:15	10/29/21 23:37	
cetic acid (NMeFOSAA)									
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.23		ug/Kg	₩	10/29/21 04:15	10/29/21 23:37	•
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.23	0.040	ug/Kg	₩	10/29/21 04:15	10/29/21 23:37	•
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23	0.046	ug/Kg	₩	10/29/21 04:15	10/29/21 23:37	
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.23	0.035	ug/Kg	₽	10/29/21 04:15	10/29/21 23:37	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.044	ug/Kg	₩	10/29/21 04:15	10/29/21 23:37	
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	87		50 - 150				10/29/21 04:15	10/29/21 23:37	
13C4 PFHpA	94		50 - 150				10/29/21 04:15	10/29/21 23:37	
13C4 PFOA	101		50 - 150				10/29/21 04:15	10/29/21 23:37	
13C5 PFNA	101		50 - 150				10/29/21 04:15	10/29/21 23:37	
13C2 PFDA	101		50 - 150				10/29/21 04:15	10/29/21 23:37	
13C2 PFUnA	99		50 - 150				10/29/21 04:15	10/29/21 23:37	
13C2 PFDoA	95		50 - 150				10/29/21 04:15	10/29/21 23:37	
13C2 PFTeDA	104		50 - 150				10/29/21 04:15	10/29/21 23:37	
13C3 PFBS	103		50 - 150				10/29/21 04:15	10/29/21 23:37	
1802 PFHxS	92		50 - 150				10/29/21 04:15	10/29/21 23:37	
13C4 PFOS	98		50 - 150				10/29/21 04:15	10/29/21 23:37	
d3-NMeFOSAA	99		50 - 150				10/29/21 04:15	10/29/21 23:37	
d5-NEtFOSAA	101		50 <sub>-</sub> 150				10/29/21 04:15	10/29/21 23:37	
13C3 HFPO-DA	88		50 - 150					10/29/21 23:37	
General Chemistry									
Analyte		Qualifier	RL_	MDL		D	Prepared	Analyzed	Dil Fa
Percent Moisture	19.5		0.1	0.1	%			10/28/21 12:18	•
i di danci malatara				0.1					

11/5/2021

Client: Shannon & Wilson, Inc Job ID: 320-80903-1

Project/Site: SG Soils WO#1

Client Sample ID: 21GST-MW25-02 Lab Sample ID: 320-80903-13

Date Collected: 10/23/21 12:30 **Matrix: Solid** Date Received: 10/27/21 12:25 Percent Solids: 79.2

Perfluorohexanoic acid (PFHxA)         ND           Perfluoroheptanoic acid (PFHpA)         ND           Perfluorococtanoic acid (PFOA)         ND           Perfluorodoccanoic acid (PFNA)         ND           Perfluorodoccanoic acid (PFDA)         ND           Perfluoroduccanoic acid (PFDA)         ND           Perfluorodoccanoic acid (PFDA)         ND           Perfluorodoccanoic acid (PFTriA)         ND           Perfluorotetradecanoic acid (PFTeA)         ND           Perfluorobutanesulfonic acid (PFBS)         ND           Perfluorobutanesulfonic acid (PFBS)         ND           Perfluorocctanesulfonic acid (PFNS)         ND           N-methylperfluorocctanesulfonamidoa         ND           ectic acid (NMeFOSAA)         ND           N-ethylperfluorocctanesulfonamidoac         ND           etic acid (NEIFOSAA)         ND           N-chlorohexadecafluoro-3-oxanonan         ND           e-1-sulfonic acid         ND           Hexafluoropropylene Oxide Dimer         ND           Acid (HFPO-DA)         ND           11-Chloroeicosafluoro-3-oxanonan         ND           e-1-sulfonic acid         ND           4,8-Dioxa-3H-perfluorononanoic acid         ND           (ADONA)         **Recovery <th>RL</th> <th>MDL</th> <th>Unit</th> <th>D</th> <th>Prepared</th> <th>Analyzed</th> <th>Dil Fac</th>	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)         ND           Perfluorononanoic acid (PFNA)         ND           Perfluorodecanoic acid (PFDA)         ND           Perfluoroundecanoic acid (PFDA)         ND           Perfluoroundecanoic acid (PFDA)         ND           Perfluorodecanoic acid (PFDA)         ND           Perfluorottridecanoic acid (PFTA)         ND           Perfluorobutanesulfonic acid (PFTBS)         ND           Perfluorobexanesulfonic acid (PFHxS)         ND           Perfluorobexanesulfonic acid (PFOS)         ND           N-methylperfluorooctanesulfonamidoa         ND           vetic acid (NMeFOSAA)         ND           N-ethylperfluorooctanesulfonamidoac         ND           etic acid (NEtFOSAA)         ND           9-Chlorohexadecafluoro-3-oxanonan         ND           e-1-sulfonic acid         ND           4,8-Dioxa-3H-perfluorononanoic acid         ND           (ADONA)         ND           Isotope Dilution         %Recovery           13C2 PFHxA         126           13C4 PFDA         126           13C2 PFDA         124           13C2 PFDA         124           13C2 PFDA         131           13C2 PFDA         131	0.23	0.036	ug/Kg	<u></u>	10/28/21 18:22	10/30/21 04:48	1
Perfluorononanoic acid (PFNA)         ND           Perfluorodecanoic acid (PFDA)         ND           Perfluoroundecanoic acid (PFDA)         ND           Perfluoroundecanoic acid (PFDA)         ND           Perfluorotridecanoic acid (PFDA)         ND           Perfluorotetradecanoic acid (PFTA)         ND           Perfluorobutanesulfonic acid (PFBS)         ND           Perfluorobexanesulfonic acid (PFNS)         ND           Perfluorocanesulfonic acid (PFOS)         ND           N-methylperfluorocanesulfonamidoa         ND           vetic acid (NMeFOSAA)         ND           N-ethylperfluorocanesulfonamidoac         ND           etic acid (NEFOSAA)         ND           9-Chlorohexadecafluoro-3-oxanonan         ND           e-1-sulfonic acid         ND           Hexafluoropropylene Oxide Dimer         ND           Acid (HFPO-DA)         ND           11-Chloroeicosafluoro-3-oxanndecan         ND           e-1-sulfonic acid         ND           4,8-Dioxa-3H-perfluorononanoic acid         ND           ABONA)         **Recovery           13C2 PFHxA         128           13C4 PFDA         126           13C4 PFDA         124           13C2 PFDA         131 <td>0.23</td> <td>0.044</td> <td>ug/Kg</td> <td>₽</td> <td>10/28/21 18:22</td> <td>10/30/21 04:48</td> <td>1</td>	0.23	0.044	ug/Kg	₽	10/28/21 18:22	10/30/21 04:48	1
Perfluorodecanoic acid (PFDA)         ND           Perfluoroundecanoic acid (PFUnA)         ND           Perfluorododecanoic acid (PFDoA)         ND           Perfluorotridecanoic acid (PFTriA)         ND           Perfluorotetradecanoic acid (PFTeA)         ND           Perfluorobutanesulfonic acid (PFBS)         ND           Perfluorobecanesulfonic acid (PFBS)         ND           Perfluoronecanesulfonic acid (PFOS)         ND           N-methylperfluorooctanesulfonamidoa         ND           cetic acid (NMeFOSAA)         ND           N-ethylperfluorooctanesulfonamidoac         ND           etic acid (NEtFOSAA)         ND           9-Chlorohexadecafluoro-3-oxanonan         ND           e-1-sulfonic acid         ND           Hexafluoropropylene Oxide Dimer         ND           Acid (HFPO-DA)         ND           11-Chloroeicosafluoro-3-oxannonan         ND           e-1-sulfonic acid         ND           4,8-Dioxa-3H-perfluorononanoic acid         ND           kaboixa-3H-perfluorononanoic acid         ND           kaboixa-3H-perfluorononanoic acid         ND           kaboixa-3H-perfluorononanoic acid         ND           kaboixa-3H-perfluoronoic acid         ND           kaboixa-3H-perfluoronoic a	0.23	0.062	ug/Kg	₽	10/28/21 18:22	10/30/21 04:48	1
Perfluoroundecanoic acid (PFUnA) ND Perfluorododecanoic acid (PFDoA) ND Perfluorotridecanoic acid (PFTriA) ND Perfluorotridecanoic acid (PFTriA) ND Perfluorotetradecanoic acid (PFTeA) ND Perfluorobutanesulfonic acid (PFBS) ND Perfluorobutanesulfonic acid (PFHxS) ND Perfluorooctanesulfonic acid (PFHxS) ND Perfluorooctanesulfonic acid (PFOS) ND N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA) N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA) 9-Chlorohexadecafluoro-3-oxanonan ND e-1-sulfonic acid Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaundecan ND e-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid (ADONA)  Isotope Dilution %Recovery Qualifier  13C2 PFHxA 128 13C4 PFDA 135 13C5 PFNA 125 13C2 PFDA 124 13C2 PFDA 124 13C2 PFDA 124 13C2 PFDA 131 13C3 PFBS 137 18O2 PFTEDA 137 13C3 PFBS 137 18O2 PFHxS 122 13C4 PFOS 127 d3-NMeFOSAA 122 d5-NEtFOSAA 122 d5-NEtFOSAA 122 13C3 HFPO-DA 117	0.23	0.026	ug/Kg	₩	10/28/21 18:22	10/30/21 04:48	1
Perfluorododecanoic acid (PFDoA) Perfluorotridecanoic acid (PFTriA) Perfluorotridecanoic acid (PFTriA) ND Perfluorotetradecanoic acid (PFTeA) Perfluorobutanesulfonic acid (PFBS) ND Perfluorobexanesulfonic acid (PFHxS) Perfluorooctanesulfonic acid (PFHxS) ND Perfluorooctanesulfonic acid (PFOS) ND N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA) N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA) P-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid (ADONA)  Isotope Dilution  Sotope Dilution  3C2 PFHxA 3C4 PFAA 3C3 PFDA 3C5 PFNA 3C5 PFNA 3C5 PFNA 3C6 PFDA 313 3C7 PFDA 313 3C7 PFDA 313 3C7 PFDA 313 3C7 PFDA 313 3C7 PFDA 313 3C7 PFDA 313 3C7 PFDA 313 3C7 PFDA 313 3C7 PFDA 313 3C7 PFDA 313 3C7 PFDA 313 3C7 PFDA 313 3C7 PFBS 313 3C7 PFDSAA 312 3C7 PFDSAA 317	0.23	0.056	ug/Kg	₽	10/28/21 18:22	10/30/21 04:48	1
Perfluorotridecanoic acid (PFTriA)         ND           Perfluorotetradecanoic acid (PFTeA)         ND           Perfluorobutanesulfonic acid (PFBS)         ND           Perfluorobexanesulfonic acid (PFHxS)         ND           Perfluorooctanesulfonic acid (PFOS)         ND           N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)         ND           N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)         ND           9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid         ND           Hexafluoropropylene Oxide Dimer         ND           Acid (HFPO-DA)         ND           11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid         ND           4,8-Dioxa-3H-perfluorononanoic acid         ND           Maccovery         Qualifier           13C2 PFHxA         128           13C2 PFHxA         128           13C3 PFNA         125           13C3 PFNA         125           13C2 PFDA         124           13C2 PFDA         131           13C2 PFDA         131           13C3 PFBS         137           18O2 PFHxS         122           13C4 PFOS         127           d3-NMeFOSAA         122           13C3 HFPO-DA         117 <td>0.23</td> <td>0.049</td> <td>ug/Kg</td> <td>₽</td> <td>10/28/21 18:22</td> <td>10/30/21 04:48</td> <td>1</td>	0.23	0.049	ug/Kg	₽	10/28/21 18:22	10/30/21 04:48	1
Perfluorotetradecanoic acid (PFTeA)         ND           Perfluorobutanesulfonic acid (PFBS)         ND           Perfluorohexanesulfonic acid (PFHxS)         ND           Perfluoroctanesulfonic acid (PFOS)         ND           N-methylperfluorooctanesulfonamidoa         ND           cetic acid (NMeFOSAA)         ND           N-ethylperfluorooctanesulfonamidoac         ND           etic acid (NEtFOSAA)         ND           9-Chlorohexadecafluoro-3-oxanonan         ND           e-1-sulfonic acid         ND           Hexafluoropropylene Oxide Dimer         ND           Acid (HFPO-DA)         ND           11-Chloroeicosafluoro-3-oxaundecan         ND           e-1-sulfonic acid         ND           4,8-Dioxa-3H-perfluorononanoic acid         ND           kaboixa-3H-perfluorononanoic acid         ND           Macorea Dilution         %Recovery         Qualifier           13C2 PFHXA         128           13C4 PFDA         126           13C5 PFNA         125           13C2 PFDA         124           13C2 PFDA         131           13C2 PFTEDA         131           13C3 PFBS         137           18C2 PFHXS         122 <td< td=""><td>0.23</td><td>0.035</td><td>ug/Kg</td><td>₩</td><td>10/28/21 18:22</td><td>10/30/21 04:48</td><td>1</td></td<>	0.23	0.035	ug/Kg	₩	10/28/21 18:22	10/30/21 04:48	1
Perfluorobutanesulfonic acid (PFBS)         ND           Perfluorohexanesulfonic acid (PFHxS)         ND           Perfluorooctanesulfonic acid (PFOS)         ND           N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)         ND           N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)         ND           9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid         ND           Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)         ND           11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid         ND           4,8-Dioxa-3H-perfluorononanoic acid (ADONA)         ND           Isotope Dilution         %Recovery         Qualifier           13C2 PFHxA         128           13C4 PFDA         126           13C4 PFDA         125           13C2 PFDA         124           13C2 PFDA         124           13C2 PFDA         124           13C2 PFDA         131           13C2 PFDA         131           13C2 PFDA         124           13C3 PFBS         137           18C3 PFBS         137           18C3 PFBS         127           13C4 PFOS         127           43-NMeFOSAA         122           13C3 HFPO-DA         117 </td <td>0.23</td> <td>0.024</td> <td>ug/Kg</td> <td>₽</td> <td>10/28/21 18:22</td> <td>10/30/21 04:48</td> <td>1</td>	0.23	0.024	ug/Kg	₽	10/28/21 18:22	10/30/21 04:48	1
Perfluorohexanesulfonic acid (PFHxS)         ND           Perfluorooctanesulfonic acid (PFOS)         ND           N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)         ND           N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)         ND           9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid         ND           Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)         ND           11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid         ND           4,8-Dioxa-3H-perfluorononanoic acid (ADONA)         ND           Isotope Dilution         %Recovery         Qualifier           13C2 PFHxA         128           13C4 PFDA         126           13C4 PFDA         125           13C2 PFDA         124           13C2 PFDA         124           13C2 PFDA         124           13C2 PFDA         124           13C2 PFDA         131           13C2 PFDA         137           13C2 PFDA         122           13C4 PFOS         137           18O2 PFHxS         122           13C4 PFOS         127           d3-NMeFOSAA         122           13C3 HFPO-DA         117	0.23	0.043	ug/Kg	₩	10/28/21 18:22	10/30/21 04:48	1
Perfluoroctanesulfonic acid (PFOS)         ND           N-methylperfluorocotanesulfonamidoa cetic acid (NMeFOSAA)         ND           N-ethylperfluorocotanesulfonamidoac etic acid (NEtFOSAA)         ND           9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid         ND           Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)         ND           11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid         ND           (ADONA)         **Recovery**         Qualifier           13C2 PFHxA         128           13C4 PFHpA         126           13C4 PFHpA         126           13C4 PFOA         135           13C2 PFDA         124           13C2 PFDA         124           13C2 PFDA         124           13C2 PFDA         131           13C2 PFDA         137           13C3 PFBS         137           18O2 PFTeDA         137           13C3 PFBS         137           18O2 PFHxS         122           13C4 PFOS         127           d3-NMeFOSAA         122           13C3 HFPO-DA         117           General Chemistry	0.23	0.044	ug/Kg	₽	10/28/21 18:22	10/30/21 04:48	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)         ND           N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)         ND           9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid         ND           Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)         ND           11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (ADONA)         ND           Isotope Dilution         %Recovery (ADONA)           Isotope Dilution         %Recovery (ADONA)           Isotope Dilution         %Recovery (ADONA)           Isotope Dilution         128           13C2 PFHxA         128           13C4 PFDA         126           13C5 PFNA         125           13C2 PFDA         124           13C2 PFDA         124           13C2 PFDA         131           13C2 PFDA         137           13C3 PFBS         137           13C3 PFBS         137           18O2 PFHxS         122           13C4 PFOS         127           d3-NMeFOSAA         122           13C3 HFPO-DA         117           General Chemistry	0.23	0.034	ug/Kg	₩	10/28/21 18:22	10/30/21 04:48	1
cetic acid (NMeFOSAA)         N-ethylperfluorooctanesulfonamidoac         ND           etic acid (NEtFOSAA)         9-Chlorohexadecafluoro-3-oxanonan         ND           9-Chlorohexadecafluoro-3-oxanonan         ND         ND           e-1-sulfonic acid         Hexafluoropropylene Oxide Dimer         ND           Acid (HFPO-DA)         ND         ND           11-Chloroeicosafluoro-3-oxaundecan         ND         e-1-sulfonic acid           4,8-Dioxa-3H-perfluorononanoic acid         ND         ND           (ADONA)         8Recovery         Qualifier           13C2 PFHxA         128         128           13C4 PFHpA         126         135           13C4 PFDA         135         135           13C2 PFNA         125         136           13C2 PFDA         124         13C           13C2 PFUNA         122         13C           13C2 PFDA         131         13C           13C2 PFDA         137         13C           13C3 PFBS         137         13C           18O2 PFHxS         122         13C           13C4 PFOS         127         127           13C3 NMeFOSAA         122           13C3 HFPO-DA         117	0.23	0.050	ug/Kg	₩	10/28/21 18:22	10/30/21 04:48	1
etic acid (NEtFOSAA) 9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid (ADONA)  Isotope Dilution  Sotope Dilution  13C2 PFHxA 128 13C4 PFHpA 126 13C5 PFNA 125 13C2 PFDA 13C2 PFDA 13C2 PFDA 13C2 PFDA 13C2 PFDA 13C2 PFDA 13C2 PFDA 13C3 PFBS 137 13C3 PFBS 137 13C3 PFBS 137 18O2 PFHxS 122 13C4 PFOS d3-NMeFOSAA 122 d5-NEtFOSAA 122 13C3 HFPO-DA 117  General Chemistry	0.23	0.027	ug/Kg	₩	10/28/21 18:22	10/30/21 04:48	1
e-1-sulfonic acid  Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)  11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid (ADONA)  Isotope Dilution  Social PFHxA  128  13C4 PFHpA  13C4 PFOA  13C5 PFNA  13C2 PFDA  13C2 PFUA  13C2 PFUA  13C2 PFUA  13C2 PFUA  13C2 PFOA  13C3 PFBS  13C3 PFBS  13C3 PFBS  13C3 PFBS  13C4 PFOS d3-NMeFOSAA  122  General Chemistry	0.23	0.056	ug/Kg	₩	10/28/21 18:22	10/30/21 04:48	1
Acid (HFPO-DA)  11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid (ADONA)  Isotope Dilution  ISC2 PFHXA  128  13C4 PFHpA  126  13C5 PFNA  125  13C2 PFDA  13C2 PFDA  13C2 PFDA  13C2 PFDA  13C2 PFDA  13C2 PFDA  13C2 PFDA  13C2 PFDOA  13C2 PFDOA  13C2 PFOOS  13C3 PFSS  13C3 PFSS  13C3 PFSS  13C3 PFSS  13C4 PFOS  13C5 NMeFOSAA  122  13C3 HFPO-DA  117  General Chemistry	0.23	0.041	ug/Kg	☼	10/28/21 18:22	10/30/21 04:48	1
e-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid (ADONA)  Isotope Dilution  33C2 PFHxA  128  13C4 PFHpA  126  13C5 PFNA  13C5 PFNA  125  13C2 PFDA  13C2 PFDA  13C2 PFDA  13C2 PFDA  13C2 PFDA  13C2 PFDA  13C2 PFDA  13C2 PFDOA  13C3 PFBS  13C3 PFBS  13C3 PFBS  13C4 PFOS  13C4 PFOS  13C5 PFNA  12C5 PFNA  12C6 PFNA  12C7 PFNA  13C7 PFNA  13C8 PFTEDA  13C9 PFTEDA  13C9 PFTEDA  13C1 PFTEDA  13C1 PFTEDA  13C2 PFTEDA  13C3 PFBS  13C4 PFOS  13C4 PFOS  13C5 PFNA  13C6 PFNA  13C7 PFNA  13C8 PFNA  13C9 PFNA	0.23	0.048	ug/Kg	₽	10/28/21 18:22	10/30/21 04:48	1
ADONA   Isotope Dilution   %Recovery   Qualifier   13C2 PFHxA   128   13C4 PFHpA   126   13C5 PFNA   125   13C5 PFNA   125   13C2 PFDA   124   13C2 PFUnA   122   13C2 PFUnA   13C2 PFDOA   131   13C2 PFTeDA   137   13C3 PFBS   137   13C3 PFBS   137   13C4 PFOS   127   13C4 PFOS   127   13C5 PFOSAA   122   13C5 PFOSAA   127   13C5 PFOSAA   13C5 P	0.23	0.036	ug/Kg	₩	10/28/21 18:22	10/30/21 04:48	1
13C2 PFHxA       128         13C4 PFHpA       126         13C4 PFOA       135         13C5 PFNA       125         13C2 PFDA       124         13C2 PFUnA       122         13C2 PFDOA       131         13C2 PFTEDA       137         13C3 PFBS       137         18O2 PFHxS       122         13C4 PFOS       127         d3-NMeFOSAA       122         13C3 HFPO-DA       117	0.23	0.045	ug/Kg	₩	10/28/21 18:22	10/30/21 04:48	1
13C4 PFHpA       126         13C4 PFOA       135         13C5 PFNA       125         13C2 PFDA       124         13C2 PFUnA       122         13C2 PFDOA       131         13C2 PFTEDA       137         13C3 PFBS       137         18O2 PFHxS       122         13C4 PFOS       127         d3-NMeFOSAA       122         13C3 HFPO-DA       117	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA       135         13C5 PFNA       125         13C2 PFDA       124         13C2 PFUnA       122         13C2 PFDoA       131         13C2 PFTeDA       137         13C3 PFBS       137         18O2 PFHxS       122         13C4 PFOS       127         d3-NMeFOSAA       122         13C3 HFPO-DA       117	50 - 150				10/28/21 18:22	10/30/21 04:48	1
13C5 PFNA       125         13C2 PFDA       124         13C2 PFUnA       122         13C2 PFDOA       131         13C2 PFTEDA       137         13C3 PFBS       137         18O2 PFHxS       122         13C4 PFOS       127         d3-NMeFOSAA       122         13C3 HFPO-DA       117	50 - 150				10/28/21 18:22	10/30/21 04:48	1
13C2 PFDA       124         13C2 PFUnA       122         13C2 PFDoA       131         13C2 PFTeDA       137         13C3 PFBS       137         18O2 PFHxS       122         13C4 PFOS       127         d3-NMeFOSAA       122         d5-NEtFOSAA       122         13C3 HFPO-DA       117	50 - 150				10/28/21 18:22	10/30/21 04:48	1
13C2 PFUnA       122         13C2 PFDoA       131         13C2 PFTeDA       137         13C3 PFBS       137         18O2 PFHxS       122         13C4 PFOS       127         d3-NMeFOSAA       122         d5-NEtFOSAA       122         13C3 HFPO-DA       117	50 - 150				10/28/21 18:22	10/30/21 04:48	1
13C2 PFDoA       131         13C2 PFTeDA       137         13C3 PFBS       137         18O2 PFHxS       122         13C4 PFOS       127         d3-NMeFOSAA       122         d5-NEtFOSAA       122         13C3 HFPO-DA       117	50 - 150				10/28/21 18:22	10/30/21 04:48	1
13C2 PFTeDA       137         13C3 PFBS       137         18O2 PFHxS       122         13C4 PFOS       127         d3-NMeFOSAA       122         d5-NEtFOSAA       122         13C3 HFPO-DA       117	50 - 150				10/28/21 18:22	10/30/21 04:48	1
13C3 PFBS       137         18O2 PFHxS       122         13C4 PFOS       127         d3-NMeFOSAA       122         d5-NEtFOSAA       122         13C3 HFPO-DA       117    General Chemistry	50 - 150				10/28/21 18:22	10/30/21 04:48	1
1802 PFHxS       122         13C4 PFOS       127         d3-NMeFOSAA       122         d5-NEtFOSAA       122         13C3 HFPO-DA       117    General Chemistry	50 - 150				10/28/21 18:22	10/30/21 04:48	1
13C4 PFOS       127         d3-NMeFOSAA       122         d5-NEtFOSAA       122         13C3 HFPO-DA       117    General Chemistry	50 - 150				10/28/21 18:22	10/30/21 04:48	1
d3-NMeFOSAA 122 d5-NEtFOSAA 122 13C3 HFPO-DA 117 General Chemistry	50 - 150				10/28/21 18:22	10/30/21 04:48	1
d5-NEtFOSAA 122 13C3 HFPO-DA 117 General Chemistry	50 - 150				10/28/21 18:22	10/30/21 04:48	1
13C3 HFPO-DA 117  General Chemistry	50 - 150				10/28/21 18:22	10/30/21 04:48	1
General Chemistry	50 - 150				10/28/21 18:22	10/30/21 04:48	1
	50 - 150				10/28/21 18:22	10/30/21 04:48	1
Beauti AIII				_			B
Analyte Result Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture 20.8 Percent Solids 79.2	0.1 0.1	0.1				10/28/21 12:18 10/28/21 12:18	1

Client: Shannon & Wilson, Inc Job ID: 320-80903-1 Project/Site: SG Soils WO#1

Client Sample ID: 21GST-SED-010 Lab Sample ID: 320-80903-14

Date Collected: 10/17/21 09:20 **Matrix: Solid** Percent Solids: 74.7 Date Received: 10/27/21 12:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.26	0.040	ug/Kg	<u></u>	10/28/21 11:53	10/30/21 00:39	1
Perfluoroheptanoic acid (PFHpA)	ND		0.26	0.049	ug/Kg	≎	10/28/21 11:53	10/30/21 00:39	1
Perfluorooctanoic acid (PFOA)	ND		0.26	0.068	ug/Kg	≎	10/28/21 11:53	10/30/21 00:39	1
Perfluorononanoic acid (PFNA)	ND		0.26	0.028	ug/Kg	₽	10/28/21 11:53	10/30/21 00:39	1
Perfluorodecanoic acid (PFDA)	ND		0.26	0.061	ug/Kg	₽	10/28/21 11:53	10/30/21 00:39	1
Perfluoroundecanoic acid (PFUnA)	ND		0.26	0.054	ug/Kg	₩	10/28/21 11:53	10/30/21 00:39	1
Perfluorododecanoic acid (PFDoA)	ND		0.26	0.038	ug/Kg	₩	10/28/21 11:53	10/30/21 00:39	1
Perfluorotridecanoic acid (PFTriA)	ND		0.26	0.027	ug/Kg	₩	10/28/21 11:53	10/30/21 00:39	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.26	0.047	ug/Kg	₩	10/28/21 11:53	10/30/21 00:39	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.26	0.049	ug/Kg		10/28/21 11:53	10/30/21 00:39	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.26	0.037	ug/Kg	₩	10/28/21 11:53	10/30/21 00:39	1
Perfluorooctanesulfonic acid (PFOS)	0.82	I	0.26	0.055	ug/Kg	₩	10/28/21 11:53	10/30/21 00:39	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.26	0.029	ug/Kg	₩	10/28/21 11:53	10/30/21 00:39	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.26	0.061	ug/Kg	₩	10/28/21 11:53	10/30/21 00:39	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.26	0.045	ug/Kg	₩	10/28/21 11:53	10/30/21 00:39	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.26	0.052	ug/Kg	₩	10/28/21 11:53	10/30/21 00:39	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.26	0.040	ug/Kg	₩	10/28/21 11:53	10/30/21 00:39	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.26	0.050	ug/Kg	₩	10/28/21 11:53	10/30/21 00:39	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	95		50 - 150				10/28/21 11:53	10/30/21 00:39	1
13C4 PFHpA	102		50 - 150				10/28/21 11:53	10/30/21 00:39	1
13C4 PFOA	110		50 - 150				10/28/21 11:53	10/30/21 00:39	1
13C5 PFNA	107		50 - 150				10/28/21 11:53	10/30/21 00:39	1
13C2 PFDA	101		50 - 150				10/28/21 11:53	10/30/21 00:39	1
13C2 PFUnA	95		50 - 150				10/28/21 11:53	10/30/21 00:39	1
13C2 PFDoA	89		50 - 150				10/28/21 11:53	10/30/21 00:39	1
13C2 PFTeDA	93		50 <sub>-</sub> 150				10/28/21 11:53	10/30/21 00:39	1
13C3 PFBS	109		50 <sub>-</sub> 150				10/28/21 11:53	10/30/21 00:39	1
1802 PFHxS	98		50 - 150				10/28/21 11:53	10/30/21 00:39	1
13C4 PFOS	105		50 - 150				10/28/21 11:53	10/30/21 00:39	1
d3-NMeFOSAA	105		50 <sub>-</sub> 150				10/28/21 11:53	10/30/21 00:39	1
d5-NEtFOSAA	101		50 - 150				10/28/21 11:53	10/30/21 00:39	1
13C3 HFPO-DA	94		50 - 150				10/28/21 11:53	10/30/21 00:39	1
General Chemistry	_						_		
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	25.3		0.1	0.1	%			10/28/21 12:18	1
Percent Solids	74.7		0.1	0.1	%			10/28/21 12:18	1

Eurofins TestAmerica, Sacramento

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Client: Shannon & Wilson, Inc Job ID: 320-80903-1

Project/Site: SG Soils WO#1

Client Sample ID: 21GST-SED-008 Lab Sample ID: 320-80903-15

Date Collected: 10/17/21 09:50 **Matrix: Solid** Date Received: 10/27/21 12:25 Percent Solids: 74.2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.24	0.038	ug/Kg	₩	10/28/21 11:53	10/30/21 01:10	•
Perfluoroheptanoic acid (PFHpA)	ND		0.24	0.046	ug/Kg	≎	10/28/21 11:53	10/30/21 01:10	1
Perfluorooctanoic acid (PFOA)	ND		0.24	0.064	ug/Kg	≎	10/28/21 11:53	10/30/21 01:10	1
Perfluorononanoic acid (PFNA)	ND		0.24	0.027	ug/Kg	₽	10/28/21 11:53	10/30/21 01:10	1
Perfluorodecanoic acid (PFDA)	ND		0.24	0.058	ug/Kg	₩	10/28/21 11:53	10/30/21 01:10	1
Perfluoroundecanoic acid (PFUnA)	ND		0.24	0.051	ug/Kg	₩	10/28/21 11:53	10/30/21 01:10	1
Perfluorododecanoic acid (PFDoA)	ND		0.24	0.036	ug/Kg	₩	10/28/21 11:53	10/30/21 01:10	1
Perfluorotridecanoic acid (PFTriA)	ND		0.24	0.025	ug/Kg	₩	10/28/21 11:53	10/30/21 01:10	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.24	0.045	ug/Kg	₩	10/28/21 11:53	10/30/21 01:10	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.24	0.046	ug/Kg	₩	10/28/21 11:53	10/30/21 01:10	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.24	0.035	ug/Kg	₽	10/28/21 11:53	10/30/21 01:10	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.24	0.052	ug/Kg	₩	10/28/21 11:53	10/30/21 01:10	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.24		ug/Kg		10/28/21 11:53	10/30/21 01:10	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.24	0.058	ug/Kg	₩	10/28/21 11:53	10/30/21 01:10	1
9-Chloronexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.24	0.042	ug/Kg	₽	10/28/21 11:53	10/30/21 01:10	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.24	0.050	ug/Kg	₩	10/28/21 11:53	10/30/21 01:10	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.24	0.038	ug/Kg	₩	10/28/21 11:53	10/30/21 01:10	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.24	0.047	ug/Kg	₩	10/28/21 11:53	10/30/21 01:10	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	95		50 - 150				10/28/21 11:53	10/30/21 01:10	1
13C4 PFHpA	97		50 - 150				10/28/21 11:53	10/30/21 01:10	1
13C4 PFOA	107		50 - 150				10/28/21 11:53	10/30/21 01:10	1
13C5 PFNA	110		50 - 150				10/28/21 11:53	10/30/21 01:10	1
13C2 PFDA	101		50 - 150				10/28/21 11:53	10/30/21 01:10	1
13C2 PFUnA	99		50 <sub>-</sub> 150				10/28/21 11:53	10/30/21 01:10	1
13C2 PFDoA	89		50 - 150				10/28/21 11:53	10/30/21 01:10	1
13C2 PFTeDA	86		50 <sub>-</sub> 150				10/28/21 11:53	10/30/21 01:10	1
13C3 PFBS	107		50 <sub>-</sub> 150				10/28/21 11:53	10/30/21 01:10	1
1802 PFHxS	94		50 - 150				10/28/21 11:53	10/30/21 01:10	1
13C4 PFOS	105		50 <sub>-</sub> 150				10/28/21 11:53	10/30/21 01:10	1
d3-NMeFOSAA	107		50 <sub>-</sub> 150					10/30/21 01:10	1
d5-NEtFOSAA	104		50 - 150					10/30/21 01:10	1
13C3 HFPO-DA	95		50 - 150					10/30/21 01:10	1
General Chemistry									
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	25.8		0.1	0.1	%	_		10/28/21 12:18	1
Percent Solids	74.2		0.1	0.1	0/_			10/28/21 12:18	1

Client: Shannon & Wilson, Inc Job ID: 320-80903-1 Project/Site: SG Soils WO#1

**Percent Solids** 

Client Sample ID: 21GST-SED-024 Lab Sample ID: 320-80903-16

Date Collected: 10/17/21 10:20 **Matrix: Solid** Date Received: 10/27/21 12:25 Percent Solids: 74.4

Analyte	Result (	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.24	0.037	ug/Kg	<u></u>	10/28/21 11:53	10/30/21 01:21	
Perfluoroheptanoic acid (PFHpA)	ND		0.24	0.045	ug/Kg	₽	10/28/21 11:53	10/30/21 01:21	•
Perfluorooctanoic acid (PFOA)	ND		0.24	0.063	ug/Kg	☆	10/28/21 11:53	10/30/21 01:21	•
Perfluorononanoic acid (PFNA)	ND		0.24	0.026	ug/Kg	☼	10/28/21 11:53	10/30/21 01:21	
Perfluorodecanoic acid (PFDA)	ND		0.24	0.057	ug/Kg	₽	10/28/21 11:53	10/30/21 01:21	•
Perfluoroundecanoic acid (PFUnA)	ND		0.24	0.050	ug/Kg	₽	10/28/21 11:53	10/30/21 01:21	•
Perfluorododecanoic acid (PFDoA)	ND		0.24	0.036	ug/Kg	₽	10/28/21 11:53	10/30/21 01:21	
Perfluorotridecanoic acid (PFTriA)	ND		0.24	0.025	ug/Kg	₽	10/28/21 11:53	10/30/21 01:21	•
Perfluorotetradecanoic acid (PFTeA)	ND		0.24	0.044	ug/Kg	☼	10/28/21 11:53	10/30/21 01:21	•
Perfluorobutanesulfonic acid (PFBS)	ND		0.24	0.045	ug/Kg	☼	10/28/21 11:53	10/30/21 01:21	
Perfluorohexanesulfonic acid (PFHxS)	ND		0.24	0.034	ug/Kg	☼	10/28/21 11:53	10/30/21 01:21	
Perfluorooctanesulfonic acid (PFOS)	0.15 、	J I	0.24	0.051	ug/Kg	₩	10/28/21 11:53	10/30/21 01:21	,
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.24	0.027	ug/Kg	₩	10/28/21 11:53	10/30/21 01:21	
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.24	0.057	ug/Kg	₩	10/28/21 11:53	10/30/21 01:21	•
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.24		ug/Kg	<b>☆</b>		10/30/21 01:21	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.24		ug/Kg	₩	10/28/21 11:53	10/30/21 01:21	•
I1-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.24		ug/Kg	☼		10/30/21 01:21	•
I,8-Dioxa-3H-perfluorononanoic acid ADONA)	ND		0.24	0.046	ug/Kg	₩	10/28/21 11:53	10/30/21 01:21	•
sotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	92		50 - 150				10/28/21 11:53	10/30/21 01:21	
13C4 PFHpA	98		50 - 150				10/28/21 11:53	10/30/21 01:21	
13C4 PFOA	105		50 - 150				10/28/21 11:53	10/30/21 01:21	
13C5 PFNA	98		50 - 150				10/28/21 11:53	10/30/21 01:21	
13C2 PFDA	96		50 - 150				10/28/21 11:53	10/30/21 01:21	
13C2 PFUnA	87		50 - 150				10/28/21 11:53	10/30/21 01:21	
13C2 PFDoA	79		50 - 150				10/28/21 11:53	10/30/21 01:21	
13C2 PFTeDA	83		50 - 150				10/28/21 11:53	10/30/21 01:21	1
13C3 PFBS	107		50 - 150				10/28/21 11:53	10/30/21 01:21	
1802 PFHxS	95		50 - 150				10/28/21 11:53	10/30/21 01:21	
13C4 PFOS	101		50 - 150				10/28/21 11:53	10/30/21 01:21	
d3-NMeFOSAA	93		50 - 150				10/28/21 11:53	10/30/21 01:21	
15-NEtFOSAA	92		50 - 150				10/28/21 11:53	10/30/21 01:21	
13C3 HFPO-DA	99		50 - 150				10/28/21 11:53	10/30/21 01:21	
General Chemistry	B tr	O !!£"	5.	1457	11-14	_	D	Amak	D:: =
Analyte	Result	Qualitier	RL _	MDL		D	Prepared	Analyzed	Dil Fac
Percent Moisture	25.6		0.1	0.1	%			10/28/21 12:18	

11/5/2021

10/28/21 12:18

0.1

74.4

0.1 %

Client: Shannon & Wilson, Inc Job ID: 320-80903-1 Project/Site: SG Soils WO#1

Client Sample ID: 21GST-DPSED-024

**Percent Solids** 

Lab Sample ID: 320-80903-17 Date Collected: 10/17/21 10:35 **Matrix: Solid** 

Date Received: 10/27/21 12:25 Percent Solids: 75.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Perfluorohexanoic acid (PFHxA)	ND		0.23	0.036	ug/Kg		10/28/21 11:53	10/30/21 01:31	
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.044	ug/Kg	₩	10/28/21 11:53	10/30/21 01:31	
Perfluorooctanoic acid (PFOA)	ND		0.23	0.062	ug/Kg	₩	10/28/21 11:53	10/30/21 01:31	
Perfluorononanoic acid (PFNA)	ND		0.23	0.026	ug/Kg	₩	10/28/21 11:53	10/30/21 01:31	
Perfluorodecanoic acid (PFDA)	ND		0.23	0.056	ug/Kg	₩	10/28/21 11:53	10/30/21 01:31	
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.049	ug/Kg	₩	10/28/21 11:53	10/30/21 01:31	
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.035	ug/Kg	₩	10/28/21 11:53	10/30/21 01:31	
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.024	ug/Kg	₩	10/28/21 11:53	10/30/21 01:31	
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.043	ug/Kg	₩	10/28/21 11:53	10/30/21 01:31	
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.044	ug/Kg	₽	10/28/21 11:53	10/30/21 01:31	
Perfluorohexanesulfonic acid (PFHxS)	ND		0.23	0.034	ug/Kg	₩	10/28/21 11:53	10/30/21 01:31	
Perfluorooctanesulfonic acid (PFOS)	0.47	L	0.23	0.050	ug/Kg	₩	10/28/21 11:53	10/30/21 01:31	
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.23	0.027	ug/Kg	☼	10/28/21 11:53	10/30/21 01:31	
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.23	0.056	ug/Kg	₩	10/28/21 11:53	10/30/21 01:31	•
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.23	0.041	ug/Kg	₩	10/28/21 11:53	10/30/21 01:31	•
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23	0.048	ug/Kg	₩	10/28/21 11:53	10/30/21 01:31	
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.23		ug/Kg	₩	10/28/21 11:53	10/30/21 01:31	•
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.045	ug/Kg	₩	10/28/21 11:53	10/30/21 01:31	•
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	94		50 - 150				10/28/21 11:53	10/30/21 01:31	
13C4 PFHpA	99		50 - 150				10/28/21 11:53	10/30/21 01:31	
13C4 PFOA	106		50 - 150				10/28/21 11:53	10/30/21 01:31	
13C5 PFNA	104		50 - 150				10/28/21 11:53	10/30/21 01:31	
13C2 PFDA	100		50 - 150				10/28/21 11:53	10/30/21 01:31	
13C2 PFUnA	91		50 - 150				10/28/21 11:53	10/30/21 01:31	
13C2 PFDoA	95		50 - 150				10/28/21 11:53	10/30/21 01:31	
13C2 PFTeDA	91		50 - 150				10/28/21 11:53	10/30/21 01:31	
13C3 PFBS	109		50 - 150				10/28/21 11:53	10/30/21 01:31	
1802 PFHxS	97		50 - 150				10/28/21 11:53	10/30/21 01:31	
13C4 PFOS	105		50 - 150				10/28/21 11:53	10/30/21 01:31	
d3-NMeFOSAA	109		50 - 150				10/28/21 11:53	10/30/21 01:31	
d5-NEtFOSAA	109		50 - 150				10/28/21 11:53	10/30/21 01:31	
13C3 HFPO-DA	90		50 - 150				10/28/21 11:53	10/30/21 01:31	
General Chemistry	<b>_</b>	0			1114	_	<b>D</b>	A	D.: -
Analyte		Qualifier	RL _		Unit	D	Prepared	Analyzed	Dil Fa
Percent Moisture	24.7		0.1	0.1	%			10/28/21 12:18	•

Eurofins TestAmerica, Sacramento

11/5/2021

10/28/21 12:18

0.1

75.3

0.1 %

Client: Shannon & Wilson, Inc Job ID: 320-80903-1 Project/Site: SG Soils WO#1

Client Sample ID: 21GST-SED-124

Lab Sample ID: 320-80903-18 Date Collected: 10/17/21 10:10 **Matrix: Solid** 

Date Received: 10/27/21 12:25 Percent Solids: 73.8

Analyte	Result Qua	lifier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND	0.27	0.041	ug/Kg	<u></u>	10/28/21 11:53	10/30/21 01:42	
Perfluoroheptanoic acid (PFHpA)	ND	0.27	0.051	ug/Kg	₩	10/28/21 11:53	10/30/21 01:42	•
Perfluorooctanoic acid (PFOA)	ND	0.27	0.071	ug/Kg	₩	10/28/21 11:53	10/30/21 01:42	•
Perfluorononanoic acid (PFNA)	ND	0.27	0.029	ug/Kg	₩	10/28/21 11:53	10/30/21 01:42	· · · · · · · · ·
Perfluorodecanoic acid (PFDA)	ND	0.27	0.064	ug/Kg	₩	10/28/21 11:53	10/30/21 01:42	•
Perfluoroundecanoic acid (PFUnA)	ND	0.27	0.056	ug/Kg	☼	10/28/21 11:53	10/30/21 01:42	
Perfluorododecanoic acid (PFDoA)	ND	0.27	0.040	ug/Kg	₩	10/28/21 11:53	10/30/21 01:42	,
Perfluorotridecanoic acid (PFTriA)	ND	0.27	0.028	ug/Kg	☼	10/28/21 11:53	10/30/21 01:42	
Perfluorotetradecanoic acid (PFTeA)	ND	0.27	0.049	ug/Kg	≎	10/28/21 11:53	10/30/21 01:42	
Perfluorobutanesulfonic acid (PFBS)	ND	0.27	0.051	ug/Kg	≎	10/28/21 11:53	10/30/21 01:42	
Perfluorohexanesulfonic acid (PFHxS)	ND	0.27	0.039	ug/Kg	₽	10/28/21 11:53	10/30/21 01:42	
Perfluorooctanesulfonic acid (PFOS)	1.0 I	0.27	0.057	ug/Kg	₩	10/28/21 11:53	10/30/21 01:42	•
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND	0.27	0.031	ug/Kg	₩	10/28/21 11:53	10/30/21 01:42	,
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND	0.27	0.064	ug/Kg	₩	10/28/21 11:53	10/30/21 01:42	•
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND	0.27		ug/Kg	<b>;</b>		10/30/21 01:42	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	0.27		ug/Kg	₩	10/28/21 11:53	10/30/21 01:42	,
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND	0.27		ug/Kg	₽		10/30/21 01:42	•
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.27	0.052	ug/Kg	₩	10/28/21 11:53	10/30/21 01:42	•
Isotope Dilution	%Recovery Qua	lifier Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	86	50 - 150				10/28/21 11:53	10/30/21 01:42	
13C4 PFHpA	96	50 - 150				10/28/21 11:53	10/30/21 01:42	1
13C4 PFOA	100	50 - 150				10/28/21 11:53	10/30/21 01:42	1
13C5 PFNA	104	50 - 150				10/28/21 11:53	10/30/21 01:42	
13C2 PFDA	102	50 - 150				10/28/21 11:53	10/30/21 01:42	:
13C2 PFUnA	100	50 - 150				10/28/21 11:53	10/30/21 01:42	
13C2 PFDoA	100	50 - 150				10/28/21 11:53	10/30/21 01:42	
13C2 PFTeDA	109	50 - 150				10/28/21 11:53	10/30/21 01:42	
13C3 PFBS	104	50 - 150				10/28/21 11:53	10/30/21 01:42	
1802 PFHxS	94	50 - 150				10/28/21 11:53	10/30/21 01:42	
13C4 PFOS	104	50 - 150				10/28/21 11:53	10/30/21 01:42	
d3-NMeFOSAA	113	50 - 150				10/28/21 11:53	10/30/21 01:42	
d5-NEtFOSAA	111	50 - 150				10/28/21 11:53	10/30/21 01:42	
13C3 HFPO-DA	88	50 - 150				10/28/21 11:53	10/30/21 01:42	•
General Chemistry								
Analyte	Result Qua			Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	26.2	0.1	0.1	%			10/28/21 12:18	•

0.1

0.1 %

73.8

**Percent Solids** 

10/28/21 12:18

Client: Shannon & Wilson, Inc Job ID: 320-80903-1 Project/Site: SG Soils WO#1

Client Sample ID: 21GST-DPSED-124

Lab Sample ID: 320-80903-19 Date Collected: 10/17/21 10:25 **Matrix: Solid** 

Date Received: 10/27/21 12:25 Percent Solids: 75.8

Method: EPA 537(Mod) - PFAS Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.25	0.039	ug/Kg	<del></del>	10/28/21 11:53	10/30/21 01:52	1
Perfluoroheptanoic acid (PFHpA)	ND		0.25	0.048	ug/Kg	₽	10/28/21 11:53	10/30/21 01:52	1
Perfluorooctanoic acid (PFOA)	ND		0.25	0.068	ug/Kg	₽	10/28/21 11:53	10/30/21 01:52	1
Perfluorononanoic acid (PFNA)	ND		0.25	0.028	ug/Kg	₩	10/28/21 11:53	10/30/21 01:52	1
Perfluorodecanoic acid (PFDA)	ND		0.25	0.061	ug/Kg	₩	10/28/21 11:53	10/30/21 01:52	1
Perfluoroundecanoic acid (PFUnA)	ND		0.25	0.054	ug/Kg	₩	10/28/21 11:53	10/30/21 01:52	1
Perfluorododecanoic acid (PFDoA)	ND		0.25	0.038	ug/Kg	₩	10/28/21 11:53	10/30/21 01:52	1
Perfluorotridecanoic acid (PFTriA)	ND		0.25	0.027	ug/Kg	₽	10/28/21 11:53	10/30/21 01:52	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.25	0.047	ug/Kg	₩	10/28/21 11:53	10/30/21 01:52	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.25	0.048	ug/Kg	₽	10/28/21 11:53	10/30/21 01:52	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.25	0.037	ug/Kg	₩	10/28/21 11:53	10/30/21 01:52	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.25	0.055	ug/Kg	₩	10/28/21 11:53	10/30/21 01:52	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.25	0.029	ug/Kg	₩	10/28/21 11:53	10/30/21 01:52	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.25	0.061	ug/Kg	₩	10/28/21 11:53	10/30/21 01:52	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.25	0.045	ug/Kg	₩	10/28/21 11:53	10/30/21 01:52	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.052	ug/Kg	₩	10/28/21 11:53	10/30/21 01:52	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.25	0.039	ug/Kg	₩	10/28/21 11:53	10/30/21 01:52	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.25	0.050	ug/Kg	₩	10/28/21 11:53	10/30/21 01:52	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	88		50 - 150				10/28/21 11:53	10/30/21 01:52	1
13C4 PFHpA	94		50 - 150				10/28/21 11:53	10/30/21 01:52	1
13C4 PFOA	104		50 - 150				10/28/21 11:53	10/30/21 01:52	1
13C5 PFNA	109		50 - 150				10/28/21 11:53	10/30/21 01:52	1
13C2 PFDA	99		50 - 150				10/28/21 11:53	10/30/21 01:52	1
13C2 PFUnA	96		50 - 150				10/28/21 11:53	10/30/21 01:52	1
13C2 PFDoA	98		50 - 150				10/28/21 11:53	10/30/21 01:52	1
13C2 PFTeDA	93		50 - 150				10/28/21 11:53	10/30/21 01:52	1
13C3 PFBS	100		50 - 150				10/28/21 11:53	10/30/21 01:52	1
1802 PFHxS	93		50 - 150				10/28/21 11:53	10/30/21 01:52	1
13C4 PFOS	103		50 - 150				10/28/21 11:53	10/30/21 01:52	1
d3-NMeFOSAA	101		50 - 150				10/28/21 11:53	10/30/21 01:52	1
d5-NEtFOSAA	108		50 - 150				10/28/21 11:53	10/30/21 01:52	1
13C3 HFPO-DA	91		50 - 150				10/28/21 11:53	10/30/21 01:52	1
General Chemistry							_		
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Percent Moisture Percent Solids	24.2 75.8		0.1 0.1	0.1 0.1				10/28/21 12:18 10/28/21 12:18	1

Client: Shannon & Wilson, Inc Job ID: 320-80903-1 Project/Site: SG Soils WO#1

Client Sample ID: 21GST-SED-005

Lab Sample ID: 320-80903-20 Date Collected: 10/17/21 11:20 **Matrix: Solid** 

Date Received: 10/27/21 12:25 **Percent Solids: 81.8** 

Method: EPA 537(Mod) - PFAS Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.23	0.035	ug/Kg	— <u></u>	10/28/21 11:53	10/30/21 02:23	1
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.043	ug/Kg	₩	10/28/21 11:53	10/30/21 02:23	•
Perfluorooctanoic acid (PFOA)	ND		0.23	0.060	ug/Kg	₩	10/28/21 11:53	10/30/21 02:23	•
Perfluorononanoic acid (PFNA)	ND		0.23	0.025	ug/Kg	☼	10/28/21 11:53	10/30/21 02:23	· · · · · · · · ·
Perfluorodecanoic acid (PFDA)	ND		0.23	0.055	ug/Kg	₩	10/28/21 11:53	10/30/21 02:23	
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.048	ug/Kg	₩	10/28/21 11:53	10/30/21 02:23	•
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.034	ug/Kg	₩	10/28/21 11:53	10/30/21 02:23	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.024	ug/Kg	₩	10/28/21 11:53	10/30/21 02:23	•
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.042	ug/Kg	☼	10/28/21 11:53	10/30/21 02:23	
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.043	ug/Kg	₩	10/28/21 11:53	10/30/21 02:23	
Perfluorohexanesulfonic acid (PFHxS)	ND		0.23	0.033	ug/Kg	₩	10/28/21 11:53	10/30/21 02:23	
Perfluorooctanesulfonic acid (PFOS)	ND		0.23	0.049	ug/Kg	₩	10/28/21 11:53	10/30/21 02:23	
N-methylperfluorooctanesulfonamidoa	ND		0.23	0.026	ug/Kg		10/28/21 11:53	10/30/21 02:23	
cetic acid (NMeFOSAA)									
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.23		ug/Kg	₩		10/30/21 02:23	,
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.23	0.040	ug/Kg	☼	10/28/21 11:53	10/30/21 02:23	•
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23	0.047	ug/Kg	₩	10/28/21 11:53	10/30/21 02:23	•
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.23	0.035	ug/Kg	₩	10/28/21 11:53	10/30/21 02:23	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.044	ug/Kg	☼	10/28/21 11:53	10/30/21 02:23	
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	93		50 - 150				10/28/21 11:53	10/30/21 02:23	
13C4 PFHpA	94		50 - 150				10/28/21 11:53	10/30/21 02:23	
13C4 PFOA	105		50 - 150				10/28/21 11:53	10/30/21 02:23	
13C5 PFNA	108		50 - 150				10/28/21 11:53	10/30/21 02:23	
13C2 PFDA	100		50 - 150				10/28/21 11:53	10/30/21 02:23	
13C2 PFUnA	93		50 - 150				10/28/21 11:53	10/30/21 02:23	
13C2 PFDoA	96		50 - 150				10/28/21 11:53	10/30/21 02:23	
13C2 PFTeDA	95		50 - 150				10/28/21 11:53	10/30/21 02:23	
13C3 PFBS	102		50 - 150				10/28/21 11:53	10/30/21 02:23	
1802 PFHxS	97		50 - 150				10/28/21 11:53	10/30/21 02:23	
13C4 PFOS	103		50 - 150				10/28/21 11:53	10/30/21 02:23	
d3-NMeFOSAA	117		50 - 150				10/28/21 11:53	10/30/21 02:23	
d5-NEtFOSAA	105		50 <sub>-</sub> 150				10/28/21 11:53	10/30/21 02:23	
13C3 HFPO-DA	91		50 - 150					10/30/21 02:23	
General Chemistry									
Amalusta	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Analyte									
Percent Moisture	18.2 81.8	<u> </u>	0.1	0.1				10/28/21 12:18	1

Client: Shannon & Wilson, Inc Job ID: 320-80903-1

Project/Site: SG Soils WO#1

Client Sample ID: 21GST-SED-004 Lab Sample ID: 320-80903-21

Date Collected: 10/17/21 11:35 **Matrix: Solid** Date Received: 10/27/21 12:25 Percent Solids: 87.1

Perfluorochaptanoic acid (PFHpA)	ed Ana	alyzed [	Dil Fac
Perfluorooctanoic acid (PFOA)   ND   0.21   0.055   ug/kg   0   10/28/2	11:53 10/30/2	21 02:34	1
Perfluorononanoic acid (PFNA)   ND   0.21   0.023   ug/Kg   0   10/28/2	11:53 10/30/2	21 02:34	1
Perfluorodecanoic acid (PFDA)   ND   0.21   0.050   ug/Kg   0   10/28/2	11:53 10/30/2	21 02:34	1
Perfluoroundecanoic acid (PFUnA)   ND   0.21   0.043   ug/Kg   0   10/28/2	11:53 10/30/2	21 02:34	1
Perfluorododecanoic acid (PFDA)	11:53 10/30/2	21 02:34	1
Perfluorotridecanoic acid (PFTriA)	11:53 10/30/2	21 02:34	1
Perfluorotetradecanoic acid (PFTeA)   ND   0.21   0.038   ug/kg   0.10/28/2	11:53 10/30/2	21 02:34	1
Perfluorobutanesulfonic acid (PFBS)   ND   0.21   0.039   ug/Kg   10/28/2	11:53 10/30/2	21 02:34	1
Perfluorocanesulfonic acid (PFHXS)   ND   0.21   0.030   ug/Kg   10/28/2	11:53 10/30/2	21 02:34	1
Perfluorooctanesulfonic acid (PFOS)   ND   0.21   0.044   ug/Kg   3   10/28/2	11:53 10/30/2	21 02:34	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA) N-ethylperfluorooctanesulfonamidoac etic acid (NMeFOSAA) N-ethylperfluorooctanesulfonamidoac etic acid (NMeFOSAA) 9-Chlorohexadecafluoro-3-oxanonan ND 0.21 0.030 ug/Kg 10/28/2 etic acid (NEtFOSAA) 9-Chlorohexadecafluoro-3-oxanonan ND 0.21 0.042 ug/Kg 10/28/2 eti-sulfonic acid Hexafluoropropylene Oxide Dimer ND 0.21 0.042 ug/Kg 10/28/2 Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxanudecan ND 0.21 0.032 ug/Kg 10/28/2 eti-sulfonic acid AB-Dioxa-3H-perfluorononanoic acid ND 0.21 0.040 ug/Kg 10/28/2 (ADONA)  Isotope Dilution %Recovery Qualifier Limits Prep 13C2 PFHxA 96 50 - 150 10/28/2 13C4 PFDA 101 50 - 150 10/28/2 13C4 PFDA 111 50 - 150 10/28/2 13C2 PFDA 111 50 - 150 10/28/2 13C2 PFDA 111 50 - 150 10/28/2 13C2 PFDA 110 50 - 150 10/28/2 13C2 PFDA 111 50 - 150 10/28/2 13C2 PFD	11:53 10/30/2	21 02:34	1
Cetic acid (NMeFOSAA)   N-ethylperfluorooctanesulfonamidoac   ND   0.21   0.050   ug/Kg   10/28/2	11:53 10/30/2	21 02:34	1
etic acid (NEIFOSAA) 9-Chlorohexadecafluoro-3-oxanonan 9-Chlorohexadecafluoro-3-oxanonan 9-Chlorohexadecafluoro-3-oxanonan 1-Chlorohexadecafluoro-3-oxanonan 1-Chlorohexadecafluoro-3-oxanundecan 1-Sulfonic acid Hexafluoropropylene Oxide Dimer ND 0.21 0.042 0.032 0.032 0.048 0.049 0.049 0.040 0.	11:53 10/30/2	21 02:34	1
e-1-sulfonic acid  Hexafluoropropylene Oxide Dimer ND 0.21 0.042 ug/Kg 10/28/2 Acid (HFPO-DA)  11-Chloroeicosafluoro-3-oxaundecan ND 0.21 0.032 ug/Kg 10/28/2 e-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid (ADD)  Isotope Dilution 8/Recovery Qualifier Limits Prep 13C2 PFHxA 96 50 - 150 10/28/2 13C4 PFHpA 101 50 - 150 10/28/2 13C4 PFHpA 101 50 - 150 10/28/2 13C5 PFNA 111 50 - 150 10/28/2 13C5 PFNA 111 50 - 150 10/28/2 13C2 PFDA 110 50 - 150 10/28/2 13C2 PFDA 100 50 - 150 10/28/2 13C2 PFDA 110 50 - 150 10/28/2 13C2 PFDA 100 50 - 150 10/28/2 13C2 PFDA 111 50 - 150 10/28/2 13C2 PFDA 100 50 - 150 10/28/2 13C2 PFDA 100 50 - 150 10/28/2 13C3 PFBS 114 50 - 150 10/28/2 13C3 PFBS 109 50 - 150 10/28/2 13C3 PFHxS 99 50 - 150 10/28/2 13C3 PFHxS 99 50 - 150 10/28/2 13C3 PFHxS 99 50 - 150 10/28/2 13C3 PFHxS 99 50 - 150 10/28/2 13C3 PFHxS 99 50 - 150 10/28/2 13C3 PFHxS 99 50 - 150 10/28/2 13C3 PFHxS 99 50 - 150 10/28/2 13C3 PFHxS 99 50 - 150 10/28/2 13C3 PFHxS 99 50 - 150 10/28/2 13C3 PFHxS 99 50 - 150 10/28/2 13C3 PFHxS 99 50 - 150 10/28/2 13C3 PFHxS 99 50 - 150 10/28/2 13C3 PFHxS 99 50 - 150 10/28/2 13C3 PFHxS 99 50 - 150 10/28/2	11:53 10/30/2	21 02:34	1
Acid (HFPO-DA)  11-Chloroeicosafluoro-3-oxaundecan ND 0.21 0.032 ug/Kg 10/28/2 e-1-sulfonic acid (AB-Dioxa-3H-perfluorononanoic acid (AB-DNA)  Isotope Dilution %Recovery Qualifier Limits Prep  13C2 PFHxA 96 50 -150 10/28/2  13C4 PFHpA 101 50 -150 10/28/2  13C4 PFOA 111 50 -150 10/28/2  13C5 PFNA 111 50 -150 10/28/2  13C2 PFDA 110 50 -150 10/28/2  13C2 PFDA 110 50 -150 10/28/2  13C2 PFDA 110 50 -150 10/28/2  13C2 PFDA 110 50 -150 10/28/2  13C2 PFDA 110 50 -150 10/28/2  13C2 PFDA 104 50 -150 10/28/2  13C2 PFDA 104 50 -150 10/28/2  13C2 PFDA 111 50 -150 10/28/2  13C2 PFDA 104 50 -150 10/28/2  13C2 PFDA 111 50 -150 10/28/2  13C2 PFDA 111 50 -150 10/28/2  13C2 PFDA 111 50 -150 10/28/2  13C3 PFBS 114 50 -150 10/28/2  13C4 PFOS 109 50 -150 10/28/2  d3-NMeFOSAA 113 50 -150 10/28/2  d3-NMeFOSAA 113 50 -150 10/28/2  d3-NMeFOSAA 113 50 -150 10/28/2  d3-NHeFOSAA 113 50 -150 10/28/2	11:53 10/30/2	21 02:34	1
e-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid (ADONA)  Isotope Dilution    Souther   Sou	11:53 10/30/2	21 02:34	1
ADDNA   Stotope Dilution   Street   Stotope Dilution   Stotop	11:53 10/30/2	21 02:34	1
13C2 PFHxA	11:53 10/30/2	21 02:34	1
13C4 PFHpA       101       50 - 150       10/28/2         13C4 PFOA       111       50 - 150       10/28/2         13C5 PFNA       111       50 - 150       10/28/2         13C2 PFDA       110       50 - 150       10/28/2         13C2 PFUnA       100       50 - 150       10/28/2         13C2 PFDOA       104       50 - 150       10/28/2         13C2 PFTEDA       111       50 - 150       10/28/2         13C3 PFBS       114       50 - 150       10/28/2         18O2 PFHxS       99       50 - 150       10/28/2         13C4 PFOS       109       50 - 150       10/28/2         d3-NMeFOSAA       113       50 - 150       10/28/2         d5-NEtFOSAA       113       50 - 150       10/28/2         13C3 HFPO-DA       99       50 - 150       10/28/2         General Chemistry         Analyte       Result       Qualifier       RL       MDL       Unit       D       Prep.	ed Ana	alyzed l	Dil Fac
13C4 PFOA     111     50 - 150     10/28/2       13C5 PFNA     111     50 - 150     10/28/2       13C2 PFDA     110     50 - 150     10/28/2       13C2 PFUnA     100     50 - 150     10/28/2       13C2 PFDOA     104     50 - 150     10/28/2       13C2 PFTEDA     111     50 - 150     10/28/2       13C3 PFBS     114     50 - 150     10/28/2       18O2 PFHxS     99     50 - 150     10/28/2       13C4 PFOS     109     50 - 150     10/28/2       d3-NMeFOSAA     113     50 - 150     10/28/2       d5-NEtFOSAA     113     50 - 150     10/28/2       d5-NEtFOSAA     113     50 - 150     10/28/2       General Chemistry     Result     Qualifier     RL     MDL     Unit     D     Prep.	11:53 10/30/2	/21 02:34	1
13C5 PFNA     111     50 - 150     10/28/2       13C2 PFDA     110     50 - 150     10/28/2       13C2 PFUnA     100     50 - 150     10/28/2       13C2 PFDOA     104     50 - 150     10/28/2       13C2 PFTeDA     111     50 - 150     10/28/2       13C3 PFBS     114     50 - 150     10/28/2       18O2 PFHxS     99     50 - 150     10/28/2       13C4 PFOS     109     50 - 150     10/28/2       d3-NMeFOSAA     113     50 - 150     10/28/2       d5-NEtFOSAA     113     50 - 150     10/28/2       d5-NEtFOSAA     113     50 - 150     10/28/2       General Chemistry       Analyte     Result     Qualifier     RL     MDL     Unit     D     Prep.	11:53 10/30/2	/21 02:34	1
13C2 PFDA       110       50 - 150       10/28/2         13C2 PFUnA       100       50 - 150       10/28/2         13C2 PFDOA       104       50 - 150       10/28/2         13C3 PFBDA       111       50 - 150       10/28/2         13C3 PFBS       114       50 - 150       10/28/2         18O2 PFHxS       99       50 - 150       10/28/2         13C4 PFOS       109       50 - 150       10/28/2         d3-NMeFOSAA       113       50 - 150       10/28/2         d5-NEtFOSAA       113       50 - 150       10/28/2         3C3 HFPO-DA       99       50 - 150       10/28/2         General Chemistry         Analyte       Result       Qualifier       RL       MDL       Unit       D       Prep.	11:53 10/30/2	/21 02:34	1
13C2 PFUnA       100       50 - 150       10/28/2         13C2 PFDoA       104       50 - 150       10/28/2         13C2 PFTeDA       111       50 - 150       10/28/2         13C3 PFBS       114       50 - 150       10/28/2         18O2 PFHxS       99       50 - 150       10/28/2         13C4 PFOS       109       50 - 150       10/28/2         d3-NMeFOSAA       113       50 - 150       10/28/2         d5-NEtFOSAA       113       50 - 150       10/28/2         3C3 HFPO-DA       99       50 - 150       10/28/2         General Chemistry         Analyte       Result       Qualifier       RL       MDL       Unit       D       Prep.	11:53 10/30/2	/21 02:34	1
13C2 PFDoA       104       50 - 150       10/28/2         13C2 PFTeDA       111       50 - 150       10/28/2         13C3 PFBS       114       50 - 150       10/28/2         18O2 PFHxS       99       50 - 150       10/28/2         13C4 PFOS       109       50 - 150       10/28/2         d3-NMeFOSAA       113       50 - 150       10/28/2         d5-NEtFOSAA       113       50 - 150       10/28/2         13C3 HFPO-DA       99       50 - 150       10/28/2         General Chemistry         Analyte       Result       Qualifier       RL       MDL       Unit       D       Prep.	11:53 10/30/2	/21 02:34	1
13C2 PFTeDA     111     50 - 150     10/28/2       13C3 PFBS     114     50 - 150     10/28/2       18O2 PFHxS     99     50 - 150     10/28/2       13C4 PFOS     109     50 - 150     10/28/2       d3-NMeFOSAA     113     50 - 150     10/28/2       d5-NEtFOSAA     113     50 - 150     10/28/2       13C3 HFPO-DA     99     50 - 150     10/28/2       General Chemistry       Analyte     Result     Qualifier     RL     MDL     Unit     D     Prep.	11:53 10/30/2	/21 02:34	1
13C3 PFBS     114     50 - 150     10/28/2       18O2 PFHxS     99     50 - 150     10/28/2       13C4 PFOS     109     50 - 150     10/28/2       d3-NMeFOSAA     113     50 - 150     10/28/2       d5-NEtFOSAA     113     50 - 150     10/28/2       13C3 HFPO-DA     99     50 - 150     10/28/2       General Chemistry       Analyte     Result Qualifier     RL     MDL Unit     D     Prep.	11:53 10/30/2	/21 02:34	1
1802 PFHxS     99     50 - 150     10/28/2       13C4 PFOS     109     50 - 150     10/28/2       d3-NMeFOSAA     113     50 - 150     10/28/2       d5-NEtFOSAA     113     50 - 150     10/28/2       13C3 HFPO-DA     99     50 - 150     10/28/2       General Chemistry       Analyte     Result Qualifier     RL     MDL Unit     D     Prep.	11:53 10/30/2	/21 02:34	1
13C4 PFOS       109       50 - 150       10/28/2         d3-NMeFOSAA       113       50 - 150       10/28/2         d5-NEtFOSAA       113       50 - 150       10/28/2         13C3 HFPO-DA       99       50 - 150       10/28/2         General Chemistry         Analyte       Result       Qualifier       RL       MDL       Unit       D       Prep.	11:53 10/30/2	/21 02:34	1
d3-NMeFOSAA     113     50 - 150     10/28/2       d5-NEtFOSAA     113     50 - 150     10/28/2       13C3 HFPO-DA     99     50 - 150     10/28/2       General Chemistry       Analyte     Result     Qualifier     RL     MDL     Unit     D     Prep.	11:53 10/30/2	/21 02:34	1
d5-NEtFOSAA     113     50 - 150     10/28/2       13C3 HFPO-DA     99     50 - 150     10/28/2       General Chemistry       Analyte     Result Qualifier     RL     MDL Unit     D     Prep.	11:53 10/30/2	/21 02:34	1
13C3 HFPO-DA       99       50 - 150       10/28/2         General Chemistry         Analyte       Result Qualifier       RL       MDL Unit       D       Prep.	11:53 10/30/2	/21 02:34	1
General Chemistry Analyte Result Qualifier RL MDL Unit D Prep.	11:53 10/30/2	/21 02:34	1
Analyte Result Qualifier RL MDL Unit D Prep	11:53 10/30/2	′21 02:34	1
			<b>.</b>
		•	Dil Fac
Percent Moisture         12.9         0.1         0.1 %           Percent Solids         87.1         0.1         0.1 %		/21 12:18 /21 12:18	1 1

Client: Shannon & Wilson, Inc Job ID: 320-80903-1 Project/Site: SG Soils WO#1

Client Sample ID: 21GST-SED-006 Lab Sample ID: 320-80903-22

Date Collected: 10/17/21 12:05 **Matrix: Solid** Date Received: 10/27/21 12:25 Percent Solids: 88.7

Method: EPA 537(Mod) - PFAS Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Perfluorohexanoic acid (PFHxA)	ND		0.21	0.032	ug/Kg	<u></u>	10/28/21 11:53	10/30/21 02:44	
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.039	ug/Kg	₩	10/28/21 11:53	10/30/21 02:44	
Perfluorooctanoic acid (PFOA)	ND		0.21	0.055	ug/Kg	₩	10/28/21 11:53	10/30/21 02:44	
Perfluorononanoic acid (PFNA)	ND		0.21	0.023	ug/Kg	₩	10/28/21 11:53	10/30/21 02:44	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.050	ug/Kg	₩	10/28/21 11:53	10/30/21 02:44	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.044	ug/Kg	₩	10/28/21 11:53	10/30/21 02:44	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.031	ug/Kg		10/28/21 11:53	10/30/21 02:44	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.022	ug/Kg	₩	10/28/21 11:53	10/30/21 02:44	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.038	ug/Kg	₩	10/28/21 11:53	10/30/21 02:44	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.039	ug/Kg		10/28/21 11:53	10/30/21 02:44	1
Perfluorohexanesulfonic acid	0.052	J	0.21	0.030	ug/Kg	₩	10/28/21 11:53	10/30/21 02:44	1
(PFHxS)	0.002				5 5				
Perfluorooctanesulfonic acid	0.62	1	0.21	0.045	ug/Kg	₩	10/28/21 11:53	10/30/21 02:44	1
(PFOS)									
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.21		ug/Kg			10/30/21 02:44	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.21	0.050	ug/Kg	₩	10/28/21 11:53	10/30/21 02:44	1
9-Chlorohexadecafluoro-3-oxanonan	ND		0.21	0.036	ug/Kg	₩	10/28/21 11:53	10/30/21 02:44	1
e-1-sulfonic acid									
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21		ug/Kg	☼		10/30/21 02:44	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.21		ug/Kg	₩	10/28/21 11:53	10/30/21 02:44	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.040	ug/Kg	₩	10/28/21 11:53	10/30/21 02:44	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	94		50 - 150				10/28/21 11:53	10/30/21 02:44	1
13C4 PFHpA	98		50 - 150				10/28/21 11:53	10/30/21 02:44	1
13C4 PFOA	111		50 - 150				10/28/21 11:53	10/30/21 02:44	1
13C5 PFNA	112		50 - 150				10/28/21 11:53	10/30/21 02:44	1
13C2 PFDA	99		50 <sub>-</sub> 150				10/28/21 11:53	10/30/21 02:44	1
13C2 PFUnA	88		50 <sub>-</sub> 150				10/28/21 11:53	10/30/21 02:44	1
13C2 PFDoA	82		50 - 150				10/28/21 11:53	10/30/21 02:44	
13C2 PFTeDA	92		50 <sub>-</sub> 150				10/28/21 11:53	10/30/21 02:44	1
13C3 PFBS	110		50 - 150					10/30/21 02:44	1
1802 PFHxS	97		50 - 150					10/30/21 02:44	
13C4 PFOS	107		50 - 150					10/30/21 02:44	1
d3-NMeFOSAA	82		50 - 150 50 - 150					10/30/21 02:44	1
d5-NEtFOSAA	84		50 - 150 50 - 150					10/30/21 02:44	
13C3 HFPO-DA	94		50 - 150 50 - 150					10/30/21 02:44	1
General Chemistry									
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	11.3		0.1	0.1	%			10/28/21 12:18	1
Percent Solids	88.7		0.1	0.1	0/			10/28/21 12:18	1

Client: Shannon & Wilson, Inc Job ID: 320-80903-1

Project/Site: SG Soils WO#1

Client Sample ID: 21GST-SED-007 Lab Sample ID: 320-80903-23

Date Collected: 10/17/21 12:25 **Matrix: Solid** Date Received: 10/27/21 12:25 Percent Solids: 79.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.23	0.036	ug/Kg	₩	10/28/21 11:53	10/30/21 02:55	•
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.045	ug/Kg	≎	10/28/21 11:53	10/30/21 02:55	1
Perfluorooctanoic acid (PFOA)	ND		0.23	0.062	ug/Kg	₽	10/28/21 11:53	10/30/21 02:55	1
Perfluorononanoic acid (PFNA)	ND		0.23	0.026	ug/Kg	₽	10/28/21 11:53	10/30/21 02:55	1
Perfluorodecanoic acid (PFDA)	ND		0.23	0.056	ug/Kg	₩	10/28/21 11:53	10/30/21 02:55	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.049	ug/Kg	₩	10/28/21 11:53	10/30/21 02:55	1
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.035	ug/Kg	₩	10/28/21 11:53	10/30/21 02:55	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.025	ug/Kg	₩	10/28/21 11:53	10/30/21 02:55	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.043	ug/Kg	₩	10/28/21 11:53	10/30/21 02:55	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.045	ug/Kg	₩	10/28/21 11:53	10/30/21 02:55	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.23	0.034	ug/Kg	₩	10/28/21 11:53	10/30/21 02:55	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.23	0.050	ug/Kg	₩	10/28/21 11:53	10/30/21 02:55	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.23	0.027	ug/Kg	☼	10/28/21 11:53	10/30/21 02:55	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.23	0.056	ug/Kg	₩	10/28/21 11:53	10/30/21 02:55	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.23	0.041	ug/Kg	₽	10/28/21 11:53	10/30/21 02:55	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23	0.048	ug/Kg	₽	10/28/21 11:53	10/30/21 02:55	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.23	0.036	ug/Kg	₩	10/28/21 11:53	10/30/21 02:55	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.046	ug/Kg	₩	10/28/21 11:53	10/30/21 02:55	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	87		50 - 150				10/28/21 11:53	10/30/21 02:55	1
13C4 PFHpA	93		50 - 150				10/28/21 11:53	10/30/21 02:55	1
13C4 PFOA	104		50 - 150				10/28/21 11:53	10/30/21 02:55	1
13C5 PFNA	104		50 - 150				10/28/21 11:53	10/30/21 02:55	1
13C2 PFDA	99		50 - 150				10/28/21 11:53	10/30/21 02:55	1
13C2 PFUnA	95		50 <sub>-</sub> 150				10/28/21 11:53	10/30/21 02:55	1
13C2 PFDoA	98		50 - 150				10/28/21 11:53	10/30/21 02:55	1
13C2 PFTeDA	92		50 <sub>-</sub> 150				10/28/21 11:53	10/30/21 02:55	1
13C3 PFBS	103		50 <sub>-</sub> 150				10/28/21 11:53	10/30/21 02:55	1
1802 PFHxS	90		50 <sub>-</sub> 150				10/28/21 11:53	10/30/21 02:55	1
13C4 PFOS	101		50 <sub>-</sub> 150				10/28/21 11:53	10/30/21 02:55	1
d3-NMeFOSAA	110		50 <sub>-</sub> 150					10/30/21 02:55	1
d5-NEtFOSAA	111		50 <sub>-</sub> 150					10/30/21 02:55	1
13C3 HFPO-DA	92		50 - 150					10/30/21 02:55	1
General Chemistry									
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	20.9		0.1	0.1	%			10/28/21 12:18	1
Percent Solids	79.1		0.1	0.1				10/28/21 12:18	1

Eurofins TestAmerica, Sacramento

Client: Shannon & Wilson, Inc Job ID: 320-80903-1

Project/Site: SG Soils WO#1

**General Chemistry** 

**Percent Moisture** 

**Percent Solids** 

Analyte

Client Sample ID: 21GST-SED-011 Lab Sample ID: 320-80903-24

Date Collected: 10/17/21 12:45 **Matrix: Solid** Date Received: 10/27/21 12:25 Percent Solids: 73.3

Analyte	Result Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND	0.25	0.038	ug/Kg	₩	10/28/21 11:53	10/30/21 03:05	
Perfluoroheptanoic acid (PFHpA)	ND	0.25	0.047	ug/Kg	☼	10/28/21 11:53	10/30/21 03:05	•
Perfluorooctanoic acid (PFOA)	ND	0.25	0.065	ug/Kg	₩	10/28/21 11:53	10/30/21 03:05	•
Perfluorononanoic acid (PFNA)	ND	0.25	0.027	ug/Kg	₩	10/28/21 11:53	10/30/21 03:05	
Perfluorodecanoic acid (PFDA)	ND	0.25	0.059	ug/Kg	₩	10/28/21 11:53	10/30/21 03:05	•
Perfluoroundecanoic acid (PFUnA)	ND	0.25	0.052	ug/Kg	₩	10/28/21 11:53	10/30/21 03:05	•
Perfluorododecanoic acid (PFDoA)	ND	0.25	0.037	ug/Kg	₩	10/28/21 11:53	10/30/21 03:05	
Perfluorotridecanoic acid (PFTriA)	ND	0.25	0.026	ug/Kg	₩	10/28/21 11:53	10/30/21 03:05	•
Perfluorotetradecanoic acid (PFTeA)	ND	0.25	0.046	ug/Kg	₩	10/28/21 11:53	10/30/21 03:05	•
Perfluorobutanesulfonic acid (PFBS)	ND	0.25	0.047	ug/Kg	₩	10/28/21 11:53	10/30/21 03:05	
Perfluorohexanesulfonic acid (PFHxS)	0.12 J	0.25	0.036	ug/Kg	₩	10/28/21 11:53	10/30/21 03:05	,
Perfluorooctanesulfonic acid (PFOS)	ND	0.25	0.053	ug/Kg	₩	10/28/21 11:53	10/30/21 03:05	•
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND	0.25		ug/Kg	₩	10/28/21 11:53	10/30/21 03:05	,
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND	0.25	0.059	ug/Kg	₩	10/28/21 11:53	10/30/21 03:05	,
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND	0.25	0.043	ug/Kg			10/30/21 03:05	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	0.25		ug/Kg	₩	10/28/21 11:53		•
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND	0.25		ug/Kg	₩		10/30/21 03:05	•
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.25	0.048	ug/Kg	☼	10/28/21 11:53	10/30/21 03:05	•
sotope Dilution	%Recovery Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	90	50 - 150				10/28/21 11:53	10/30/21 03:05	
13C4 PFHpA	95	50 - 150				10/28/21 11:53	10/30/21 03:05	
13C4 PFOA	106	50 - 150				10/28/21 11:53	10/30/21 03:05	
13C5 PFNA	111	50 - 150				10/28/21 11:53	10/30/21 03:05	•
13C2 PFDA	97	50 - 150				10/28/21 11:53	10/30/21 03:05	
13C2 PFUnA	93	50 - 150				10/28/21 11:53	10/30/21 03:05	
13C2 PFDoA	91	50 - 150				10/28/21 11:53	10/30/21 03:05	
13C2 PFTeDA	96	50 - 150				10/28/21 11:53	10/30/21 03:05	
13C3 PFBS	107	50 - 150				10/28/21 11:53	10/30/21 03:05	
1802 PFHxS	96	50 - 150				10/28/21 11:53	10/30/21 03:05	
13C4 PFOS	106	50 - 150				10/28/21 11:53	10/30/21 03:05	-
d3-NMeFOSAA	113	50 <sub>-</sub> 150				10/28/21 11:53	10/30/21 03:05	-
d5-NEtFOSAA	102	50 - 150				10/28/21 11:53	10/30/21 03:05	
13C3 HFPO-DA	90	50 <sub>-</sub> 150					10/30/21 03:05	

Prepared

RL

0.1

0.1

MDL Unit

0.1 %

0.1 %

Result Qualifier

26.7

73.3

Analyzed

10/28/21 12:18

10/28/21 12:18

Dil Fac

Client: Shannon & Wilson, Inc Job ID: 320-80903-1 Project/Site: SG Soils WO#1

Client Sample ID: 21GST-DPSED-011

Lab Sample ID: 320-80903-25 Date Collected: 10/17/21 12:55 **Matrix: Solid** 

Date Received: 10/27/21 12:25 Percent Solids: 83.9

Method: EPA 537(Mod) - PFAS Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Perfluorohexanoic acid (PFHxA)	ND		0.22	0.034	ug/Kg	<u></u>	10/28/21 11:53	10/30/21 03:16	
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.042	ug/Kg	₩	10/28/21 11:53	10/30/21 03:16	
Perfluorooctanoic acid (PFOA)	ND		0.22	0.058	ug/Kg	₩	10/28/21 11:53	10/30/21 03:16	
Perfluorononanoic acid (PFNA)	ND		0.22	0.024	ug/Kg	₩	10/28/21 11:53	10/30/21 03:16	
Perfluorodecanoic acid (PFDA)	ND		0.22	0.053	ug/Kg	₩	10/28/21 11:53	10/30/21 03:16	
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.046	ug/Kg	₩	10/28/21 11:53	10/30/21 03:16	
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.033	ug/Kg	₩	10/28/21 11:53	10/30/21 03:16	
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.023	ug/Kg	₩	10/28/21 11:53	10/30/21 03:16	
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.041	ug/Kg	₩	10/28/21 11:53	10/30/21 03:16	
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.042	ug/Kg	₩	10/28/21 11:53	10/30/21 03:16	
Perfluorohexanesulfonic acid (PFHxS)	ND		0.22	0.032	ug/Kg	₽	10/28/21 11:53	10/30/21 03:16	
Perfluorooctanesulfonic acid (PFOS)	ND		0.22	0.047	ug/Kg	₩	10/28/21 11:53	10/30/21 03:16	
N-methylperfluorooctanesulfonamidoa	ND		0.22	0.025	ug/Kg	₩	10/28/21 11:53	10/30/21 03:16	
cetic acid (NMeFOSAA)									
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.22		ug/Kg	₩		10/30/21 03:16	
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.22	0.038	ug/Kg	₩	10/28/21 11:53	10/30/21 03:16	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22	0.045	ug/Kg	₩	10/28/21 11:53	10/30/21 03:16	
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.22	0.034	ug/Kg	₽	10/28/21 11:53	10/30/21 03:16	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.043	ug/Kg	₩	10/28/21 11:53	10/30/21 03:16	
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	97		50 - 150				10/28/21 11:53	10/30/21 03:16	-
13C4 PFHpA	107		50 - 150				10/28/21 11:53	10/30/21 03:16	
13C4 PFOA	111		50 - 150				10/28/21 11:53	10/30/21 03:16	
13C5 PFNA	111		50 - 150				10/28/21 11:53	10/30/21 03:16	
13C2 PFDA	101		50 - 150				10/28/21 11:53	10/30/21 03:16	
13C2 PFUnA	104		50 - 150				10/28/21 11:53	10/30/21 03:16	
13C2 PFDoA	103		50 - 150				10/28/21 11:53	10/30/21 03:16	
13C2 PFTeDA	107		50 - 150				10/28/21 11:53	10/30/21 03:16	
13C3 PFBS	106		50 - 150				10/28/21 11:53	10/30/21 03:16	
1802 PFHxS	100		50 - 150				10/28/21 11:53	10/30/21 03:16	
13C4 PFOS	117		50 - 150				10/28/21 11:53	10/30/21 03:16	
d3-NMeFOSAA	121		50 - 150				10/28/21 11:53	10/30/21 03:16	
d5-NEtFOSAA	119		50 - 150				10/28/21 11:53	10/30/21 03:16	
13C3 HFPO-DA	96		50 - 150				10/28/21 11:53	10/30/21 03:16	
General Chemistry									
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
Demonstrations	16.1		0.1	0.1	%			10/28/21 12:18	
Percent Moisture Percent Solids	83.9		0.1	0.1				10/28/21 12:18	

Client: Shannon & Wilson, Inc Job ID: 320-80903-1 Project/Site: SG Soils WO#1

Client Sample ID: 21GST-SED-017

Lab Sample ID: 320-80903-26 Date Collected: 10/17/21 13:20 **Matrix: Solid** 

Date Received: 10/27/21 12:25 Percent Solids: 75.3

Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	0.093	J	0.26	0.040	ug/Kg	☆	10/28/21 11:53	10/30/21 03:26	•
Perfluoroheptanoic acid (PFHpA)	ND		0.26	0.050	ug/Kg	≎	10/28/21 11:53	10/30/21 03:26	1
Perfluorooctanoic acid (PFOA)	ND		0.26	0.069	ug/Kg	≎	10/28/21 11:53	10/30/21 03:26	1
Perfluorononanoic acid (PFNA)	ND		0.26	0.029	ug/Kg	☆	10/28/21 11:53	10/30/21 03:26	1
Perfluorodecanoic acid (PFDA)	ND		0.26	0.063	ug/Kg	☆	10/28/21 11:53	10/30/21 03:26	1
Perfluoroundecanoic acid (PFUnA)	ND		0.26	0.055	ug/Kg	₽	10/28/21 11:53	10/30/21 03:26	1
Perfluorododecanoic acid (PFDoA)	ND		0.26	0.039	ug/Kg	☼	10/28/21 11:53	10/30/21 03:26	1
Perfluorotridecanoic acid (PFTriA)	ND		0.26	0.027	ug/Kg	₩	10/28/21 11:53	10/30/21 03:26	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.26	0.048	ug/Kg	☼	10/28/21 11:53	10/30/21 03:26	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.26	0.050	ug/Kg	₩	10/28/21 11:53	10/30/21 03:26	1
Perfluorohexanesulfonic acid (PFHxS)	0.31		0.26	0.038	ug/Kg	₩	10/28/21 11:53	10/30/21 03:26	1
Perfluorooctanesulfonic acid (PFOS)	2.5		0.26	0.056	ug/Kg	₩	10/28/21 11:53	10/30/21 03:26	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.26	0.030	ug/Kg	₩	10/28/21 11:53	10/30/21 03:26	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.26	0.063	ug/Kg	₩	10/28/21 11:53	10/30/21 03:26	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.26	0.046	ug/Kg	₩	10/28/21 11:53	10/30/21 03:26	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.26	0.053	ug/Kg	☼	10/28/21 11:53	10/30/21 03:26	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.26	0.040	ug/Kg	₩	10/28/21 11:53	10/30/21 03:26	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.26	0.051	ug/Kg	₩	10/28/21 11:53	10/30/21 03:26	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	98		50 - 150				10/28/21 11:53	10/30/21 03:26	1
13C4 PFHpA	100		50 - 150				10/28/21 11:53	10/30/21 03:26	1
13C4 PFOA	111		50 - 150				10/28/21 11:53	10/30/21 03:26	1
13C5 PFNA	107		50 - 150				10/28/21 11:53	10/30/21 03:26	1
13C2 PFDA	108		50 - 150				10/28/21 11:53	10/30/21 03:26	1
13C2 PFUnA	100		50 - 150				10/28/21 11:53	10/30/21 03:26	1
13C2 PFDoA	105		50 - 150				10/28/21 11:53	10/30/21 03:26	1
13C2 PFTeDA	107		50 - 150				10/28/21 11:53	10/30/21 03:26	1
13C3 PFBS	105		50 - 150				10/28/21 11:53	10/30/21 03:26	1
1802 PFHxS	101		50 - 150				10/28/21 11:53	10/30/21 03:26	1
13C4 PFOS	109		50 - 150				10/28/21 11:53	10/30/21 03:26	1
d3-NMeFOSAA	116		50 - 150				10/28/21 11:53	10/30/21 03:26	1
d5-NEtFOSAA	117		50 <sub>-</sub> 150				10/28/21 11:53	10/30/21 03:26	1
13C3 HFPO-DA	96		50 - 150				10/28/21 11:53	10/30/21 03:26	1
General Chemistry						_			
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Percent Moisture	24.7		0.1	0.1				10/28/21 12:18	1
Percent Solids	75.3		0.1	0.1	%			10/28/21 12:18	1

Client: Shannon & Wilson, Inc Job ID: 320-80903-1 Project/Site: SG Soils WO#1

Client Sample ID: 21GST-DPSED-017 Lab Sample ID: 320-80903-27

Date Collected: 10/17/21 13:30 **Matrix: Solid** Date Received: 10/27/21 12:25 Percent Solids: 80.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	0.090	J	0.23	0.035	ug/Kg	<u></u>	10/28/21 11:53	10/30/21 03:36	1
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.043	ug/Kg	☼	10/28/21 11:53	10/30/21 03:36	1
Perfluorooctanoic acid (PFOA)	ND		0.23	0.060	ug/Kg	☼	10/28/21 11:53	10/30/21 03:36	1
Perfluorononanoic acid (PFNA)	ND		0.23	0.025	ug/Kg	₩	10/28/21 11:53	10/30/21 03:36	1
Perfluorodecanoic acid (PFDA)	ND		0.23	0.054	ug/Kg	☆	10/28/21 11:53	10/30/21 03:36	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.047	ug/Kg	₽	10/28/21 11:53	10/30/21 03:36	1
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.034	ug/Kg	₽	10/28/21 11:53	10/30/21 03:36	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.024	ug/Kg	₽	10/28/21 11:53	10/30/21 03:36	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.042	ug/Kg	☼	10/28/21 11:53	10/30/21 03:36	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.043	ug/Kg	₩	10/28/21 11:53	10/30/21 03:36	1
Perfluorohexanesulfonic acid (PFHxS)	0.18	J	0.23	0.033	ug/Kg	₽	10/28/21 11:53	10/30/21 03:36	1
Perfluorooctanesulfonic acid (PFOS)	1.6		0.23	0.048	ug/Kg	₩	10/28/21 11:53	10/30/21 03:36	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.23	0.026	ug/Kg	₩	10/28/21 11:53	10/30/21 03:36	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.23	0.054	ug/Kg	₩	10/28/21 11:53	10/30/21 03:36	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.23	0.039	ug/Kg	₩	10/28/21 11:53	10/30/21 03:36	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23	0.046	ug/Kg	☼	10/28/21 11:53	10/30/21 03:36	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.23	0.035	ug/Kg	₩	10/28/21 11:53	10/30/21 03:36	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.044	ug/Kg	₩	10/28/21 11:53	10/30/21 03:36	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	91		50 - 150				10/28/21 11:53	10/30/21 03:36	1
13C4 PFHpA	95		50 - 150				10/28/21 11:53	10/30/21 03:36	1
13C4 PFOA	102		50 - 150				10/28/21 11:53	10/30/21 03:36	1
13C5 PFNA	104		50 - 150				10/28/21 11:53	10/30/21 03:36	1
13C2 PFDA	95		50 - 150				10/28/21 11:53	10/30/21 03:36	1
13C2 PFUnA	91		50 - 150				10/28/21 11:53	10/30/21 03:36	1
13C2 PFDoA	90		50 - 150				10/28/21 11:53	10/30/21 03:36	1
13C2 PFTeDA	88		50 <sub>-</sub> 150				10/28/21 11:53	10/30/21 03:36	1
13C3 PFBS	102		50 <sub>-</sub> 150				10/28/21 11:53	10/30/21 03:36	1
1802 PFHxS	91		50 - 150				10/28/21 11:53	10/30/21 03:36	1
13C4 PFOS	103		50 <sub>-</sub> 150					10/30/21 03:36	1
d3-NMeFOSAA	113		50 - 150					10/30/21 03:36	1
d5-NEtFOSAA	103		50 - 150					10/30/21 03:36	
13C3 HFPO-DA	91		50 - 150					10/30/21 03:36	1
General Chemistry						_			<b></b> -
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	19.7		0.1	0.1				10/28/21 12:18	1
Percent Solids	80.3		0.1	0.1	%			10/28/21 12:18	1

Eurofins TestAmerica, Sacramento

11/5/2021

Client: Shannon & Wilson, Inc Job ID: 320-80903-1 Project/Site: SG Soils WO#1

Client Sample ID: 21GST-SED-019 Lab Sample ID: 320-80903-28

Date Collected: 10/17/21 13:50 **Matrix: Solid** Date Received: 10/27/21 12:25 Percent Solids: 74.8

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.24	0.037	ug/Kg	<del></del>	10/28/21 11:53	10/30/21 03:47	
Perfluoroheptanoic acid (PFHpA)	ND		0.24	0.045	ug/Kg	₽	10/28/21 11:53	10/30/21 03:47	
Perfluorooctanoic acid (PFOA)	ND		0.24	0.063	ug/Kg	☼	10/28/21 11:53	10/30/21 03:47	•
Perfluorononanoic acid (PFNA)	ND		0.24	0.026	ug/Kg	₽	10/28/21 11:53	10/30/21 03:47	
Perfluorodecanoic acid (PFDA)	ND		0.24	0.057	ug/Kg	₩	10/28/21 11:53	10/30/21 03:47	•
Perfluoroundecanoic acid (PFUnA)	ND		0.24	0.050	ug/Kg	₩	10/28/21 11:53	10/30/21 03:47	1
Perfluorododecanoic acid (PFDoA)	ND		0.24	0.035	ug/Kg	₩	10/28/21 11:53	10/30/21 03:47	
Perfluorotridecanoic acid (PFTriA)	ND		0.24	0.025	ug/Kg	₩	10/28/21 11:53	10/30/21 03:47	•
Perfluorotetradecanoic acid (PFTeA)	ND		0.24	0.044	ug/Kg	₩	10/28/21 11:53	10/30/21 03:47	
Perfluorobutanesulfonic acid (PFBS)	ND		0.24	0.045	ug/Kg		10/28/21 11:53	10/30/21 03:47	
Perfluorohexanesulfonic acid (PFHxS)	ND		0.24	0.034	ug/Kg	≎	10/28/21 11:53	10/30/21 03:47	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.24	0.051	ug/Kg	≎	10/28/21 11:53	10/30/21 03:47	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.24	0.027	ug/Kg	≎	10/28/21 11:53	10/30/21 03:47	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.24	0.057	ug/Kg	₩	10/28/21 11:53	10/30/21 03:47	1
9-Chlorohexadecafluoro-3-oxanonan	ND		0.24	0.041	ug/Kg	☼	10/28/21 11:53	10/30/21 03:47	•
e-1-sulfonic acid	<u></u>				<u></u>				
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.24		ug/Kg			10/30/21 03:47	•
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.24		ug/Kg	₽		10/30/21 03:47	•
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.24	0.046	ug/Kg	₽	10/28/21 11:53	10/30/21 03:47	•
lsotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	94		50 - 150				10/28/21 11:53	10/30/21 03:47	
13C4 PFHpA	96		50 - 150				10/28/21 11:53	10/30/21 03:47	
13C4 PFOA	108		50 - 150				10/28/21 11:53	10/30/21 03:47	
13C5 PFNA	103		50 - 150				10/28/21 11:53	10/30/21 03:47	:
13C2 PFDA	99		50 - 150				10/28/21 11:53	10/30/21 03:47	
13C2 PFUnA	96		50 - 150				10/28/21 11:53	10/30/21 03:47	
13C2 PFDoA	96		50 - 150				10/28/21 11:53	10/30/21 03:47	
13C2 PFTeDA	99		50 - 150				10/28/21 11:53	10/30/21 03:47	
13C3 PFBS	104		50 - 150				10/28/21 11:53	10/30/21 03:47	
1802 PFHxS	93		50 - 150				10/28/21 11:53	10/30/21 03:47	
13C4 PFOS	106		50 - 150				10/28/21 11:53	10/30/21 03:47	
d3-NMeFOSAA	109		50 - 150				10/28/21 11:53	10/30/21 03:47	
d5-NEtFOSAA	108		50 - 150				10/28/21 11:53	10/30/21 03:47	
13C3 HFPO-DA	95		50 - 150					10/30/21 03:47	
General Chemistry									
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	25.2		0.1	0.1				10/28/21 12:18	1
Percent Solids	74.8		0.1	0.1	%			10/28/21 12:18	1

11/5/2021

Client: Shannon & Wilson, Inc Job ID: 320-80903-1 Project/Site: SG Soils WO#1

Client Sample ID: 21GST-SED-016

Lab Sample ID: 320-80903-29 Date Collected: 10/17/21 14:10 **Matrix: Solid** 

Date Received: 10/27/21 12:25 Percent Solids: 77.3

Method: EPA 537(Mod) - PFAS Analyte		Qualifier	-15 RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.26	0.040	ug/Kg	— <u></u>		10/30/21 03:57	1
Perfluoroheptanoic acid (PFHpA)	ND		0.26		ug/Kg	₽	10/28/21 11:53	10/30/21 03:57	1
Perfluorooctanoic acid (PFOA)	ND		0.26	0.069		₽	10/28/21 11:53	10/30/21 03:57	1
Perfluorononanoic acid (PFNA)	ND		0.26	0.028	ug/Kg		10/28/21 11:53	10/30/21 03:57	1
Perfluorodecanoic acid (PFDA)	ND		0.26	0.062	ug/Kg	₽	10/28/21 11:53	10/30/21 03:57	1
Perfluoroundecanoic acid (PFUnA)	ND		0.26	0.054	ug/Kg	₽	10/28/21 11:53	10/30/21 03:57	1
Perfluorododecanoic acid (PFDoA)	ND		0.26	0.039	ug/Kg		10/28/21 11:53	10/30/21 03:57	1
Perfluorotridecanoic acid (PFTriA)	ND		0.26	0.027	ug/Kg	☼	10/28/21 11:53	10/30/21 03:57	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.26	0.048	ug/Kg	₩	10/28/21 11:53	10/30/21 03:57	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.26	0.049	ug/Kg	₩	10/28/21 11:53	10/30/21 03:57	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.26	0.038	ug/Kg	₩	10/28/21 11:53	10/30/21 03:57	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.26	0.056	ug/Kg	₽	10/28/21 11:53	10/30/21 03:57	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.26	0.030	ug/Kg	☼	10/28/21 11:53	10/30/21 03:57	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.26	0.062	ug/Kg	₩	10/28/21 11:53	10/30/21 03:57	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.26	0.045	ug/Kg	₩	10/28/21 11:53	10/30/21 03:57	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.26	0.053	ug/Kg	₩	10/28/21 11:53	10/30/21 03:57	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.26	0.040	ug/Kg	₩	10/28/21 11:53	10/30/21 03:57	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.26	0.050	ug/Kg	₩	10/28/21 11:53	10/30/21 03:57	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	95		50 - 150				10/28/21 11:53	10/30/21 03:57	1
13C4 PFHpA	100		50 - 150				10/28/21 11:53	10/30/21 03:57	1
13C4 PFOA	106		50 - 150				10/28/21 11:53	10/30/21 03:57	1
13C5 PFNA	111		50 - 150				10/28/21 11:53	10/30/21 03:57	1
13C2 PFDA	102		50 - 150				10/28/21 11:53	10/30/21 03:57	1
13C2 PFUnA	95		50 - 150				10/28/21 11:53	10/30/21 03:57	1
13C2 PFDoA	94		50 - 150				10/28/21 11:53	10/30/21 03:57	1
13C2 PFTeDA	104		50 - 150				10/28/21 11:53	10/30/21 03:57	1
13C3 PFBS	113		50 - 150				10/28/21 11:53	10/30/21 03:57	1
1802 PFHxS	96		50 - 150				10/28/21 11:53	10/30/21 03:57	1
13C4 PFOS	106		50 - 150				10/28/21 11:53	10/30/21 03:57	1
d3-NMeFOSAA	106		50 - 150				10/28/21 11:53	10/30/21 03:57	1
d5-NEtFOSAA	100		50 - 150				10/28/21 11:53	10/30/21 03:57	1
13C3 HFPO-DA	95		50 - 150				10/28/21 11:53	10/30/21 03:57	1
General Chemistry	_					_	_		
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Percent Moisture	22.7		0.1	0.1				10/28/21 12:18	1
Percent Solids	77.3		0.1	0.1	%			10/28/21 12:18	1

Eurofins TestAmerica, Sacramento

Client: Shannon & Wilson, Inc Job ID: 320-80903-1

Project/Site: SG Soils WO#1

Client Sample ID: 21GST-SED-013 Lab Sample ID: 320-80903-30

Date Collected: 10/17/21 14:45 **Matrix: Solid** Date Received: 10/27/21 12:25 Percent Solids: 38.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.46	0.071	ug/Kg	<u></u>	10/28/21 11:53	10/30/21 04:28	
Perfluoroheptanoic acid (PFHpA)	ND		0.46	0.087	ug/Kg	☼	10/28/21 11:53	10/30/21 04:28	1
Perfluorooctanoic acid (PFOA)	ND		0.46	0.12	ug/Kg	≎	10/28/21 11:53	10/30/21 04:28	1
Perfluorononanoic acid (PFNA)	ND		0.46	0.050	ug/Kg	₩	10/28/21 11:53	10/30/21 04:28	1
Perfluorodecanoic acid (PFDA)	ND		0.46	0.11	ug/Kg	≎	10/28/21 11:53	10/30/21 04:28	1
Perfluoroundecanoic acid (PFUnA)	ND		0.46	0.096	ug/Kg	₽	10/28/21 11:53	10/30/21 04:28	1
Perfluorododecanoic acid (PFDoA)	ND		0.46	0.069	ug/Kg	₽	10/28/21 11:53	10/30/21 04:28	1
Perfluorotridecanoic acid (PFTriA)	ND		0.46	0.048	ug/Kg	≎	10/28/21 11:53	10/30/21 04:28	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.46	0.085	ug/Kg	₽	10/28/21 11:53	10/30/21 04:28	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.46	0.087	ug/Kg	₽	10/28/21 11:53	10/30/21 04:28	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.46	0.066	ug/Kg	₩	10/28/21 11:53	10/30/21 04:28	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.46	0.098	ug/Kg	₩	10/28/21 11:53	10/30/21 04:28	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.46	0.053	ug/Kg	₽	10/28/21 11:53	10/30/21 04:28	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.46		ug/Kg	₩	10/28/21 11:53	10/30/21 04:28	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.46	0.080	ug/Kg	₩	10/28/21 11:53	10/30/21 04:28	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.46	0.094	ug/Kg	₩	10/28/21 11:53	10/30/21 04:28	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.46	0.071	ug/Kg	₩	10/28/21 11:53	10/30/21 04:28	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.46	0.089	ug/Kg	₩	10/28/21 11:53	10/30/21 04:28	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	85		50 - 150				10/28/21 11:53	10/30/21 04:28	1
13C4 PFHpA	90		50 - 150				10/28/21 11:53	10/30/21 04:28	1
13C4 PFOA	104		50 - 150				10/28/21 11:53	10/30/21 04:28	1
13C5 PFNA	105		50 - 150				10/28/21 11:53	10/30/21 04:28	1
13C2 PFDA	101		50 - 150				10/28/21 11:53	10/30/21 04:28	1
13C2 PFUnA	103		50 - 150				10/28/21 11:53	10/30/21 04:28	1
13C2 PFDoA	101		50 - 150				10/28/21 11:53	10/30/21 04:28	1
13C2 PFTeDA	97		50 - 150				10/28/21 11:53	10/30/21 04:28	1
13C3 PFBS	108		50 - 150				10/28/21 11:53	10/30/21 04:28	1
1802 PFHxS	97		50 - 150				10/28/21 11:53	10/30/21 04:28	1
13C4 PFOS	106		50 - 150				10/28/21 11:53	10/30/21 04:28	1
d3-NMeFOSAA	110		50 - 150				10/28/21 11:53	10/30/21 04:28	1
d5-NEtFOSAA	115		50 - 150				10/28/21 11:53	10/30/21 04:28	1
13C3 HFPO-DA	90		50 - 150				10/28/21 11:53	10/30/21 04:28	1
General Chemistry									
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	61.1		0.1	0.1	%			10/28/21 12:18	1
Percent Solids	38.9		0.1	0.1	0/			10/28/21 12:18	1

Client: Shannon & Wilson, Inc Job ID: 320-80903-1 Project/Site: SG Soils WO#1

Client Sample ID: 21GST-SED-014 Lab Sample ID: 320-80903-31

Date Collected: 10/17/21 15:05 **Matrix: Solid** Percent Solids: 70.6 Date Received: 10/27/21 12:25

Analyte	for QSM 5 Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.26	0.041	ug/Kg	<del>-</del>	10/28/21 11:53	10/30/21 04:39	1
Perfluoroheptanoic acid (PFHpA)	ND		0.26	0.050	ug/Kg	₽	10/28/21 11:53	10/30/21 04:39	1
Perfluorooctanoic acid (PFOA)	ND		0.26	0.069	ug/Kg	₩	10/28/21 11:53	10/30/21 04:39	1
Perfluorononanoic acid (PFNA)	ND		0.26	0.029	ug/Kg	₽	10/28/21 11:53	10/30/21 04:39	1
Perfluorodecanoic acid (PFDA)	ND		0.26	0.063	ug/Kg	₩	10/28/21 11:53	10/30/21 04:39	1
Perfluoroundecanoic acid (PFUnA)	ND		0.26	0.055	ug/Kg	₽	10/28/21 11:53	10/30/21 04:39	1
Perfluorododecanoic acid (PFDoA)	ND		0.26	0.039	ug/Kg	₽	10/28/21 11:53	10/30/21 04:39	1
Perfluorotridecanoic acid (PFTriA)	ND		0.26	0.028	ug/Kg	☼	10/28/21 11:53	10/30/21 04:39	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.26	0.048	ug/Kg	₽	10/28/21 11:53	10/30/21 04:39	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.26	0.050	ug/Kg	₽	10/28/21 11:53	10/30/21 04:39	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.26	0.038	ug/Kg	₩	10/28/21 11:53	10/30/21 04:39	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.26	0.056	ug/Kg	₩	10/28/21 11:53	10/30/21 04:39	1
N-methylperfluorooctanesulfonamidoa	ND		0.26	0.030	ug/Kg	₽	10/28/21 11:53	10/30/21 04:39	1
cetic acid (NMeFOSAA)									
N-ethylperfluorooctanesulfonamidoac	ND		0.26	0.063	ug/Kg	₩	10/28/21 11:53	10/30/21 04:39	1
etic acid (NEtFOSAA)	ND		0.00	0.040			40/00/04 44-50	40/20/04 04:20	4
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.26	0.046	ug/Kg	₩	10/28/21 11:53	10/30/21 04:39	1
Hexafluoropropylene Oxide Dimer	ND		0.26	0.054	ug/Kg		10/28/21 11:53	10/30/21 04:39	1
Acid (HFPO-DA)	112		0.20	0.001	agritg	~	10/20/21 11:00	10/00/21 01:00	•
11-Chloroeicosafluoro-3-oxaundecan	ND		0.26	0.041	ug/Kg	☼	10/28/21 11:53	10/30/21 04:39	1
e-1-sulfonic acid									
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.26	0.051	ug/Kg	₩	10/28/21 11:53	10/30/21 04:39	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	87		50 - 150				10/28/21 11:53	10/30/21 04:39	1
13C4 PFHpA	97		50 - 150				10/28/21 11:53	10/30/21 04:39	1
13C4 PFOA	102		50 - 150				10/28/21 11:53	10/30/21 04:39	1
13C5 PFNA	105		50 - 150				10/28/21 11:53	10/30/21 04:39	1
13C2 PFDA	106		50 - 150				10/28/21 11:53	10/30/21 04:39	1
13C2 PFUnA	101		50 - 150				10/28/21 11:53	10/30/21 04:39	1
13C2 PFDoA	90		50 - 150				10/28/21 11:53	10/30/21 04:39	1
13C2 PFTeDA	95		50 - 150				10/28/21 11:53	10/30/21 04:39	1
13C3 PFBS	105		50 - 150				10/28/21 11:53	10/30/21 04:39	1
1802 PFHxS	99		50 - 150				10/28/21 11:53	10/30/21 04:39	1
13C4 PFOS	105		50 - 150				10/28/21 11:53	10/30/21 04:39	1
d3-NMeFOSAA	103		50 - 150				10/28/21 11:53	10/30/21 04:39	1
d5-NEtFOSAA	99		50 - 150				10/28/21 11:53	10/30/21 04:39	1
13C3 HFPO-DA	91		50 - 150				10/28/21 11:53	10/30/21 04:39	1
General Chemistry									
Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	29.4		0.1	0.1	%	_		10/28/21 12:18	1
Percent Solids	70.6		0.1	0.1	0/2			10/28/21 12:18	1

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Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

Client Sample ID: 21GST SED 016

Date Received: 10/27/21 12:25

Client Sample ID: 21GST-SED-015

Date Collected: 10/17/21 15:20

Lab Sample ID: 320-80903-32

Matrix: Solid

Matrix: Solid
Percent Solids: 52.1

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 Analyte Result Qualifier RL **MDL** Unit D Prepared Analyzed Dil Fac Perfluorohexanoic acid (PFHxA) ND 0.35 0.054 ug/Kg 10/28/21 11:53 10/30/21 04:49 ND Perfluoroheptanoic acid (PFHpA) 0.35 0.066 ug/Kg 10/28/21 11:53 10/30/21 04:49 Perfluorooctanoic acid (PFOA) ND 0.35 0.092 ug/Kg 10/28/21 11:53 10/30/21 04:49 Perfluorononanoic acid (PFNA) ND 10/28/21 11:53 10/30/21 04:49 0.35 0.038 ug/Kg Perfluorodecanoic acid (PFDA) ND 0.35 0.083 ug/Kg 10/28/21 11:53 10/30/21 04:49 Perfluoroundecanoic acid (PFUnA) ND 0.35 0.073 ug/Kg 10/28/21 11:53 10/30/21 04:49 Perfluorododecanoic acid (PFDoA) ND 0.35 0.052 ug/Kg 10/28/21 11:53 10/30/21 04:49 Perfluorotridecanoic acid (PFTriA) ND 0.35 0.036 ug/Kg 10/28/21 11:53 10/30/21 04:49 Perfluorotetradecanoic acid (PFTeA) ND 0.35 0.064 ug/Kg 10/28/21 11:53 10/30/21 04:49 Perfluorobutanesulfonic acid (PFBS) ND 0.35 0.066 ug/Kg 10/28/21 11:53 10/30/21 04:49 Perfluorohexanesulfonic acid (PFHxS) ND 0.35 0.050 ug/Kg 10/28/21 11:53 10/30/21 04:49 Perfluorooctanesulfonic acid 0.35 0.074 ug/Kg 10/28/21 11:53 10/30/21 04:49 0.92 I (PFOS) N-methylperfluorooctanesulfona 0.040 ug/Kg 10/28/21 11:53 10/30/21 04:49 0.059 J 0.35 midoacetic acid (NMeFOSAA) N-ethylperfluorooctanesulfonamidoac ND 0.35 0.083 ug/Kg 10/28/21 11:53 10/30/21 04:49 etic acid (NEtFOSAA) ND 0.35 0.061 ug/Kg 10/28/21 11:53 10/30/21 04:49 9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid ND 10/28/21 11:53 10/30/21 04:49 0.35 0.071 ug/Kg Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaundecan ND 0.35 0.054 ug/Kg 10/28/21 11:53 10/30/21 04:49 e-1-sulfonic acid ND 0.35 0.068 ug/Kg 10/28/21 11:53 10/30/21 04:49 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) C

(ADONA)					
Isotope Dilution	%Recovery Qualifie	er Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	84	50 - 150	10/28/21 11:53	10/30/21 04:49	1
13C4 PFHpA	89	50 <sub>-</sub> 150	10/28/21 11:53	10/30/21 04:49	1
13C4 PFOA	106	50 <sub>-</sub> 150	10/28/21 11:53	10/30/21 04:49	1
13C5 PFNA	108	50 - 150	10/28/21 11:53	10/30/21 04:49	1
13C2 PFDA	99	50 <sub>-</sub> 150	10/28/21 11:53	10/30/21 04:49	1
13C2 PFUnA	91	50 - 150	10/28/21 11:53	10/30/21 04:49	1
13C2 PFDoA	100	50 - 150	10/28/21 11:53	10/30/21 04:49	1
13C2 PFTeDA	105	50 <sub>-</sub> 150	10/28/21 11:53	10/30/21 04:49	1
13C3 PFBS	104	50 <sub>-</sub> 150	10/28/21 11:53	10/30/21 04:49	1
18O2 PFHxS	95	50 - 150	10/28/21 11:53	10/30/21 04:49	1
13C4 PFOS	103	50 - 150	10/28/21 11:53	10/30/21 04:49	1
d3-NMeFOSAA	112	50 <sub>-</sub> 150	10/28/21 11:53	10/30/21 04:49	1
d5-NEtFOSAA	109	50 - 150	10/28/21 11:53	10/30/21 04:49	1
13C3 HFPO-DA	87	50 <sub>-</sub> 150	10/28/21 11:53	10/30/21 04:49	1

General Chemistry								
Analyte	Result Qualifier	r RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	47.9	0.1	0.1	%			10/28/21 12:18	1
Percent Solids	52.1	0.1	0.1	%			10/28/21 12:18	1

Eurofins TestAmerica, Sacramento

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Client: Shannon & Wilson, Inc Job ID: 320-80903-1

Project/Site: SG Soils WO#1

Client Sample ID: 21GST-SED-018 Lab Sample ID: 320-80903-33

Date Collected: 10/17/21 15:45 **Matrix: Solid** Date Received: 10/27/21 12:25 Percent Solids: 68.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.27	0.042	ug/Kg	<del>-</del>	10/28/21 11:53	10/30/21 05:00	1
Perfluoroheptanoic acid (PFHpA)	ND		0.27	0.051	ug/Kg	₩	10/28/21 11:53	10/30/21 05:00	1
Perfluorooctanoic acid (PFOA)	ND		0.27	0.071	ug/Kg	₩	10/28/21 11:53	10/30/21 05:00	1
Perfluorononanoic acid (PFNA)	ND		0.27	0.030	ug/Kg	₩	10/28/21 11:53	10/30/21 05:00	1
Perfluorodecanoic acid (PFDA)	ND		0.27	0.065	ug/Kg	₩	10/28/21 11:53	10/30/21 05:00	1
Perfluoroundecanoic acid (PFUnA)	ND		0.27	0.056	ug/Kg	₩	10/28/21 11:53	10/30/21 05:00	1
Perfluorododecanoic acid (PFDoA)	ND		0.27	0.040	ug/Kg	₩	10/28/21 11:53	10/30/21 05:00	1
Perfluorotridecanoic acid (PFTriA)	ND		0.27	0.028	ug/Kg	₩	10/28/21 11:53	10/30/21 05:00	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.27	0.050	ug/Kg	₩	10/28/21 11:53	10/30/21 05:00	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.27	0.051	ug/Kg	₩	10/28/21 11:53	10/30/21 05:00	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.27	0.039	ug/Kg	₩	10/28/21 11:53	10/30/21 05:00	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.27	0.058	ug/Kg	₩	10/28/21 11:53	10/30/21 05:00	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.27	0.031	ug/Kg	☼	10/28/21 11:53	10/30/21 05:00	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.27	0.065	ug/Kg	₩	10/28/21 11:53	10/30/21 05:00	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.27	0.047	ug/Kg	₩	10/28/21 11:53	10/30/21 05:00	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.27	0.055	ug/Kg	₽	10/28/21 11:53	10/30/21 05:00	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.27	0.042	ug/Kg	₩	10/28/21 11:53	10/30/21 05:00	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.27	0.052	ug/Kg	₩	10/28/21 11:53	10/30/21 05:00	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	89		50 - 150				10/28/21 11:53	10/30/21 05:00	1
13C4 PFHpA	93		50 - 150				10/28/21 11:53	10/30/21 05:00	1
13C4 PFOA	103		50 - 150				10/28/21 11:53	10/30/21 05:00	1
13C5 PFNA	104		50 - 150				10/28/21 11:53	10/30/21 05:00	1
13C2 PFDA	104		50 - 150				10/28/21 11:53	10/30/21 05:00	1
13C2 PFUnA	95		50 - 150				10/28/21 11:53	10/30/21 05:00	1
13C2 PFDoA	102		50 - 150				10/28/21 11:53	10/30/21 05:00	1
13C2 PFTeDA	102		50 - 150				10/28/21 11:53	10/30/21 05:00	1
13C3 PFBS	106		50 - 150				10/28/21 11:53	10/30/21 05:00	1
1802 PFHxS	94		50 - 150				10/28/21 11:53	10/30/21 05:00	1
13C4 PFOS	104		50 - 150				10/28/21 11:53	10/30/21 05:00	1
d3-NMeFOSAA	110		50 - 150				10/28/21 11:53	10/30/21 05:00	1
d5-NEtFOSAA	109		50 - 150				10/28/21 11:53	10/30/21 05:00	1
13C3 HFPO-DA	101		50 - 150				10/28/21 11:53	10/30/21 05:00	1
General Chemistry		O a a li fi			1114	_	<b>.</b>	A 1	D.: -
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	31.7		0.1	0.1				10/28/21 12:18	1
Percent Solids	68.3		0.1	0.1	%			10/28/21 12:18	1

Client: Shannon & Wilson, Inc Job ID: 320-80903-1 Project/Site: SG Soils WO#1

Client Sample ID: 21GST-SED-118

Lab Sample ID: 320-80903-34 Date Collected: 10/17/21 15:35 **Matrix: Solid** 

Percent Solids: 72.5 Date Received: 10/27/21 12:25

Method: EPA 537(Mod) - PFAS Analyte	for QSM 5.3 Result(	•	·15 RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.26		ug/Kg	<u>_</u>	10/28/21 18:22		
Perfluoroheptanoic acid (PFHpA)	ND		0.26		ug/Kg	₩	10/28/21 18:22		
Perfluorooctanoic acid (PFOA)	ND		0.26		ug/Kg	☼	10/28/21 18:22	10/30/21 05:19	1
Perfluorononanoic acid (PFNA)	ND		0.26		ug/Kg		10/28/21 18:22	10/30/21 05:19	1
Perfluorodecanoic acid (PFDA)	ND		0.26		ug/Kg	₩		10/30/21 05:19	1
Perfluoroundecanoic acid (PFUnA)	ND		0.26		ug/Kg	÷	10/28/21 18:22		1
Perfluorododecanoic acid (PFDoA)	ND		0.26		ug/Kg			10/30/21 05:19	1
Perfluorotridecanoic acid (PFTriA)	ND		0.26		ug/Kg	₩		10/30/21 05:19	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.26		ug/Kg	÷	10/28/21 18:22	10/30/21 05:19	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.26		ug/Kg		10/28/21 18:22	10/30/21 05:19	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.26		ug/Kg	÷		10/30/21 05:19	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.26		ug/Kg	÷	10/28/21 18:22		1
N-methylperfluorooctanesulfonamidoa	ND		0.26		ug/Kg		10/28/21 18:22		
cetic acid (NMeFOSAA)	.,,,		0.20	0.000	~3'''8		. 5, 25, 21, 15, 22	. 5, 55, 21, 55, 10	
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.26	0.064	ug/Kg	₩	10/28/21 18:22	10/30/21 05:19	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.26	0.046	ug/Kg	₩	10/28/21 18:22	10/30/21 05:19	•
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.26	0.054	ug/Kg	₽	10/28/21 18:22	10/30/21 05:19	
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.26	0.041	ug/Kg	₩	10/28/21 18:22	10/30/21 05:19	,
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.26	0.052	ug/Kg	₩	10/28/21 18:22	10/30/21 05:19	,
Isotope Dilution	%Recovery (	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	109		50 - 150				10/28/21 18:22	10/30/21 05:19	•
13C4 PFHpA	118		50 - 150				10/28/21 18:22	10/30/21 05:19	
13C4 PFOA	117		50 - 150				10/28/21 18:22	10/30/21 05:19	1
13C5 PFNA	117		50 - 150				10/28/21 18:22	10/30/21 05:19	1
13C2 PFDA	113		50 - 150				10/28/21 18:22	10/30/21 05:19	1
13C2 PFUnA	111		50 - 150				10/28/21 18:22	10/30/21 05:19	1
13C2 PFDoA	123		50 - 150				10/28/21 18:22	10/30/21 05:19	1
13C2 PFTeDA	129		50 - 150				10/28/21 18:22	10/30/21 05:19	1
13C3 PFBS	124		50 - 150				10/28/21 18:22	10/30/21 05:19	1
1802 PFHxS	112		50 - 150				10/28/21 18:22	10/30/21 05:19	1
13C4 PFOS	112		50 - 150				10/28/21 18:22	10/30/21 05:19	1
d3-NMeFOSAA	112		50 - 150				10/28/21 18:22	10/30/21 05:19	1
d5-NEtFOSAA	113		50 - 150				10/28/21 18:22	10/30/21 05:19	
13C3 HFPO-DA	105		50 - 150					10/30/21 05:19	•
General Chemistry									
Analyte	Result (	Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Percent Moisture	27.5		0.1	0.1				10/28/21 12:18	1
Percent Solids	72.5				%			10/28/21 12:18	

Eurofins TestAmerica, Sacramento

Client: Shannon & Wilson, Inc Job ID: 320-80903-1

Project/Site: SG Soils WO#1

Client Sample ID: 21GST-SED-020 Lab Sample ID: 320-80903-35

Date Collected: 10/17/21 16:15 **Matrix: Solid** Date Received: 10/27/21 12:25 Percent Solids: 79.1

Method: EPA 537(Mod) - PFAS Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.22	0.035	ug/Kg	— <u></u>	10/28/21 18:22	10/30/21 05:29	1
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.043	ug/Kg	☼	10/28/21 18:22	10/30/21 05:29	1
Perfluorooctanoic acid (PFOA)	ND		0.22	0.059	ug/Kg	₩	10/28/21 18:22	10/30/21 05:29	1
Perfluorononanoic acid (PFNA)	ND		0.22	0.025	ug/Kg	₩	10/28/21 18:22	10/30/21 05:29	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.054	ug/Kg	₩	10/28/21 18:22	10/30/21 05:29	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.047	ug/Kg	₩	10/28/21 18:22	10/30/21 05:29	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.034	ug/Kg	₽	10/28/21 18:22	10/30/21 05:29	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.023	ug/Kg	₽	10/28/21 18:22	10/30/21 05:29	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.041	ug/Kg	₽	10/28/21 18:22	10/30/21 05:29	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.043	ug/Kg	₽	10/28/21 18:22	10/30/21 05:29	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.22	0.032	ug/Kg	₩	10/28/21 18:22	10/30/21 05:29	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.22	0.048	ug/Kg	₩	10/28/21 18:22	10/30/21 05:29	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.22	0.026	ug/Kg	₩	10/28/21 18:22	10/30/21 05:29	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.22	0.054	ug/Kg	₩	10/28/21 18:22	10/30/21 05:29	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.22	0.039	ug/Kg	₽	10/28/21 18:22	10/30/21 05:29	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22	0.046	ug/Kg	₽	10/28/21 18:22	10/30/21 05:29	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.22	0.035	ug/Kg	₩	10/28/21 18:22	10/30/21 05:29	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.044	ug/Kg	₩	10/28/21 18:22	10/30/21 05:29	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	99		50 - 150				10/28/21 18:22	10/30/21 05:29	1
13C4 PFHpA	103		50 - 150				10/28/21 18:22	10/30/21 05:29	1
13C4 PFOA	110		50 - 150				10/28/21 18:22	10/30/21 05:29	1
13C5 PFNA	100		50 - 150				10/28/21 18:22	10/30/21 05:29	1
13C2 PFDA	100		50 - 150				10/28/21 18:22	10/30/21 05:29	1
13C2 PFUnA	102		50 - 150				10/28/21 18:22	10/30/21 05:29	1
13C2 PFDoA	105		50 - 150				10/28/21 18:22	10/30/21 05:29	1
13C2 PFTeDA	102		50 - 150				10/28/21 18:22	10/30/21 05:29	1
13C3 PFBS	108		50 - 150				10/28/21 18:22	10/30/21 05:29	1
1802 PFHxS	95		50 - 150				10/28/21 18:22	10/30/21 05:29	1
13C4 PFOS	98		50 - 150				10/28/21 18:22	10/30/21 05:29	1
d3-NMeFOSAA	100		50 - 150				10/28/21 18:22	10/30/21 05:29	1
d5-NEtFOSAA	94		50 - 150				10/28/21 18:22	10/30/21 05:29	1
13C3 HFPO-DA	95		50 - 150				10/28/21 18:22	10/30/21 05:29	1
-									
General Chemistry	Dec. 16	Ovelifier	DI	MD:	1114	_	Dunana d	A mah mad	DUE
Analyte		Qualifier	RL	MDL		<u>D</u>	Prepared	Analyzed	Dil Fac
	Result 20.9 79.1	Qualifier	RL 0.1 0.1	MDL 0.1 0.1	%	<u>D</u>	Prepared	Analyzed 10/28/21 12:18 10/28/21 12:18	Dil Fac

Client: Shannon & Wilson, Inc Job ID: 320-80903-1 Project/Site: SG Soils WO#1

Client Sample ID: 21GST-SED-021

Lab Sample ID: 320-80903-36 Date Collected: 10/17/21 16:50 **Matrix: Solid** 

Date Received: 10/27/21 12:25 Percent Solids: 74.4

Method: EPA 537(Mod) - PFAS Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.25	0.039	ug/Kg		10/28/21 18:22	10/30/21 05:39	1
Perfluoroheptanoic acid (PFHpA)	ND		0.25	0.048	ug/Kg	₩	10/28/21 18:22	10/30/21 05:39	
Perfluorooctanoic acid (PFOA)	ND		0.25	0.067	ug/Kg	₩	10/28/21 18:22	10/30/21 05:39	•
Perfluorononanoic acid (PFNA)	ND		0.25	0.028	ug/Kg	₽	10/28/21 18:22	10/30/21 05:39	
Perfluorodecanoic acid (PFDA)	ND		0.25	0.061	ug/Kg	₩	10/28/21 18:22	10/30/21 05:39	
Perfluoroundecanoic acid (PFUnA)	ND		0.25	0.053	ug/Kg	₩	10/28/21 18:22	10/30/21 05:39	•
Perfluorododecanoic acid (PFDoA)	ND		0.25	0.038	ug/Kg	₽	10/28/21 18:22	10/30/21 05:39	1
Perfluorotridecanoic acid (PFTriA)	ND		0.25	0.027	ug/Kg	₩	10/28/21 18:22	10/30/21 05:39	•
Perfluorotetradecanoic acid (PFTeA)	ND		0.25	0.047	ug/Kg	₩	10/28/21 18:22	10/30/21 05:39	
Perfluorobutanesulfonic acid (PFBS)	ND		0.25	0.048	ug/Kg	₩	10/28/21 18:22	10/30/21 05:39	,
Perfluorohexanesulfonic acid (PFHxS)	ND		0.25	0.037	ug/Kg	₽	10/28/21 18:22	10/30/21 05:39	
Perfluorooctanesulfonic acid (PFOS)	ND		0.25	0.054	ug/Kg	₩	10/28/21 18:22	10/30/21 05:39	
N-methylperfluorooctanesulfonamidoa	ND		0.25	0.029	ug/Kg	₩	10/28/21 18:22	10/30/21 05:39	1
cetic acid (NMeFOSAA)									
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.25	0.061	ug/Kg	₩	10/28/21 18:22	10/30/21 05:39	,
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.25	0.044	ug/Kg	☼	10/28/21 18:22	10/30/21 05:39	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.052	ug/Kg	₩	10/28/21 18:22	10/30/21 05:39	
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.25	0.039	ug/Kg	₩	10/28/21 18:22	10/30/21 05:39	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.25	0.049	ug/Kg	₩	10/28/21 18:22	10/30/21 05:39	
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	113		50 - 150				10/28/21 18:22	10/30/21 05:39	
13C4 PFHpA	118		50 - 150				10/28/21 18:22	10/30/21 05:39	
13C4 PFOA	128		50 - 150				10/28/21 18:22	10/30/21 05:39	
13C5 PFNA	118		50 - 150				10/28/21 18:22	10/30/21 05:39	
13C2 PFDA	118		50 - 150				10/28/21 18:22	10/30/21 05:39	
13C2 PFUnA	121		50 <sub>-</sub> 150				10/28/21 18:22	10/30/21 05:39	
13C2 PFDoA	128		50 - 150				10/28/21 18:22	10/30/21 05:39	
13C2 PFTeDA	135		50 <sub>-</sub> 150				10/28/21 18:22	10/30/21 05:39	
13C3 PFBS	140		50 <sub>-</sub> 150				10/28/21 18:22	10/30/21 05:39	
1802 PFHxS	119		50 - 150				10/28/21 18:22	10/30/21 05:39	
13C4 PFOS	114		50 - 150					10/30/21 05:39	
d3-NMeFOSAA	115		50 - 150					10/30/21 05:39	
d5-NEtFOSAA	122		50 - 150					10/30/21 05:39	
13C3 HFPO-DA	106		50 - 150					10/30/21 05:39	
General Chemistry									
Analyte	Result	Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
Percent Moisture	25.6		0.1	0.1 0.1				10/28/21 12:18	1

Client: Shannon & Wilson, Inc Job ID: 320-80903-1

Project/Site: SG Soils WO#1

Client Sample ID: 21GST-DPSED-020 Lab Sample ID: 320-80903-37

Date Collected: 10/17/21 16:25 **Matrix: Solid** Percent Solids: 76.3 Date Received: 10/27/21 12:25

Result C	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ND		0.25	0.039	ug/Kg	<u></u>	10/28/21 18:22	10/30/21 05:49	
ND		0.25	0.047	ug/Kg	₩	10/28/21 18:22	10/30/21 05:49	
ND		0.25	0.066	ug/Kg	₩	10/28/21 18:22	10/30/21 05:49	
ND		0.25	0.027	ug/Kg	₩	10/28/21 18:22	10/30/21 05:49	1
ND		0.25	0.060	ug/Kg	₩	10/28/21 18:22	10/30/21 05:49	•
ND		0.25	0.052	ug/Kg	₩	10/28/21 18:22	10/30/21 05:49	•
ND		0.25	0.037	ug/Kg	₩	10/28/21 18:22	10/30/21 05:49	
ND		0.25	0.026	ug/Kg	₩	10/28/21 18:22	10/30/21 05:49	•
ND		0.25	0.046	ug/Kg	₩	10/28/21 18:22	10/30/21 05:49	•
ND		0.25	0.047	ug/Kg	₩	10/28/21 18:22	10/30/21 05:49	,
ND		0.25	0.036	ug/Kg	₩	10/28/21 18:22	10/30/21 05:49	
ND		0.25	0.054	ug/Kg	₩	10/28/21 18:22	10/30/21 05:49	1
ND		0.25	0.029	ug/Kg	₩	10/28/21 18:22	10/30/21 05:49	1
ND		0.25	0.060	ug/Kg	₩	10/28/21 18:22	10/30/21 05:49	
ND		0.25	0.044	ug/Kg	₩	10/28/21 18:22	10/30/21 05:49	•
ND		0.25	0.051	ug/Kg	₩	10/28/21 18:22	10/30/21 05:49	
ND		0.25	0.039	ug/Kg	₩	10/28/21 18:22	10/30/21 05:49	
ND		0.25	0.049	ug/Kg	₩	10/28/21 18:22	10/30/21 05:49	
%Recovery G	Qualifier	Limits				Prepared	Analyzed	Dil Fa
97		50 - 150				10/28/21 18:22	10/30/21 05:49	
105		50 - 150				10/28/21 18:22	10/30/21 05:49	
104		50 - 150				10/28/21 18:22	10/30/21 05:49	
101		50 - 150				10/28/21 18:22	10/30/21 05:49	
103		50 - 150				10/28/21 18:22	10/30/21 05:49	
104		50 - 150				10/28/21 18:22	10/30/21 05:49	
110		50 - 150				10/28/21 18:22	10/30/21 05:49	
110		50 <sub>-</sub> 150				10/28/21 18:22	10/30/21 05:49	
115		50 <sub>-</sub> 150				10/28/21 18:22	10/30/21 05:49	
96		50 - 150				10/28/21 18:22	10/30/21 05:49	
98		50 <sub>-</sub> 150				10/28/21 18:22	10/30/21 05:49	
97		50 <sub>-</sub> 150						
96		50 - 150						
99		50 - 150						
						_		
	Juglifier	RL	MDL	Linit	_ n	Droparod	Analyzed	Dil Fac
Result 23.7	Zuaiiiiei	0.1	0.1		D	Prepared	10/28/21 12:18	Dilla
	Result   ND   ND   ND   ND   ND   ND   ND   N	ND ND ND ND ND ND ND ND ND ND ND ND ND N	Result         Qualifier         RL           ND         0.25           ND         0.25	ND         0.25         0.039           ND         0.25         0.047           ND         0.25         0.066           ND         0.25         0.060           ND         0.25         0.052           ND         0.25         0.037           ND         0.25         0.026           ND         0.25         0.046           ND         0.25         0.047           ND         0.25         0.036           ND         0.25         0.054           ND         0.25         0.054           ND         0.25         0.060           ND         0.25         0.044           ND         0.25         0.044           ND         0.25         0.044           ND         0.25         0.049           **Recovery         Qualifier         Limits           97         50 - 150           104         50 - 150           103         50 - 150           104         50 - 150           105         50 - 150           110         50 - 150           110         50 - 150           96         50 - 150	ND         0.25         0.039         ug/Kg           ND         0.25         0.047         ug/Kg           ND         0.25         0.066         ug/Kg           ND         0.25         0.027         ug/Kg           ND         0.25         0.060         ug/Kg           ND         0.25         0.037         ug/Kg           ND         0.25         0.026         ug/Kg           ND         0.25         0.026         ug/Kg           ND         0.25         0.046         ug/Kg           ND         0.25         0.046         ug/Kg           ND         0.25         0.044         ug/Kg           ND         0.25         0.054         ug/Kg           ND         0.25         0.054         ug/Kg           ND         0.25         0.060         ug/Kg           ND         0.25         0.060         ug/Kg           ND         0.25         0.044         ug/Kg           ND         0.25         0.044         ug/Kg           ND         0.25         0.049         ug/Kg           ND         0.25         0.049         ug/Kg	ND       0.25       0.039       ug/Kg       ☆         ND       0.25       0.047       ug/Kg       ☆         ND       0.25       0.066       ug/Kg       ☆         ND       0.25       0.060       ug/Kg       ☆         ND       0.25       0.060       ug/Kg       ☆         ND       0.25       0.052       ug/Kg       ☆         ND       0.25       0.037       ug/Kg       ☆         ND       0.25       0.037       ug/Kg       ☆         ND       0.25       0.046       ug/Kg       ☆         ND       0.25       0.044       ug/Kg       ☆         ND       0.25       0.036       ug/Kg       ☆         ND       0.25       0.054       ug/Kg       ☆         ND       0.25       0.054       ug/Kg       ☆         ND       0.25       0.054       ug/Kg       ☆         ND       0.25       0.051       ug/Kg       ☆         ND       0.25       0.049       ug/Kg       ☆         %       ND       0.25       0.049       ug/Kg       ☆         %       ND	Result   Qualifier   RL   MDL   Unit   D   Prepared	No

Client: Shannon & Wilson, Inc Job ID: 320-80903-1 Project/Site: SG Soils WO#1

Client Sample ID: 21GST-DPSED-021

Lab Sample ID: 320-80903-38 Date Collected: 10/17/21 17:00 **Matrix: Solid** 

Percent Solids: 77.8 Date Received: 10/27/21 12:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.24	0.036	ug/Kg	— <u></u>	10/28/21 18:22	10/30/21 05:59	1
Perfluoroheptanoic acid (PFHpA)	ND		0.24		ug/Kg	₽	10/28/21 18:22	10/30/21 05:59	1
Perfluorooctanoic acid (PFOA)	ND		0.24		ug/Kg	₽	10/28/21 18:22	10/30/21 05:59	1
Perfluorononanoic acid (PFNA)	ND		0.24	0.026	ug/Kg	₩	10/28/21 18:22	10/30/21 05:59	1
Perfluorodecanoic acid (PFDA)	ND		0.24	0.056	ug/Kg	≎	10/28/21 18:22	10/30/21 05:59	1
Perfluoroundecanoic acid (PFUnA)	ND		0.24	0.049	ug/Kg	₽	10/28/21 18:22	10/30/21 05:59	1
Perfluorododecanoic acid (PFDoA)	ND		0.24	0.035	ug/Kg	₩	10/28/21 18:22	10/30/21 05:59	1
Perfluorotridecanoic acid (PFTriA)	ND		0.24	0.025	ug/Kg	₩	10/28/21 18:22	10/30/21 05:59	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.24	0.044	ug/Kg	≎	10/28/21 18:22	10/30/21 05:59	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.24	0.045	ug/Kg	₩	10/28/21 18:22	10/30/21 05:59	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.24	0.034	ug/Kg	₽	10/28/21 18:22	10/30/21 05:59	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.24		ug/Kg	₽	10/28/21 18:22	10/30/21 05:59	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.24	0.027	ug/Kg	₩	10/28/21 18:22	10/30/21 05:59	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.24	0.056	ug/Kg	₩	10/28/21 18:22	10/30/21 05:59	1
9-Chlorohexadecafluoro-3-oxanonan	ND		0.24	0.041	ug/Kg	₩	10/28/21 18:22	10/30/21 05:59	1
e-1-sulfonic acid									
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.24		ug/Kg		10/28/21 18:22		1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.24		ug/Kg		10/28/21 18:22		1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.24	0.046	ug/Kg	₽	10/28/21 18:22	10/30/21 05:59	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	108		50 - 150				10/28/21 18:22	10/30/21 05:59	1
13C4 PFHpA	113		50 - 150				10/28/21 18:22	10/30/21 05:59	1
13C4 PFOA	121		50 - 150				10/28/21 18:22	10/30/21 05:59	1
13C5 PFNA	111		50 - 150				10/28/21 18:22	10/30/21 05:59	1
13C2 PFDA	114		50 - 150				10/28/21 18:22	10/30/21 05:59	1
13C2 PFUnA	108		50 - 150				10/28/21 18:22	10/30/21 05:59	1
13C2 PFDoA	116		50 - 150				10/28/21 18:22	10/30/21 05:59	1
13C2 PFTeDA	123		50 - 150				10/28/21 18:22	10/30/21 05:59	1
13C3 PFBS	107		50 - 150				10/28/21 18:22	10/30/21 05:59	1
1802 PFHxS	106		50 - 150				10/28/21 18:22	10/30/21 05:59	1
13C4 PFOS	112		50 - 150				10/28/21 18:22	10/30/21 05:59	1
d3-NMeFOSAA	102		50 - 150				10/28/21 18:22	10/30/21 05:59	1
d5-NEtFOSAA	113		50 - 150				10/28/21 18:22	10/30/21 05:59	1
13C3 HFPO-DA	114		50 - 150				10/28/21 18:22	10/30/21 05:59	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	22.2		0.1	0.1	%			10/28/21 12:18	1
Percent Solids	77.8		0.1	0.1	0.4			10/28/21 12:18	1

Client: Shannon & Wilson, Inc Job ID: 320-80903-1

Project/Site: SG Soils WO#1

Client Sample ID: 21GST-SED-012 Lab Sample ID: 320-80903-39

Date Collected: 10/17/21 17:25 **Matrix: Solid** Date Received: 10/27/21 12:25 **Percent Solids: 77.8** 

Method: EPA 537(Mod) - PFAS		•		MDL	Unit	Б	Droporod	Anglyzod	Dil Ea
Analyte Perfluorohexanoic acid (PFHxA)	ND	Qualifier	——————————————————————————————————————		ug/Kg	— <del>D</del>	Prepared 10/29/21 19:22	Analyzed 10/30/21 06:30	Dil Fac
,						<b>‡</b>			
Perfluoroheptanoic acid (PFHpA)	ND		0.25		ug/Kg	ф.		10/30/21 06:30	•
Perfluorooctanoic acid (PFOA)	ND		0.25		ug/Kg	<del></del>		10/30/21 06:30	
Perfluorononanoic acid (PFNA)	ND		0.25		ug/Kg	<b>‡</b>		10/30/21 06:30	
Perfluorodecanoic acid (PFDA)	ND		0.25		ug/Kg	₩.		10/30/21 06:30	,
Perfluoroundecanoic acid (PFUnA)	ND		0.25		ug/Kg	<del>.</del> .		10/30/21 06:30	
Perfluorododecanoic acid (PFDoA)	ND		0.25		ug/Kg	₩		10/30/21 06:30	ŕ
Perfluorotridecanoic acid (PFTriA)	ND		0.25		ug/Kg	₩		10/30/21 06:30	•
Perfluorotetradecanoic acid (PFTeA)	ND		0.25		ug/Kg	<b>#</b>		10/30/21 06:30	
Perfluorobutanesulfonic acid (PFBS)	ND		0.25		ug/Kg	₩	10/28/21 18:22	10/30/21 06:30	•
Perfluorohexanesulfonic acid (PFHxS)	ND		0.25		ug/Kg	☼		10/30/21 06:30	,
Perfluorooctanesulfonic acid (PFOS)	ND		0.25		ug/Kg		10/28/21 18:22	10/30/21 06:30	
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.25		ug/Kg	₽	10/28/21 18:22	10/30/21 06:30	•
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.25	0.060	ug/Kg	₽	10/28/21 18:22	10/30/21 06:30	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.25	0.044	ug/Kg	₩	10/28/21 18:22	10/30/21 06:30	•
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.051	ug/Kg	₽	10/28/21 18:22	10/30/21 06:30	,
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.25	0.039	ug/Kg	≎	10/28/21 18:22	10/30/21 06:30	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.25	0.049	ug/Kg	₩	10/28/21 18:22	10/30/21 06:30	•
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	90		50 - 150				10/28/21 18:22	10/30/21 06:30	
13C4 PFHpA	96		50 - 150				10/28/21 18:22	10/30/21 06:30	
13C4 PFOA	103		50 - 150				10/28/21 18:22	10/30/21 06:30	
13C5 PFNA	93		50 - 150				10/28/21 18:22	10/30/21 06:30	
13C2 PFDA	103		50 - 150				10/28/21 18:22	10/30/21 06:30	
13C2 PFUnA	101		50 <sub>-</sub> 150				10/28/21 18:22	10/30/21 06:30	
13C2 PFDoA	95		50 - 150				10/28/21 18:22	10/30/21 06:30	
13C2 PFTeDA	106		50 <sub>-</sub> 150				10/28/21 18:22	10/30/21 06:30	
13C3 PFBS	96		50 <sub>-</sub> 150				10/28/21 18:22	10/30/21 06:30	
1802 PFHxS	86		50 <sub>-</sub> 150					10/30/21 06:30	
13C4 PFOS	95		50 <sub>-</sub> 150					10/30/21 06:30	
d3-NMeFOSAA	91		50 - 150					10/30/21 06:30	
d5-NEtFOSAA	96		50 - 150					10/30/21 06:30	
13C3 HFPO-DA	91		50 - 150					10/30/21 06:30	
General Chemistry									
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Percent Moisture	22.2		0.1	0.1	%			10/28/21 12:18	1
Percent Solids	77.8		0.1	0.1	%			10/28/21 12:18	1

Client: Shannon & Wilson, Inc Job ID: 320-80903-1

Project/Site: SG Soils WO#1

Client Sample ID: 21GST-SED-022 Lab Sample ID: 320-80903-40

Date Collected: 10/18/21 09:35 **Matrix: Solid** Date Received: 10/27/21 12:25 Percent Solids: 76.4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.24	0.037	ug/Kg	<u></u>	10/28/21 18:22	10/30/21 06:40	
Perfluoroheptanoic acid (PFHpA)	ND		0.24	0.045	ug/Kg	₩	10/28/21 18:22	10/30/21 06:40	
Perfluorooctanoic acid (PFOA)	ND		0.24	0.063	ug/Kg	₩	10/28/21 18:22	10/30/21 06:40	
Perfluorononanoic acid (PFNA)	ND		0.24	0.026	ug/Kg	₽	10/28/21 18:22	10/30/21 06:40	
Perfluorodecanoic acid (PFDA)	ND		0.24	0.057	ug/Kg	₩	10/28/21 18:22	10/30/21 06:40	
Perfluoroundecanoic acid (PFUnA)	ND		0.24	0.050	ug/Kg	₽	10/28/21 18:22	10/30/21 06:40	
Perfluorododecanoic acid (PFDoA)	ND		0.24	0.035	ug/Kg	₽	10/28/21 18:22	10/30/21 06:40	
Perfluorotridecanoic acid (PFTriA)	ND		0.24	0.025	ug/Kg	₽	10/28/21 18:22	10/30/21 06:40	
Perfluorotetradecanoic acid (PFTeA)	ND		0.24	0.044	ug/Kg	₩	10/28/21 18:22	10/30/21 06:40	
Perfluorobutanesulfonic acid (PFBS)	ND		0.24	0.045	ug/Kg	₽	10/28/21 18:22	10/30/21 06:40	
Perfluorohexanesulfonic acid (PFHxS)	ND		0.24	0.034	ug/Kg	₩	10/28/21 18:22	10/30/21 06:40	
Perfluorooctanesulfonic acid (PFOS)	ND		0.24	0.051	ug/Kg	₩	10/28/21 18:22	10/30/21 06:40	
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.24	0.027	ug/Kg	₩	10/28/21 18:22	10/30/21 06:40	
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.24	0.057	ug/Kg	₩	10/28/21 18:22	10/30/21 06:40	
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.24	0.041	ug/Kg	₩	10/28/21 18:22	10/30/21 06:40	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.24	0.049	ug/Kg	₩	10/28/21 18:22	10/30/21 06:40	
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.24	0.037	ug/Kg	₩	10/28/21 18:22	10/30/21 06:40	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.24	0.046	ug/Kg	₩	10/28/21 18:22	10/30/21 06:40	
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	109		50 - 150				10/28/21 18:22	10/30/21 06:40	
13C4 PFHpA	125		50 - 150				10/28/21 18:22	10/30/21 06:40	
13C4 PFOA	122		50 - 150				10/28/21 18:22	10/30/21 06:40	
13C5 PFNA	111		50 - 150				10/28/21 18:22	10/30/21 06:40	
13C2 PFDA	118		50 - 150				10/28/21 18:22	10/30/21 06:40	
13C2 PFUnA	119		50 - 150				10/28/21 18:22	10/30/21 06:40	
13C2 PFDoA	129		50 - 150				10/28/21 18:22	10/30/21 06:40	
13C2 PFTeDA	130		50 - 150				10/28/21 18:22	10/30/21 06:40	
13C3 PFBS	114		50 - 150				10/28/21 18:22	10/30/21 06:40	
1802 PFHxS	108		50 - 150				10/28/21 18:22	10/30/21 06:40	
13C4 PFOS	109		50 - 150				10/28/21 18:22	10/30/21 06:40	
d3-NMeFOSAA	111		50 - 150				10/28/21 18:22	10/30/21 06:40	
d5-NEtFOSAA	119		50 - 150				10/28/21 18:22	10/30/21 06:40	
13C3 HFPO-DA	112		50 - 150				10/28/21 18:22	10/30/21 06:40	
General Chemistry	<b>_</b>	0			1124	_	<b>D</b>	A	D.: -
	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Analyte Percent Moisture	23.6		0.1	0.1		_ =		10/28/21 12:18	

Client: Shannon & Wilson, Inc Job ID: 320-80903-1

Project/Site: SG Soils WO#1

Client Sample ID: 21GST-SED-009 Lab Sample ID: 320-80903-41

Date Collected: 10/18/21 10:50 Matrix: Solid
Date Received: 10/27/21 12:25 Percent Solids: 79.4

Method: EPA 537(Mod) - PFAS Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.25	0.038	ug/Kg	<u></u>	10/28/21 18:22	10/30/21 06:50	1
Perfluoroheptanoic acid (PFHpA)	ND		0.25	0.047	ug/Kg	₩	10/28/21 18:22	10/30/21 06:50	1
Perfluorooctanoic acid (PFOA)	ND		0.25	0.065	ug/Kg	₩	10/28/21 18:22	10/30/21 06:50	1
Perfluorononanoic acid (PFNA)	ND		0.25	0.027	ug/Kg	₩	10/28/21 18:22	10/30/21 06:50	1
Perfluorodecanoic acid (PFDA)	ND		0.25	0.059	ug/Kg	₩	10/28/21 18:22	10/30/21 06:50	1
Perfluoroundecanoic acid (PFUnA)	ND		0.25	0.052	ug/Kg	₩	10/28/21 18:22	10/30/21 06:50	1
Perfluorododecanoic acid (PFDoA)	ND		0.25	0.037	ug/Kg	₩	10/28/21 18:22	10/30/21 06:50	1
Perfluorotridecanoic acid (PFTriA)	ND		0.25	0.026	ug/Kg	₩	10/28/21 18:22	10/30/21 06:50	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.25	0.045	ug/Kg	₩	10/28/21 18:22	10/30/21 06:50	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.25	0.047	ug/Kg		10/28/21 18:22	10/30/21 06:50	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.25	0.036	ug/Kg	₩	10/28/21 18:22	10/30/21 06:50	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.25	0.053	ug/Kg	₩	10/28/21 18:22	10/30/21 06:50	1
N-methylperfluorooctanesulfonamidoa	ND		0.25	0.028	ug/Kg	₩	10/28/21 18:22	10/30/21 06:50	1
cetic acid (NMeFOSAA)									
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.25	0.059	ug/Kg	☼	10/28/21 18:22	10/30/21 06:50	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.25	0.043	ug/Kg	₽	10/28/21 18:22	10/30/21 06:50	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.050	ug/Kg	₩	10/28/21 18:22	10/30/21 06:50	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.25	0.038	ug/Kg	₽	10/28/21 18:22	10/30/21 06:50	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.25	0.048	ug/Kg	₩	10/28/21 18:22	10/30/21 06:50	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	100		50 - 150				10/28/21 18:22	10/30/21 06:50	1
13C4 PFHpA	102		50 - 150				10/28/21 18:22	10/30/21 06:50	1
13C4 PFOA	112		50 - 150				10/28/21 18:22	10/30/21 06:50	1
13C5 PFNA	103		50 - 150				10/28/21 18:22	10/30/21 06:50	1
13C2 PFDA	104		50 - 150				10/28/21 18:22	10/30/21 06:50	1
13C2 PFUnA	105		50 - 150				10/28/21 18:22	10/30/21 06:50	1
13C2 PFDoA	109		50 - 150				10/28/21 18:22	10/30/21 06:50	1
13C2 PFTeDA	111		50 - 150				10/28/21 18:22	10/30/21 06:50	1
13C3 PFBS	106		50 - 150				10/28/21 18:22	10/30/21 06:50	1
1802 PFHxS	98		50 - 150				10/28/21 18:22	10/30/21 06:50	1
13C4 PFOS	98		50 <sub>-</sub> 150				10/28/21 18:22	10/30/21 06:50	1
d3-NMeFOSAA	99		50 <sub>-</sub> 150				10/28/21 18:22	10/30/21 06:50	1
d5-NEtFOSAA	97		50 - 150				10/28/21 18:22	10/30/21 06:50	1
13C3 HFPO-DA	96		50 - 150					10/30/21 06:50	1
General Chemistry									
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Percent Moisture	20.6		0.1	0.1	%	_		10/28/21 12:18	1
Percent Solids	79.4		0.1	0.1	0.1			10/28/21 12:18	1

Eurofins TestAmerica, Sacramento

Client: Shannon & Wilson, Inc Job ID: 320-80903-1 Project/Site: SG Soils WO#1

Client Sample ID: 21GST-DPSED-009

Lab Sample ID: 320-80903-42 Date Collected: 10/18/21 11:00 **Matrix: Solid** 

Date Received: 10/27/21 12:25 Percent Solids: 80.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.25	0.039	ug/Kg	<u></u>	10/28/21 18:22	10/30/21 07:00	
Perfluoroheptanoic acid (PFHpA)	ND		0.25	0.047	ug/Kg	₽	10/28/21 18:22	10/30/21 07:00	1
Perfluorooctanoic acid (PFOA)	ND		0.25	0.066	ug/Kg	≎	10/28/21 18:22	10/30/21 07:00	1
Perfluorononanoic acid (PFNA)	ND		0.25	0.027	ug/Kg	₽	10/28/21 18:22	10/30/21 07:00	1
Perfluorodecanoic acid (PFDA)	ND		0.25	0.060	ug/Kg	₽	10/28/21 18:22	10/30/21 07:00	1
Perfluoroundecanoic acid (PFUnA)	ND		0.25	0.052	ug/Kg	₩	10/28/21 18:22	10/30/21 07:00	1
Perfluorododecanoic acid (PFDoA)	ND		0.25	0.037	ug/Kg	₩	10/28/21 18:22	10/30/21 07:00	1
Perfluorotridecanoic acid (PFTriA)	ND		0.25	0.026	ug/Kg	₩	10/28/21 18:22	10/30/21 07:00	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.25	0.046	ug/Kg	₩	10/28/21 18:22	10/30/21 07:00	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.25	0.047	ug/Kg		10/28/21 18:22	10/30/21 07:00	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.25	0.036	ug/Kg	₽	10/28/21 18:22	10/30/21 07:00	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.25	0.054	ug/Kg	₽	10/28/21 18:22	10/30/21 07:00	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.25	0.029	ug/Kg		10/28/21 18:22	10/30/21 07:00	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.25	0.060	ug/Kg	₩	10/28/21 18:22	10/30/21 07:00	1
9-Chlorohexadecafluoro-3-oxanonan	ND		0.25	0.044	ug/Kg	≎	10/28/21 18:22	10/30/21 07:00	•
e-1-sulfonic acid									
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25		ug/Kg	₩		10/30/21 07:00	,
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.25		ug/Kg	₩		10/30/21 07:00	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.25	0.049	ug/Kg	₩	10/28/21 18:22	10/30/21 07:00	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	93		50 - 150				10/28/21 18:22	10/30/21 07:00	
13C4 PFHpA	100		50 - 150				10/28/21 18:22	10/30/21 07:00	1
13C4 PFOA	109		50 - 150				10/28/21 18:22	10/30/21 07:00	1
13C5 PFNA	99		50 - 150				10/28/21 18:22	10/30/21 07:00	1
13C2 PFDA	101		50 - 150				10/28/21 18:22	10/30/21 07:00	1
13C2 PFUnA	103		50 - 150				10/28/21 18:22	10/30/21 07:00	1
13C2 PFDoA	106		50 - 150				10/28/21 18:22	10/30/21 07:00	1
13C2 PFTeDA	117		50 - 150				10/28/21 18:22	10/30/21 07:00	1
13C3 PFBS	102		50 - 150				10/28/21 18:22	10/30/21 07:00	1
1802 PFHxS	96		50 - 150				10/28/21 18:22	10/30/21 07:00	
13C4 PFOS	100		50 - 150				10/28/21 18:22	10/30/21 07:00	1
d3-NMeFOSAA	103		50 - 150				10/28/21 18:22	10/30/21 07:00	1
d5-NEtFOSAA	103		50 <sub>-</sub> 150				10/28/21 18:22	10/30/21 07:00	
13C3 HFPO-DA	92		50 - 150				10/28/21 18:22	10/30/21 07:00	1
General Chemistry									
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Percent Moisture	19.7		0.1	0.1				10/28/21 12:18	1
Percent Solids	80.3		0.1	0.1	%			10/28/21 12:18	1

Client: Shannon & Wilson, Inc Job ID: 320-80903-1

Project/Site: SG Soils WO#1

**Percent Solids** 

Client Sample ID: 21GST-SED-023 Lab Sample ID: 320-80903-43

Date Collected: 10/18/21 11:55 **Matrix: Solid** Date Received: 10/27/21 12:25 Percent Solids: 64.2

Analyte	Result C	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.30	0.047	ug/Kg	<u></u>	10/28/21 18:22	10/30/21 07:10	1
Perfluoroheptanoic acid (PFHpA)	ND		0.30	0.057	ug/Kg	₩	10/28/21 18:22	10/30/21 07:10	1
Perfluorooctanoic acid (PFOA)	ND		0.30	0.080	ug/Kg	₩	10/28/21 18:22	10/30/21 07:10	1
Perfluorononanoic acid (PFNA)	ND		0.30	0.033	ug/Kg	₩	10/28/21 18:22	10/30/21 07:10	1
Perfluorodecanoic acid (PFDA)	ND		0.30	0.072	ug/Kg	₩	10/28/21 18:22	10/30/21 07:10	1
Perfluoroundecanoic acid (PFUnA)	ND		0.30	0.063	ug/Kg	₩	10/28/21 18:22	10/30/21 07:10	1
Perfluorododecanoic acid (PFDoA)	ND		0.30	0.045	ug/Kg	₽	10/28/21 18:22	10/30/21 07:10	1
Perfluorotridecanoic acid (PFTriA)	ND		0.30	0.032	ug/Kg	₩	10/28/21 18:22	10/30/21 07:10	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.30	0.056	ug/Kg	₩	10/28/21 18:22	10/30/21 07:10	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.30	0.057	ug/Kg	₽	10/28/21 18:22	10/30/21 07:10	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.30	0.044	ug/Kg	₩	10/28/21 18:22	10/30/21 07:10	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.30	0.065	ug/Kg	₩	10/28/21 18:22	10/30/21 07:10	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.30	0.035	ug/Kg	₩	10/28/21 18:22	10/30/21 07:10	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.30	0.072	ug/Kg	₩	10/28/21 18:22	10/30/21 07:10	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.30	0.053	ug/Kg		10/28/21 18:22	10/30/21 07:10	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.30	0.062	ug/Kg	≎	10/28/21 18:22	10/30/21 07:10	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.30	0.047	ug/Kg	₩	10/28/21 18:22	10/30/21 07:10	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.30	0.059	ug/Kg	₩	10/28/21 18:22	10/30/21 07:10	1
Isotope Dilution	%Recovery 0	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	86		50 - 150				10/28/21 18:22	10/30/21 07:10	1
13C4 PFHpA	93		50 - 150				10/28/21 18:22	10/30/21 07:10	1
13C4 PFOA	100		50 - 150				10/28/21 18:22	10/30/21 07:10	1
13C5 PFNA	94		50 - 150				10/28/21 18:22	10/30/21 07:10	1
13C2 PFDA	98		50 - 150				10/28/21 18:22	10/30/21 07:10	1
13C2 PFUnA	103		50 - 150				10/28/21 18:22	10/30/21 07:10	1
13C2 PFDoA	102		50 - 150				10/28/21 18:22	10/30/21 07:10	1
13C2 PFTeDA	108		50 - 150				10/28/21 18:22	10/30/21 07:10	1
13C3 PFBS	97		50 - 150				10/28/21 18:22	10/30/21 07:10	1
1802 PFHxS	93		50 - 150				10/28/21 18:22	10/30/21 07:10	1
13C4 PFOS	97		50 - 150				10/28/21 18:22	10/30/21 07:10	1
d3-NMeFOSAA	97		50 - 150				10/28/21 18:22	10/30/21 07:10	1
d5-NEtFOSAA	106		50 - 150				10/28/21 18:22	10/30/21 07:10	1
13C3 HFPO-DA	87		50 - 150				10/28/21 18:22	10/30/21 07:10	1
General Chemistry									
Analyte	Result C	Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Percent Moisture	<b>35.8</b>		0.1	0.1	%			10/28/21 12:18	1

0.1

0.1 %

64.2

10/28/21 12:18

Client: Shannon & Wilson, Inc Job ID: 320-80903-1 Project/Site: SG Soils WO#1

Client Sample ID: 21GST-DPSED-023

Lab Sample ID: 320-80903-44 Date Collected: 10/18/21 12:00 **Matrix: Solid** 

Date Received: 10/27/21 12:25 Percent Solids: 76.2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.25	0.039	ug/Kg	<u></u>	10/28/21 18:22	10/30/21 07:20	1
Perfluoroheptanoic acid (PFHpA)	ND		0.25	0.048	ug/Kg	₽	10/28/21 18:22	10/30/21 07:20	1
Perfluorooctanoic acid (PFOA)	ND		0.25	0.067	ug/Kg	₩	10/28/21 18:22	10/30/21 07:20	1
Perfluorononanoic acid (PFNA)	ND		0.25	0.028	ug/Kg	₩	10/28/21 18:22	10/30/21 07:20	1
Perfluorodecanoic acid (PFDA)	ND		0.25	0.060	ug/Kg	₩	10/28/21 18:22	10/30/21 07:20	1
Perfluoroundecanoic acid (PFUnA)	ND		0.25	0.053	ug/Kg	₩	10/28/21 18:22	10/30/21 07:20	1
Perfluorododecanoic acid (PFDoA)	ND		0.25	0.038	ug/Kg	₩	10/28/21 18:22	10/30/21 07:20	1
Perfluorotridecanoic acid (PFTriA)	ND		0.25	0.026	ug/Kg	₩	10/28/21 18:22	10/30/21 07:20	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.25	0.047	ug/Kg	₩	10/28/21 18:22	10/30/21 07:20	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.25	0.048	ug/Kg		10/28/21 18:22	10/30/21 07:20	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.25	0.037	ug/Kg	₩	10/28/21 18:22	10/30/21 07:20	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.25	0.054	ug/Kg	₩	10/28/21 18:22	10/30/21 07:20	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.25	0.029	ug/Kg	ಘ	10/28/21 18:22	10/30/21 07:20	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.25	0.060	ug/Kg	₩	10/28/21 18:22	10/30/21 07:20	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.25	0.044	ug/Kg	₩	10/28/21 18:22	10/30/21 07:20	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25		ug/Kg	☼	10/28/21 18:22	10/30/21 07:20	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.25		ug/Kg	☼	10/28/21 18:22	10/30/21 07:20	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.25	0.049	ug/Kg	₩	10/28/21 18:22	10/30/21 07:20	1
lsotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	101		50 - 150				10/28/21 18:22	10/30/21 07:20	1
13C4 PFHpA	105		50 - 150				10/28/21 18:22	10/30/21 07:20	1
13C4 PFOA	109		50 <sub>-</sub> 150				10/28/21 18:22	10/30/21 07:20	1
13C5 PFNA	104		50 - 150				10/28/21 18:22	10/30/21 07:20	1
13C2 PFDA	105		50 - 150				10/28/21 18:22	10/30/21 07:20	1
13C2 PFUnA	106		50 - 150				10/28/21 18:22	10/30/21 07:20	1
13C2 PFDoA	121		50 - 150				10/28/21 18:22	10/30/21 07:20	1
13C2 PFTeDA	118		50 - 150				10/28/21 18:22	10/30/21 07:20	1
13C3 PFBS	106		50 - 150				10/28/21 18:22	10/30/21 07:20	1
1802 PFHxS	95		50 <sub>-</sub> 150				10/28/21 18:22	10/30/21 07:20	1
13C4 PFOS	101		50 - 150				10/28/21 18:22	10/30/21 07:20	1
d3-NMeFOSAA	104		50 - 150				10/28/21 18:22	10/30/21 07:20	1
d5-NEtFOSAA	105		50 - 150				10/28/21 18:22	10/30/21 07:20	1
13C3 HFPO-DA	101		50 - 150					10/30/21 07:20	1
General Chemistry						_	_		
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Percent Moisture	23.8		0.1	0.1	%			10/28/21 12:18	1
Percent Solids	76.2		0.1	0.1				10/28/21 12:18	

Client: Shannon & Wilson, Inc Job ID: 320-80903-1 Project/Site: SG Soils WO#1

Client Sample ID: 21GST-SED-030

Lab Sample ID: 320-80903-45 Date Collected: 10/18/21 13:30 **Matrix: Solid** 

Date Received: 10/27/21 12:25 Percent Solids: 74.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.26	0.040	ug/Kg		10/28/21 18:22	10/30/21 07:30	
Perfluoroheptanoic acid (PFHpA)	ND		0.26	0.050	ug/Kg	₩	10/28/21 18:22	10/30/21 07:30	
Perfluorooctanoic acid (PFOA)	ND		0.26	0.069	ug/Kg	₩	10/28/21 18:22	10/30/21 07:30	
Perfluorononanoic acid (PFNA)	ND		0.26	0.029	ug/Kg	₩	10/28/21 18:22	10/30/21 07:30	1
Perfluorodecanoic acid (PFDA)	ND		0.26	0.063	ug/Kg	₩	10/28/21 18:22	10/30/21 07:30	•
Perfluoroundecanoic acid (PFUnA)	ND		0.26	0.055	ug/Kg	₩	10/28/21 18:22	10/30/21 07:30	•
Perfluorododecanoic acid (PFDoA)	ND		0.26	0.039	ug/Kg	₽	10/28/21 18:22	10/30/21 07:30	1
Perfluorotridecanoic acid (PFTriA)	ND		0.26	0.027	ug/Kg	₩	10/28/21 18:22	10/30/21 07:30	•
Perfluorotetradecanoic acid (PFTeA)	ND		0.26	0.048	ug/Kg	₩	10/28/21 18:22	10/30/21 07:30	
Perfluorobutanesulfonic acid (PFBS)	ND		0.26	0.050	ug/Kg		10/28/21 18:22	10/30/21 07:30	
Perfluorohexanesulfonic acid (PFHxS)	ND		0.26	0.038	ug/Kg	₩	10/28/21 18:22	10/30/21 07:30	
Perfluorooctanesulfonic acid (PFOS)	ND		0.26	0.056	ug/Kg	₩	10/28/21 18:22	10/30/21 07:30	
N-methylperfluorooctanesulfonamidoa	ND		0.26	0.030	ug/Kg		10/28/21 18:22	10/30/21 07:30	1
cetic acid (NMeFOSAA)									
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.26	0.063	ug/Kg	₩	10/28/21 18:22	10/30/21 07:30	,
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.26	0.046	ug/Kg	₩	10/28/21 18:22	10/30/21 07:30	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.26	0.054	ug/Kg	₩	10/28/21 18:22	10/30/21 07:30	•
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.26	0.040	ug/Kg	₩	10/28/21 18:22	10/30/21 07:30	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.26	0.051	ug/Kg	₩	10/28/21 18:22	10/30/21 07:30	
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	85		50 - 150				10/28/21 18:22	10/30/21 07:30	-
13C4 PFHpA	91		50 - 150				10/28/21 18:22	10/30/21 07:30	
13C4 PFOA	101		50 - 150				10/28/21 18:22	10/30/21 07:30	
13C5 PFNA	93		50 - 150				10/28/21 18:22	10/30/21 07:30	
13C2 PFDA	97		50 - 150				10/28/21 18:22	10/30/21 07:30	
13C2 PFUnA	98		50 - 150				10/28/21 18:22	10/30/21 07:30	
13C2 PFDoA	98		50 - 150				10/28/21 18:22	10/30/21 07:30	
13C2 PFTeDA	104		50 - 150				10/28/21 18:22	10/30/21 07:30	
13C3 PFBS	100		50 - 150				10/28/21 18:22	10/30/21 07:30	
1802 PFHxS	84		50 - 150				10/28/21 18:22	10/30/21 07:30	
13C4 PFOS	93		50 - 150				10/28/21 18:22	10/30/21 07:30	
d3-NMeFOSAA	92		50 - 150				10/28/21 18:22	10/30/21 07:30	
d5-NEtFOSAA	100		50 - 150				10/28/21 18:22	10/30/21 07:30	
13C3 HFPO-DA	88		50 - 150				10/28/21 18:22	10/30/21 07:30	
General Chemistry									
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
	00.0		0.1	0.1	0/			10/28/21 12:18	1
Percent Moisture	26.0		0.1	0.1				10/20/21 12.10	

Client: Shannon & Wilson, Inc Job ID: 320-80903-1

Project/Site: SG Soils WO#1

Client Sample ID: 21GST-SED-028 Lab Sample ID: 320-80903-46

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.90	0.14	ug/Kg	₩	10/28/21 18:22	10/30/21 07:40	•
Perfluoroheptanoic acid (PFHpA)	ND		0.90	0.17	ug/Kg	≎	10/28/21 18:22	10/30/21 07:40	1
Perfluorooctanoic acid (PFOA)	ND		0.90	0.24	ug/Kg	₽	10/28/21 18:22	10/30/21 07:40	1
Perfluorononanoic acid (PFNA)	ND		0.90	0.099	ug/Kg	₽	10/28/21 18:22	10/30/21 07:40	1
Perfluorodecanoic acid (PFDA)	ND		0.90	0.22	ug/Kg	₩	10/28/21 18:22	10/30/21 07:40	1
Perfluoroundecanoic acid (PFUnA)	ND		0.90	0.19	ug/Kg	₩	10/28/21 18:22	10/30/21 07:40	1
Perfluorododecanoic acid (PFDoA)	ND		0.90	0.13	ug/Kg	₩	10/28/21 18:22	10/30/21 07:40	1
Perfluorotridecanoic acid (PFTriA)	ND		0.90	0.094	ug/Kg	₩	10/28/21 18:22	10/30/21 07:40	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.90	0.17	ug/Kg	₩	10/28/21 18:22	10/30/21 07:40	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.90	0.17	ug/Kg		10/28/21 18:22	10/30/21 07:40	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.90	0.13	ug/Kg	₩	10/28/21 18:22	10/30/21 07:40	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.90	0.19	ug/Kg	₩	10/28/21 18:22	10/30/21 07:40	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.90	0.10	ug/Kg	☼	10/28/21 18:22	10/30/21 07:40	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.90	0.22	ug/Kg	₩	10/28/21 18:22	10/30/21 07:40	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.90	0.16	ug/Kg	₽	10/28/21 18:22	10/30/21 07:40	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.90	0.18	ug/Kg	₽	10/28/21 18:22	10/30/21 07:40	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.90	0.14	ug/Kg	₩	10/28/21 18:22	10/30/21 07:40	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.90	0.17	ug/Kg	₩	10/28/21 18:22	10/30/21 07:40	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	91		50 - 150				10/28/21 18:22	10/30/21 07:40	1
13C4 PFHpA	103		50 - 150				10/28/21 18:22	10/30/21 07:40	1
13C4 PFOA	98		50 - 150				10/28/21 18:22	10/30/21 07:40	1
13C5 PFNA	101		50 - 150				10/28/21 18:22	10/30/21 07:40	1
13C2 PFDA	101		50 - 150				10/28/21 18:22	10/30/21 07:40	1
13C2 PFUnA	104		50 - 150				10/28/21 18:22	10/30/21 07:40	1
13C2 PFDoA	106		50 - 150				10/28/21 18:22	10/30/21 07:40	1
13C2 PFTeDA	103		50 <sub>-</sub> 150				10/28/21 18:22	10/30/21 07:40	1
13C3 PFBS	102		50 <sub>-</sub> 150				10/28/21 18:22	10/30/21 07:40	1
1802 PFHxS	90		50 <sub>-</sub> 150				10/28/21 18:22	10/30/21 07:40	1
13C4 PFOS	90		50 <sub>-</sub> 150				10/28/21 18:22	10/30/21 07:40	1
d3-NMeFOSAA	96		50 <sub>-</sub> 150				10/28/21 18:22	10/30/21 07:40	1
d5-NEtFOSAA	97		50 <sub>-</sub> 150				10/28/21 18:22	10/30/21 07:40	1
13C3 HFPO-DA	96		50 - 150					10/30/21 07:40	1
General Chemistry									
Analyte		Qualifier	RL_		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	78.5		0.1	0.1	%			10/28/21 12:18	1
Percent Solids	21.5		0.1	0.1	0/2			10/28/21 12:18	1

Client: Shannon & Wilson, Inc Job ID: 320-80903-1 Project/Site: SG Soils WO#1

Client Sample ID: 21GST-DPSED-028

Lab Sample ID: 320-80903-47 Date Collected: 10/18/21 14:00 **Matrix: Solid** 

Date Received: 10/27/21 12:25 Percent Solids: 61.9

Method: EPA 537(Mod) - PFAS Analyte		Qualifier	-13 RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.31	0.047	ug/Kg	— <del>-</del>	10/28/21 18:22	10/30/21 07:51	1
Perfluoroheptanoic acid (PFHpA)	ND		0.31		ug/Kg	₽	10/28/21 18:22	10/30/21 07:51	1
Perfluorooctanoic acid (PFOA)	ND		0.31	0.081	ug/Kg	☼	10/28/21 18:22	10/30/21 07:51	1
Perfluorononanoic acid (PFNA)	ND		0.31	0.034	ug/Kg	₩	10/28/21 18:22	10/30/21 07:51	1
Perfluorodecanoic acid (PFDA)	ND		0.31	0.073	ug/Kg	₩	10/28/21 18:22	10/30/21 07:51	1
Perfluoroundecanoic acid (PFUnA)	ND		0.31	0.064	ug/Kg	₩	10/28/21 18:22	10/30/21 07:51	1
Perfluorododecanoic acid (PFDoA)	ND		0.31	0.046	ug/Kg	₩	10/28/21 18:22	10/30/21 07:51	1
Perfluorotridecanoic acid (PFTriA)	ND		0.31	0.032	ug/Kg	☼	10/28/21 18:22	10/30/21 07:51	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.31	0.056	ug/Kg	₩	10/28/21 18:22	10/30/21 07:51	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.31	0.058	ug/Kg		10/28/21 18:22	10/30/21 07:51	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.31	0.044	ug/Kg	₩	10/28/21 18:22	10/30/21 07:51	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.31	0.066	ug/Kg	₽	10/28/21 18:22	10/30/21 07:51	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.31	0.035	ug/Kg	☼	10/28/21 18:22	10/30/21 07:51	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.31	0.073	ug/Kg	₩	10/28/21 18:22	10/30/21 07:51	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.31	0.053	ug/Kg	₩	10/28/21 18:22	10/30/21 07:51	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.31	0.063	ug/Kg	₩	10/28/21 18:22	10/30/21 07:51	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.31	0.047	ug/Kg	₩	10/28/21 18:22	10/30/21 07:51	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.31	0.060	ug/Kg	₩	10/28/21 18:22	10/30/21 07:51	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	84		50 - 150				10/28/21 18:22	10/30/21 07:51	1
13C4 PFHpA	92		50 - 150				10/28/21 18:22	10/30/21 07:51	1
13C4 PFOA	95		50 - 150				10/28/21 18:22	10/30/21 07:51	1
13C5 PFNA	87		50 - 150				10/28/21 18:22	10/30/21 07:51	1
13C2 PFDA	90		50 - 150				10/28/21 18:22	10/30/21 07:51	1
13C2 PFUnA	92		50 - 150				10/28/21 18:22	10/30/21 07:51	1
13C2 PFDoA	92		50 - 150				10/28/21 18:22	10/30/21 07:51	1
13C2 PFTeDA	95		50 - 150				10/28/21 18:22	10/30/21 07:51	1
13C3 PFBS	87		50 - 150				10/28/21 18:22	10/30/21 07:51	1
1802 PFHxS	81		50 - 150				10/28/21 18:22	10/30/21 07:51	1
13C4 PFOS	84		50 - 150				10/28/21 18:22	10/30/21 07:51	1
d3-NMeFOSAA	84		50 - 150				10/28/21 18:22	10/30/21 07:51	1
d5-NEtFOSAA	87		50 - 150				10/28/21 18:22	10/30/21 07:51	1
13C3 HFPO-DA	77		50 - 150				10/28/21 18:22	10/30/21 07:51	1
General Chemistry	_	• "-		<b>.</b>		_	_		
Analyte		Qualifier	RL _	MDL		D	Prepared	Analyzed	Dil Fac
Percent Moisture	38.1		0.1	0.1				10/28/21 12:18	1
Percent Solids	61.9		0.1	0.1	%			10/28/21 12:18	1

Client: Shannon & Wilson, Inc Job ID: 320-80903-1 Project/Site: SG Soils WO#1

Client Sample ID: 21GST-SED-029 Lab Sample ID: 320-80903-48

Date Collected: 10/18/21 14:20 **Matrix: Solid** Date Received: 10/27/21 12:25 Percent Solids: 68.8

13C2 PFHxA	18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0	01 01 01 01 01 01 01 01 01 01 01 01
Perfluoroclanel acid (PFOA)   ND   0.28   0.075   ug/Kg   v   10/28/21   18:22   10/30/21 08:01	18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0	01 01 01 01 01 01 01 01 01 01 01
Perfluoronananic acid (PFDA)   ND   0.28	18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0	01 01 01 01 01 01 01 01 01 01
Perfluorodecanoic acid (PFDA)   ND   0.28   0.068   ug/Kg   0   10/28/21   18.22   10/30/21 08.01   Perfluoroundecanoic acid (PFDA)   ND   0.28   0.043   ug/Kg   0   10/28/21   18.22   10/30/21 08.01   Perfluorotridecanoic acid (PFDA)   ND   0.28   0.043   ug/Kg   0   10/28/21   18.22   10/30/21 08.01   Perfluorotridecanoic acid (PFTA)   ND   0.28   0.050   ug/Kg   0   10/28/21   18.22   10/30/21 08.01   Perfluorotridecanoic acid (PFTA)   ND   0.28   0.050   ug/Kg   0   10/28/21   18.22   10/30/21 08.01   Perfluorotetradecanoic acid (PFTA)   ND   0.28   0.054   ug/Kg   0   10/28/21   18.22   10/30/21 08.01   Perfluorotetradecanoic acid (PFTAS)   ND   0.28   0.064   ug/Kg   0   10/28/21   18.22   10/30/21 08.01   Perfluorotetradecanoic acid (PFTAS)   ND   0.28   0.064   ug/Kg   0   10/28/21   18.22   10/30/21 08.01   Perfluorotetradecanoic acid (PFTAS)   ND   0.28   0.064   ug/Kg   0   10/28/21   18.22   10/30/21 08.01   Perfluorocetranesulfonic acid (PFOS)   ND   0.28   0.068   ug/Kg   0   10/28/21   18.22   10/30/21 08.01   Perfluorocetranesulfonamidoa   ND   0.28   0.068   ug/Kg   0   10/28/21   18.22   10/30/21 08.01   Perfluorocetranesulfonamidoa   ND   0.28   0.068   ug/Kg   0   10/28/21   18.22   10/30/21 08.01   Perfluorocetranesulfonamidoa   ND   0.28   0.068   ug/Kg   0   10/28/21   18.22   10/30/21 08.01   Perfluorocetranesulfonamidoa   ND   0.28   0.068   ug/Kg   0   10/28/21   18.22   10/30/21 08.01   Perfluorocetranesulfonic acid   ND   0.28   0.068   ug/Kg   0   10/28/21   18.22   10/30/21 08.01   Perfluorocetranesulfonic acid   ND   0.28   0.050   ug/Kg   0   10/28/21   18.22   10/30/21 08.01   Perfluorocetranesulfonic acid   ND   0.28   0.055   ug/Kg   0   10/28/21   18.22   10/30/21 08.01   Perfluorocetranesulfonic acid   ND   0.28   0.055   ug/Kg   0   10/28/21   18.22   10/30/21 08.01   Perfluorocetranesulfonic acid   ND   0.28   0.055   ug/Kg   0   10/28/21   18.22   10/30/21 08.01   Perfluorocetranesulfonic acid   ND   0.28   0.055   ug/Kg   0   10/28/21   18.22   10/30/21 08.01   Perfluo	18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0	01 01 01 01 01 01 01 01 01
Perfluoroundecanoic acid (PFUnA)   ND   0.28   0.060   ug/Kg   0   10/28/21   18:22   10/30/21 08:01   Perfluorotodecanoic acid (PFDA)   ND   0.28   0.043   ug/Kg   0   10/28/21   18:22   10/30/21 08:01   Perfluorototaneanoic acid (PFTHA)   ND   0.28   0.052   ug/Kg   0   10/28/21   18:22   10/30/21 08:01   Perfluorototanesulfonic acid (PFBS)   ND   0.28   0.054   ug/Kg   0   10/28/21   18:22   10/30/21 08:01   Perfluorototanesulfonic acid (PFBS)   ND   0.28   0.054   ug/Kg   0   10/28/21   18:22   10/30/21 08:01   Perfluorocotanesulfonic acid (PFDS)   ND   0.28   0.061   ug/Kg   0   10/28/21   18:22   10/30/21 08:01   Perfluorocotanesulfonic acid (PFDS)   ND   0.28   0.061   ug/Kg   0   10/28/21   18:22   10/30/21 08:01   Perfluorocotanesulfonic acid (PFDS)   ND   0.28   0.068   ug/Kg   0   10/28/21   18:22   10/30/21 08:01   Perfluorocotanesulfonic acid (PFDS)   ND   0.28   0.068   ug/Kg   0   10/28/21   18:22   10/30/21 08:01   Perfluorocotanesulfonic acid (PFDSA)   ND   0.28   0.050   ug/Kg   0   10/28/21   18:22   10/30/21 08:01   Perfluorocotanesulfonic acid   ND   0.28   0.050   ug/Kg   0   10/28/21   18:22   10/30/21 08:01   Perfluorocotanesulfonic acid   ND   0.28   0.050   ug/Kg   0   10/28/21   18:22   10/30/21 08:01   Perfluoropropylene Oxide Dimer   ND   0.28   0.050   ug/Kg   0   10/28/21   18:22   10/30/21 08:01   Perfluoropropylene Oxide Dimer   ND   0.28   0.050   ug/Kg   0   10/28/21   18:22   10/30/21 08:01   Perfluoropropylene Oxide Dimer   ND   0.28   0.050   ug/Kg   0   10/28/21   18:22   10/30/21 08:01   Perfluoropropylene Oxide Dimer   ND   0.28   0.050   ug/Kg   0   10/28/21   18:22   10/30/21 08:01   Perfluoropropylene Oxide Dimer   ND   0.28   0.050   ug/Kg   0   10/28/21   18:22   10/30/21 08:01   Perfluoropropylene Oxide Dimer   ND   0.28   0.050   ug/Kg   0   10/28/21   18:22   10/30/21 08:01   Perfluoropropylene Oxide Dimer   ND   0.28   0.050   ug/Kg   0   10/28/21   18:22   10/30/21 08:01   Perfluoropropylene Oxide Dimer   ND   0.28   0.050   ug/Kg   0   10/28/21   18:22   10/	18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0	01 01 01 01 01 01 01 01 01
Perfluorododecanoic acid (PFDoA)   ND   0.28   0.043   ug/Kg   0.10/28/21 18:22   10/30/21 08:01   Perfluorotridecanoic acid (PFTiA)   ND   0.28   0.050   ug/Kg   0.10/28/21 18:22   10/30/21 08:01   Perfluorobutaneaulfonic acid (PFTiA)   ND   0.28   0.052   ug/Kg   0.10/28/21 18:22   10/30/21 08:01   Perfluorobutaneaulfonic acid (PFDKS)   ND   0.28   0.054   ug/Kg   0.10/28/21 18:22   10/30/21 08:01   Perfluorobutaneaulfonic acid (PFDKS)   ND   0.28   0.061   ug/Kg   0.10/28/21 18:22   10/30/21 08:01   Perfluoroctaneaulfonic acid (PFDS)   ND   0.28   0.061   ug/Kg   0.10/28/21 18:22   10/30/21 08:01   N-methylperfluoroctaneaulfonamidoa   ND   0.28   0.068   ug/Kg   0.10/28/21 18:22   10/30/21 08:01   N-methylperfluoroctaneaulfonamidoa   ND   0.28   0.068   ug/Kg   0.10/28/21 18:22   10/30/21 08:01   Perfluoroctaneaulfonamidoa   ND   0.28   0.068   ug/Kg   0.10/28/21 18:22   10/30/21 08:01   Perfluoroctaneaulfonamidoa   ND   0.28   0.050   ug/Kg   0.10/28/21 18:22   10/30/21 08:01   Perfluoroctaneaulfonic acid   ND   0.28   0.050   ug/Kg   0.10/28/21 18:22   10/30/21 08:01   Perfluoroctaneaulfonic acid   ND   0.28   0.058   ug/Kg   0.10/28/21 18:22   10/30/21 08:01   Perfluoroctaneaulfonic acid   ND   0.28   0.044   ug/Kg   0.10/28/21 18:22   10/30/21 08:01   Perfluoroctaneaulfonic acid   ND   0.28   0.055   ug/Kg   0.10/28/21 18:22   10/30/21 08:01   Perfluoroctaneaulfonic acid   ND   0.28   0.055   ug/Kg   0.10/28/21 18:22   10/30/21 08:01   Perfluoroctaneaulfonic acid   ND   0.28   0.055   ug/Kg   0.10/28/21 18:22   10/30/21 08:01   Perfluoroctaneaulfonic acid   ND   0.28   0.055   ug/Kg   0.10/28/21 18:22   10/30/21 08:01   Perfluoroctaneaulfonic acid   ND   0.28   0.055   ug/Kg   0.10/28/21 18:22   10/30/21 08:01   Perfluoroctaneaulfonic acid   ND   0.28   0.055   ug/Kg   0.10/28/21 18:22   10/30/21 08:01   Perfluoroctaneaulfonic acid   ND   0.28   0.055   ug/Kg   0.10/28/21 18:22   10/30/21 08:01   Perfluoroctaneaulfonic acid   ND   0.28   0.055   ug/Kg   0.10/28/21 18:22   10/30/21 08:01   Perfluoroctan	18:22 10/30/21 08:0 18:22 10/30/21 08:0	01 01 01 01 01 01 01 01 01
Perfluorotridecanoic acid (PFTriA)   ND   0.28   0.030 ug/Kg   0 10/28/21 18:22   10/30/21 08:01	18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0	01 01 01 01 01 01 01 01
Perfluorotetradecanoic acid (PFTeA)   ND   0.28   0.052   ug/Kg   0   10/28/21 18:22   10/30/21 08:01   Perfluorobutanesulfonic acid (PFBS)   ND   0.28   0.054   ug/Kg   0   10/28/21 18:22   10/30/21 08:01   Perfluoroctanesulfonic acid (PFDKS)   ND   0.28   0.061   ug/Kg   0   10/28/21 18:22   10/30/21 08:01   Perfluoroctanesulfonic acid (PFOS)   ND   0.28   0.061   ug/Kg   0   10/28/21 18:22   10/30/21 08:01   N-methylperfluorocctanesulfonamidoa   ND   0.28   0.068   ug/Kg   0   10/28/21 18:22   10/30/21 08:01   N-ethylperfluorocctanesulfonamidoac   ND   0.28   0.050   ug/Kg   0   10/28/21 18:22   10/30/21 08:01   Perfluorocctanesulfonamidoac   ND   0.28   0.050   ug/Kg   0   10/28/21 18:22   10/30/21 08:01   Perfluorocctanesulfonamidoac   ND   0.28   0.050   ug/Kg   0   10/28/21 18:22   10/30/21 08:01   Perfluoropropylene Oxide Dimer   ND   0.28   0.050   ug/Kg   0   10/28/21 18:22   10/30/21 08:01   Perfluorocctanesulfonamidoac   ND   0.28   0.055   ug/Kg   0   10/28/21 18:22   10/30/21 08:01   Perfluoropropylene Oxide Dimer   ND   0.28   0.055   ug/Kg   0   10/28/21 18:22   10/30/21 08:01   Perfluoropropylene Oxide Dimer   ND   0.28   0.055   ug/Kg   0   10/28/21 18:22   10/30/21 08:01   Perfluoropropylene Oxide Dimer   ND   0.28   0.055   ug/Kg   0   10/28/21 18:22   10/30/21 08:01   Perfluoropropylene Oxide Dimer   ND   0.28   0.055   ug/Kg   0   10/28/21 18:22   10/30/21 08:01   Perfluoropropylene Oxide Dimer   ND   0.28   0.055   ug/Kg   0   10/28/21 18:22   10/30/21 08:01   Perfluoropropylene Oxide Dimer   ND   0.28   0.055   ug/Kg   0   10/28/21 18:22   10/30/21 08:01   Perfluoropropylene Oxide Dimer   ND   0.28   0.055   ug/Kg   0   10/28/21 18:22   10/30/21 08:01   Perfluoropropylene Oxide Dimer   ND   0.28   0.055   ug/Kg   0   10/28/21 18:22   10/30/21 08:01   Perfluoropropylene Oxide Dimer   ND   0.28   0.055   ug/Kg   0   10/28/21 18:22   10/30/21 08:01   Perfluoropropylene Oxide Dimer   ND   0.28   0.055   ug/Kg   0   10/28/21 18:22   10/30/21 08:01   Perfluoropropylene Oxide Dimer   ND   0.2	18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0	01 01 01 01 01 01 01
Perfluorobutanesulfonic acid (PFBS)   ND   0.28   0.054   ug/Kg   0   10/28/21   18:22   10/30/21   08:01	18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0	01 01 01 01 01 01
Perfluorohexanesulfonic acid (PFHxS)   ND   0.28   0.041   ug/Kg   0   10/28/21 18:22   10/30/21 08:01	18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0	01 01 01 01 01 01
Perfluorooctanesulfonic acid (PFOS)   ND   0.28   0.061   ug/Kg   3   10/28/21   18:22   10/30/21   08:01	18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0	01 01 01 01 01
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA) N-bethylperfluorooctanesulfonamidoac ND 0.28 0.068 ug/Kg 0.10/28/21 18:22 10/30/21 08:01 etic acid (NEFOSAA) 9-Chlorohexadecafluoro-3-oxanonan ND 0.28 0.050 ug/Kg 0.10/28/21 18:22 10/30/21 08:01 e-1-sulfonic acid Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxanundecan e-1-sulfonic acid ND 0.28 0.050 ug/Kg 0.10/28/21 18:22 10/30/21 08:01 ND 0.28 0.058 ug/Kg 0.10/28/21 18:22 10/30/21 08:01 ND 0.28 0.055 ug/Kg 0.10/28/21 18:22 10/30/21 08:01 ND 0.058 0.058 0.058 0.058 0.058 0.058 0.058 0.050 0.058 0.058 0.058 0.050 0.058 0.058 0.050 0	18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0	01 01 01 01
cetic acid (NMeFOSAA) N-ethylperfluorooctanesulfonamidoac etic acid (NELFOSAA) 9-Chlorohexadecafluoro-3-oxanonan	18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0	01 01 01
etic acid (NEIFOSAA) 9-Chilorhorexadecafluoro-3-oxanonan e-1-sulfonic acid Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid As-Dioxa-3H-perfluoronanoic acid ND 0.28 0.044 ug/Kg 0 10/28/21 18:22 10/30/21 08:01  10/2	18:22 10/30/21 08:0 18:22 10/30/21 08:0	)1 )1
e-1-sulfonic acid Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (AB-Dioxa-3H-perfluorononanoic acid (ADONA)    Sotope Dilution   WRecovery   Qualifier   Limits   Prepared   Malyzed   Dilution     13C2 PFHXA   75   50 - 150   10/28/21 18:22   10/30/21 08:01     13C4 PFDA   82   50 - 150   10/28/21 18:22   10/30/21 08:01     13C5 PFNA   87   50 - 150   10/28/21 18:22   10/30/21 08:01     13C2 PFDA   88   50 - 150   10/28/21 18:22   10/30/21 08:01     13C2 PFDA   88   50 - 150   10/28/21 18:22   10/30/21 08:01     13C2 PFDA   88   50 - 150   10/28/21 18:22   10/30/21 08:01     13C2 PFDA   88   50 - 150   10/28/21 18:22   10/30/21 08:01     13C2 PFDA   88   50 - 150   10/28/21 18:22   10/30/21 08:01     13C2 PFDA   88   50 - 150   10/28/21 18:22   10/30/21 08:01     13C2 PFDA   88   50 - 150   10/28/21 18:22   10/30/21 08:01     13C2 PFDA   88   50 - 150   10/28/21 18:22   10/30/21 08:01     13C2 PFDA   88   50 - 150   10/28/21 18:22   10/30/21 08:01     13C2 PFDA   88   50 - 150   10/28/21 18:22   10/30/21 08:01     13C3 PFBS   82   50 - 150   10/28/21 18:22   10/30/21 08:01     13C3 PFBS   82   50 - 150   10/28/21 18:22   10/30/21 08:01     13C3 PFBS   82   50 - 150   10/28/21 18:22   10/30/21 08:01     13C3 PFBS   83   50 - 150   10/28/21 18:22   10/30/21 08:01     13C3 PFBS   84   50 - 150   10/28/21 18:22   10/30/21 08:01     13C3 PFBS   84   50 - 150   10/28/21 18:22   10/30/21 08:01     13C3 PFBS   85   50 - 150   10/28/21 18:22   10/30/21 08:01     13C4 PFOS   79   50 - 150   10/28/21 18:22   10/30/21 08:01     13C3 PFBS   85   50 - 150   10/28/21 18:22   10/30/21 08:01     13C4 PFOS   79   50 - 150   10/28/21 18:22   10/30/21 08:01     13C4 PFOS   79   50 - 150   10/28/21 18:22   10/30/21 08:01     13C4 PFOS   79   50 - 150   10/28/21 18:22   10/30/21 08:01     13C4 PFOS   70   50 - 150   10/28/21 18:22   10/30/21 08:01     13C4 PFOS   70   70   70   70   70   70   70   7	18:22 10/30/21 08:0	)1
Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaundecan e1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid (ADONA)  **Sotope Dilution** **Sotope Dilut		
e-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid 4,8-Dioxa-3H	10.00 40/00/04.00	01
Sotope Dilution   %Recovery   Qualifier   Limits   Prepared   Analyzed   Dilution   10/28/21 18:22   10/30/21 08:01   13C2 PFHxA   75   50 - 150   10/28/21 18:22   10/30/21 08:01   13C4 PFHpA   82   50 - 150   10/28/21 18:22   10/30/21 08:01   13C4 PFOA   85   50 - 150   10/28/21 18:22   10/30/21 08:01   13C5 PFNA   87   50 - 150   10/28/21 18:22   10/30/21 08:01   13C2 PFDA   87   50 - 150   10/28/21 18:22   10/30/21 08:01   13C2 PFDA   88   50 - 150   10/28/21 18:22   10/30/21 08:01   13C2 PFDA   88   50 - 150   10/28/21 18:22   10/30/21 08:01   13C2 PFDA   88   50 - 150   10/28/21 18:22   10/30/21 08:01   13C2 PFDA   88   50 - 150   10/28/21 18:22   10/30/21 08:01   13C2 PFDA   88   50 - 150   10/28/21 18:22   10/30/21 08:01   13C2 PFDA   88   50 - 150   10/28/21 18:22   10/30/21 08:01   13C2 PFDA   88   50 - 150   10/28/21 18:22   10/30/21 08:01   13C2 PFDA   88   50 - 150   10/28/21 18:22   10/30/21 08:01   13C4 PFOS   79   50 - 150   10/28/21 18:22   10/30/21 08:01   13C4 PFOS   79   50 - 150   10/28/21 18:22   10/30/21 08:01   13C4 PFOS   10/28/21 18:22	18:22 10/30/21 08:0	
13C2 PFHXA	18:22 10/30/21 08:0	01
13C4 PFHpA 82 50 - 150 10/28/21 18:22 10/30/21 08:01 13C4 PFOA 85 50 - 150 10/28/21 18:22 10/30/21 08:01 13C5 PFNA 87 50 - 150 10/28/21 18:22 10/30/21 08:01 13C2 PFDA 87 50 - 150 10/28/21 18:22 10/30/21 08:01 13C2 PFUnA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 13C2 PFDoA 85 50 - 150 10/28/21 18:22 10/30/21 08:01 13C2 PFDoA 85 50 - 150 10/28/21 18:22 10/30/21 08:01 13C2 PFDoA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 13C2 PFDOA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 13C3 PFBS 82 50 - 150 10/28/21 18:22 10/30/21 08:01 13C3 PFBS 72 50 - 150 10/28/21 18:22 10/30/21 08:01 13C4 PFOS 79 50 - 150 10/28/21 18:22 10/30/21 08:01 13C4 PFOS 79 50 - 150 10/28/21 18:22 10/30/21 08:01 13C4 PFOS 80 50 - 150 10/28/21 18:22 10/30/21 08:01 13C4 PFOS 88 50 - 150 10/28/21 18:22 10/30/21 08:01 13C3 NMEFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 13C3 NFPO-DA 77 50 - 150 10/28/21 18:22 10/30/21 08:01 13C3 HFPO-DA 77 50 - 150 10/28/21 18:22 10/30/21 08:01 10/28/21 18:22	ed Analyzed	Dil Fa
13C4 PFOA 85 50 - 150 10/28/21 18:22 10/30/21 08:01 13C5 PFNA 87 50 - 150 10/28/21 18:22 10/30/21 08:01 13C2 PFDA 87 50 - 150 10/28/21 18:22 10/30/21 08:01 13C2 PFDA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 13C2 PFDAA 85 50 - 150 10/28/21 18:22 10/30/21 08:01 13C2 PFDAA 85 50 - 150 10/28/21 18:22 10/30/21 08:01 13C2 PFTeDA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 13C2 PFTeDA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 13C3 PFBS 82 50 - 150 10/28/21 18:22 10/30/21 08:01 13C3 PFBS 72 50 - 150 10/28/21 18:22 10/30/21 08:01 13C4 PFOS 79 50 - 150 10/28/21 18:22 10/30/21 08:01 13C4 PFOS 79 50 - 150 10/28/21 18:22 10/30/21 08:01 13C4 PFOSAA 80 50 - 150 10/28/21 18:22 10/30/21 08:01 13C3 HFPO-DA 77 10/28/21 18:22 10/30/21 08:01 13C3 HFPO-DA 10/28/21 18:22 10/30/21 08:01 13C3 HFP	18:22 10/30/21 08:0	01
13C5 PFNA 87 50 - 150 10/28/21 18:22 10/30/21 08:01 13C2 PFDA 87 50 - 150 10/28/21 18:22 10/30/21 08:01 13C2 PFUnA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 13C2 PFUnA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 13C2 PFDOA 85 50 - 150 10/28/21 18:22 10/30/21 08:01 13C2 PFTeDA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 13C3 PFBS 82 50 - 150 10/28/21 18:22 10/30/21 08:01 13C3 PFBS 82 50 - 150 10/28/21 18:22 10/30/21 08:01 13C4 PFOS 79 50 - 150 10/28/21 18:22 10/30/21 08:01 13C4 PFOS 79 50 - 150 10/28/21 18:22 10/30/21 08:01 13C4 PFOS 79 50 - 150 10/28/21 18:22 10/30/21 08:01 13C3 NMeFOSAA 80 50 - 150 10/28/21 18:22 10/30/21 08:01 13C3 NMeFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 13C3 NMeFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 13C3 NMeFODA 77 50 - 150 10/28/21 18	18:22 10/30/21 08:0	01
13C2 PFDA 87 50 - 150 10/28/21 18:22 10/30/21 08:01 13C2 PFUnA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 13C2 PFDOA 85 50 - 150 10/28/21 18:22 10/30/21 08:01 13C2 PFTeDA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 13C3 PFBS 82 50 - 150 10/28/21 18:22 10/30/21 08:01 18C2 PFTeDA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 13C3 PFBS 72 50 - 150 10/28/21 18:22 10/30/21 08:01 13C4 PFOS 79 50 - 150 10/28/21 18:22 10/30/21 08:01 13C4 PFOS 80 50 - 150 10/28/21 18:22 10/30/21 08:01 13C5 PFDAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 13C6 NEIFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 13C6 NEIFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 13C7 NEIFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 13C7 NEIFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 13C7 NEIFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 13C7 NEIFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 13C7 NEIFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 13C7 NEIFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 13C7 NEIFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 13C7 NEIFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 13C7 NEIFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 13C7 NEIFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01	18:22 10/30/21 08:0	01
13C2 PFUnA	18:22 10/30/21 08:0	01
13C2 PFDoA 85 50 - 150 10/28/21 18:22 10/30/21 08:01 13C2 PFTeDA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 13C3 PFBS 82 50 - 150 10/28/21 18:22 10/30/21 08:01 1802 PFHxS 72 50 - 150 10/28/21 18:22 10/30/21 08:01 13C4 PFOS 79 50 - 150 10/28/21 18:22 10/30/21 08:01 d3-NMeFOSAA 80 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NEtFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NEtFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NEtFOSAA 77 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NEtFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NEtFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NEtFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NEtFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NEtFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NEtFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NEtFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NEtFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NEtFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NEtFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NEtFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NEtFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NEtFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NEtFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NEtFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NEtFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NETFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NETFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NETFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NETFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NETFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NETFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NETFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NETFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NETFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NETFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NETFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NETFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NETFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01	18:22 10/30/21 08:0	01
13C2 PFTeDA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 13C3 PFBS 82 50 - 150 10/28/21 18:22 10/30/21 08:01 1802 PFHxS 72 50 - 150 10/28/21 18:22 10/30/21 08:01 13C4 PFOS 79 50 - 150 10/28/21 18:22 10/30/21 08:01 d3-NMeFOSAA 80 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NEtFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 13C3 HFPO-DA 77 50 - 150 10/28/21 18:22 10/30/21 08:01 10/28/21 18:22 10/30/2	18:22 10/30/21 08:0	01
13C3 PFBS 82 50 - 150 10/28/21 18:22 10/30/21 08:01 18O2 PFHxS 72 50 - 150 10/28/21 18:22 10/30/21 08:01 13C4 PFOS 79 50 - 150 10/28/21 18:22 10/30/21 08:01 d3-NMeFOSAA 80 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NEtFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 13C3 HFPO-DA 77 50 - 150 10/28/21 18:22 10/30/21 08:01  General Chemistry Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Percent Moisture 31.2 0.1 0.1 %	18:22 10/30/21 08:0	01
1802 PFHxS     72     50 - 150     10/28/21 18:22 10/30/21 08:01       13C4 PFOS     79     50 - 150     10/28/21 18:22 10/30/21 08:01       d3-NMeFOSAA     80     50 - 150     10/28/21 18:22 10/30/21 08:01       d5-NEtFOSAA     88     50 - 150     10/28/21 18:22 10/30/21 08:01       13C3 HFPO-DA     77     50 - 150     10/28/21 18:22 10/30/21 08:01       General Chemistry       Analyte     Result Qualifier     RL     MDL Unit     D     Prepared     Analyzed     Dil       Percent Moisture     31.2     0.1     0.1     %     10/28/21 12:18	18:22 10/30/21 08:0	01
13C4 PFOS 79 50 - 150 10/28/21 18:22 10/30/21 08:01 d3-NMeFOSAA 80 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NEtFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NEtFOSAA 77 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NEtFOSAA 77 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NEtFOSAA 77 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NEtFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NEtFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NEtFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NEtFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NEtFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NEtFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NEtFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NEtFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NEtFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NEtFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NEtFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NEtFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NEtFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NEtFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NEtFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NETFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NETFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NETFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NETFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NETFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NETFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NETFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NETFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NETFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NETFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NETFOSAA 88 50 - 150 10/28/21 18:22 10/30/21 08:01 d5-NETFOSAA 88 50 - 150 10/28/21 12:18 d5-NETFOSAA 88 50 - 150 10/28/21 12:18 d5-NETFOSAA 88 50 - 150 10/28/21 12:18 d5-NETFOSAA 88 50 - 150 10/28/21 12:18 d5-NETFOSAA 88 50 - 150 10/28/21 12:18 d5-NETFOSAA 88 50 - 150 10/28/21 12:18 d5-NETFOSAA 88 50 10/28/21 12:18 d5-NETFOSAA 88 50 10/28/21 12:18 d5-NETFOSAA 88 50 10	18:22 10/30/21 08:0	01
d3-NMeFOSAA     80     50 - 150     10/28/21 18:22 10/30/21 08:01       d5-NEtFOSAA     88     50 - 150     10/28/21 18:22 10/30/21 08:01       13C3 HFPO-DA     77     50 - 150     10/28/21 18:22 10/30/21 08:01       General Chemistry       Analyte     Result Qualifier     RL     MDL Unit Unit Unit Unit Unit Unit Unit Unit	18:22 10/30/21 08:0	01
d5-NEtFOSAA     88     50 - 150     10/28/21 18:22 10/30/21 08:01       13C3 HFPO-DA     77     50 - 150     10/28/21 18:22 10/30/21 08:01       General Chemistry       Analyte     Result Qualifier     RL MDL Unit     D Prepared Analyzed Dil       Percent Moisture     31.2     0.1     0.1     %     10/28/21 12:18	18:22 10/30/21 08:0	01
13C3 HFPO-DA	18:22 10/30/21 08:0	01
General Chemistry Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Percent Moisture 31.2 0.1 0.1 % 10/28/21 12:18	18:22 10/30/21 08:0	01
Analyte Result Qualifier RL MDL Unit D Percent Moisture 0.1 0.1 0.1 % D Prepared 10/28/21 12:18		01
Percent Moisture 31.2 0.1 0.1 % 10/28/21 12:18	18:22 10/30/21 08:0	
* **		
Percent Solids 68.8 0.1 0.1 % 10/28/21 12:18	ed Analyzed	Dil Fa
<b>Percent Solids</b> 68.8 0.1 0.1 %	1 1 1	18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0 18:22 10/30/21 08:0

Eurofins TestAmerica, Sacramento

Client: Shannon & Wilson, Inc Job ID: 320-80903-1

Project/Site: SG Soils WO#1

**Percent Solids** 

Client Sample ID: 21GST-SED-027 Lab Sample ID: 320-80903-49

Date Collected: 10/18/21 14:40 **Matrix: Solid** Date Received: 10/27/21 12:25 Percent Solids: 70.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.27	0.042	ug/Kg	— <u></u>	10/28/21 18:22	10/30/21 08:31	
Perfluoroheptanoic acid (PFHpA)	ND		0.27	0.052	ug/Kg	₩	10/28/21 18:22	10/30/21 08:31	
Perfluorooctanoic acid (PFOA)	ND		0.27	0.073	ug/Kg	₩	10/28/21 18:22	10/30/21 08:31	•
Perfluorononanoic acid (PFNA)	ND		0.27	0.030	ug/Kg	₩	10/28/21 18:22	10/30/21 08:31	1
Perfluorodecanoic acid (PFDA)	ND		0.27	0.066	ug/Kg	₩	10/28/21 18:22	10/30/21 08:31	1
Perfluoroundecanoic acid (PFUnA)	ND		0.27	0.057	ug/Kg	₩	10/28/21 18:22	10/30/21 08:31	1
Perfluorododecanoic acid (PFDoA)	ND		0.27	0.041	ug/Kg	₩	10/28/21 18:22	10/30/21 08:31	
Perfluorotridecanoic acid (PFTriA)	ND		0.27	0.029	ug/Kg	₩	10/28/21 18:22	10/30/21 08:31	
Perfluorotetradecanoic acid (PFTeA)	ND		0.27	0.051	ug/Kg	≎	10/28/21 18:22	10/30/21 08:31	
Perfluorobutanesulfonic acid (PFBS)	ND		0.27	0.052	ug/Kg	₩	10/28/21 18:22	10/30/21 08:31	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.27	0.040	ug/Kg	≎	10/28/21 18:22	10/30/21 08:31	1
Perfluorooctanesulfonic acid (PFOS)	0.26	JI	0.27	0.059	ug/Kg	₩	10/28/21 18:22	10/30/21 08:31	,
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.27	0.031	ug/Kg	₩	10/28/21 18:22	10/30/21 08:31	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.27	0.066	ug/Kg	₩	10/28/21 18:22	10/30/21 08:31	,
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.27	0.048	ug/Kg	₩	10/28/21 18:22	10/30/21 08:31	,
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.27	0.056	ug/Kg	☆	10/28/21 18:22	10/30/21 08:31	
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.27	0.042	ug/Kg	₩	10/28/21 18:22	10/30/21 08:31	•
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.27	0.053	ug/Kg	₩	10/28/21 18:22	10/30/21 08:31	,
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	84		50 - 150				10/28/21 18:22	10/30/21 08:31	
13C4 PFHpA	90		50 - 150				10/28/21 18:22	10/30/21 08:31	1
13C4 PFOA	99		50 - 150				10/28/21 18:22	10/30/21 08:31	
13C5 PFNA	94		50 - 150				10/28/21 18:22	10/30/21 08:31	
13C2 PFDA	94		50 - 150				10/28/21 18:22	10/30/21 08:31	1
13C2 PFUnA	93		50 - 150				10/28/21 18:22	10/30/21 08:31	
13C2 PFDoA	102		50 - 150				10/28/21 18:22	10/30/21 08:31	
13C2 PFTeDA	106		50 - 150				10/28/21 18:22	10/30/21 08:31	
13C3 PFBS	96		50 - 150				10/28/21 18:22	10/30/21 08:31	
1802 PFHxS	82		50 - 150				10/28/21 18:22	10/30/21 08:31	
13C4 PFOS	90		50 - 150				10/28/21 18:22	10/30/21 08:31	
d3-NMeFOSAA	89		50 - 150				10/28/21 18:22	10/30/21 08:31	
d5-NEtFOSAA	87		50 - 150				10/28/21 18:22	10/30/21 08:31	
13C3 HFPO-DA	90		50 - 150				10/28/21 18:22	10/30/21 08:31	
General Chemistry							_		
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	29.7		0.1	0.1	%			10/28/21 12:18	1

0.1

70.3

0.1 %

10/28/21 12:18

Client: Shannon & Wilson, Inc Job ID: 320-80903-1 Project/Site: SG Soils WO#1

Client Sample ID: 21GST-SED-026

**Percent Solids** 

Lab Sample ID: 320-80903-50 Date Collected: 10/18/21 15:05 **Matrix: Solid** 

Date Received: 10/27/21 12:25 Percent Solids: 75.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.25	0.039	ug/Kg	<u></u>	10/28/21 18:22	10/30/21 08:41	
Perfluoroheptanoic acid (PFHpA)	ND		0.25	0.048	ug/Kg	≎	10/28/21 18:22	10/30/21 08:41	1
Perfluorooctanoic acid (PFOA)	ND		0.25	0.067	ug/Kg	≎	10/28/21 18:22	10/30/21 08:41	1
Perfluorononanoic acid (PFNA)	ND		0.25	0.028	ug/Kg	₽	10/28/21 18:22	10/30/21 08:41	1
Perfluorodecanoic acid (PFDA)	ND		0.25	0.061	ug/Kg	₩	10/28/21 18:22	10/30/21 08:41	1
Perfluoroundecanoic acid (PFUnA)	ND		0.25	0.053	ug/Kg	₩	10/28/21 18:22	10/30/21 08:41	1
Perfluorododecanoic acid (PFDoA)	ND		0.25	0.038	ug/Kg	₽	10/28/21 18:22	10/30/21 08:41	1
Perfluorotridecanoic acid (PFTriA)	ND		0.25	0.027	ug/Kg	₩	10/28/21 18:22	10/30/21 08:41	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.25	0.047	ug/Kg	₩	10/28/21 18:22	10/30/21 08:41	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.25	0.048	ug/Kg	₩	10/28/21 18:22	10/30/21 08:41	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.25	0.037	ug/Kg	≎	10/28/21 18:22	10/30/21 08:41	1
Perfluorooctanesulfonic acid (PFOS)	0.14	JI	0.25	0.054	ug/Kg	₩	10/28/21 18:22	10/30/21 08:41	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.25	0.029	ug/Kg	₩	10/28/21 18:22	10/30/21 08:41	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.25	0.061	ug/Kg	₩	10/28/21 18:22	10/30/21 08:41	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.25		ug/Kg		10/28/21 18:22		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25		ug/Kg	₩	10/28/21 18:22		1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.25		ug/Kg	₩	10/28/21 18:22		1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.25	0.049	ug/Kg	≎	10/28/21 18:22	10/30/21 08:41	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	88		50 - 150				10/28/21 18:22	10/30/21 08:41	1
13C4 PFHpA	90		50 - 150				10/28/21 18:22	10/30/21 08:41	1
13C4 PFOA	99		50 - 150				10/28/21 18:22	10/30/21 08:41	1
13C5 PFNA	88		50 - 150				10/28/21 18:22	10/30/21 08:41	1
13C2 PFDA	89		50 - 150				10/28/21 18:22	10/30/21 08:41	1
13C2 PFUnA	88		50 - 150				10/28/21 18:22	10/30/21 08:41	1
13C2 PFDoA	98		50 - 150				10/28/21 18:22	10/30/21 08:41	1
13C2 PFTeDA	96		50 - 150				10/28/21 18:22	10/30/21 08:41	1
13C3 PFBS	88		50 - 150				10/28/21 18:22	10/30/21 08:41	1
1802 PFHxS	81		50 - 150				10/28/21 18:22	10/30/21 08:41	1
13C4 PFOS	84		50 - 150				10/28/21 18:22	10/30/21 08:41	1
d3-NMeFOSAA	85		50 - 150				10/28/21 18:22	10/30/21 08:41	1
d5-NEtFOSAA	84		50 - 150					10/30/21 08:41	1
13C3 HFPO-DA	83		50 - 150				10/28/21 18:22	10/30/21 08:41	1
General Chemistry	_			:		_			
Analyte		Qualifier	RL _		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	24.7		0.1	0.1	%			10/28/21 12:18	1

10/28/21 12:18

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0.1

75.3

0.1 %

Client: Shannon & Wilson, Inc Job ID: 320-80903-1 Project/Site: SG Soils WO#1

Client Sample ID: 21GST-SED-025

Lab Sample ID: 320-80903-51 Date Collected: 10/18/21 15:25 **Matrix: Solid** Date Received: 10/27/21 12:25

Percent Solids: 74.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.25	0.038	ug/Kg	<del></del>	10/28/21 18:22	10/30/21 08:51	
Perfluoroheptanoic acid (PFHpA)	ND		0.25	0.047	ug/Kg	₩	10/28/21 18:22	10/30/21 08:51	
Perfluorooctanoic acid (PFOA)	ND		0.25	0.065	ug/Kg	₩	10/28/21 18:22	10/30/21 08:51	1
Perfluorononanoic acid (PFNA)	ND		0.25	0.027	ug/Kg	₩	10/28/21 18:22	10/30/21 08:51	1
Perfluorodecanoic acid (PFDA)	ND		0.25	0.059	ug/Kg	₩	10/28/21 18:22	10/30/21 08:51	1
Perfluoroundecanoic acid (PFUnA)	ND		0.25	0.052	ug/Kg	☼	10/28/21 18:22	10/30/21 08:51	1
Perfluorododecanoic acid (PFDoA)	ND		0.25	0.037	ug/Kg	₩	10/28/21 18:22	10/30/21 08:51	1
Perfluorotridecanoic acid (PFTriA)	ND		0.25	0.026	ug/Kg	₩	10/28/21 18:22	10/30/21 08:51	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.25	0.046	ug/Kg	☼	10/28/21 18:22	10/30/21 08:51	
Perfluorobutanesulfonic acid (PFBS)	ND		0.25	0.047	ug/Kg	₩	10/28/21 18:22	10/30/21 08:51	
Perfluorohexanesulfonic acid (PFHxS)	ND		0.25	0.036	ug/Kg	₩	10/28/21 18:22	10/30/21 08:51	
Perfluorooctanesulfonic acid (PFOS)	ND		0.25	0.053	ug/Kg	₩	10/28/21 18:22	10/30/21 08:51	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.25	0.028	ug/Kg	₩	10/28/21 18:22	10/30/21 08:51	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.25	0.059	ug/Kg	₩	10/28/21 18:22	10/30/21 08:51	,
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.25	0.043	ug/Kg	₩	10/28/21 18:22	10/30/21 08:51	,
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.050	ug/Kg	₩	10/28/21 18:22	10/30/21 08:51	
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.25	0.038	ug/Kg	₩	10/28/21 18:22	10/30/21 08:51	•
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.25	0.048	ug/Kg	₩	10/28/21 18:22	10/30/21 08:51	•
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	108		50 - 150				10/28/21 18:22	10/30/21 08:51	
13C4 PFHpA	114		50 - 150				10/28/21 18:22	10/30/21 08:51	
13C4 PFOA	116		50 - 150				10/28/21 18:22	10/30/21 08:51	
13C5 PFNA	111		50 - 150				10/28/21 18:22	10/30/21 08:51	
13C2 PFDA	110		50 - 150				10/28/21 18:22	10/30/21 08:51	
13C2 PFUnA	121		50 <sub>-</sub> 150				10/28/21 18:22	10/30/21 08:51	
13C2 PFDoA	121		50 - 150				10/28/21 18:22	10/30/21 08:51	
13C2 PFTeDA	122		50 <sub>-</sub> 150				10/28/21 18:22	10/30/21 08:51	
13C3 PFBS	112		50 <sub>-</sub> 150				10/28/21 18:22	10/30/21 08:51	
1802 PFHxS	103		50 - 150					10/30/21 08:51	
13C4 PFOS	104		50 <sub>-</sub> 150					10/30/21 08:51	
d3-NMeFOSAA	104		50 <sub>-</sub> 150					10/30/21 08:51	
d5-NEtFOSAA	108		50 - 150				10/28/21 18:22	10/30/21 08:51	
13C3 HFPO-DA	102		50 - 150					10/30/21 08:51	
General Chemistry						_	_		
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Percent Moisture	26.0		0.1	0.1	%			10/28/21 12:18	1
Percent Solids	74.0		0.1	0.1				10/28/21 12:18	

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Client: Shannon & Wilson, Inc Job ID: 320-80903-1

Project/Site: SG Soils WO#1

**Percent Solids** 

Client Sample ID: 21GST-SED-127 Lab Sample ID: 320-80903-52

Method: EPA 537(Mod) - PFAS Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND	-	0.28	0.043	ug/Kg	— <u></u>		10/30/21 09:02	
Perfluoroheptanoic acid (PFHpA)	ND		0.28		ug/Kg	₩	10/28/21 18:22	10/30/21 09:02	1
Perfluorooctanoic acid (PFOA)	ND		0.28	0.074	ug/Kg	₽	10/28/21 18:22	10/30/21 09:02	1
Perfluorononanoic acid (PFNA)	ND		0.28	0.031	ug/Kg	₽	10/28/21 18:22	10/30/21 09:02	1
Perfluorodecanoic acid (PFDA)	ND		0.28	0.067	ug/Kg	₽	10/28/21 18:22	10/30/21 09:02	1
Perfluoroundecanoic acid (PFUnA)	ND		0.28		ug/Kg	₽	10/28/21 18:22	10/30/21 09:02	1
Perfluorododecanoic acid (PFDoA)	ND		0.28	0.042	ug/Kg	≎	10/28/21 18:22	10/30/21 09:02	1
Perfluorotridecanoic acid (PFTriA)	ND		0.28	0.029	ug/Kg	☼	10/28/21 18:22	10/30/21 09:02	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.28	0.052	ug/Kg	≎	10/28/21 18:22	10/30/21 09:02	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.28	0.053	ug/Kg	≎	10/28/21 18:22	10/30/21 09:02	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.28	0.040	ug/Kg	≎	10/28/21 18:22	10/30/21 09:02	1
Perfluorooctanesulfonic acid (PFOS)	0.76	1	0.28	0.060	ug/Kg	₩	10/28/21 18:22	10/30/21 09:02	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.28	0.032	ug/Kg	₩	10/28/21 18:22	10/30/21 09:02	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.28		ug/Kg	₩	10/28/21 18:22	10/30/21 09:02	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.28		ug/Kg		10/28/21 18:22	10/30/21 09:02	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.28		ug/Kg	₩	10/28/21 18:22		•
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.28		ug/Kg	₩		10/30/21 09:02	•
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.28	0.054	ug/Kg	₩	10/28/21 18:22	10/30/21 09:02	•
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	92		50 - 150				10/28/21 18:22	10/30/21 09:02	
13C4 PFHpA	100		50 - 150				10/28/21 18:22	10/30/21 09:02	
13C4 PFOA	107		50 - 150				10/28/21 18:22	10/30/21 09:02	
13C5 PFNA	100		50 - 150				10/28/21 18:22	10/30/21 09:02	
13C2 PFDA	100		50 - 150				10/28/21 18:22	10/30/21 09:02	
13C2 PFUnA	98		50 - 150				10/28/21 18:22	10/30/21 09:02	
13C2 PFDoA	105		50 - 150				10/28/21 18:22	10/30/21 09:02	
13C2 PFTeDA	107		50 - 150				10/28/21 18:22	10/30/21 09:02	1
13C3 PFBS	101		50 - 150				10/28/21 18:22	10/30/21 09:02	
1802 PFHxS	87		50 - 150				10/28/21 18:22	10/30/21 09:02	
13C4 PFOS	97		50 - 150				10/28/21 18:22	10/30/21 09:02	
d3-NMeFOSAA	101		50 - 150				10/28/21 18:22	10/30/21 09:02	
d5-NEtFOSAA	99		50 - 150				10/28/21 18:22	10/30/21 09:02	1
13C3 HFPO-DA	91		50 - 150				10/28/21 18:22	10/30/21 09:02	•
General Chemistry							_		
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	30.9		0.1	0.1	%			10/28/21 12:18	1

11/5/2021

10/28/21 12:18

0.1

69.1

0.1 %

# **Isotope Dilution Summary**

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15

Matrix: Solid Prep Type: Total/NA

		PFHxA	Perce C4PFHA	ent Isotope PFOA	Dilution Re	covery (Ac	ceptance L PFUnA	imits) PFDoA	PFTDA
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150
320-80903-1	21GST-MW13-01	79	84	95	96	95	86	91	86
320-80903-1 MS	21GST-MW13-01	82	92	102	102	98	95	91	90
320-80903-1 MSD	21GST-MW13-01	75	84	95	99	92	93	83	88
320-80903-2	21GST-MW13-02	88	92	99	101	94	98	95	102
320-80903-3	21GST-MW13-03	94	100	101	98	92	96	88	93
320-80903-4	21GST-MW13-04	82	86	95	91	88	84	83	86
320-80903-5	21GST-MW13-05	80	88	97	97	89	96	98	100
320-80903-6	21GST-MW13-07	90	92	97	97	93	88	89	96
320-80903-7	21GST-MW13-12	88	91	96	97	94	93	97	99
320-80903-8	21GST-MW23-01	83	91	93	89	86	86	88	91
320-80903-9	21GST-MW23-02	84	95	97	93	87	87	88	102
320-80903-10	21GST-MW17-01	94	96	99	99	94	93	95	98
320-80903-11	21GST-MW17-02	88	91	99	100	96	90	98	99
320-80903-12	21GST-MW25-01	87	94	101	101	101	99	95	104
320-80903-12	21GST-MW25-01	128	126	135	125	124	122	131	137
320-80903-13 MS	21GST-MW25-02	123	132	136	123	119	123	125	139
320-80903-13 MSD	21GST-MW25-02	123	110	119	108	113	109	119	130
		95			108		95	89	
320-80903-14	21GST-SED-010		102	110		101			93
320-80903-14 MS	21GST-SED-010	96	93	106	108	105	106	105	113
320-80903-14 MSD	21GST-SED-010	96	104	109	112	103	98	93	93
320-80903-15	21GST-SED-008	95	97	107	110	101	99	89	86
320-80903-16	21GST-SED-024	92	98	105	98	96	87	79	83
320-80903-17	21GST-DPSED-024	94	99	106	104	100	91	95	91
320-80903-18	21GST-SED-124	86	96	100	104	102	100	100	109
320-80903-19	21GST-DPSED-124	88	94	104	109	99	96	98	93
320-80903-20	21GST-SED-005	93	94	105	108	100	93	96	95
320-80903-21	21GST-SED-004	96	101	111	111	110	100	104	111
320-80903-22	21GST-SED-006	94	98	111	112	99	88	82	92
320-80903-23	21GST-SED-007	87	93	104	104	99	95	98	92
320-80903-24	21GST-SED-011	90	95	106	111	97	93	91	96
320-80903-25	21GST-DPSED-011	97	107	111	111	101	104	103	107
320-80903-26	21GST-SED-017	98	100	111	107	108	100	105	107
320-80903-27	21GST-DPSED-017	91	95	102	104	95	91	90	88
320-80903-28	21GST-SED-019	94	96	108	103	99	96	96	99
320-80903-29	21GST-SED-016	95	100	106	111	102	95	94	104
320-80903-30	21GST-SED-013	85	90	104	105	101	103	101	97
320-80903-31	21GST-SED-014	87	97	102	105	106	101	90	95
320-80903-32	21GST-SED-015	84	89	106	108	99	91	100	105
320-80903-33	21GST-SED-018	89	93	103	104	104	95	102	102
320-80903-34	21GST-SED-118	109	118	117	117	113	111	123	129
320-80903-35	21GST-SED-020	99	103	110	100	100	102	105	102
320-80903-36	21GST-SED-021	113	118	128	118	118	121	128	135
320-80903-37	21GST-DPSED-020	97	105	104	101	103	104	110	110
320-80903-38	21GST-DPSED-021	108	113	121	111	114	108	116	123
320-80903-39	21GST-SED-012	90	96	103	93	103	101	95	106
320-80903-39	21GST-SED-012 21GST-SED-022	109	125	122	111	118	119	129	130
320-80903-40 320-80903-41	21GST-SED-022 21GST-SED-009	109	102	112	103	104	105	109	
320-80903-41 320-80903-42	21GST-SED-009 21GST-DPSED-009								111
JZU-0U3UJ-4Z	21001-DF3ED-009	93	100	109	99	101	103	106	117

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# **Isotope Dilution Summary**

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Matrix: Solid Prep Type: Total/NA

			Parce	ant Isotono	Dilution Re	covery (Ac	centance I	imite)	
		PFHxA	C4PFHA	PFOA	PFNA	PFDA	PFUnA	PFDoA	PFTDA
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)
320-80903-44	21GST-DPSED-023	101	105	109	104	105	106	121	118
320-80903-45	21GST-SED-030	85	91	101	93	97	98	98	104
320-80903-46	21GST-SED-028	91	103	98	101	101	104	106	103
320-80903-47	21GST-DPSED-028	84	92	95	87	90	92	92	95
320-80903-48	21GST-SED-029	75	82	85	87	87	88	85	88
320-80903-49	21GST-SED-027	84	90	99	94	94	93	102	106
320-80903-50	21GST-SED-026	88	90	99	88	89	88	98	96
320-80903-51	21GST-SED-025	108	114	116	111	110	121	121	122
320-80903-52	21GST-SED-023	92	100	107	100	100	98	105	107
LCS 320-537957/2-A	Lab Control Sample	96	96	107	99	100	96	93	107
LCS 320-538091/2-A	Lab Control Sample	109	111	118	99 115	110	110	93 113	116
LCS 320-538091/2-A LCS 320-538118/2-A	Lab Control Sample		87	97	96	89		94	99
	•	83					84		
MB 320-537957/1-A	Method Blank	94	100	103	108	102	104	97	108
MB 320-538091/1-A	Method Blank	96	100	103	102	101	98	106	107
MB 320-538118/1-A	Method Blank	86	89	96	101	92	90	87	102
					Dilution Re			imits)	
		C3PFBS	PFHxS	PFOS		d5NEFOS			
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)		
320-80903-1	21GST-MW13-01	98	85	90	87	89	79		
320-80903-1 MS	21GST-MW13-01	102	91	99	93	101	92		
320-80903-1 MSD	21GST-MW13-01	94	87	96	88	88	84		
320-80903-2	21GST-MW13-02	106	93	103	95	88	82		
320-80903-3	21GST-MW13-03	104	99	98	93	90	94		
320-80903-4	21GST-MW13-04	91	83	93	83	80	86		
320-80903-5	21GST-MW13-05	95	87	97	86	92	96		
320-80903-6	21GST-MW13-07	102	90	99	90	87	92		
320-80903-7	21GST-MW13-12	103	91	100	85	87	103		
320-80903-8	21GST-MW23-01	95	86	96	94	90	90		
320-80903-9	21GST-MW23-02	99	92	95	92	93	87		
320-80903-10	21GST-MW17-01	100	92	98	98	95	91		
320-80903-11	21GST-MW17-02	101	90	101	98	91	91		
320-80903-12	21GST-MW25-01	103	92	98	99	101	88		
320-80903-13	21GST-MW25-02	137	122	127	122	122	117		
320-80903-13 MS	21GST-MW25-02	139	125	129	119	121	119		
320-80903-13 MSD	21GST-MW25-02	127	108	116	112	110	108		
320-80903-14	21GST-SED-010	109	98	105	105	101	94		
320-80903-14 MS	21GST-SED-010	113	98	112	111	119	98		
320-80903-14 MSD	21GST-SED-010	110	96	109	106	100	95		
320-80903-15	21GST-SED-008	107	94	105	107	104	95		
320-80903-16	21GST-SED-024	107	95	101	93	92	99		
320-80903-17	21GST-DPSED-024	109	97	105	109	109	90		
320-80903-18	21GST-SED-124	104	94	104	113	111	88		
320-80903-19	21GST-DPSED-124	100	93	103	101	108	91		
320-80903-20	21GST-SED-005	102	97	103	117	105	91		
320-80903-21	21GST-SED-004	114	99	109	113	113	99		
320-80903-22	21GST-SED-006	110	97	107	82	84	94		
320-80903-23	21GST-SED-007	103	90	101	110	111	92		
320-80903-24	21GST-SED-011	107	96	106	113	102	90		
320-80903-25	21GST-DPSED-011	106	100	117	121	119	96		
320-80903-26	21GST-SED-017	105	100	109	116	117	96		

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## **Isotope Dilution Summary**

Client: Shannon & Wilson, Inc Job ID: 320-80903-1 Project/Site: SG Soils WO#1

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

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

			Perce	ent Isotope	Dilution Re	covery (Ac	ceptance Limits)	
		C3PFBS	PFHxS	PFOS	d3NMFOS	d5NEFOS	HFPODA	
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	
320-80903-27	21GST-DPSED-017	102	91	103	113	103	91	
320-80903-28	21GST-SED-019	104	93	106	109	108	95	
320-80903-29	21GST-SED-016	113	96	106	106	100	95	
320-80903-30	21GST-SED-013	108	97	106	110	115	90	
320-80903-31	21GST-SED-014	105	99	105	103	99	91	
320-80903-32	21GST-SED-015	104	95	103	112	109	87	
320-80903-33	21GST-SED-018	106	94	104	110	109	101	
320-80903-34	21GST-SED-118	124	112	112	112	113	105	
320-80903-35	21GST-SED-020	108	95	98	100	94	95	
320-80903-36	21GST-SED-021	140	119	114	115	122	106	
320-80903-37	21GST-DPSED-020	115	96	98	97	96	99	
320-80903-38	21GST-DPSED-021	107	106	112	102	113	114	
320-80903-39	21GST-SED-012	96	86	95	91	96	91	
320-80903-40	21GST-SED-022	114	108	109	111	119	112	
320-80903-41	21GST-SED-009	106	98	98	99	97	96	
320-80903-42	21GST-DPSED-009	102	96	100	103	103	92	
320-80903-43	21GST-SED-023	97	93	97	97	106	87	
320-80903-44	21GST-DPSED-023	106	95	101	104	105	101	
320-80903-45	21GST-SED-030	100	84	93	92	100	88	
320-80903-46	21GST-SED-028	102	90	90	96	97	96	
320-80903-47	21GST-DPSED-028	87	81	84	84	87	77	
320-80903-48	21GST-SED-029	82	72	79	80	88	77	
320-80903-49	21GST-SED-027	96	82	90	89	87	90	
320-80903-50	21GST-SED-026	88	81	84	85	84	83	
320-80903-51	21GST-SED-025	112	103	104	104	108	102	
320-80903-52	21GST-SED-127	101	87	97	101	99	91	
LCS 320-537957/2-A	Lab Control Sample	105	92	102	112	103	90	
LCS 320-538091/2-A	Lab Control Sample	120	107	112	104	105	106	
LCS 320-538118/2-A	Lab Control Sample	96	86	94	89	89	92	
MB 320-537957/1-A	Method Blank	108	91	102	104	105	94	
MB 320-538091/1-A	Method Blank	99	93	99	99	95	95	
MB 320-538118/1-A	Method Blank	101	91	98	93	89	91	

#### Surrogate Legend

PFHxA = 13C2 PFHxA

C4PFHA = 13C4 PFHpA

PFOA = 13C4 PFOA

PFNA = 13C5 PFNA

PFDA = 13C2 PFDA

PFUnA = 13C2 PFUnA

PFDoA = 13C2 PFDoA

PFTDA = 13C2 PFTeDA

C3PFBS = 13C3 PFBS PFHxS = 18O2 PFHxS

PFOS = 13C4 PFOS

d3NMFOS = d3-NMeFOSAA

d5NEFOS = d5-NEtFOSAA

HFPODA = 13C3 HFPO-DA

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Eurofins TestAmerica, Sacramento

Client: Shannon & Wilson, Inc Job ID: 320-80903-1

Project/Site: SG Soils WO#1

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15

Lab Sample ID: MB 320-537957/1-A Matrix: Solid

Analysis Batch: 538667

Client Sample ID: Method Blank Prep Type: Total/NA Prep Batch: 537957

									••••
	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.031	ug/Kg		10/28/21 11:53	10/30/21 00:18	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.038	ug/Kg		10/28/21 11:53	10/30/21 00:18	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.053	ug/Kg		10/28/21 11:53	10/30/21 00:18	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.022	ug/Kg		10/28/21 11:53	10/30/21 00:18	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.048	ug/Kg		10/28/21 11:53	10/30/21 00:18	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.042	ug/Kg		10/28/21 11:53	10/30/21 00:18	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.030	ug/Kg		10/28/21 11:53	10/30/21 00:18	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.021	ug/Kg		10/28/21 11:53	10/30/21 00:18	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.037	ug/Kg		10/28/21 11:53	10/30/21 00:18	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.038	ug/Kg		10/28/21 11:53	10/30/21 00:18	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.029	ug/Kg		10/28/21 11:53	10/30/21 00:18	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.20	0.043	ug/Kg		10/28/21 11:53	10/30/21 00:18	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg		10/28/21 11:53	10/30/21 00:18	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.20	0.048	ug/Kg		10/28/21 11:53	10/30/21 00:18	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.20	0.035	ug/Kg		10/28/21 11:53	10/30/21 00:18	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.20	0.041	ug/Kg		10/28/21 11:53	10/30/21 00:18	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.20	0.031	ug/Kg		10/28/21 11:53	10/30/21 00:18	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.039	ug/Kg		10/28/21 11:53	10/30/21 00:18	1
•									

MB MB

	IVID IVID				
Isotope Dilution	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	94	50 - 150	10/28/21 11:53	10/30/21 00:18	1
13C4 PFHpA	100	50 - 150	10/28/21 11:53	10/30/21 00:18	1
13C4 PFOA	103	50 - 150	10/28/21 11:53	10/30/21 00:18	1
13C5 PFNA	108	50 - 150	10/28/21 11:53	10/30/21 00:18	1
13C2 PFDA	102	50 - 150	10/28/21 11:53	10/30/21 00:18	1
13C2 PFUnA	104	50 - 150	10/28/21 11:53	10/30/21 00:18	1
13C2 PFDoA	97	50 - 150	10/28/21 11:53	10/30/21 00:18	1
13C2 PFTeDA	108	50 - 150	10/28/21 11:53	10/30/21 00:18	1
13C3 PFBS	108	50 - 150	10/28/21 11:53	10/30/21 00:18	1
1802 PFHxS	91	50 - 150	10/28/21 11:53	10/30/21 00:18	1
13C4 PFOS	102	50 - 150	10/28/21 11:53	10/30/21 00:18	1
d3-NMeFOSAA	104	50 - 150	10/28/21 11:53	10/30/21 00:18	1
d5-NEtFOSAA	105	50 - 150	10/28/21 11:53	10/30/21 00:18	1
13C3 HFPO-DA	94	50 - 150	10/28/21 11:53	10/30/21 00:18	1

Lab Sample ID: LCS 320-537957/2-A

**Matrix: Solid** 

**Analysis Batch: 538667** 

Client Sample ID:	Lab Control Sample
	Prep Type: Total/NA
	<b>Prep Batch: 537957</b>

ı		Spike	LCS	LCS				%Rec.	
	Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
	Perfluorohexanoic acid (PFHxA)	2.00	1.77		ug/Kg		88	70 - 132	
	Perfluoroheptanoic acid (PFHpA)	2.00	1.92		ug/Kg		96	71 - 131	
ı	Perfluorooctanoic acid (PFOA)	2.00	1.89		ug/Kg		94	69 - 133	
	Perfluorononanoic acid (PFNA)	2.00	2.11		ug/Kg		106	72 - 129	

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2

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13

14

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Spike

Client: Shannon & Wilson, Inc Job ID: 320-80903-1 Project/Site: SG Soils WO#1

LCS LCS

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: LCS 320-537957/2-A

**Matrix: Solid** 

Analysis Batch: 538667

Hexafluoropropylene Oxide

4,8-Dioxa-3H-perfluorononanoic

Lab Sample ID: 320-80903-14 MS

**Matrix: Solid** 

Dimer Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaund

ecane-1-sulfonic acid

acid (ADONA)

**Client Sample ID: Lab Control Sample** 

%Rec.

**Prep Type: Total/NA Prep Batch: 537957** 

Opino		•		/01 1001	
Added	Result Qua	alifier Unit	D %Rec	Limits	
2.00	1.95	ug/Kg	98	69 - 133	
2.00	2.00	ug/Kg	100	64 - 136	
2.00	2.06	ug/Kg	103	69 - 135	
2.00	2.00	ug/Kg	100	66 - 139	
2.00	1.79	ug/Kg	90	69 - 133	
1.77	1.47	ug/Kg	83	72 - 128	
1.82	1.73	ug/Kg	95	67 - 130	
1.86	1.66	ug/Kg	89	68 - 136	
2.00	1.67	ug/Kg	83	63 - 144	
2.00	1.86	ug/Kg	93	61 - 139	
1.86	1.67	ug/Kg	89	75 - 135	
	2.00 2.00 2.00 2.00 2.00 2.00	Added         Result         Qual           2.00         1.95         2.00           2.00         2.00         2.06           2.00         2.00         2.00           2.00         1.79         1.47           1.82         1.73         1.86           2.00         1.67         2.00           2.00         1.86         1.86	Added         Result         Qualifier         Unit           2.00         1.95         ug/Kg           2.00         2.00         ug/Kg           2.00         2.06         ug/Kg           2.00         2.00         ug/Kg           2.00         1.79         ug/Kg           1.77         1.47         ug/Kg           1.82         1.73         ug/Kg           1.86         1.66         ug/Kg           2.00         1.67         ug/Kg           2.00         1.86         ug/Kg	Added         Result         Qualifier         Unit         D         %Rec           2.00         1.95         ug/Kg         98           2.00         2.00         ug/Kg         100           2.00         2.06         ug/Kg         103           2.00         2.00         ug/Kg         90           1.77         1.47         ug/Kg         83           1.82         1.73         ug/Kg         95           1.86         1.66         ug/Kg         89           2.00         1.86         ug/Kg         93	Added         Result         Qualifier         Unit         D         %Rec         Limits           2.00         1.95         ug/Kg         98         69-133           2.00         2.00         ug/Kg         100         64-136           2.00         2.00         ug/Kg         100         66-139           2.00         1.79         ug/Kg         90         69-133           1.77         1.47         ug/Kg         83         72-128           1.82         1.73         ug/Kg         95         67-130           1.86         1.66         ug/Kg         89         68-136           2.00         1.67         ug/Kg         93         61-139

2.00

1.88

1.88

2.19

1.56

1.73

ug/Kg

ug/Kg

ug/Kg

110

83

92

77 - 137

76 - 136

79 - 139

LCS LCS

	LUJ	LUS	
Isotope Dilution	%Recovery	Qualifier	Limits
13C2 PFHxA	96		50 - 150
13C4 PFHpA	96		50 <sub>-</sub> 150
13C4 PFOA	102		50 <sub>-</sub> 150
13C5 PFNA	99		50 - 150
13C2 PFDA	100		50 - 150
13C2 PFUnA	96		50 <sub>-</sub> 150
13C2 PFDoA	93		50 - 150
13C2 PFTeDA	102		50 <sub>-</sub> 150
13C3 PFBS	105		50 - 150
1802 PFHxS	92		50 - 150
13C4 PFOS	102		50 <sub>-</sub> 150
d3-NMeFOSAA	112		50 - 150
d5-NEtFOSAA	103		50 - 150
13C3 HFPO-DA	90		50 - 150

Client Sample ID: 21GST-SED-010

Prep Type: Total/NA

Prep Batch: 537957

Analysis Batch: 538667									Prep Batc	h: 537957
	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorohexanoic acid (PFHxA)	ND		2.59	2.61		ug/Kg	<u></u>	101	70 - 132	
Perfluoroheptanoic acid (PFHpA)	ND		2.59	2.56		ug/Kg	≎	99	71 - 131	
Perfluorooctanoic acid (PFOA)	ND		2.59	2.41		ug/Kg	₽	93	69 - 133	

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Client: Shannon & Wilson, Inc Project/Site: SG Soils WO#1

### Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: 320-80903-14 MS Client Sample ID: 21GST-SED-010 **Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 538667** Prep Batch: 537957

	Sample	Sample	Spike	MS	MS				%Rec.
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Perfluorononanoic acid (PFNA)	ND		2.59	2.56		ug/Kg	₩	99	72 - 129
Perfluorodecanoic acid (PFDA)	ND		2.59	2.52		ug/Kg	☆	97	69 - 133
Perfluoroundecanoic acid (PFUnA)	ND		2.59	2.52		ug/Kg	₩	97	64 - 136
Perfluorododecanoic acid (PFDoA)	ND		2.59	2.47		ug/Kg	₩	95	69 - 135
Perfluorotridecanoic acid (PFTriA)	ND		2.59	2.78		ug/Kg	₩	107	66 - 139
Perfluorotetradecanoic acid (PFTeA)	ND		2.59	2.22		ug/Kg	₩	86	69 - 133
Perfluorobutanesulfonic acid (PFBS)	ND		2.29	1.97		ug/Kg	₩	86	72 - 128
Perfluorohexanesulfonic acid (PFHxS)	ND		2.36	2.36		ug/Kg	₩	100	67 - 130
Perfluorooctanesulfonic acid (PFOS)	0.82	I	2.40	3.34	1	ug/Kg	₩	105	68 - 136
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	ND		2.59	2.44		ug/Kg	☼	94	63 - 144
N-ethylperfluorooctanesulfonami doacetic acid (NEtFOSAA)	ND		2.59	2.25		ug/Kg	₩	87	61 - 139
9-Chlorohexadecafluoro-3-oxan onane-1-sulfonic acid	ND		2.41	2.11		ug/Kg	☼	87	75 - 135
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		2.59	2.73		ug/Kg	₩	105	77 - 137
11-Chloroeicosafluoro-3-oxaund ecane-1-sulfonic acid	ND		2.44	2.04		ug/Kg	₩	84	76 - 136
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.44	2.11		ug/Kg	₩	86	79 - 139

MS MS

	IVIS	IVIS	
Isotope Dilution	%Recovery	Qualifier	Limits
13C2 PFHxA	96		50 - 150
13C4 PFHpA	93		50 - 150
13C4 PFOA	106		50 - 150
13C5 PFNA	108		50 - 150
13C2 PFDA	105		50 - 150
13C2 PFUnA	106		50 - 150
13C2 PFDoA	105		50 - 150
13C2 PFTeDA	113		50 - 150
13C3 PFBS	113		50 - 150
1802 PFHxS	98		50 - 150
13C4 PFOS	112		50 - 150
d3-NMeFOSAA	111		50 - 150
d5-NEtFOSAA	119		50 - 150
13C3 HFPO-DA	98		50 - 150

Lab Sample ID: 320-80903-14 MSD

Matrix: Solid									<b>Prep Ty</b>	pe: Tot	al/NA
Analysis Batch: 538667									Prep Ba	atch: 53	37957
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluorohexanoic acid (PFHxA)	ND		2.41	2.49		ug/Kg	<u></u>	103	70 - 132	5	30
Perfluoroheptanoic acid (PFHpA)	ND		2.41	2.38		ug/Kg	₩	99	71 - 131	7	30

Eurofins TestAmerica, Sacramento

Client Sample ID: 21GST-SED-010

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Client: Shannon & Wilson, Inc Project/Site: SG Soils WO#1

### Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: 320-80903-14 MSD Client Sample ID: 21GST-SED-010 **Matrix: Solid Prep Type: Total/NA Analysis Batch: 538667 Prep Batch: 537957** 

Alialysis Balcii. 530001							Prep Batch. 53				
	•	Sample	Spike		MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	_ D	%Rec	Limits	RPD	Limit
Perfluorooctanoic acid (PFOA)	ND		2.41	2.19		ug/Kg	☆	91	69 - 133	10	30
Perfluorononanoic acid (PFNA)	ND		2.41	2.29		ug/Kg	₩	95	72 - 129	11	30
Perfluorodecanoic acid (PFDA)	ND		2.41	2.26		ug/Kg	☆	94	69 - 133	11	30
Perfluoroundecanoic acid (PFUnA)	ND		2.41	2.34		ug/Kg	₩	97	64 - 136	7	30
Perfluorododecanoic acid (PFDoA)	ND		2.41	2.39		ug/Kg	☼	99	69 - 135	3	30
Perfluorotridecanoic acid (PFTriA)	ND		2.41	2.29		ug/Kg	☼	95	66 - 139	19	30
Perfluorotetradecanoic acid (PFTeA)	ND		2.41	2.11		ug/Kg	☼	87	69 - 133	5	30
Perfluorobutanesulfonic acid (PFBS)	ND		2.13	1.79		ug/Kg	₩	84	72 - 128	10	30
Perfluorohexanesulfonic acid (PFHxS)	ND		2.20	2.32		ug/Kg	₩	106	67 - 130	1	30
Perfluorooctanesulfonic acid (PFOS)	0.82	I	2.24	2.95	I	ug/Kg	₩	95	68 - 136	13	30
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	ND		2.41	2.16		ug/Kg	₩	90	63 - 144	12	30
N-ethylperfluorooctanesulfonami doacetic acid (NEtFOSAA)	ND		2.41	2.13		ug/Kg	₩	88	61 - 139	5	30
9-Chlorohexadecafluoro-3-oxan onane-1-sulfonic acid	ND		2.25	1.97		ug/Kg	₩	88	75 - 135	7	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		2.41	2.70		ug/Kg	₩	112	77 - 137	1	30
11-Chloroeicosafluoro-3-oxaund ecane-1-sulfonic acid	ND		2.27	1.78		ug/Kg	☼	78	76 - 136	14	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.27	2.08		ug/Kg	☼	92	79 - 139	1	30
` '											

MSD MSD

Isotope Dilution	%Recovery	Qualifier	Limits
13C2 PFHxA	96		50 - 150
13C4 PFHpA	104		50 <sub>-</sub> 150
13C4 PFOA	109		50 - 150
13C5 PFNA	112		50 - 150
13C2 PFDA	103		50 - 150
13C2 PFUnA	98		50 <sub>-</sub> 150
13C2 PFDoA	93		50 - 150
13C2 PFTeDA	93		50 <sub>-</sub> 150
13C3 PFBS	110		50 - 150
1802 PFHxS	96		50 - 150
13C4 PFOS	109		50 <sub>-</sub> 150
d3-NMeFOSAA	106		50 - 150
d5-NEtFOSAA	100		50 - 150
13C3 HFPO-DA	95		50 <sub>-</sub> 150

Lab Sample ID: MB 320-538091/1-A

**Matrix: Solid** 

Analysis Batch: 538358								Prep Batch:	
	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.031	ug/Kg		10/28/21 18:22	10/30/21 04:28	1

Eurofins TestAmerica, Sacramento

Client Sample ID: Method Blank

**Prep Type: Total/NA** 

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Client: Shannon & Wilson, Inc Project/Site: SG Soils WO#1

### Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

MB MB

Lab Sample ID: MB 320-538091/1-A

**Matrix: Solid** 

**Analysis Batch: 538358** 

**Client Sample ID: Method Blank** 

**Prep Type: Total/NA** 

**Prep Batch: 538091** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.038	ug/Kg		10/28/21 18:22	10/30/21 04:28	1
Perfluorooctanoic acid (PFOA)	ND		0.20		ug/Kg		10/28/21 18:22	10/30/21 04:28	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.022	ug/Kg		10/28/21 18:22	10/30/21 04:28	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.048	ug/Kg		10/28/21 18:22	10/30/21 04:28	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.042	ug/Kg		10/28/21 18:22	10/30/21 04:28	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.030	ug/Kg		10/28/21 18:22	10/30/21 04:28	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.021	ug/Kg		10/28/21 18:22	10/30/21 04:28	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.037	ug/Kg		10/28/21 18:22	10/30/21 04:28	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.038	ug/Kg		10/28/21 18:22	10/30/21 04:28	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.029	ug/Kg		10/28/21 18:22	10/30/21 04:28	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.20	0.043	ug/Kg		10/28/21 18:22	10/30/21 04:28	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg		10/28/21 18:22	10/30/21 04:28	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.20	0.048	ug/Kg		10/28/21 18:22	10/30/21 04:28	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.20	0.035	ug/Kg		10/28/21 18:22	10/30/21 04:28	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.20	0.041	ug/Kg		10/28/21 18:22	10/30/21 04:28	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.20	0.031	ug/Kg		10/28/21 18:22	10/30/21 04:28	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.039	ug/Kg		10/28/21 18:22	10/30/21 04:28	1
	MR	MR							

	MB	MB				
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	96		50 - 150	10/28/21 18:22	10/30/21 04:28	1
13C4 PFHpA	100		50 - 150	10/28/21 18:22	10/30/21 04:28	1
13C4 PFOA	103		50 - 150	10/28/21 18:22	10/30/21 04:28	1
13C5 PFNA	102		50 - 150	10/28/21 18:22	10/30/21 04:28	1
13C2 PFDA	101		50 - 150	10/28/21 18:22	10/30/21 04:28	1
13C2 PFUnA	98		50 - 150	10/28/21 18:22	10/30/21 04:28	1
13C2 PFDoA	106		50 - 150	10/28/21 18:22	10/30/21 04:28	1
13C2 PFTeDA	107		50 - 150	10/28/21 18:22	10/30/21 04:28	1
13C3 PFBS	99		50 - 150	10/28/21 18:22	10/30/21 04:28	1
1802 PFHxS	93		50 - 150	10/28/21 18:22	10/30/21 04:28	1
13C4 PFOS	99		50 - 150	10/28/21 18:22	10/30/21 04:28	1
d3-NMeFOSAA	99		50 - 150	10/28/21 18:22	10/30/21 04:28	1
d5-NEtFOSAA	95		50 - 150	10/28/21 18:22	10/30/21 04:28	1
13C3 HFPO-DA	95		50 <sub>-</sub> 150	10/28/21 18:22	10/30/21 04:28	1

Lab Sample ID: LCS 320-538091/2-A

**Matrix: Solid** 

**Analysis Batch: 538358** 

<b>Client Sample</b>	ID: Lab	Contro	I Sample
	_	_	

**Prep Type: Total/NA Prep Batch: 538091** 

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorohexanoic acid (PFHxA)	2.00	1.94		ug/Kg		97	70 - 132	
Perfluoroheptanoic acid (PFHpA)	2.00	1.93		ug/Kg		96	71 - 131	
Perfluorooctanoic acid (PFOA)	2.00	1.79		ug/Kg		90	69 - 133	
Perfluorononanoic acid (PFNA)	2.00	1.86		ug/Kg		93	72 - 129	
Perfluorodecanoic acid (PFDA)	2.00	1.85		ug/Kg		92	69 - 133	

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Client: Shannon & Wilson, Inc Project/Site: SG Soils WO#1

### Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: LCS 320-538091/2-A

**Matrix: Solid** 

**Analysis Batch: 538358** 

**Client Sample ID: Lab Control Sample** 

Prep	Type: Total/NA
Prep	Batch: 538091
%Rec	

Analysis Batem 600000	Spike	LCS	S LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Perfluoroundecanoic acid	2.00	1.90		ug/Kg		95	64 - 136
(PFUnA)							
Perfluorododecanoic acid	2.00	1.92		ug/Kg		96	69 - 135
(PFDoA)							
Perfluorotridecanoic acid	2.00	2.04		ug/Kg		102	66 - 139
(PFTriA)							
Perfluorotetradecanoic acid	2.00	1.81		ug/Kg		91	69 - 133
(PFTeA)							
Perfluorobutanesulfonic acid	1.77	1.43		ug/Kg		81	72 - 128
(PFBS)							
Perfluorohexanesulfonic acid	1.82	1.62		ug/Kg		89	67 - 130
(PFHxS)							
Perfluorooctanesulfonic acid	1.86	1.66		ug/Kg		89	68 - 136
(PFOS)							
N-methylperfluorooctanesulfona	2.00	1.82		ug/Kg		91	63 - 144
midoacetic acid (NMeFOSAA)							
N-ethylperfluorooctanesulfonami	2.00	1.94		ug/Kg		97	61 - 139
doacetic acid (NEtFOSAA)	4.00	4 70		"		0.4	75 405
9-Chlorohexadecafluoro-3-oxan	1.86	1.70		ug/Kg		91	75 - 135
onane-1-sulfonic acid							
Hexafluoropropylene Oxide	2.00	1.93		ug/Kg		97	77 - 137
Dimer Acid (HFPO-DA)	4.00	4 70		11.0			70 400
11-Chloroeicosafluoro-3-oxaund	1.88	1.79		ug/Kg		95	76 - 136
ecane-1-sulfonic acid	4.00	4 70		11.0			70 400
4,8-Dioxa-3H-perfluorononanoic	1.88	1.76		ug/Kg		94	79 - 139
acid (ADONA)							

100 100

	LUS	LUS	
Isotope Dilution	%Recovery	Qualifier	Limits
13C2 PFHxA	109		50 - 150
13C4 PFHpA	111		50 - 150
13C4 PFOA	118		50 - 150
13C5 PFNA	115		50 - 150
13C2 PFDA	110		50 <sub>-</sub> 150
13C2 PFUnA	110		50 - 150
13C2 PFDoA	113		50 <sub>-</sub> 150
13C2 PFTeDA	116		50 - 150
13C3 PFBS	120		50 <sub>-</sub> 150
1802 PFHxS	107		50 - 150
13C4 PFOS	112		50 - 150
d3-NMeFOSAA	104		50 - 150
d5-NEtFOSAA	105		50 - 150
13C3 HFPO-DA	106		50 - 150

Lab Sample ID: 320-80903-13 MS

**Matrix: Solid** 

Client Sample ID: 21GST-MW25-02

Prep Type: Total/NA

Prep Batch: 538091

Analysis Batch: 538358									Prep Ba	tch: 538091
	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorohexanoic acid (PFHxA)	ND		2.43	2.38		ug/Kg	<u></u>	98	70 - 132	
Perfluoroheptanoic acid (PFHpA)	ND		2.43	2.27		ug/Kg	☼	93	71 - 131	
Perfluorooctanoic acid (PFOA)	ND		2.43	2.22		ug/Kg	☼	91	69 - 133	
Perfluorononanoic acid (PFNA)	ND		2.43	2.34		ug/Kg	≎	96	72 - 129	

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Client: Shannon & Wilson, Inc Project/Site: SG Soils WO#1

### Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: 320-80903-13 MS

Matrix: Solid

Analysis Batch: 538358

Client Sample ID: 21GST-MW25-02

Prep Type: Total/NA

Prep Batch: 538091

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	•	Sample	Spike	MS	MS		_		%Rec.	
Analyte	Result	Qualifier	Added		Qualifier	Unit	D	%Rec	Limits	
Perfluorodecanoic acid (PFDA)	ND		2.43	2.36		ug/Kg	☼	97	69 - 133	
Perfluoroundecanoic acid (PFUnA)	ND		2.43	2.47		ug/Kg	₩	101	64 - 136	
Perfluorododecanoic acid (PFDoA)	ND		2.43	2.43		ug/Kg	₩	100	69 - 135	
Perfluorotridecanoic acid (PFTriA)	ND		2.43	2.76		ug/Kg	₩	113	66 - 139	
Perfluorotetradecanoic acid (PFTeA)	ND		2.43	2.17		ug/Kg	₩	89	69 - 133	
Perfluorobutanesulfonic acid (PFBS)	ND		2.15	1.96		ug/Kg	₩	91	72 - 128	
Perfluorohexanesulfonic acid (PFHxS)	ND		2.21	2.03		ug/Kg	₩	92	67 - 130	
Perfluorooctanesulfonic acid (PFOS)	ND		2.26	2.04		ug/Kg	₩	91	68 - 136	
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	ND		2.43	2.40		ug/Kg	☼	99	63 - 144	
N-ethylperfluorooctanesulfonami doacetic acid (NEtFOSAA)	ND		2.43	2.28		ug/Kg	☼	94	61 - 139	
9-Chlorohexadecafluoro-3-oxan onane-1-sulfonic acid	ND		2.27	2.11		ug/Kg	☼	93	75 - 135	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		2.43	2.43		ug/Kg	₩	100	77 - 137	
11-Chloroeicosafluoro-3-oxaund ecane-1-sulfonic acid	ND		2.29	2.12		ug/Kg	₩	92	76 - 136	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.29	2.21		ug/Kg	₩	96	79 - 139	

acid (ADONA)	MS	MS	
Isotope Dilution	%Recovery	Qualifier	Limits
13C2 PFHxA	123		50 - 150
13C4 PFHpA	132		50 - 150
13C4 PFOA	136		50 - 150
13C5 PFNA	123		50 - 150
13C2 PFDA	119		50 - 150
13C2 PFUnA	123		50 - 150
13C2 PFDoA	125		50 - 150
13C2 PFTeDA	139		50 - 150
13C3 PFBS	139		50 - 150
1802 PFHxS	125		50 - 150
13C4 PFOS	129		50 - 150
d3-NMeFOSAA	119		50 - 150
d5-NEtFOSAA	121		50 - 150
13C3 HFPO-DA	119		50 <sub>-</sub> 150

Lab Sample ID: 320-80903-13 MSD

**Matrix: Solid** 

Analysis Batch: 538358									Prep Ba	atch: 5	38091
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluorohexanoic acid (PFHxA)	ND		2.32	2.19		ug/Kg	<u></u>	95	70 - 132	8	30
Perfluoroheptanoic acid (PFHpA)	ND		2.32	2.33		ug/Kg	₩	101	71 - 131	3	30
Perfluorooctanoic acid (PFOA)	ND		2.32	2.16		ug/Kg	₩	93	69 - 133	3	30

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Client Sample ID: 21GST-MW25-02

Prep Type: Total/NA

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Client: Shannon & Wilson, Inc Project/Site: SG Soils WO#1

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: 320-80903-13 MSD

Matrix: Solid

**Analysis Batch: 538358** 

Client Sample ID: 21GST-MW25-02

Prep Type: Total/NA Prep Batch: 538091

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluorononanoic acid (PFNA)	ND		2.32	2.30		ug/Kg	<del>*</del>	99	72 - 129	2	30
Perfluorodecanoic acid (PFDA)	ND		2.32	2.23		ug/Kg	☆	96	69 - 133	6	30
Perfluoroundecanoic acid (PFUnA)	ND		2.32	2.19		ug/Kg	₩	95	64 - 136	12	30
Perfluorododecanoic acid (PFDoA)	ND		2.32	2.19		ug/Kg	₩	95	69 - 135	11	30
Perfluorotridecanoic acid (PFTriA)	ND		2.32	2.34		ug/Kg	₩	101	66 - 139	16	30
Perfluorotetradecanoic acid (PFTeA)	ND		2.32	2.13		ug/Kg	₩	92	69 - 133	2	30
Perfluorobutanesulfonic acid (PFBS)	ND		2.05	1.69		ug/Kg	₩	83	72 - 128	15	30
Perfluorohexanesulfonic acid (PFHxS)	ND		2.11	1.88		ug/Kg	₩	89	67 - 130	7	30
Perfluorooctanesulfonic acid (PFOS)	ND		2.15	1.93		ug/Kg	₩	90	68 - 136	6	30
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	ND		2.32	1.99		ug/Kg	₩	86	63 - 144	19	30
N-ethylperfluorooctanesulfonami doacetic acid (NEtFOSAA)	ND		2.32	2.20		ug/Kg	₩	95	61 - 139	4	30
9-Chlorohexadecafluoro-3-oxan onane-1-sulfonic acid	ND		2.16	1.97		ug/Kg	₩	91	75 - 135	7	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		2.32	2.25		ug/Kg	₩	97	77 - 137	8	30
11-Chloroeicosafluoro-3-oxaund ecane-1-sulfonic acid	ND		2.18	2.07		ug/Kg	₩	95	76 - 136	2	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.18	1.99		ug/Kg	₩	91	79 - 139	10	30

MSD MSD

Isotope Dilution	%Recovery Qualifier	Limits
13C2 PFHxA	111	50 - 150
13C4 PFHpA	110	50 - 150
13C4 PFOA	119	50 - 150
13C5 PFNA	108	50 - 150
13C2 PFDA	113	50 - 150
13C2 PFUnA	109	50 - 150
13C2 PFDoA	119	50 - 150
13C2 PFTeDA	130	50 - 150
13C3 PFBS	127	50 - 150
1802 PFHxS	108	50 - 150
13C4 PFOS	116	50 - 150
d3-NMeFOSAA	112	50 - 150
d5-NEtFOSAA	110	50 - 150
13C3 HFPO-DA	108	50 - 150

Lab Sample ID: MB 320-538118/1-A

**Matrix: Solid** 

Analysis Batch: 538662

Client Sample ID: Method Blank Prep Type: Total/NA Prep Batch: 538118

MB MB Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac Perfluorohexanoic acid (PFHxA) ND 0.20 0.031 ug/Kg 10/29/21 04:15 10/29/21 20:40 Perfluoroheptanoic acid (PFHpA) ND 0.20 0.038 ug/Kg 10/29/21 04:15 10/29/21 20:40

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Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: MB 320-538118/1-A

Matrix: Solid

Analysis Batch: 538662

Client Sample ID: Method Blank

Prep Type: Total/NA Prep Batch: 538118

7 <b>,</b> 0.00 00000_									
	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	ND		0.20	0.053	ug/Kg		10/29/21 04:15	10/29/21 20:40	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.022	ug/Kg		10/29/21 04:15	10/29/21 20:40	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.048	ug/Kg		10/29/21 04:15	10/29/21 20:40	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.042	ug/Kg		10/29/21 04:15	10/29/21 20:40	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.030	ug/Kg		10/29/21 04:15	10/29/21 20:40	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.021	ug/Kg		10/29/21 04:15	10/29/21 20:40	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.037	ug/Kg		10/29/21 04:15	10/29/21 20:40	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.038	ug/Kg		10/29/21 04:15	10/29/21 20:40	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.029	ug/Kg		10/29/21 04:15	10/29/21 20:40	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.20	0.043	ug/Kg		10/29/21 04:15	10/29/21 20:40	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg		10/29/21 04:15	10/29/21 20:40	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.20	0.048	ug/Kg		10/29/21 04:15	10/29/21 20:40	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.20	0.035	ug/Kg		10/29/21 04:15	10/29/21 20:40	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.20	0.041	ug/Kg		10/29/21 04:15	10/29/21 20:40	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.20	0.031	ug/Kg		10/29/21 04:15	10/29/21 20:40	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.039	ug/Kg		10/29/21 04:15	10/29/21 20:40	1
	MD	MD							

MB MB

	IVID	IVID				
Isotope Dilution	%Recovery	Qualifier Lim	its	Prepared	Analyzed	Dil Fac
13C2 PFHxA	86	50 -	150	10/29/21 04:15	10/29/21 20:40	1
13C4 PFHpA	89	50 -	150	10/29/21 04:15	10/29/21 20:40	1
13C4 PFOA	96	50 -	150	10/29/21 04:15	10/29/21 20:40	1
13C5 PFNA	101	50 -	150	10/29/21 04:15	10/29/21 20:40	1
13C2 PFDA	92	50 -	150	10/29/21 04:15	10/29/21 20:40	1
13C2 PFUnA	90	50 -	150	10/29/21 04:15	10/29/21 20:40	1
13C2 PFDoA	87	50 -	150	10/29/21 04:15	10/29/21 20:40	1
13C2 PFTeDA	102	50 -	150	10/29/21 04:15	10/29/21 20:40	1
13C3 PFBS	101	50 -	150	10/29/21 04:15	10/29/21 20:40	1
1802 PFHxS	91	50 -	150	10/29/21 04:15	10/29/21 20:40	1
13C4 PFOS	98	50 -	150	10/29/21 04:15	10/29/21 20:40	1
d3-NMeFOSAA	93	50 -	150	10/29/21 04:15	10/29/21 20:40	1
d5-NEtFOSAA	89	50 -	150	10/29/21 04:15	10/29/21 20:40	1
13C3 HFPO-DA	91	50 -	150	10/29/21 04:15	10/29/21 20:40	1

Lab Sample ID: LCS 320-538118/2-A

**Matrix: Solid** 

Analysis Batch: 538662

Client Sample ID: Lab Control Sample Prep Type: Total/NA Prep Batch: 538118

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorohexanoic acid (PFHxA)	2.00	1.90		ug/Kg		95	70 - 132	
Perfluoroheptanoic acid (PFHpA)	2.00	1.94		ug/Kg		97	71 - 131	
Perfluorooctanoic acid (PFOA)	2.00	1.81		ug/Kg		91	69 - 133	
Perfluorononanoic acid (PFNA)	2.00	2.05		ug/Kg		103	72 - 129	
Perfluorodecanoic acid (PFDA)	2.00	1.98		ug/Kg		99	69 - 133	
Perfluoroundecanoic acid	2.00	2.12		ug/Kg		106	64 - 136	
(PFUnA)								

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Client: Shannon & Wilson, Inc Job ID: 320-80903-1 Project/Site: SG Soils WO#1

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: LCS 320-538118/2-A

**Matrix: Solid** 

Analysis Batch: 538662

**Client Sample ID: Lab Control Sample** Prep Type: Total/NA **Prep Batch: 538118** 

LCS LCS Spike %Rec. Analyte Added Result Qualifier Unit %Rec Limits Perfluorododecanoic acid 2.00 1.96 ug/Kg 98 69 - 135 (PFDoA) 2.00 Perfluorotridecanoic acid 1.96 ug/Kg 98 66 - 139 (PFTriA) Perfluorotetradecanoic acid 2.00 1.77 ug/Kg 88 69 - 133 (PFTeA) Perfluorobutanesulfonic acid 1.77 1.47 ug/Kg 83 72 - 128 (PFBS) 1.82 1.72 94 67 - 130 Perfluorohexanesulfonic acid ug/Kg (PFHxS) 93 68 - 136 Perfluorooctanesulfonic acid 1.86 1.73 ug/Kg (PFOS) N-methylperfluorooctanesulfona 2.00 1.73 ug/Kg 87 63 - 144 midoacetic acid (NMeFOSAA) N-ethylperfluorooctanesulfonami 2.00 1.83 ug/Kg 92 61 - 139 doacetic acid (NEtFOSAA) 9-Chlorohexadecafluoro-3-oxan 1.86 1.73 ug/Kg 93 75 - 135 onane-1-sulfonic acid 77 - 137 Hexafluoropropylene Oxide 2.00 2.10 ug/Kg 105 Dimer Acid (HFPO-DA) 1.70 11-Chloroeicosafluoro-3-oxaund 1.88 ug/Kg 90 76 - 136 ecane-1-sulfonic acid

1.88

1.81

ug/Kg

96

79 - 139

LCS LCS

Sample Sample

	LUJ	LUJ	
Isotope Dilution	%Recovery	Qualifier	Limits
13C2 PFHxA	83		50 - 150
13C4 PFHpA	87		50 - 150
13C4 PFOA	97		50 - 150
13C5 PFNA	96		50 - 150
13C2 PFDA	89		50 - 150
13C2 PFUnA	84		50 - 150
13C2 PFDoA	94		50 - 150
13C2 PFTeDA	99		50 - 150
13C3 PFBS	96		50 - 150
1802 PFHxS	86		50 - 150
13C4 PFOS	94		50 - 150
d3-NMeFOSAA	89		50 - 150
d5-NEtFOSAA	89		50 - 150
13C3 HFPO-DA	92		50 <sub>-</sub> 150

Lab Sample ID: 320-80903-1 MS Client Sample ID: 21GST-MW13-01 Prep Type: Total/NA

MC MC

Snika

**Matrix: Solid** 

Analysis Batch: 538662

4,8-Dioxa-3H-perfluorononanoic

acid (ADONA)

				atch: 538118	
			%Rec.		
it	D	%Rec	Limits		
Kg	— <u>—</u>	101	70 - 132		

	Sample	Sample	Spike	IVIS	IVIO				MREC.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorohexanoic acid (PFHxA)	ND		1.99	2.01		ug/Kg	<u> </u>	101	70 - 132	
Perfluoroheptanoic acid (PFHpA)	ND		1.99	1.98		ug/Kg	₩	99	71 - 131	
Perfluorooctanoic acid (PFOA)	ND		1.99	1.82		ug/Kg	₩	92	69 - 133	
Perfluorononanoic acid (PFNA)	ND		1.99	2.05		ug/Kg	₩	103	72 - 129	
Perfluorodecanoic acid (PFDA)	ND		1.99	1.94		ug/Kg	₩	98	69 - 133	

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Client: Shannon & Wilson, Inc Job ID: 320-80903-1 Project/Site: SG Soils WO#1

### Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: 320-80903-1 MS Client Sample ID: 21GST-MW13-01

**Matrix: Solid** 

Prep Type: Total/NA **Analysis Batch: 538662 Prep Batch: 538118** MS MS Sample Sample Spike %Rec. Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits ND 1 99 2.03 ug/Kg Ö 102 64 - 136

Perfluoroundecanoic acid (PFUnA) Perfluorododecanoic acid ND 1.99 1.96 99 69 - 135 ug/Kg ₩ (PFDoA) Perfluorotridecanoic acid ND 1.99 1.94 ug/Kg Ö 98 66 - 139 (PFTriA) Perfluorotetradecanoic acid ND 1.99 1.85 ug/Kg 93 69 - 133 ₩ (PFTeA) 87 Perfluorobutanesulfonic acid ND 1.76 1.53 ug/Kg Ö 72 - 128 (PFBS) ND 1.65 Perfluorohexanesulfonic acid 1.81 ug/Kg 91 67 - 130₩ (PFHxS) Perfluorooctanesulfonic acid ND 1.85 1.87 ug/Kg 101 68 - 136 Ö (PFOS) N-methylperfluorooctanesulfona ND 1.99 1.79 ug/Kg ÷Ċ÷ 90 63 - 144 midoacetic acid (NMeFOSAA) N-ethylperfluorooctanesulfonami ND 1.99 1.73 ug/Kg 87 61 - 139Ö doacetic acid (NEtFOSAA) NΩ 1.86 1.80 ug/Kg 97 75 - 135 9-Chlorohexadecafluoro-3-oxan Ö onane-1-sulfonic acid ND Hexafluoropropylene Oxide 1.99 2.09 ug/Kg ∜ 105 77 - 137 Dimer Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaund ND 1.88 1.61 ug/Kg Ö 86 76 - 136 ecane-1-sulfonic acid

1.88

1.70

ug/Kg

acid (ADONA)

4.8-Dioxa-3H-perfluorononanoic

MS MS %Recovery Qualifier Isotope Dilution Limits 13C2 PFHxA 82 50 - 150 13C4 PFHpA 92 50 - 150 13C4 PFOA 102 50 - 150 13C5 PFNA 102 50 - 150 13C2 PFDA 98 50 - 150 13C2 PFUnA 95 50 - 150 91 13C2 PFDoA 50 - 150 50 - 150 13C2 PFTeDA 90 13C3 PFBS 102 50 - 150 1802 PFHxS 91 50 - 150 13C4 PFOS 99 50 - 150 d3-NMeFOSAA 93 50 - 150 d5-NEtFOSAA 101 50 - 150 13C3 HFPO-DA 92 50 - 150

ND

Lab Sample ID: 320-80903-1 MSD Client Sample ID: 21GST-MW13-01 **Matrix: Solid Prep Type: Total/NA** 

**Analysis Batch: 538662** 

**Prep Batch: 538118** MSD MSD %Rec. **RPD** Sample Sample Spike Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit D Perfluorohexanoic acid (PFHxA) ND 2.05 2.06 ug/Kg ☆ 101 70 - 132 2 30 ND 2.05 30 Perfluoroheptanoic acid (PFHpA) 2.11 ug/Kg ÷Ċ÷ 103 71 - 131 6 Perfluorooctanoic acid (PFOA) ND 2.05 1.84 ug/Kg ₩ 90 69 - 133 30 Perfluorononanoic acid (PFNA) ND 2.05 1.94 95 72 - 129 30 ug/Kg

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### **QC Sample Results**

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

#### Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: 320-80903-1 MSD Client Sample ID: 21GST-MW13-01 **Matrix: Solid** Prep Type: Total/NA **Prep Batch: 538118** Analysis Batch: 538662 MSD MSD %Rec. **RPD** Sample Sample Spike Result Qualifier Added Result Qualifier Unit D %Rec Limits RPD Limit Perfluorodecanoic acid (PFDA) ND 2.05 1.98 ug/Kg ₩ 97 69 - 133 2 30 Perfluoroundecanoic acid ND 2.05 1.91 ug/Kg ₩ 93 64 - 136 6 30 (PFUnA) ND 2.05 2.08 101 69 - 135 30 Perfluorododecanoic acid ug/Kg (PFDoA) ND 2.05 1.99 97 66 - 139 3 30 Perfluorotridecanoic acid ug/Kg ∜ (PFTriA) ND 2.05 1.73 ug/Kg 84 69 - 133 7 30 Perfluorotetradecanoic acid Ö (PFTeA) Perfluorobutanesulfonic acid 1.81 1.53 30 ND ug/Kg 85 72 - 128 (PFBS) Perfluorohexanesulfonic acid ND 1.86 1.66 ug/Kg ₩ 89 67 - 130 30 (PFHxS) Perfluorooctanesulfonic acid ND 1.90 1.82 ug/Kg ₩ 96 68 - 136 3 30 (PFOS) ND 2.05 1.78 n 30 N-methylperfluorooctanesulfona ug/Kg 24 87 63 - 144 midoacetic acid (NMeFOSAA) N-ethylperfluorooctanesulfonami ND 2.05 103 2.11 ug/Kg ∜ 61 - 139 20 30 doacetic acid (NEtFOSAA)

9-Chlorohexadecafluoro-3-oxan ND 1.91 1.74 ug/Kg ₩ 91 75 - 135 3 onane-1-sulfonic acid Hexafluoropropylene Oxide ND 2.05 2.07 ug/Kg 101 77 - 137 Dimer Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaund ND 1.93 1.59 ug/Kg ☼ 83 76 - 136 ecane-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic ND 1.93 1.72 ug/Kg 89 79 - 139 acid (ADONA) MSD MSD

Isotope Dilution	%Recovery	Qualifier	Limits
13C2 PFHxA	75		50 - 150
13C4 PFHpA	84		50 - 150
13C4 PFOA	95		50 - 150
13C5 PFNA	99		50 - 150
13C2 PFDA	92		50 - 150
13C2 PFUnA	93		50 - 150
13C2 PFDoA	83		50 - 150
13C2 PFTeDA	88		50 - 150
13C3 PFBS	94		50 <sub>-</sub> 150
1802 PFHxS	87		50 - 150
13C4 PFOS	96		50 - 150
d3-NMeFOSAA	88		50 <sub>-</sub> 150
d5-NEtFOSAA	88		50 - 150
13C3 HFPO-DA	84		50 <sub>-</sub> 150

#### Method: D 2216 - Percent Moisture

Lab Sample ID: 320-80903-1 DU

Matrix: Solid

Client Sample ID: 21GST-MW13-01

Prep Type: Total/NA

Analysis Batch: 537918

7 many old Batolin don o lo									
	Sample	Sample	DU	DU				RPD	
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit	
Percent Moisture	6.8		9.0	F3	%		25	20	

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### **QC Sample Results**

Client: Shannon & Wilson, Inc Job ID: 320-80903-1 Project/Site: SG Soils WO#1

Method: D 2216 - Percent Moisture (Continued)

Lab Sample ID: 320-80903-1 DU Client Sample ID: 21GST-MW13-01 Prep Type: Total/NA

Matrix: Solid

**Analysis Batch: 537918** 

	Sample	Sample	DU	DU					RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D		RPD	Limit
Percent Solids	93.2		 91.0		%		 	2	20

Lab Sample ID: 320-80903-20 DU Client Sample ID: 21GST-SED-005 **Prep Type: Total/NA** 

**Matrix: Solid** 

**Analysis Batch: 537919** 

	Sample	Sample	DU	DU				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
Percent Moisture	18.2		23.6	F3	%		 26	20
Percent Solids	81.8		76.4		%		7	20

Lab Sample ID: 320-80903-39 DU Client Sample ID: 21GST-SED-012 Prep Type: Total/NA

**Matrix: Solid** 

**Analysis Batch: 537920** 

•	Sample	Sample	DU	DU				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
Percent Moisture	22.2		24.4		%		9	20
Percent Solids	77.8		75.6		%		3	20

Client: Shannon & Wilson, Inc Job ID: 320-80903-1 Project/Site: SG Soils WO#1

#### LCMS

#### **Prep Batch: 537957**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-80903-14	21GST-SED-010	Total/NA	Solid	SHAKE	_
320-80903-15	21GST-SED-008	Total/NA	Solid	SHAKE	
320-80903-16	21GST-SED-024	Total/NA	Solid	SHAKE	
320-80903-17	21GST-DPSED-024	Total/NA	Solid	SHAKE	
320-80903-18	21GST-SED-124	Total/NA	Solid	SHAKE	
320-80903-19	21GST-DPSED-124	Total/NA	Solid	SHAKE	
320-80903-20	21GST-SED-005	Total/NA	Solid	SHAKE	
320-80903-21	21GST-SED-004	Total/NA	Solid	SHAKE	
320-80903-22	21GST-SED-006	Total/NA	Solid	SHAKE	
320-80903-23	21GST-SED-007	Total/NA	Solid	SHAKE	
320-80903-24	21GST-SED-011	Total/NA	Solid	SHAKE	
320-80903-25	21GST-DPSED-011	Total/NA	Solid	SHAKE	
320-80903-26	21GST-SED-017	Total/NA	Solid	SHAKE	
320-80903-27	21GST-DPSED-017	Total/NA	Solid	SHAKE	
320-80903-28	21GST-SED-019	Total/NA	Solid	SHAKE	
320-80903-29	21GST-SED-016	Total/NA	Solid	SHAKE	
320-80903-30	21GST-SED-013	Total/NA	Solid	SHAKE	
320-80903-31	21GST-SED-014	Total/NA	Solid	SHAKE	
320-80903-32	21GST-SED-015	Total/NA	Solid	SHAKE	
320-80903-33	21GST-SED-018	Total/NA	Solid	SHAKE	
MB 320-537957/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-537957/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
320-80903-14 MS	21GST-SED-010	Total/NA	Solid	SHAKE	
320-80903-14 MSD	21GST-SED-010	Total/NA	Solid	SHAKE	

Prep Batch: 538091 - Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-80903-13	21GST-MW25-02	Total/NA	Solid	SHAKE	
320-80903-34	21GST-SED-118	Total/NA	Solid	SHAKE	
320-80903-35	21GST-SED-020	Total/NA	Solid	SHAKE	
320-80903-36	21GST-SED-021	Total/NA	Solid	SHAKE	
320-80903-37	21GST-DPSED-020	Total/NA	Solid	SHAKE	
320-80903-38	21GST-DPSED-021	Total/NA	Solid	SHAKE	
320-80903-39	21GST-SED-012	Total/NA	Solid	SHAKE	
320-80903-40	21GST-SED-022	Total/NA	Solid	SHAKE	
320-80903-41	21GST-SED-009	Total/NA	Solid	SHAKE	
320-80903-42	21GST-DPSED-009	Total/NA	Solid	SHAKE	
320-80903-43	21GST-SED-023	Total/NA	Solid	SHAKE	
320-80903-44	21GST-DPSED-023	Total/NA	Solid	SHAKE	
320-80903-45	21GST-SED-030	Total/NA	Solid	SHAKE	
320-80903-46	21GST-SED-028	Total/NA	Solid	SHAKE	
320-80903-47	21GST-DPSED-028	Total/NA	Solid	SHAKE	
320-80903-48	21GST-SED-029	Total/NA	Solid	SHAKE	
320-80903-49	21GST-SED-027	Total/NA	Solid	SHAKE	
320-80903-50	21GST-SED-026	Total/NA	Solid	SHAKE	
320-80903-51	21GST-SED-025	Total/NA	Solid	SHAKE	
320-80903-52	21GST-SED-127	Total/NA	Solid	SHAKE	
MB 320-538091/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-538091/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
320-80903-13 MS	21GST-MW25-02	Total/NA	Solid	SHAKE	
320-80903-13 MSD	21GST-MW25-02	Total/NA	Solid	SHAKE	

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Client: Shannon & Wilson, Inc Job ID: 320-80903-1 Project/Site: SG Soils WO#1

LCMS

**Prep Batch: 538118** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-80903-1	21GST-MW13-01	Total/NA	Solid	SHAKE	
320-80903-2	21GST-MW13-02	Total/NA	Solid	SHAKE	
320-80903-3	21GST-MW13-03	Total/NA	Solid	SHAKE	
320-80903-4	21GST-MW13-04	Total/NA	Solid	SHAKE	
320-80903-5	21GST-MW13-05	Total/NA	Solid	SHAKE	
320-80903-6	21GST-MW13-07	Total/NA	Solid	SHAKE	
320-80903-7	21GST-MW13-12	Total/NA	Solid	SHAKE	
320-80903-8	21GST-MW23-01	Total/NA	Solid	SHAKE	
320-80903-9	21GST-MW23-02	Total/NA	Solid	SHAKE	
320-80903-10	21GST-MW17-01	Total/NA	Solid	SHAKE	
320-80903-11	21GST-MW17-02	Total/NA	Solid	SHAKE	
320-80903-12	21GST-MW25-01	Total/NA	Solid	SHAKE	
MB 320-538118/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-538118/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
320-80903-1 MS	21GST-MW13-01	Total/NA	Solid	SHAKE	
320-80903-1 MSD	21GST-MW13-01	Total/NA	Solid	SHAKE	

**Analysis Batch: 538358** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-80903-13	21GST-MW25-02	Total/NA	Solid	EPA 537(Mod)	538091
320-80903-34	21GST-SED-118	Total/NA	Solid	EPA 537(Mod)	538091
320-80903-35	21GST-SED-020	Total/NA	Solid	EPA 537(Mod)	538091
320-80903-36	21GST-SED-021	Total/NA	Solid	EPA 537(Mod)	538091
320-80903-37	21GST-DPSED-020	Total/NA	Solid	EPA 537(Mod)	538091
320-80903-38	21GST-DPSED-021	Total/NA	Solid	EPA 537(Mod)	538091
320-80903-39	21GST-SED-012	Total/NA	Solid	EPA 537(Mod)	538091
320-80903-40	21GST-SED-022	Total/NA	Solid	EPA 537(Mod)	538091
320-80903-41	21GST-SED-009	Total/NA	Solid	EPA 537(Mod)	538091
320-80903-42	21GST-DPSED-009	Total/NA	Solid	EPA 537(Mod)	538091
320-80903-43	21GST-SED-023	Total/NA	Solid	EPA 537(Mod)	538091
320-80903-44	21GST-DPSED-023	Total/NA	Solid	EPA 537(Mod)	538091
320-80903-45	21GST-SED-030	Total/NA	Solid	EPA 537(Mod)	538091
320-80903-46	21GST-SED-028	Total/NA	Solid	EPA 537(Mod)	538091
320-80903-47	21GST-DPSED-028	Total/NA	Solid	EPA 537(Mod)	538091
320-80903-48	21GST-SED-029	Total/NA	Solid	EPA 537(Mod)	538091
320-80903-49	21GST-SED-027	Total/NA	Solid	EPA 537(Mod)	538091
320-80903-50	21GST-SED-026	Total/NA	Solid	EPA 537(Mod)	538091
320-80903-51	21GST-SED-025	Total/NA	Solid	EPA 537(Mod)	538091
320-80903-52	21GST-SED-127	Total/NA	Solid	EPA 537(Mod)	538091
MB 320-538091/1-A	Method Blank	Total/NA	Solid	EPA 537(Mod)	538091
LCS 320-538091/2-A	Lab Control Sample	Total/NA	Solid	EPA 537(Mod)	538091
320-80903-13 MS	21GST-MW25-02	Total/NA	Solid	EPA 537(Mod)	538091
320-80903-13 MSD	21GST-MW25-02	Total/NA	Solid	EPA 537(Mod)	538091

Analysis Batch: 538662

<b>Lab Sample ID</b> 320-80903-1	Client Sample ID 21GST-MW13-01	Prep Type Total/NA	Matrix Solid	Method EPA 537(Mod)	Prep Batch 538118
320-80903-2	21GST-MW13-02	Total/NA	Solid	EPA 537(Mod)	538118
320-80903-3	21GST-MW13-03	Total/NA	Solid	EPA 537(Mod)	538118
320-80903-4	21GST-MW13-04	Total/NA	Solid	EPA 537(Mod)	538118
320-80903-5	21GST-MW13-05	Total/NA	Solid	EPA 537(Mod)	538118

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Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

**LCMS (Continued)** 

#### **Analysis Batch: 538662 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-80903-6	21GST-MW13-07	Total/NA	Solid	EPA 537(Mod)	538118
320-80903-7	21GST-MW13-12	Total/NA	Solid	EPA 537(Mod)	538118
320-80903-8	21GST-MW23-01	Total/NA	Solid	EPA 537(Mod)	538118
320-80903-9	21GST-MW23-02	Total/NA	Solid	EPA 537(Mod)	538118
320-80903-10	21GST-MW17-01	Total/NA	Solid	EPA 537(Mod)	538118
320-80903-11	21GST-MW17-02	Total/NA	Solid	EPA 537(Mod)	538118
320-80903-12	21GST-MW25-01	Total/NA	Solid	EPA 537(Mod)	538118
MB 320-538118/1-A	Method Blank	Total/NA	Solid	EPA 537(Mod)	538118
LCS 320-538118/2-A	Lab Control Sample	Total/NA	Solid	EPA 537(Mod)	538118
320-80903-1 MS	21GST-MW13-01	Total/NA	Solid	EPA 537(Mod)	538118
320-80903-1 MSD	21GST-MW13-01	Total/NA	Solid	EPA 537(Mod)	538118

#### **Analysis Batch: 538667**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-80903-14	21GST-SED-010	Total/NA	Solid	EPA 537(Mod)	537957
320-80903-15	21GST-SED-008	Total/NA	Solid	EPA 537(Mod)	537957
320-80903-16	21GST-SED-024	Total/NA	Solid	EPA 537(Mod)	537957
320-80903-17	21GST-DPSED-024	Total/NA	Solid	EPA 537(Mod)	537957
320-80903-18	21GST-SED-124	Total/NA	Solid	EPA 537(Mod)	537957
320-80903-19	21GST-DPSED-124	Total/NA	Solid	EPA 537(Mod)	537957
320-80903-20	21GST-SED-005	Total/NA	Solid	EPA 537(Mod)	537957
320-80903-21	21GST-SED-004	Total/NA	Solid	EPA 537(Mod)	537957
320-80903-22	21GST-SED-006	Total/NA	Solid	EPA 537(Mod)	537957
320-80903-23	21GST-SED-007	Total/NA	Solid	EPA 537(Mod)	537957
320-80903-24	21GST-SED-011	Total/NA	Solid	EPA 537(Mod)	537957
320-80903-25	21GST-DPSED-011	Total/NA	Solid	EPA 537(Mod)	537957
320-80903-26	21GST-SED-017	Total/NA	Solid	EPA 537(Mod)	537957
320-80903-27	21GST-DPSED-017	Total/NA	Solid	EPA 537(Mod)	537957
320-80903-28	21GST-SED-019	Total/NA	Solid	EPA 537(Mod)	537957
320-80903-29	21GST-SED-016	Total/NA	Solid	EPA 537(Mod)	537957
320-80903-30	21GST-SED-013	Total/NA	Solid	EPA 537(Mod)	537957
320-80903-31	21GST-SED-014	Total/NA	Solid	EPA 537(Mod)	537957
320-80903-32	21GST-SED-015	Total/NA	Solid	EPA 537(Mod)	537957
320-80903-33	21GST-SED-018	Total/NA	Solid	EPA 537(Mod)	537957
MB 320-537957/1-A	Method Blank	Total/NA	Solid	EPA 537(Mod)	537957
LCS 320-537957/2-A	Lab Control Sample	Total/NA	Solid	EPA 537(Mod)	537957
320-80903-14 MS	21GST-SED-010	Total/NA	Solid	EPA 537(Mod)	537957
320-80903-14 MSD	21GST-SED-010	Total/NA	Solid	EPA 537(Mod)	537957

### **General Chemistry**

#### **Analysis Batch: 537918**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-80903-1	21GST-MW13-01	Total/NA	Solid	D 2216	
320-80903-2	21GST-MW13-02	Total/NA	Solid	D 2216	
320-80903-3	21GST-MW13-03	Total/NA	Solid	D 2216	
320-80903-4	21GST-MW13-04	Total/NA	Solid	D 2216	
320-80903-5	21GST-MW13-05	Total/NA	Solid	D 2216	
320-80903-6	21GST-MW13-07	Total/NA	Solid	D 2216	
320-80903-7	21GST-MW13-12	Total/NA	Solid	D 2216	
320-80903-8	21GST-MW23-01	Total/NA	Solid	D 2216	

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Client: Shannon & Wilson, Inc Job ID: 320-80903-1 Project/Site: SG Soils WO#1

### **General Chemistry (Continued)**

#### **Analysis Batch: 537918 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-80903-9	21GST-MW23-02	Total/NA	Solid	D 2216	_
320-80903-10	21GST-MW17-01	Total/NA	Solid	D 2216	
320-80903-11	21GST-MW17-02	Total/NA	Solid	D 2216	
320-80903-12	21GST-MW25-01	Total/NA	Solid	D 2216	
320-80903-13	21GST-MW25-02	Total/NA	Solid	D 2216	
320-80903-14	21GST-SED-010	Total/NA	Solid	D 2216	
320-80903-15	21GST-SED-008	Total/NA	Solid	D 2216	
320-80903-16	21GST-SED-024	Total/NA	Solid	D 2216	
320-80903-17	21GST-DPSED-024	Total/NA	Solid	D 2216	
320-80903-18	21GST-SED-124	Total/NA	Solid	D 2216	
320-80903-19	21GST-DPSED-124	Total/NA	Solid	D 2216	
320-80903-1 DU	21GST-MW13-01	Total/NA	Solid	D 2216	

#### **Analysis Batch: 537919**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-80903-20	21GST-SED-005	Total/NA	Solid	D 2216	
320-80903-21	21GST-SED-004	Total/NA	Solid	D 2216	
320-80903-22	21GST-SED-006	Total/NA	Solid	D 2216	
320-80903-23	21GST-SED-007	Total/NA	Solid	D 2216	
320-80903-24	21GST-SED-011	Total/NA	Solid	D 2216	
320-80903-25	21GST-DPSED-011	Total/NA	Solid	D 2216	
320-80903-26	21GST-SED-017	Total/NA	Solid	D 2216	
320-80903-27	21GST-DPSED-017	Total/NA	Solid	D 2216	
320-80903-28	21GST-SED-019	Total/NA	Solid	D 2216	
320-80903-29	21GST-SED-016	Total/NA	Solid	D 2216	
320-80903-30	21GST-SED-013	Total/NA	Solid	D 2216	
320-80903-31	21GST-SED-014	Total/NA	Solid	D 2216	
320-80903-32	21GST-SED-015	Total/NA	Solid	D 2216	
320-80903-33	21GST-SED-018	Total/NA	Solid	D 2216	
320-80903-34	21GST-SED-118	Total/NA	Solid	D 2216	
320-80903-35	21GST-SED-020	Total/NA	Solid	D 2216	
320-80903-36	21GST-SED-021	Total/NA	Solid	D 2216	
320-80903-37	21GST-DPSED-020	Total/NA	Solid	D 2216	
320-80903-38	21GST-DPSED-021	Total/NA	Solid	D 2216	
320-80903-20 DU	21GST-SED-005	Total/NA	Solid	D 2216	

#### **Analysis Batch: 537920**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-80903-39	21GST-SED-012	Total/NA	Solid	D 2216	<del></del>
320-80903-40	21GST-SED-022	Total/NA	Solid	D 2216	
320-80903-41	21GST-SED-009	Total/NA	Solid	D 2216	
320-80903-42	21GST-DPSED-009	Total/NA	Solid	D 2216	
320-80903-43	21GST-SED-023	Total/NA	Solid	D 2216	
320-80903-44	21GST-DPSED-023	Total/NA	Solid	D 2216	
320-80903-45	21GST-SED-030	Total/NA	Solid	D 2216	
320-80903-46	21GST-SED-028	Total/NA	Solid	D 2216	
320-80903-47	21GST-DPSED-028	Total/NA	Solid	D 2216	
320-80903-48	21GST-SED-029	Total/NA	Solid	D 2216	
320-80903-49	21GST-SED-027	Total/NA	Solid	D 2216	
320-80903-50	21GST-SED-026	Total/NA	Solid	D 2216	
320-80903-51	21GST-SED-025	Total/NA	Solid	D 2216	

Eurofins TestAmerica, Sacramento

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

# General Chemistry (Continued)

#### **Analysis Batch: 537920 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-80903-52	21GST-SED-127	Total/NA	Solid	D 2216	
320-80903-39 DU	21GST-SED-012	Total/NA	Solid	D 2216	

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Job ID: 320-80903-1

Client: Shannon & Wilson, Inc Project/Site: SG Soils WO#1

Client Sample ID: 21GST-MW13-01

Date Collected: 10/19/21 11:10 Date Received: 10/27/21 12:25 Lab Sample ID: 320-80903-1

**Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			537918	10/28/21 12:18	TCS	TAL SAC

Client Sample ID: 21GST-MW13-01

Date Collected: 10/19/21 11:10 Date Received: 10/27/21 12:25

Lab Sample ID: 320-80903-1 **Matrix: Solid** 

Percent Solids: 93.2

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.28 g	10.0 mL	538118	10/29/21 04:15	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538662	10/29/21 21:00	RS1	TAL SAC

Client Sample ID: 21GST-MW13-02

Date Collected: 10/19/21 11:40 Date Received: 10/27/21 12:25 Lab Sample ID: 320-80903-2

**Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared			
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab	
Total/NA	Analysis	D 2216		1			537918	10/28/21 12:18	TCS	TAL SAC	

Client Sample ID: 21GST-MW13-02

Date Collected: 10/19/21 11:40

Lab Sample ID: 320-80903-2 **Matrix: Solid** 

Date Received: 10/27/21 12:25 Percent Solids: 80.4

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.23 g	10.0 mL	538118	10/29/21 04:15	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538662	10/29/21 21:32	RS1	TAL SAC

Client Sample ID: 21GST-MW13-03

Date Collected: 10/19/21 13:00

Matrix: Solid Date Received: 10/27/21 12:25

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1		-	537918	10/28/21 12:18	TCS	TAL SAC

Client Sample ID: 21GST-MW13-03 Date Collected: 10/19/21 13:00

Lab Sample ID: 320-80903-3 Matrix: Solid

Lab Sample ID: 320-80903-3

Percent Solids: 88.3

**Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.35 g	10.0 mL	538118	10/29/21 04:15	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538662	10/29/21 21:42	RS1	TAL SAC

Client Sample ID: 21GST-MW13-04

Date Collected: 10/19/21 13:30

Date Received: 10/27/21 12:25

Date Received: 10/27/21 12:25

_										
	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			537918	10/28/21 12:18	TCS	TAL SAC

Eurofins TestAmerica, Sacramento

Lab Sample ID: 320-80903-4

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Job ID: 320-80903-1

Client: Shannon & Wilson, Inc Project/Site: SG Soils WO#1

Client Sample ID: 21GST-MW13-04

Date Collected: 10/19/21 13:30 Date Received: 10/27/21 12:25 Lab Sample ID: 320-80903-4

Matrix: Solid

Percent Solids: 70.7

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.36 g	10.0 mL	538118	10/29/21 04:15	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538662	10/29/21 21:53	RS1	TAL SAC

Client Sample ID: 21GST-MW13-05 Lab Sam

Date Collected: 10/19/21 14:10

Date Received: 10/27/21 12:25

Lab Sample	ID: 320-80903-5
	Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			537918	10/28/21 12:18	TCS	TAL SAC

Client Sample ID: 21GST-MW13-05

Date Collected: 10/19/21 14:10

Date Received: 10/27/21 12:25

Lab Sample	ID: 32	0-80903-5
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Matrix: Solid Percent Solids: 91.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE	- Kuii	- ractor	5.50 g	10.0 mL	538118			TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538662	10/29/21 22:03	RS1	TAL SAC

Client Sample ID: 21GST-MW13-07

Date Collected: 10/19/21 16:45

Date Received: 10/27/21 12:25

Lab Sample	e ID:	320-80903-6
		Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			537918	10/28/21 12:18	TCS	TAL SAC

Client Sample ID: 21GST-MW13-07

Date Collected: 10/19/21 16:45

Date Received: 10/27/21 12:25

Lab Sample	ID: 320-80903-6
•	Matrix: Solid

Lab Sample ID: 320-80903-7

Percent Solids: 77.4

**Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.11 g	10.0 mL	538118	10/29/21 04:15	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538662	10/29/21 22:13	RS1	TAL SAC

Client Sample ID: 21GST-MW13-12

Date Collected: 10/19/21 11:30

Date Received: 10/27/21 12:25

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216					537918	10/28/21 12:18	TCS	TAL SAC

Eurofins TestAmerica, Sacramento

Client Sample ID: 21GST-MW13-12

Date Collected: 10/19/21 11:30 Date Received: 10/27/21 12:25 Lab Sample ID: 320-80903-7

Matrix: Solid

Percent Solids: 81.5

Percent Solids: 81.7

**Matrix: Solid** 

Percent Solids: 73.6

**Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.23 g	10.0 mL	538118	10/29/21 04:15	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538662	10/29/21 22:45	RS1	TAL SAC

Client Sample ID: 21GST-MW23-01

Date Collected: 10/20/21 10:35

Lab Sample ID: 320-80903-8

Matrix: Solid

Date Collected: 10/20/21 10:35 Date Received: 10/27/21 12:25

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			537918	10/28/21 12:18	TCS	TAL SAC

Client Sample ID: 21GST-MW23-01

Date Collected: 10/20/21 10:35

Lab Sample ID: 320-80903-8

Matrix: Solid

Date Collected: 10/20/21 10:35 Date Received: 10/27/21 12:25

Batch Batch Batch Dil Initial Final Prepared **Prep Type** Type Method Factor **Amount** Amount Number or Analyzed Analyst Run Lab Total/NA Prep SHAKE 538118 10/29/21 04:15 HK TAL SAC 5.05 g 10.0 mL Total/NA Analysis EPA 537(Mod) 538662 10/29/21 22:55 RS1 TAL SAC

Client Sample ID: 21GST-MW23-02 Lab Sample ID: 320-80903-9

Date Collected: 10/20/21 16:10

Date Received: 10/27/21 12:25

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			537918	10/28/21 12:18	TCS	TAL SAC

Client Sample ID: 21GST-MW23-02

Date Collected: 10/20/21 16:10

Lab Sample ID: 320-80903-9

Matrix: Solid

Date Collected: 10/20/21 16:10 Date Received: 10/27/21 12:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.34 g	10.0 mL	538118	10/29/21 04:15	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538662	10/29/21 23:05	RS1	TAL SAC

Client Sample ID: 21GST-MW17-01 Lab Sample ID: 320-80903-10

Date Collected: 10/22/21 12:15 Date Received: 10/27/21 12:25

	Batch	Batch		Dil	Initial	Final	Batch	Prepared			
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab	
Total/NA	Analysis	D 2216					537918	10/28/21 12:18	TCS	TAL SAC	

Job ID: 320-80903-1

Client: Shannon & Wilson, Inc Project/Site: SG Soils WO#1

Client Sample ID: 21GST-MW17-01

Date Collected: 10/22/21 12:15 Date Received: 10/27/21 12:25 Lab Sample ID: 320-80903-10

**Matrix: Solid** 

Percent Solids: 78.1

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.31 g	10.0 mL	538118	10/29/21 04:15	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538662	10/29/21 23:16	RS1	TAL SAC

Client Sample ID: 21GST-MW17-02

Date Collected: 10/22/21 13:35 Date Received: 10/27/21 12:25

Lab Sample ID: 320-80903-11

**Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			537918	10/28/21 12:18	TCS	TAL SAC

Client Sample ID: 21GST-MW17-02

Date Collected: 10/22/21 13:35 Date Received: 10/27/21 12:25

Lab Sample ID: 320-80903-11

Lab Sample ID: 320-80903-12

**Matrix: Solid** Percent Solids: 75.8

**Matrix: Solid** 

**Matrix: Solid** 

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.26 g	10.0 mL	538118	10/29/21 04:15	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538662	10/29/21 23:26	RS1	TAL SAC

Client Sample ID: 21GST-MW25-01

Date Collected: 10/23/21 09:25

Date Received: 10/27/21 12:25

Total/NA

Date Received	. IOIZIIZI	2.25									
	Batch	Batch		Dil	Initial	Final	Batch	Prepared			
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab	

Client Sample ID: 21GST-MW25-01

Analysis

D 2216

Date Collected: 10/23/21 09:25

Date Received: 10/27/21 12:25

Number	or Analyzed	Analyst	Lab
537918	10/28/21 12:18	TCS	TAL SAC
		200	00000 40

Lab Sample ID: 320-80903-12 **Matrix: Solid** Percent Solids: 80.5

Lab Sample ID: 320-80903-13

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.49 g	10.0 mL	538118	10/29/21 04:15	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538662	10/29/21 23:37	RS1	TAL SAC

Client Sample ID: 21GST-MW25-02

Date Collected: 10/23/21 12:30

Date Received: 10/27/21 12:25

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			537918	10/28/21 12:18	TCS	TAL SAC

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Client Sample ID: 21GST-MW25-02

Lab Sample ID: 320-80903-13 Date Collected: 10/23/21 12:30 Date Received: 10/27/21 12:25

**Matrix: Solid** Percent Solids: 79.2

Batch Dil Initial Batch Batch Final Prepared Method Number or Analyzed **Prep Type** Type Run **Factor Amount** Amount Analyst Lab Total/NA SHAKE 10.0 mL 538091 10/28/21 18:22 AM TAL SAC Prep 5.43 g Total/NA 538358 10/30/21 04:48 S1M Analysis EPA 537(Mod) TAL SAC 1

Client Sample ID: 21GST-SED-010 Lab Sample ID: 320-80903-14

Date Collected: 10/17/21 09:20 Date Received: 10/27/21 12:25

Matrix: Solid

		Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Ty	/pe	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/N/	4	Analysis	D 2216		1			537918	10/28/21 12:18	TCS	TAL SAC

Client Sample ID: 21GST-SED-010

Lab Sample ID: 320-80903-14 Date Collected: 10/17/21 09:20 **Matrix: Solid** 

Date Received: 10/27/21 12:25 Percent Solids: 74.7

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.23 g	10.0 mL	537957	10/28/21 11:53	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538667	10/30/21 00:39	RS1	TAL SAC

Client Sample ID: 21GST-SED-008 Lab Sample ID: 320-80903-15 **Matrix: Solid** 

Date Collected: 10/17/21 09:50 Date Received: 10/27/21 12:25

Dil Batch Initial Final Batch Prepared Batch **Prep Type** Type Method **Factor** Amount Amount Number or Analyzed Run Analyst Lab 537918 Total/NA Analysis D 2216 1 10/28/21 12:18 TCS TAL SAC

Client Sample ID: 21GST-SED-008 Lab Sample ID: 320-80903-15

Date Collected: 10/17/21 09:50 **Matrix: Solid** Date Received: 10/27/21 12:25 Percent Solids: 74.2

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.56 g	10.0 mL	537957	10/28/21 11:53	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538667	10/30/21 01:10	RS1	TAL SAC

Lab Sample ID: 320-80903-16 Client Sample ID: 21GST-SED-024 **Matrix: Solid** 

Date Collected: 10/17/21 10:20 Date Received: 10/27/21 12:25

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			537918	10/28/21 12:18	TCS	TAL SAC

Client Sample ID: 21GST-SED-024

Date Collected: 10/17/21 10:20 Date Received: 10/27/21 12:25 Lab Sample ID: 320-80903-16

**Matrix: Solid** Percent Solids: 74.4

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.68 g	10.0 mL	537957	10/28/21 11:53	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538667	10/30/21 01:21	RS1	TAL SAC

Client Sample ID: 21GST-DPSED-024

Date Collected: 10/17/21 10:35 Date Received: 10/27/21 12:25

Lab Sample ID: 320-80903-17

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			537918	10/28/21 12:18	TCS	TAL SAC

Client Sample ID: 21GST-DPSED-024

Date Collected: 10/17/21 10:35 Date Received: 10/27/21 12:25

Lab Sample ID: 320-80903-17

**Matrix: Solid** Percent Solids: 75.3

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.70 g	10.0 mL	537957	10/28/21 11:53	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538667	10/30/21 01:31	RS1	TAL SAC

Client Sample ID: 21GST-SED-124

Date Collected: 10/17/21 10:10

Date Received: 10/27/21 12:25

Lab	Sample	ID:	320-80903-18	
			Matrix: Solid	

Lab Sample ID: 320-80903-18

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			537918	10/28/21 12:18	TCS	TAL SAC

Client Sample ID: 21GST-SED-124

Date Collected: 10/17/21 10:10 Matrix: Solid Date Received: 10/27/21 12:25 Percent Solids: 73.8

Γ	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.07 g	10.0 mL	537957	10/28/21 11:53	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538667	10/30/21 01:42	RS1	TAL SAC

Client Sample ID: 21GST-DPSED-124

Lab Sample ID: 320-80903-19 Date Collected: 10/17/21 10:25 **Matrix: Solid** Date Received: 10/27/21 12:25

	Batch	Batch		Dil	Initial	Final	Batch	Prepared			
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab	
Total/NA	Analysis	D 2216		1			537918	10/28/21 12:18	TCS	TAL SAC	

Client: Shannon & Wilson, Inc Project/Site: SG Soils WO#1

Client Sample ID: 21GST-DPSED-124

Date Collected: 10/17/21 10:25 Date Received: 10/27/21 12:25 Lab Sample ID: 320-80903-19

Matrix: Solid Percent Solids: 75.8

Matrix: Solid

Batch Batch Dil Initial Final Batch Prepared

Method Factor Number or Analyzed **Prep Type** Type Run **Amount** Amount Analyst Lab Total/NA SHAKE 537957 10/28/21 11:53 TAL SAC Prep 5.18 g 10.0 mL 10/30/21 01:52 RS1 Total/NA Analysis EPA 537(Mod) 538667 TAL SAC 1

Client Sample ID: 21GST-SED-005 Lab Sample ID: 320-80903-20

Date Collected: 10/17/21 11:20 Date Received: 10/27/21 12:25

Batch Batch Dil Initial Final Batch Prepared **Prep Type** Method **Amount Amount** Number or Analyzed Type Run **Factor** Analyst Lab Total/NA Analysis D 2216 537919 10/28/21 12:18 TCS TAL SAC

Client Sample ID: 21GST-SED-005 Lab Sample ID: 320-80903-20

Date Collected: 10/17/21 11:20 Matrix: Solid
Date Received: 10/27/21 12:25 Percent Solids: 81.8

Batch Batch Dil Initial Final **Batch Prepared** Method **Factor** Number or Analyzed **Prep Type** Type Run **Amount** Amount **Analyst** Lab Prep SHAKE 537957 10/28/21 11:53 OP TAL SAC Total/NA 5.36 g 10.0 mL Total/NA Analysis EPA 537(Mod) 1 538667 10/30/21 02:23 RS1 TAL SAC

Client Sample ID: 21GST-SED-004 Lab Sample ID: 320-80903-21

Date Collected: 10/17/21 11:35 Matrix: Solid

Date Received: 10/27/21 12:25

Dil Initial Final Batch **Prepared** Batch Batch Prep Type Type Method **Factor** Amount Amount Number or Analyzed Run Analyst Lab Total/NA Analysis D 2216 537919 10/28/21 12:18 TCS TAL SAC 1

Client Sample ID: 21GST-SED-004 Lab Sample ID: 320-80903-21

 Date Collected: 10/17/21 11:35
 Matrix: Solid

 Date Received: 10/27/21 12:25
 Percent Solids: 87.1

Batch Batch Dil Initial Final **Batch** Prepared **Prep Type** Type Method Run Factor Amount Amount Number or Analyzed Analyst Lab Total/NA SHAKE 537957 10/28/21 11:53 OP TAL SAC Prep 5.55 g 10.0 mL Total/NA 538667 10/30/21 02:34 RS1 TAL SAC Analysis EPA 537(Mod) 1

Client Sample ID: 21GST-SED-006 Lab Sample ID: 320-80903-22

Date Collected: 10/17/21 12:05

Date Received: 10/27/21 12:25

Matrix: Solid

Dil Batch Batch Initial Final Batch Prepared Method **Factor** Amount Amount Number or Analyzed **Prep Type** Type Run Analyst Lab D 2216 537919 10/28/21 12:18 TCS TAL SAC Total/NA Analysis

Job ID: 320-80903-1

Client: Shannon & Wilson, Inc Project/Site: SG Soils WO#1

Client Sample ID: 21GST-SED-006

Date Collected: 10/17/21 12:05 Date Received: 10/27/21 12:25 Lab Sample ID: 320-80903-22

**Matrix: Solid** Percent Solids: 88.7

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.44 g	10.0 mL	537957	10/28/21 11:53	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538667	10/30/21 02:44	RS1	TAL SAC

Client Sample ID: 21GST-SED-007

Date Collected: 10/17/21 12:25 Date Received: 10/27/21 12:25

Lab Sample ID: 320-80903-23

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			537919	10/28/21 12:18	TCS	TAL SAC

Client Sample ID: 21GST-SED-007

Date Collected: 10/17/21 12:25 Date Received: 10/27/21 12:25

Lab Sample ID: 320-80903-23

**Matrix: Solid** Percent Solids: 79.1

**Matrix: Solid** 

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE	- Tun		5.39 g	10.0 mL	537957	10/28/21 11:53		TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538667	10/30/21 02:55	RS1	TAL SAC

Client Sample ID: 21GST-SED-011

Date Collected: 10/17/21 12:45

**Prep Type** 

Total/NA

Date Received: 10/27/2	Pate Received: 10/27/21 12:25											
Batch	Batch	Dil	Initial	Final	Batch	Prepared						

**Amount** 

Amount

**Factor** 

Analysis Client Sample ID: 21GST-SED-011

Method

D 2216

Date Collected: 10/17/21 12:45

Date Received: 10/27/21 12:25

Number or Analyzed Analyst	Lab		
537919 10/28/21 12:18 TCS	TAL SAC		

Lab Sample ID: 320-80903-24 Matrix: Solid

Lab Sample ID: 320-80903-25

Lab Sample ID: 320-80903-24

Percent Solids: 73.3

**Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.52 g	10.0 mL	537957	10/28/21 11:53	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538667	10/30/21 03:05	RS1	TAL SAC

Client Sample ID: 21GST-DPSED-011

Date Collected: 10/17/21 12:55

Date Received: 10/27/21 12:25

	Batch	Batch		Dil	Initial	Final	Batch	Prepared			
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab	
Total/NA	Analysis	D 2216					537919	10/28/21 12:18	TCS	TAL SAC	

Eurofins TestAmerica, Sacramento

Job ID: 320-80903-1

Client: Shannon & Wilson, Inc Project/Site: SG Soils WO#1

Client Sample ID: 21GST-DPSED-011

Analysis

EPA 537(Mod)

Date Collected: 10/17/21 12:55 Date Received: 10/27/21 12:25

Lab Sample ID: 320-80903-25

Matrix: Solid Percent Solids: 83.9

Dil Initial Batch Batch Batch Final Prepared Method Factor Number or Analyzed **Prep Type** Type Run **Amount** Amount Analyst Lab Total/NA SHAKE 537957 10/28/21 11:53 TAL SAC Prep 5.43 g 10.0 mL

Client Sample ID: 21GST-SED-017

1

Date Collected: 10/17/21 13:20 Date Received: 10/27/21 12:25

Total/NA

Lab Sample ID: 320-80903-26 Matrix: Solid

10/30/21 03:16 RS1

538667

TAL SAC

Batch Batch Dil Initial Final Batch Prepared **Prep Type** Method **Amount Amount** Number or Analyzed Type Run **Factor** Analyst Lab Total/NA Analysis D 2216 537919 10/28/21 12:18 TCS TAL SAC

Client Sample ID: 21GST-SED-017

Lab Sample ID: 320-80903-26

**Matrix: Solid** 

Date Collected: 10/17/21 13:20 Date Received: 10/27/21 12:25 Percent Solids: 75.3

Batch Batch Dil Initial Final **Batch Prepared** Method **Factor** Number or Analyzed **Prep Type** Type Run **Amount** Amount **Analyst** Lab Prep SHAKE 537957 10/28/21 11:53 OP TAL SAC Total/NA 5.09 g 10.0 mL Total/NA Analysis EPA 537(Mod) 1 538667 10/30/21 03:26 RS1 TAL SAC

Client Sample ID: 21GST-DPSED-017

Lab Sample ID: 320-80903-27 Date Collected: 10/17/21 13:30

**Matrix: Solid** 

Date Received: 10/27/21 12:25

Dil Initial Final Batch **Prepared** Batch Batch Prep Type Type Method **Factor** Amount Amount Number or Analyzed Run Analyst Lab Total/NA Analysis D 2216 537919 10/28/21 12:18 TCS TAL SAC

Client Sample ID: 21GST-DPSED-017 Lab Sample ID: 320-80903-27

Date Collected: 10/17/21 13:30 Matrix: Solid Date Received: 10/27/21 12:25 Percent Solids: 80.3

Batch Batch Dil Initial Final Batch Prepared **Prep Type** Type Method Run Factor Amount Amount Number or Analyzed Analyst Lab Total/NA SHAKE 537957 10/28/21 11:53 OP TAL SAC Prep 5.53 g 10.0 mL Total/NA 538667 10/30/21 03:36 RS1 TAL SAC Analysis EPA 537(Mod) 1

Client Sample ID: 21GST-SED-019 Lab Sample ID: 320-80903-28

Date Collected: 10/17/21 13:50 Matrix: Solid

Date Received: 10/27/21 12:25

Dil Batch Batch Initial Final Batch Prepared Method **Factor** Amount Amount Number or Analyzed **Prep Type** Type Run Analyst Lab D 2216 537919 10/28/21 12:18 TCS TAL SAC Total/NA Analysis

Client: Shannon & Wilson, Inc Project/Site: SG Soils WO#1

Client Sample ID: 21GST-SED-019

Date Collected: 10/17/21 13:50 Date Received: 10/27/21 12:25

Lab Sample ID: 320-80903-28

Matrix: Solid Percent Solids: 74.8

Batch Dil Initial Batch Batch Final Prepared Method **Factor** Number or Analyzed **Prep Type** Type Run **Amount** Amount Analyst Lab Total/NA SHAKE 537957 10/28/21 11:53 TAL SAC Prep 5.66 g 10.0 mL Total/NA 10/30/21 03:47 RS1 Analysis EPA 537(Mod) 538667 TAL SAC 1

Client Sample ID: 21GST-SED-016

Date Collected: 10/17/21 14:10 Date Received: 10/27/21 12:25 Lab Sample ID: 320-80903-29

Matrix: Solid

Batch Batch Dil Initial Final Batch Prepared Method Number **Prep Type Amount Amount** or Analyzed Type Run **Factor** Analyst Lab Total/NA Analysis D 2216 537919 10/28/21 12:18 TCS TAL SAC

Client Sample ID: 21GST-SED-016

Date Collected: 10/17/21 14:10 Date Received: 10/27/21 12:25

Lab Sample ID: 320-80903-29

**Matrix: Solid** Percent Solids: 77.3

Batch Batch Dil Initial Final Batch **Prepared** Method **Factor Amount** Number or Analyzed **Prep Type** Type Run Amount **Analyst** Lab Total/NA Prep SHAKE 537957 10/28/21 11:53 OP TAL SAC 5.00 g 10.0 mL Total/NA Analysis EPA 537(Mod) 1 538667 10/30/21 03:57 RS1 TAL SAC

Client Sample ID: 21GST-SED-013

Date Collected: 10/17/21 14:45

Date Received: 10/27/21 12:25

**Matrix: Solid** 

Lab Sample ID: 320-80903-30

Dil Initial Final Batch Prepared Batch Batch **Prep Type** Type Method **Factor** Amount Amount Number or Analyzed Run Analyst Lab Total/NA Analysis D 2216 537919 10/28/21 12:18 TCS TAL SAC 1

Client Sample ID: 21GST-SED-013

Date Collected: 10/17/21 14:45

Date Received: 10/27/21 12:25

Lab Sample ID: 320-80903-30 **Matrix: Solid** 

Lab Sample ID: 320-80903-31

Percent Solids: 38.9

Batch Batch Dil Initial Final Batch Prepared **Prep Type** Type Method Run Factor Amount Amount Number or Analyzed **Analyst** Lab Total/NA SHAKE 537957 10/28/21 11:53 OP TAL SAC Prep 5.63 g 10.0 mL Total/NA 538667 10/30/21 04:28 RS1 TAL SAC Analysis EPA 537(Mod) 1

Client Sample ID: 21GST-SFD-014

Cheff Cample 15. 21001-025-014	Eab Campic 15. 020-00300-01
Date Collected: 10/17/21 15:05	Matrix: Solid
Date Received: 10/27/21 12:25	

	Batch	Batch		Dil	Initial	Final	Batch	Prepared			
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab	
Total/NA	Analysis	D 2216		1			537919	10/28/21 12:18	TCS	TAL SAC	

Client: Shannon & Wilson, Inc Project/Site: SG Soils WO#1

Client Sample ID: 21GST-SED-014

Date Collected: 10/17/21 15:05 Date Received: 10/27/21 12:25

Lab Sample ID: 320-80903-31

**Matrix: Solid** 

Percent Solids: 70.6

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.41 g	10.0 mL	537957	10/28/21 11:53	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538667	10/30/21 04:39	RS1	TAL SAC

Client Sample ID: 21GST-SED-015

Date Collected: 10/17/21 15:20 Date Received: 10/27/21 12:25

Lab Sample ID: 320-80903-32 Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			537919	10/28/21 12:18	TCS	TAL SAC

Client Sample ID: 21GST-SED-015

Date Collected: 10/17/21 15:20 Date Received: 10/27/21 12:25

Lab Sample ID: 320-80903-32

**Matrix: Solid** Percent Solids: 52.1

Batch Batch Dil Initial Final Batch **Prepared Prep Type** Method **Factor Amount** Number or Analyzed Type Run Amount Analyst Lab Total/NA Prep SHAKE 537957 10/28/21 11:53 OP TAL SAC 5.54 g 10.0 mL Total/NA Analysis EPA 537(Mod) 1 538667 10/30/21 04:49 RS1 TAL SAC

Client Sample ID: 21GST-SED-018

Date Collected: 10/17/21 15:45

Date Received: 10/27/21 12:25

Lab Sample ID: 320-80903-33 **Matrix: Solid** 

Lab Sample ID: 320-80903-33

Dil Batch Initial Final Batch Prepared Batch **Prep Type** Type Method **Factor** Amount Amount Number or Analyzed Run Analyst Lab 537919 Total/NA Analysis D 2216 10/28/21 12:18 TCS TAL SAC

Client Sample ID: 21GST-SED-018

Date Collected: 10/17/21 15:45

Matrix: Solid Date Received: 10/27/21 12:25 Percent Solids: 68.3

Batch Batch Dil Initial Final **Batch Prepared Prep Type** Type Method Run Factor Amount Amount Number or Analyzed **Analyst** Lab Total/NA Prep SHAKE 537957 10/28/21 11:53 OP TAL SAC 5.45 g 10.0 mL Total/NA Analysis 538667 10/30/21 05:00 RS1 TAL SAC EPA 537(Mod) 1

Client Sample ID: 21GST-SED-118

Date Collected: 10/17/21 15:35 Date Received: 10/27/21 12:25

Lab Sample ID: 320-80903-34 Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			537919	10/28/21 12:18	TCS	TAL SAC

Job ID: 320-80903-1

Client: Shannon & Wilson, Inc Project/Site: SG Soils WO#1

Client Sample ID: 21GST-SED-118

Date Collected: 10/17/21 15:35 Date Received: 10/27/21 12:25

Lab Sample ID: 320-80903-34

**Matrix: Solid** 

Percent Solids: 72.5

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.21 g	10.0 mL	538091	10/28/21 18:22	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538358	10/30/21 05:19	S1M	TAL SAC

Client Sample ID: 21GST-SED-020

Date Collected: 10/17/21 16:15 Date Received: 10/27/21 12:25

Lab Sample ID: 320-80903-35

**Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			537919	10/28/21 12:18	TCS	TAL SAC

Client Sample ID: 21GST-SED-020

Date Collected: 10/17/21 16:15 Date Received: 10/27/21 12:25

Lab Sample ID: 320-80903-35

**Matrix: Solid** Percent Solids: 79.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.65 g	10.0 mL	538091	10/28/21 18:22	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538358	10/30/21 05:29	S1M	TAL SAC

Client Sample ID: 21GST-SED-021

Date Collected: 10/17/21 16:50 Date Received: 10/27/21 12:25

Lab Sample ID: 320-80903-36

**Matrix: Solid** 

Dil Batch Initial Final Batch Prepared Batch **Prep Type** Type Method Run **Factor** Amount Amount Number or Analyzed Analyst Lab D 2216 537919 Total/NA Analysis 10/28/21 12:18 TCS TAL SAC

Client Sample ID: 21GST-SED-021

Date Collected: 10/17/21 16:50

Lab Sample ID: 320-80903-36 Matrix: Solid

Date Received: 10/27/21 12:25 Percent Solids: 74.4

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.30 g	10.0 mL	538091	10/28/21 18:22	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538358	10/30/21 05:39	S1M	TAL SAC

Client Sample ID: 21GST-DPSED-020

Analysis

D 2216

Date Collected: 10/17/21 16:25 Date Received: 10/27/21 12:25

Total/NA

Lab Sample ID: 320-80903-37 **Matrix: Solid** 

537919

Dil Initial Final Batch Batch Batch Prepared Method **Prep Type** Type Factor Amount Amount Number or Analyzed Run Analyst Lab

Eurofins TestAmerica, Sacramento

10/28/21 12:18 TCS

TAL SAC

Client Sample ID: 21GST-DPSED-020

Date Collected: 10/17/21 16:25 Date Received: 10/27/21 12:25

Lab Sample ID: 320-80903-37

**Matrix: Solid** 

Percent Solids: 76.3

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.26 g	10.0 mL	538091	10/28/21 18:22	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538358	10/30/21 05:49	S1M	TAL SAC

Client Sample ID: 21GST-DPSED-021

Date Collected: 10/17/21 17:00 Date Received: 10/27/21 12:25

Lab Sample ID: 320-80903-38

**Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			537919	10/28/21 12:18	TCS	TAL SAC

Client Sample ID: 21GST-DPSED-021

Date Collected: 10/17/21 17:00 Date Received: 10/27/21 12:25

Lab Sample ID: 320-80903-38

Lab Sample ID: 320-80903-39

Lab Sample ID: 320-80903-40

**Matrix: Solid** Percent Solids: 77.8

**Matrix: Solid** 

**Matrix: Solid** 

Dil Batch Batch Batch Initial Final Prepared **Prep Type** Type Method Factor Amount Amount Number or Analyzed Analyst Run Lab Total/NA Prep SHAKE 10.0 mL 538091 10/28/21 18:22 AM TAL SAC 5.46 g Total/NA Analysis EPA 537(Mod) 1 538358 10/30/21 05:59 S1M TAL SAC

Client Sample ID: 21GST-SED-012

Date Collected: 10/17/21 17:25

Date Received: 10/27/21 12:25

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		Batch	Batch		Dil	Initial	Final	Batch	Prepared			
	Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab	
١	Total/NA	Analysis	D 2216					537920	10/28/21 12:18	TCS	TAL SAC	

Client Sample ID: 21GST-SED-012

Date Collected: 10/17/21 17:25

Date Received: 10/27/21 12:25

Lab Sample ID: 320-80903-39 Matrix: Solid Percent Solids: 77.8

	Batch	Batch	_	Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.13 g	10.0 mL	538091	10/28/21 18:22	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538358	10/30/21 06:30	S1M	TAL SAC

Client Sample ID: 21GST-SED-022

Date Collected: 10/18/21 09:35

Date Received: 10/27/21 12:25

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	<u> </u>		537920	10/28/21 12:18	TCS	TAL SAC

Eurofins TestAmerica, Sacramento

Client Sample ID: 21GST-SED-022

Date Collected: 10/18/21 09:35 Date Received: 10/27/21 12:25

Lab Sample ID: 320-80903-40

**Matrix: Solid** 

Percent Solids: 76.4

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.53 g	10.0 mL	538091	10/28/21 18:22	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538358	10/30/21 06:40	S1M	TAL SAC

Client Sample ID: 21GST-SED-009

Date Collected: 10/18/21 10:50 Date Received: 10/27/21 12:25

Lab Sample ID: 320-80903-41

**Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			537920	10/28/21 12:18	TCS	TAL SAC

Client Sample ID: 21GST-SED-009

Date Collected: 10/18/21 10:50 Date Received: 10/27/21 12:25

Lab Sample ID: 320-80903-41

**Matrix: Solid** Percent Solids: 79.4

Batch Batch Batch Dil Initial Final **Prepared Prep Type** Type Method **Factor Amount** Amount Number or Analyzed Analyst Run Lab Total/NA Prep SHAKE 538091 10/28/21 18:22 AM TAL SAC 5.13 g 10.0 mL Total/NA Analysis EPA 537(Mod) 1 538358 10/30/21 06:50 S1M TAL SAC

Client Sample ID: 21GST-DPSED-009

Date Collected: 10/18/21 11:00 Date Received: 10/27/21 12:25 Lab Sample ID: 320-80903-42

**Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			537920	10/28/21 12:18	TCS	TAL SAC

Client Sample ID: 21GST-DPSED-009

Date Collected: 10/18/21 11:00

Matrix: Solid Date Received: 10/27/21 12:25 Percent Solids: 80.3

538358

Batch Batch Dil Initial Final **Batch Prepared Prep Type** Type Method Run Factor Amount Amount Number or Analyzed Analyst Lab Total/NA Prep SHAKE 10.0 mL 538091 10/28/21 18:22 AM TAL SAC 5.00 g

1

Analysis Client Sample ID: 21GST-SED-023

EPA 537(Mod)

Date Collected: 10/18/21 11:55 Date Received: 10/27/21 12:25

Total/NA

Lab Sample ID: 320-80903-43

10/30/21 07:00 S1M

Lab Sample ID: 320-80903-42

**Matrix: Solid** 

TAL SAC

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			537920	10/28/21 12:18	TCS	TAL SAC

Client Sample ID: 21GST-SED-023

Date Collected: 10/18/21 11:55 Date Received: 10/27/21 12:25 Lab Sample ID: 320-80903-43

**Matrix: Solid** Percent Solids: 64.2

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.19 g	10.0 mL	538091	10/28/21 18:22	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538358	10/30/21 07:10	S1M	TAL SAC

Client Sample ID: 21GST-DPSED-023

Date Collected: 10/18/21 12:00 Date Received: 10/27/21 12:25

Lab Sample ID: 320-80903-44

Matrix: Solid

		Batch	Batch		Dil	Initial	Final	Batch	Prepared		
	Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
l	Total/NA	Analysis	D 2216		1			537920	10/28/21 12:18	TCS	TAL SAC

Client Sample ID: 21GST-DPSED-023

Date Collected: 10/18/21 12:00 Date Received: 10/27/21 12:25

Lab Sample ID: 320-80903-44

**Matrix: Solid** Percent Solids: 76.2

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.21 g	10.0 mL	538091	10/28/21 18:22	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538358	10/30/21 07:20	S1M	TAL SAC

Client Sample ID: 21GST-SED-030

Date Collected: 10/18/21 13:30

Date Received: 10/27/21 12:25

Lab Sample	ID: 320-80903-45	
_	Matrix: Solid	

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			537920	10/28/21 12:18	TCS	TAL SAC

Client Sample ID: 21GST-SED-030

Date Collected: 10/18/21 13:30

Date Received: 10/27/21 12:25

Lab Sample ID	: 320-80903-45
	Matrix: Solid

Percent Solids: 74.0

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.18 g	10.0 mL	538091	10/28/21 18:22	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538358	10/30/21 07:30	S1M	TAL SAC

Client Sample ID: 21GST-SED-028

Date Collected: 10/18/21 13:50

Lab Sample ID: 320-80903-46 **Matrix: Solid** Date Received: 10/27/21 12:25

	Batch	Batch		Dil	Initial	Final	Batch	Prepared			
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab	
Total/NA	Analysis	D 2216		1			537920	10/28/21 12:18	TCS	TAL SAC	

Job ID: 320-80903-1

Client: Shannon & Wilson, Inc Project/Site: SG Soils WO#1

Client Sample ID: 21GST-SED-028

Date Collected: 10/18/21 13:50 Date Received: 10/27/21 12:25

Lab Sample ID: 320-80903-46

**Matrix: Solid** 

Percent Solids: 21.5

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.18 g	10.0 mL	538091	10/28/21 18:22	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538358	10/30/21 07:40	S1M	TAL SAC

Client Sample ID: 21GST-DPSED-028

Date Collected: 10/18/21 14:00 Date Received: 10/27/21 12:25

Lab Sample ID: 320-80903-47

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			537920	10/28/21 12:18	TCS	TAL SAC

Client Sample ID: 21GST-DPSED-028

Date Collected: 10/18/21 14:00 Date Received: 10/27/21 12:25

Lab Sample ID: 320-80903-47

Lab Sample ID: 320-80903-48

**Matrix: Solid** Percent Solids: 61.9

**Matrix: Solid** 

**Matrix: Solid** 

	Batch	Batch	D	Dil	Initial	Final	Batch	Prepared	Amalust	Lab
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.29 g	10.0 mL	538091	10/28/21 18:22	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538358	10/30/21 07:51	S1M	TAL SAC

Client Sample ID: 21GST-SED-029

Date Collected: 10/18/21 14:20

Date Received: 10/27/21 12:25

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab

Client Sample ID: 21GST-SED-029

Date Collected: 10/18/21 14:20

Date Received: 10/27/21 12:25

Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			537920	10/28/21 12:18	TCS	TAL SAC

Lab Sample ID: 320-80903-48 Matrix: Solid Percent Solids: 68.8

Lab Sample ID: 320-80903-49

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.13 g	10.0 mL	538091	10/28/21 18:22	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538358	10/30/21 08:01	S1M	TAL SAC

Client Sample ID: 21GST-SED-027

Date Collected: 10/18/21 14:40

Date Received: 10/27/21 12:25

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216			-		537920	10/28/21 12:18	TCS	TAL SAC

Eurofins TestAmerica, Sacramento

Job ID: 320-80903-1

Client: Shannon & Wilson, Inc Project/Site: SG Soils WO#1

Date Received: 10/27/21 12:25

Client Sample ID: 21GST-SED-027 Date Collected: 10/18/21 14:40

Lab Sample ID: 320-80903-49

**Matrix: Solid** 

Percent Solids: 70.3

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.20 g	10.0 mL	538091	10/28/21 18:22	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538358	10/30/21 08:31	S1M	TAL SAC

Client Sample ID: 21GST-SED-026 Lab Sample ID: 320-80903-50

Date Collected: 10/18/21 15:05 **Matrix: Solid** 

Date Received: 10/27/21 12:25

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			537920	10/28/21 12:18	TCS	TAL SAC

Lab Sample ID: 320-80903-50 Client Sample ID: 21GST-SED-026

Date Collected: 10/18/21 15:05 **Matrix: Solid** Date Received: 10/27/21 12:25 Percent Solids: 75.3

Batch Batch Batch Dil Initial Final **Prepared Prep Type** Type Method **Factor Amount** Amount Number or Analyzed Run Analyst Lab Total/NA Prep SHAKE 538091 10/28/21 18:22 AM TAL SAC 5.26 g 10.0 mL Total/NA Analysis EPA 537(Mod) 1 538358 10/30/21 08:41 S1M TAL SAC

Client Sample ID: 21GST-SED-025 Lab Sample ID: 320-80903-51

Date Collected: 10/18/21 15:25 **Matrix: Solid** 

Date Received: 10/27/21 12:25

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			537920	10/28/21 12:18	TCS	TAL SAC

Client Sample ID: 21GST-SED-025 Lab Sample ID: 320-80903-51

Date Collected: 10/18/21 15:25 **Matrix: Solid** Date Received: 10/27/21 12:25 Percent Solids: 74.0

Batch Batch Dil Initial Final **Batch Prepared Prep Type** Type Method Run Factor Amount Amount Number or Analyzed Analyst Lab Total/NA Prep SHAKE 538091 10/28/21 18:22 AM TAL SAC 5.49 g 10.0 mL Total/NA Analysis EPA 537(Mod) 538358 10/30/21 08:51 S1M TAL SAC 1

Client Sample ID: 21GST-SED-127 Lab Sample ID: 320-80903-52

Date Collected: 10/18/21 14:30 **Matrix: Solid** Date Received: 10/27/21 12:25

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			537920	10/28/21 12:18	TCS	TAL SAC

#### **Lab Chronicle**

Client: Shannon & Wilson, Inc Job ID: 320-80903-1

Project/Site: SG Soils WO#1

Client Sample ID: 21GST-SED-127 Lab Sample ID: 320-80903-52

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.18 g	10.0 mL	538091	10/28/21 18:22	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538358	10/30/21 09:02	S1M	TAL SAC

#### **Laboratory References:**

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

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### **Accreditation/Certification Summary**

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

#### **Laboratory: Eurofins TestAmerica, Sacramento**

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

Authority	Pr	ogram	Identification Number	Expiration Date
Alaska (UST)	Sta	ate	17-020	02-20-24
The following analyte:	s are included in this rend	ort but the laboratory is r	not certified by the governing authority.	This list may include analytes for y
the agency does not	•	ort, but the laboratory is i	lot certified by the governing authority.	This list may include analytes for v
,	•	Matrix	Analyte	This list may include analytes for v
the agency does not	offer certification.	•		This list may include analytes for v

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### **Method Summary**

Client: Shannon & Wilson, Inc Project/Site: SG Soils WO#1

Method **Method Description** Protocol Laboratory EPA 537(Mod) PFAS for QSM 5.3, Table B-15 EPA TAL SAC TAL SAC D 2216 Percent Moisture **ASTM** SHAKE Shake Extraction with Ultrasonic Bath Extraction SW846 TAL SAC

#### Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

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

#### Laboratory References:

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

Job ID: 320-80903-1

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### **Sample Summary**

Client: Shannon & Wilson, Inc Project/Site: SG Soils WO#1

320-80903-50

320-80903-51

320-80903-52

21GST-SED-026

21GST-SED-025

21GST-SED-127

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
0-80903-1	21GST-MW13-01	Solid	10/19/21 11:10	10/27/21 12:25
0-80903-2	21GST-MW13-02	Solid	10/19/21 11:40	10/27/21 12:25
20-80903-3	21GST-MW13-03	Solid	10/19/21 13:00	10/27/21 12:25
20-80903-4	21GST-MW13-04	Solid	10/19/21 13:30	10/27/21 12:25
20-80903-5	21GST-MW13-05	Solid	10/19/21 14:10	10/27/21 12:25
20-80903-6	21GST-MW13-07	Solid	10/19/21 16:45	10/27/21 12:25
0-80903-7	21GST-MW13-12	Solid	10/19/21 11:30	10/27/21 12:25
20-80903-8	21GST-MW23-01	Solid	10/20/21 10:35	10/27/21 12:25
20-80903-9	21GST-MW23-02	Solid	10/20/21 16:10	10/27/21 12:25
20-80903-10	21GST-MW17-01	Solid	10/22/21 12:15	10/27/21 12:25
20-80903-11	21GST-MW17-02	Solid	10/22/21 13:35	10/27/21 12:25
20-80903-12	21GST-MW25-01	Solid	10/23/21 09:25	10/27/21 12:25
20-80903-13	21GST-MW25-02	Solid	10/23/21 12:30	10/27/21 12:25
20-80903-14	21GST-SED-010	Solid	10/17/21 09:20	10/27/21 12:25
20-80903-15	21GST-SED-008	Solid	10/17/21 09:50	10/27/21 12:25
20-80903-16	21GST-SED-024	Solid		10/27/21 12:25
20-80903-17	21GST-DPSED-024	Solid	10/17/21 10:35	10/27/21 12:25
20-80903-18	21GST-SED-124	Solid	10/17/21 10:10	10/27/21 12:25
20-80903-19	21GST-DPSED-124	Solid	10/17/21 10:25	10/27/21 12:25
20-80903-20	21GST-SED-005	Solid	10/17/21 11:20	10/27/21 12:25
20-80903-21	21GST-SED-004	Solid		10/27/21 12:25
20-80903-22	21GST-SED-006	Solid		10/27/21 12:25
0-80903-23	21GST-SED-007	Solid		10/27/21 12:25
0-80903-24	21GST-SED-011	Solid		10/27/21 12:25
0-80903-25	21GST-DPSED-011	Solid		10/27/21 12:25
0-80903-26	21GST-SED-017	Solid		10/27/21 12:25
0-80903-27	21GST-DPSED-017	Solid		10/27/21 12:25
-80903-28	21GST-SED-019	Solid		10/27/21 12:25
)-80903-29	21GST-SED-016	Solid		10/27/21 12:25
)-80903-30	21GST-SED-013	Solid		10/27/21 12:25
0-80903-31	21GST-SED-014	Solid		10/27/21 12:25
0-80903-32	21GST-SED-015	Solid		10/27/21 12:25
0-80903-32	21GST-SED-018	Solid		10/27/21 12:25
0-80903-34	21GST-SED-010 21GST-SED-118	Solid		10/27/21 12:25
0-80903-35	21GST-SED-020	Solid		10/27/21 12:25
0-80903-36	21GST-SED-020 21GST-SED-021	Solid		10/27/21 12:25
0-80903-37	21GST-DPSED-020	Solid		10/27/21 12:25
0-80903-37	21GST-DPSED-020 21GST-DPSED-021	Solid		10/27/21 12:25
20-80903-39	21GST-SED-012	Solid		10/27/21 12:25
0-80903-39	21GST-SED-012 21GST-SED-022			10/27/21 12:25
0-80903-40		Solid Solid		10/27/21 12:25
	21GST-SED-009	Solid		10/27/21 12:25
0-80903-42	21GST-DPSED-009 21GST-SED-023	Solid		10/27/21 12:25
20-80903-43		Solid Solid		
20-80903-44	21GST-DPSED-023	Solid		10/27/21 12:25
0-80903-45	21GST-SED-030	Solid		10/27/21 12:25
0-80903-46	21GST-SED-028	Solid		10/27/21 12:25
20-80903-47	21GST-DPSED-028	Solid		10/27/21 12:25
0-80903-48	21GST-SED-029	Solid		10/27/21 12:25
)-80903-49	21GST-SED-027	Solid		10/27/21 12:25
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Job ID: 320-80903-1

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10/18/21 15:05 10/27/21 12:25

10/18/21 15:25 10/27/21 12:25

10/18/21 14:30 10/27/21 12:25

Solid

Solid

Solid







Client: Shannon & Wilson, Inc

Job Number: 320-80903-1

Login Number: 80903

List Source: Eurofins TestAmerica, Sacramento

List Number: 1 Creator: Her, David A

Creator. Her, David A		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	159067/1519066/1503337/15033336/1503338/15 19065
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

#### **Laboratory Data Review Checklist**

Completed By:		
Justin Risley		
Title:		
Engineering Staff		
Date:		
November 10, 2021		
Consultant Firm:		
Shannon & Wilson, Inc.		
Laboratory Name:		
Eurofins / TestAmerica Laboratories, Inc. (TestAmerica)		
Laboratory Report Number:		
320-80903-1		
Laboratory Report Date:		
11/05/2021		
CS Site Name:		
DOT&PF Gustavus Airport Statewide PFAS		
ADEC File Number:		
2569.38.033		
Hazard Identification Number:		
26981		

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Laboratory Report Date:		
Note: Any N/A or No box checked must have an explanation in the comments box.  1. Laboratory		
1. <u>Laboratory</u>		
a. Did an ADEC CS approved laboratory receive and <u>perform</u> all the submitted sample analyses?		
Yes⊠ No□ N/A□ Comments:		
TestAmerica/Eurofins Laboratories West Sacramento, CA is CS certified for the analysis of perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) by method 537. The laboratory is also certified under the Department of Defense Environmental Laboratory Accreditation Program (DoD ELAP) for the requested analyses.		
b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?		
Yes□ No□ N/A⊠ Comments:		
The samples were not transferred to a network laboratory or subcontracted out.		
2. Chain of Custody (CoC)		
CoC information completed gianal and detail (including released/massived by)?		
a. CoC information completed, signed, and dated (including released/received by)?		
$Yes \boxtimes No \square N/A \square$ Comments:		
b. Correct analyses requested?		
Yes⊠ No□ N/A□ Comments:		
TESE NOL N/AL Comments.		
3. Laboratory Sample Receipt Documentation		
5. Laboratory Sample Receipt Documentation		
a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?		
Yes⊠ No□ N/A□ Comments:		
b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?		
Yes□ No□ N/A⊠ Comments:		
Samples analyzed for PFAS do not require preservation other than temperature control.		
c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?		
Yes⊠ No□ N/A□ Comments:		
The sample receipt form notes that the samples arrived in good condition.		

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320-80903-1		
boratory Report Date:		
d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?		
$Yes \square No \square N/A \boxtimes Comments:$		
The sample receipt form did not note any discrepancies.		
e. Data quality or usability affected?		
Comments:		
The data quality/usability was not affected.		
4. Case Narrative		
a. Present and understandable?		
a. Present and understandable?  Yes⊠ No□ N/A□ Comments:		
Tesizi Noizi N/Aizi Comments.		
b. Discrepancies, errors, or QC failures identified by the lab?		
Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:		
Method EPA 537(Mod): The "I" qualifier means the transition mass ratio for the indicated analyte was outside the established ratio limits. The qualitative identification of the analyte has some degree of uncertainty. However, analyst judgment was used to positively identify the analyte.		
Method Moisture: The sample duplicate (DUP) precision for analytical batch 320-537918 was outside control limits. Sample non-homogeneity is suspected, as sample matrix was sand with rocks. Samples were not re-extracted and reanalyzed because the moisture content for the parent sample and its duplicate was less than 10%. The relative percent difference (RPD) for solids is within acceptable limits. <i>21GST-MW13-01</i> (320-80903-1) and (320-80903-A-1 DU)		
Method Moisture: The sample DUP precision for analytical batch 320-537919 was outside control limits. Sample non-homogeneity is suspected. Sample matrix was wet sand with pebbles. The RPD for solids is within acceptable limits. 21GST-SED-005 (320-80903-20) and (320-80903-A-20 DU)		
c. Were all corrective actions documented?		
Yes□ No□ N/A⊠ Comments:		
No corrective actions were documented in the case narrative.		
d. What is the effect on data quality/usability according to the case narrative?		
Comments:		
The laboratory applied the "I" qualifier to results affected by transition mass ratio failures.		

Laboratory Report Date:			
5. <u>Samples Results</u>			
a. Correct analyses performed/reported as requested on COC?			
Yes⊠ No□ N/A□ Comments:			
b. All applicable holding times met?			
Yes⊠ No□ N/A□ Comments:			
c. All soils reported on a dry weight basis?			
Yes⊠ No□ N/A□ Comments:			
d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?	•		
Yes⊠ No□ N/A□ Comments:			
e. Data quality or usability affected?			
The data quality and/or usability was not affected.			
6. QC Samples			
a. Method Blank			
i. One method blank reported per matrix, analysis and 20 samples?			
Yes⊠ No□ N/A□ Comments:			
ii. All method blank results less than limit of quantitation (LOQ) or project specified objective	es?		
$Yes \boxtimes No \square N/A \square$ Comments:			
Target PFAS were not detected in the method blank samples.			
iii. If above LOQ or project specified objectives, what samples are affected?  Comments:			
No samples are affected; see above.			

320-80903-1

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
$Yes \square No \square N/A \boxtimes Comments:$
Qualification was not required; see above.
v. Data quality or usability affected?  Comments:
The data quality/usability is not affected.
b. Laboratory Control Sample/Duplicate (LCS/LCSD)
<ul> <li>i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)</li> </ul>
Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:
An LCS was reported for each Method 537(Mod) preparation batch. See MS/MSD discussion for assessment of method precision.
ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?
Yes $\square$ No $\boxtimes$ N/A $\boxtimes$ Comments:
Metals/Inorganics analyses were not requested for this work order.
iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)
Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:
iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from LCS/LCSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)
Yes $\square$ No $\square$ N/A $\boxtimes$ Comments:
LCSDs were not reported with this work order. However, the laboratory analyzed MS/MSD samples to assess method precision.
v. If %R or RPD is outside of acceptable limits, what samples are affected?  Comments:
None; method accuracy was demonstrated to be within acceptable limits for each batch.
vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes $\square$ No $\square$ N/A $\boxtimes$ Comments:
Qualification of the data was not required; see above.

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320-80903-1	
aboratory Report Date:	
vii. Data quality or usabilit	ty affected? (Use comment box to explain.)
The data quality/usability was	not affected.
The same quarry sections; was	
c. Matrix Spike/Matrix Spike Note: Leave blank if not	- '
i. Organics – One MS/M	MSD reported per matrix, analysis and 20 samples?
Yes⊠ No□ N/A□	Comments:
ii. Metals/Inorganics – o	ne MS and one MSD reported per matrix, analysis and 20 samples?
$ Yes \square                                  $	Comments:
Metals/Inorganics analyses we	ere not requested for this work order.
iii. Accuracy – All percer project specified object	nt recoveries (%R) reported and within method or laboratory limits and etives, if applicable?
Yes⊠ No□ N/A□	Comments:
	e percent differences (RPD) reported and less than method or laboratory cified objectives, if applicable? RPD reported from MS/MSD, and or ate.
Yes⊠ No□ N/A□	Comments:
v. If %R or RPD is outsi	de of acceptable limits, what samples are affected?  Comments:
None; method accuracy and pr	recision were demonstrated to be within acceptable limits.
vi Do the affected sampl	e(s) have data flags? If so, are the data flags clearly defined?
Yes□ No□ N/A⊠	Comments:

Qualification was not required; see above.

rator	ry Report Date:
	vii. Data quality or usability affected? (Use comment box to explain.)
T:1	Comments:
	ne data quality/usability is not affected.
d.	Surrogates – Organics Only or Isotope Dilution Analytes (IDA) – Isotope Dilution Methods Only
	<ul> <li>i. Are surrogate/IDA recoveries reported for organic analyses – field, QC and laboratory samples?</li> </ul>
	Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:
	ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods 50-150 %R for field samples and 60-120 %R for QC samples; all other analyses see the laboratory report pages)
	Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:
	iii. Do the sample results with failed surrogate/IDA recoveries have data flags? If so, are the dat flags clearly defined?
	Yes $\square$ No $\square$ N/A $\boxtimes$ Comments:
Tł	nere were no IDA recovery failures associated with this work order.
•	
	iv. Data quality or usability affected?  Comments:
	ne data quality/usability is not affected.
Tł	

PFAS are not volatile compounds. A trip blank is not required for the requested analysis.

Comments:

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

Yes  $\square$  No  $\square$  N/A $\boxtimes$  Comments:

A trip blank is not required for the requested analysis.

iii. All results less than LOQ and project specified objectives?

Yes  $\square$  No  $\square$  N/A $\boxtimes$  Comments:

See above.

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 $Yes \square No \square N/A \boxtimes$ 

0-80903	<u>;-1</u>
atory Re	eport Date:
iv	. If above LOQ or project specified objectives, what samples are affected?  Comments:
N/A; s	ee above
v.	Data quality or usability affected?  Comments:
The da	ata quality/usability is not affected.
f. Fie	eld Duplicate
i.	One field duplicate submitted per matrix, analysis and 10 project samples?
	Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:
ii.	Submitted blind to lab?
	Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:
21GST	eld duplicate pairs 21GST-SED-024 / 21GST-SED-124, 21GST-SED-018 / 21GST-SED-11 T-DPSED-024 / 21GST-DPSED-124, and 21GST-MW13-02 / 21GST-MW13-12 were submais work order.
iii	. Precision – All relative percent differences (RPD) less than specified project objectives? (Recommended: 30% water, 50% soil) RPD (%) = Absolute value of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$
	Where $R_1$ = Sample Concentration $R_2$ = Field Duplicate Concentration
	Yes $\square$ No $\boxtimes$ N/A $\square$ Comments:
within	lative precision demonstrated between the detected results of the field duplicate samples we the recommended DQO of 50% for all analytes except PFOS in the pairs 21GST-SED-024 T-SED-124 and 21GST-DPSED-024 / 21GST-DPSED-124.
iv	. Data quality or usability affected? (Use the comment box to explain why or why not.)  Comments:
DPSE	PFOS results of samples 21GST-SED-024, 21GST-SED-124, 21GST-DPSED-024, and 21 D-124 are considered estimated and have been flagged 'J' for detected and 'UJ' for not-dentrations in the table and analytical database to denote the uncertainty.
_	contamination or Equipment Blank (If not applicable, a comment stating why must be ento ow)?
•	Yes $\square$ No $\square$ N/A $\boxtimes$ Comments:
	t samples were not collected with reusable equipment, so the prospect of foreign contamin introduced through equipment contamination is not plausible.
oung i	income an organization contamination is not plausiole.

	320-80903-1	
La	poratory Report Date:	
	i. All results less than LOQ and project specified objectives?	
	Yes $\square$ No $\square$ N/A $\boxtimes$ Comments:	
	An equipment blank was not required.	
	ii. If above LOQ or project specified objectives, what samples are affected?  Comments:	
	N/A; see above.	
	iii. Data quality or usability affected?  Comments:	
	No; see above.	
7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)		
a. Defined and appropriate?		
	Yes⊠ No□ N/A□ Comments:	
	The PFOS results of samples 21GST-SED-006, 21GST-SED-010, 21GST-SED-015, 21GST-SED-024, 21GST-SED-124, 21GST-DPSED-024, 21GST-SED-026, 21GST-SED-027, and 21GST-SED-127 are affected by transition mass ratio failures. These results are considered estimated with no direction of	

bias and have been flagged 'J' to denote the uncertainty.



# **Environment Testing America**

### **ANALYTICAL REPORT**

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

Laboratory Job ID: 320-80911-1 Client Project/Site: SC Surface Water

For:

Shannon & Wilson, Inc 2355 Hill Rd. Fairbanks, Alaska 99709-5244

Attn: Kristen Freiburger

Jamin all times

Authorized for release by: 11/8/2021 12:47:00 PM

David Alltucker, Project Manager I (916)374-4383

David.Alltucker@Eurofinset.com

·····LINKS ······

Review your project results through

Total Access

**Have a Question?** 



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Results relate only to the items tested and the sample(s) as received by the laboratory.

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Client: Shannon & Wilson, Inc Project/Site: SC Surface Water Laboratory Job ID: 320-80911-1

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#### **Definitions/Glossary**

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

#### **Qualifiers**

#### **LCMS**

Qualifier	Qualifier Description
*5-	Isotope dilution analyte is outside acceptance limits, low biased.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

#### Glossary

MDA

Glossary	
Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"

MDC Minimum Detectable Concentration (Radiochemistry)
MDL Method Detection Limit
ML Minimum Level (Dioxin)
MPN Most Probable Number
MQL Method Quantitation Limit

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

Minimum Detectable Activity (Radiochemistry)

NEG Negative / Absent
POS Positive / Present

PQL Practical Quantitation Limit

PRES Presumptive
QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

TNTC Too Numerous To Count

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#### **Case Narrative**

Client: Shannon & Wilson, Inc

Project/Site: SC Surface Water

Job ID: 320-80911-1

Job ID: 320-80911-1

Laboratory: Eurofins TestAmerica, Sacramento

**Narrative** 

Job Narrative 320-80911-1

#### Receipt

The samples were received on 10/27/2021 12:25 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.6° C, 2.0° C and 2.6° C.

#### **LCMS**

Method EPA 537(Mod): The transition mass ratio was outside of the established ratio limit for HFPO-DA (GenX) in (CCV 320-538508/15), (CCV 320-538508/32) and (CCV 320-538508/3) associated to this data set. This is indicated by the "R" flag in the raw data. As the flagged data is in control in the continuing calibration verification (CCV), there is no adverse impact to the data.(CCV 320-538508/15), (CCV 320-538508/32) and (CCV 320-538508/3)

Method EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit: 21GST-SW-008 (320-80911-2), 21GST-SW-005 (320-80911-5), 21GST-SW-007 (320-80911-7) and 21GST-SW-015 (320-80911-14). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the samples.

Method EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommended limit: 21GST-SW-001 (320-80911-21). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the sample(s).

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

#### **Organic Prep**

Method 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-538117.

Method 3535: The following samples contained floating particulates in the sample bottle prior to extraction: 21GST-SW-010 (320-80911-1), 21GST-SW-008 (320-80911-2), 21GST-SW-024 (320-80911-3), 21GST-SW-124 (320-80911-4), 21GST-SW-005 (320-80911-5), 21GST-SW-006 (320-80911-6), 21GST-SW-007 (320-80911-7), 21GST-SW-011 (320-80911-8), 21GST-SW-017 (320-80911-9), 21GST-SW-019 (320-80911-10), 21GST-SW-016 (320-80911-11), 21GST-SW-013 (320-80911-12), 21GST-SW-014 (320-80911-13), 21GST-SW-015 (320-80911-14), 21GST-SW-018 (320-80911-15), 21GST-SW-118 (320-80911-16), 21GST-SW-020 (320-80911-17), 21GST-SW-021 (320-80911-18) and 21GST-SW-012 (320-80911-19). prep batch 320-538117

Method 3535: The following samples contained a thin layer of sediment at the bottom of the bottle prior to extraction: 21GST-SW-008 (320-80911-2), 21GST-SW-005 (320-80911-5) and 21GST-SW-007 (320-80911-7). prep batch 320-538117

Method 3535: The following samples were brown prior to extraction: 21GST-SW-008 (320-80911-2), 21GST-SW-006 (320-80911-6), 21GST-SW-013 (320-80911-12) and 21GST-SW-015 (320-80911-14). prep batch 320-538117

Method 3535: During the solid phase extraction process, the following samples contain non-settable particulates which clogged the solid phase extraction column: 21GST-SW-008 (320-80911-2), 21GST-SW-024 (320-80911-3), 21GST-SW-005 (320-80911-5), 21GST-SW-006 (320-80911-6), 21GST-SW-007 (320-80911-7) and 21GST-SW-015 (320-80911-14). prep batch 320-538117

Method 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-538280.

Method 3535: The following samples contain floating particulates in the sample bottle prior to extraction: 21GST-SW-002 (320-80911-22).

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#### **Case Narrative**

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

Job ID: 320-80911-1 (Continued)

Laboratory: Eurofins TestAmerica, Sacramento (Continued)

preparation batch 320-538280.

Method 3535: The following samples were yellow and contain a thin layer of sediment at the bottom of the bottle prior to extraction: 21GST-SW-009 (320-80911-25), 21GST-SW-030 (320-80911-27), 21GST-SW-028 (320-80911-28), 21GST-SW-029 (320-80911-29), 21GST-SW-027 (320-80911-30), 21GST-SW-026 (320-80911-31), 21GST-SW-025 (320-80911-32) and 21GST-SW-127 (320-80911-34). preparation batch 320-538280.

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

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Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

#### Lab Sample ID: 320-80911-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	28		1.9	0.56	ng/L		_	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	9.8		1.9	0.24	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	5.2		1.9	0.83	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.4	J	1.9	0.19	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	40		1.9	0.55	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	270		1.9	0.53	ng/L	1		EPA 537(Mod)	Total/NA

#### Client Sample ID: 21GST-SW-008

#### Lab Sample ID: 320-80911-2

Analyte	Result Qualifier	RL	MDL Unit	Dil Fac D Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.67 J	1.9	0.54 ng/L	1 EPA 537(Mod	) Total/NA

#### Client Sample ID: 21GST-SW-024

#### Lab Sample ID: 320-80911-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	7.4		1.9	0.55	ng/L	1	_	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.1		1.9	0.24	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	0.98	J	1.9	0.81	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.52	J	1.9	0.19	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	9.2		1.9	0.54	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	43		1.9	0.52	ng/L	1		EPA 537(Mod)	Total/NA

#### Client Sample ID: 21GST-SW-124

#### Lab Sample ID: 320-80911-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	7.3		1.9	0.56	ng/L		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.1		1.9	0.24	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	1.1	J	1.9	0.83	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.57	J	1.9	0.19	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	9.5		1.9	0.55	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	30		1.9	0.52	ng/L	1	EPA 537(Mod)	Total/NA

#### Client Sample ID: 21GST-SW-005

#### Lab Sample ID: 320-80911-5

Analyte	Result	Qualifier	RL	MDL	Unit	Di	l Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	1.4	J	1.9	0.55	ng/L		1	_	EPA 537(Mod)	Total/NA

#### Client Sample ID: 21GST-SW-006

#### Lab Sample ID: 320-80911-6

Analyte	Result Qualifier	RL	MDL Unit	Dil Fac D Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	6.3	1.9	0.54 ng/L	1 EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	8.6	1.9	0.51 ng/L	1 EPA 537(Mod)	Total/NA

#### Client Sample ID: 21GST-SW-007

#### Lab Sample ID: 320-80911-7

No Detections.

#### Client Sample ID: 21GST-SW-011

#### Lab Sample ID: 320-80911-8

Analyte	Result Qualifier	RL	MDL U	Unit	Dil Fac D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	5.9	1.9	0.56 n	ng/L		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.59 J	1.9	0.24 n	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	3.7	1.9	0.82 n	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.2 J	1.9	0.19 n	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	48	1.9	0.55 n	ng/L	1	EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

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**Detection Summary** Client: Shannon & Wilson, Inc Job ID: 320-80911-1 Project/Site: SC Surface Water Client Sample ID: 21GST-SW-011 (Continued) Lab Sample ID: 320-80911-8 Result Qualifier RL Dil Fac D Method **MDL** Unit **Prep Type** Perfluorooctanesulfonic acid (PFOS) 1.9 0.52 ng/L EPA 537(Mod) Total/NA 67

The state of the s								
- Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	32		2.0	0.58	ng/L		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	44		2.0	0.25	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	27		2.0	0.85	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	9.2		2.0	0.27	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	2.4		2.0	0.31	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.1		2.0	0.20	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	47		2.0	0.57	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	14		2.0	0.54	ng/L	1	EPA 537(Mod)	Total/NA

#### Client Sample ID: 21GST-SW-019 Lab Sample ID: 320-80911-10 Analyte Result Qualifier RL **MDL** Unit Dil Fac D Method **Prep Type** Perfluorohexanesulfonic acid (PFHxS) 1.2 1.9 0.54 ng/L EPA 537(Mod) Total/NA Perfluorooctanesulfonic acid (PFOS) 4.2 0.51 ng/L EPA 537(Mod) Total/NA 1.9

#### Client Sample ID: 21GST-SW-016 Lab Sample ID: 320-80911-11 Analyte Result Qualifier **MDL** Unit Dil Fac D Method RL Prep Type Perfluorohexanoic acid (PFHxA) 15 2.0 0.58 ng/L EPA 537(Mod) Total/NA Perfluoroheptanoic acid (PFHpA) 4.7 2.0 0.25 ng/L 1 EPA 537(Mod) Total/NA Perfluorooctanoic acid (PFOA) 3.8 2.0 0.84 ng/L 1 EPA 537(Mod) Total/NA Perfluorobutanesulfonic acid (PFBS) 2.5 2.0 EPA 537(Mod) Total/NA 0.20 ng/L Perfluorohexanesulfonic acid (PFHxS) EPA 537(Mod) Total/NA 31 2.0 0.57 ng/L 1

2.0

0.54 ng/L

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Client Sample ID: 21GST-S\	ient Sample ID: 21GST-SW-013						Lab Sample ID: 320-80911-				
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac D	Method	Prep Type			
Perfluorohexanoic acid (PFHxA)	30		1.9	0.56	ng/L		EPA 537(Mod)	Total/NA			
Perfluoroheptanoic acid (PFHpA)	9.0		1.9	0.24	ng/L	1	EPA 537(Mod)	Total/NA			
Perfluorooctanoic acid (PFOA)	8.5		1.9	0.81	ng/L	1	EPA 537(Mod)	Total/NA			
Perfluorobutanesulfonic acid (PFBS)	4.5		1.9	0.19	ng/L	1	EPA 537(Mod)	Total/NA			
Perfluorohexanesulfonic acid (PFHxS)	79		1.9	0.55	ng/L	1	EPA 537(Mod)	Total/NA			

Client Sample ID: 21GST-SW	Lab Sai	mple ID: 320	-80911-13			
Perfluorooctanesulfonic acid (PFOS)	260	1.9	0.52 ng/L	1	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	79	1.9	0.55 ng/L	1	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	4.5	1.9	0.19 ng/L	1	EPA 537(Mod)	Total/NA
Periluorooctanoic acid (PFOA)	0.0	1.9	U.61 Hg/L	ı	EPA 537 (MOU)	iotai/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	2.5		2.0	0.57	ng/L	1	_	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.3	J	2.0	0.25	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	0.96	J	2.0	0.84	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.39	J	2.0	0.20	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	5.2		2.0	0.56	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	42		2.0	0.53	ng/L	1		EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SW-0	Lab Sample ID: 3	20-80911-14			
Analyte	Result Qualifier	RL	MDL Unit	Dil Fac D Method	Prep Type

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This Detection Summary does not include radiochemical test results.

Perfluorohexanoic acid (PFHxA)

Client Sample ID: 21GST-SW-017

Perfluorooctanesulfonic acid (PFOS)

Eurofins TestAmerica, Sacramento

Total/NA

11/8/2021

EPA 537(Mod)

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0.56 ng/L

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Lab Sample ID: 320-80911-9

EPA 537(Mod)

Total/NA

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Job ID: 320-80911-1

Client: Shannon & Wilson, Inc Project/Site: SC Surface Water

Client Sample ID: 21GST-SW-015 (Continued)	Lab Sample ID: 320-80911-14

Analyte	Result Qualifier	RL	MDL	Unit	Dil Fac	O Method	Prep Type
Perfluoroheptanoic acid (PFHpA)	2.8	1.9	0.24	ng/L		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	3.3	1.9	0.83	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.4	1.9	0.19	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	25	1.9	0.56	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	220	1.9	0.53	ng/L	1	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SW-018 Lab Sample ID: 320-80911-15

No Detections.

Client Sample ID: 21GST-SW-118 Lab Sample ID: 320-80911-16

No Detections.

Client Sample ID: 21GST-SW-020 Lab Sample ID: 320-80911-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	2.4		2.0	0.57	ng/L	1	_	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.0	J	2.0	0.24	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	5.8		2.0	0.56	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	27		2.0	0.53	ng/L	1		EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SW-021 Lab Sample ID: 320-80911-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	2.3		1.9	0.56	ng/L	1	_	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.79	J	1.9	0.24	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	0.85	J	1.9	0.83	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.37	J	1.9	0.19	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	5.2		1.9	0.55	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	24		1.9	0.53	ng/L	1		EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SW-012 Lab Sample ID: 320-80911-19

No Detections.

Client Sample ID: 21GST-EB-012 Lab Sample ID: 320-80911-20

No Detections.

Client Sample ID: 21GST-SW-001 Lab Sample ID: 320-80911-21

Analyte	Result Qualifier	RL	MDL Unit	Dil Fac D	Method	Prep Type
Perfluoroheptanoic acid (PFHpA)	0.31 J	1.9	0.24 ng/L		EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SW-002 Lab Sample ID: 320-80911-22

No Detections.

Client Sample ID: 21GST-SW-003 Lab Sample ID: 320-80911-23

No Detections.

Client Sample ID: 21GST-SW-022 Lab Sample ID: 320-80911-24

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

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Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

Client Sample ID: 21GST-SW-009

#### Lab Sample ID: 320-80911-25

Lab Sample ID: 320-80911-26

Lab Sample ID: 320-80911-27

Lab Sample ID: 320-80911-28

Lab Sample ID: 320-80911-29

Lab Sample ID: 320-80911-30

Lab Sample ID: 320-80911-31

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	1.7		1.9	0.56	ng/L	1	_	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.1	J	1.9	0.24	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	1.1	J	1.9	0.82	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.31	J	1.9	0.19	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	7.7		1.9	0.55	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	6.7		1.9	0.52	ng/L	1		EPA 537(Mod)	Total/NA

#### Client Sample ID: 21GST-SW-023

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Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	7.9		2.0	0.58	ng/L	1	_	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.8	J	2.0	0.25	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	0.90	J	2.0	0.86	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.41	J	2.0	0.20	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	7.0		2.0	0.57	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	16		2.0	0.54	ng/L	1		EPA 537(Mod)	Total/NA

#### Client Sample ID: 21GST-SW-030

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluoroheptanoic acid (PFHpA)	0.48	J	1.9	0.24	ng/L	1	_	EPA 537(Mod)	Total/NA

#### Client Sample ID: 21GST-SW-028

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	8.8		2.0	0.58	ng/L	1	_	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.5		2.0	0.25	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	1.3	J	2.0	0.84	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.69	J	2.0	0.20	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	11		2.0	0.57	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	33		2.0	0.54	ng/L	1		EPA 537(Mod)	Total/NA

#### Client Sample ID: 21GST-SW-029

Analyte	Result Qualifier	RL	MDL Unit	Dil Fac D	Method	Prep Type
Perfluoroheptanoic acid (PFHpA)	0.41 J	1.9	0.24 ng/L		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.55 J	1.9	0.51 ng/L	1	EPA 537(Mod)	Total/NA

#### Client Sample ID: 21GST-SW-027

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D Method	Prep Type
Perfluorohexanoic acid (PFHxA)	2.1		1.9	0.55	ng/L	1	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.3	J	1.9	0.24	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.28	J	1.9	0.19	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.8		1.9	0.54	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	41		1.9	0.52	ng/L	1	EPA 537(Mod)	Total/NA

#### Client Sample ID: 21GST-SW-026

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	4.0		1.9	0.56	ng/L		_	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.3	J	1.9	0.24	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	1.3	J	1.9	0.82	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.85	J	1.9	0.19	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

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#### **Detection Summary**

Client: Shannon & Wilson, Inc Job ID: 320-80911-1 Project/Site: SC Surface Water

#### Client Sample ID: 21GST-SW-026 (Continued)

## Lab Sample ID: 320-80911-31

Analyte	Result Qualifier	RL	MDL Unit	Dil Fac D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	7.0	1.9	0.55 ng/L		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	15	1.9	0.52 ng/L	1	EPA 537(Mod)	Total/NA

#### Client Sample ID: 21GST-SW-025

#### Lab Sample ID: 320-80911-32

Analyte	Result Qualifier	RL	MDL	Unit	Dil Fac	D Method	Prep Type
Perfluorohexanoic acid (PFHxA)	37	1.9	0.55	ng/L	1	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	8.2	1.9	0.24	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	3.8	1.9	0.80	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.5	1.9	0.19	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	33	1.9	0.54	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	130	1.9	0.51	ng/L	1	EPA 537(Mod)	Total/NA

#### Client Sample ID: 21GST-EB-025

#### Lab Sample ID: 320-80911-33

No Detections.

#### Client Sample ID: 21GST-SW-127

#### Lab Sample ID: 320-80911-34

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	3.5		1.9	0.55	ng/L		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.1		1.9	0.24	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.30	J	1.9	0.19	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	4.1		1.9	0.54	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	57		1.9	0.51	ng/L	1	EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

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Client: Shannon & Wilson, Inc Job ID: 320-80911-1 Project/Site: SC Surface Water

Client Sample ID: 21GST-SW-010

Lab Sample ID: 320-80911-1

Date Collected: 10/17/21 09:15 **Matrix: Water** Date Received: 10/27/21 12:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	28		1.9	0.56	ng/L		10/29/21 03:11	10/30/21 06:34	
Perfluoroheptanoic acid (PFHpA)	9.8		1.9	0.24	ng/L		10/29/21 03:11	10/30/21 06:34	•
Perfluorooctanoic acid (PFOA)	5.2		1.9	0.83	ng/L		10/29/21 03:11	10/30/21 06:34	•
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		10/29/21 03:11	10/30/21 06:34	· · · · · · · · ·
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		10/29/21 03:11	10/30/21 06:34	•
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		10/29/21 03:11	10/30/21 06:34	
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		10/29/21 03:11	10/30/21 06:34	
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.3	ng/L		10/29/21 03:11	10/30/21 06:34	•
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.71	ng/L		10/29/21 03:11	10/30/21 06:34	
Perfluorobutanesulfonic acid (PFBS)	1.4	J	1.9	0.19	ng/L		10/29/21 03:11	10/30/21 06:34	,
Perfluorohexanesulfonic acid (PFHxS)	40		1.9	0.55	ng/L		10/29/21 03:11	10/30/21 06:34	•
Perfluorooctanesulfonic acid (PFOS)	270		1.9	0.53	ng/L		10/29/21 03:11	10/30/21 06:34	
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.9	1.2	ng/L		10/29/21 03:11	10/30/21 06:34	,
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.9	1.3	ng/L		10/29/21 03:11	10/30/21 06:34	•
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.9	0.23	ng/L		10/29/21 03:11	10/30/21 06:34	,
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.9	1.5	ng/L		10/29/21 03:11	10/30/21 06:34	•
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.9		ng/L		10/29/21 03:11	10/30/21 06:34	•
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.39	ng/L		10/29/21 03:11	10/30/21 06:34	,
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	80		50 - 150				10/29/21 03:11	10/30/21 06:34	-
13C4 PFHpA	83		50 - 150				10/29/21 03:11	10/30/21 06:34	
13C4 PFOA	94		50 - 150				10/29/21 03:11	10/30/21 06:34	
13C5 PFNA	89		50 - 150				10/29/21 03:11	10/30/21 06:34	
13C2 PFDA	89		50 - 150				10/29/21 03:11	10/30/21 06:34	
13C2 PFUnA	86		50 - 150				10/29/21 03:11	10/30/21 06:34	
13C2 PFDoA	83		50 - 150				10/29/21 03:11	10/30/21 06:34	
13C2 PFTeDA	84		50 - 150				10/29/21 03:11	10/30/21 06:34	
13C3 PFBS	94		50 - 150				10/29/21 03:11	10/30/21 06:34	
1802 PFHxS	86		50 - 150				10/29/21 03:11	10/30/21 06:34	
13C4 PFOS	87		50 - 150				10/29/21 03:11	10/30/21 06:34	
d3-NMeFOSAA	96		50 - 150				10/29/21 03:11	10/30/21 06:34	-
d5-NEtFOSAA	93		50 - 150				10/29/21 03:11	10/30/21 06:34	
13C3 HFPO-DA	79		50 <sub>-</sub> 150				10/20/21 03:11	10/30/21 06:34	

Client: Shannon & Wilson, Inc Job ID: 320-80911-1

Project/Site: SC Surface Water

Client Sample ID: 21GST-SW-008

Lab Sample ID: 320-80911-2 Date Collected: 10/17/21 09:45 **Matrix: Water** 

Date Received: 10/27/21 12:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.55	ng/L		10/29/21 03:11	10/30/21 06:44	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.24	ng/L		10/29/21 03:11	10/30/21 06:44	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.81	ng/L		10/29/21 03:11	10/30/21 06:44	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		10/29/21 03:11	10/30/21 06:44	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.29	ng/L		10/29/21 03:11	10/30/21 06:44	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		10/29/21 03:11	10/30/21 06:44	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.52	ng/L		10/29/21 03:11	10/30/21 06:44	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		10/29/21 03:11	10/30/21 06:44	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.69	ng/L		10/29/21 03:11	10/30/21 06:44	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.19	ng/L		10/29/21 03:11	10/30/21 06:44	1
Perfluorohexanesulfonic acid (PFHxS)	0.67	J	1.9	0.54	ng/L		10/29/21 03:11	10/30/21 06:44	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	0.51	ng/L		10/29/21 03:11	10/30/21 06:44	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.8	1.1	ng/L		10/29/21 03:11	10/30/21 06:44	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.8	1.2	ng/L		10/29/21 03:11	10/30/21 06:44	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.9	0.23	ng/L		10/29/21 03:11	10/30/21 06:44	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.8	1.4	ng/L		10/29/21 03:11	10/30/21 06:44	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.9	0.30	ng/L		10/29/21 03:11	10/30/21 06:44	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.38	ng/L		10/29/21 03:11	10/30/21 06:44	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	41	*5-	50 - 150				10/29/21 03:11	10/30/21 06:44	1
13C4 PFHpA	41	*5-	50 - 150				10/29/21 03:11	10/30/21 06:44	1
13C4 PFOA	44	*5-	50 - 150				10/29/21 03:11	10/30/21 06:44	1
13C5 PFNA	41	*5-	50 - 150				10/29/21 03:11	10/30/21 06:44	1
13C2 PFDA	41	*5-	50 - 150				10/29/21 03:11	10/30/21 06:44	1
13C2 PFUnA	36	*5-	50 - 150				10/29/21 03:11	10/30/21 06:44	1
13C2 PFDoA	31	*5-	50 - 150				10/29/21 03:11	10/30/21 06:44	1
13C2 PFTeDA	26	*5-	50 <sub>-</sub> 150				10/29/21 03:11	10/30/21 06:44	1
13C3 PFBS	43	*5-	50 <sub>-</sub> 150				10/29/21 03:11	10/30/21 06:44	1
1802 PFHxS	40	*5-	50 - 150				10/29/21 03:11	10/30/21 06:44	1
13C4 PFOS	41	*5-	50 - 150				10/29/21 03:11	10/30/21 06:44	1
d3-NMeFOSAA	45	*5-	50 <sub>-</sub> 150					10/30/21 06:44	1
d5-NEtFOSAA	42	*5-	50 - 150				10/29/21 03:11	10/30/21 06:44	1
13C3 HFPO-DA	36	*5-	50 <sub>-</sub> 150					10/30/21 06:44	1

Client: Shannon & Wilson, Inc Job ID: 320-80911-1 Project/Site: SC Surface Water

Client Sample ID: 21GST-SW-024

Lab Sample ID: 320-80911-3

Date Collected: 10/17/21 10:15 **Matrix: Water** Date Received: 10/27/21 12:25

Method: EPA 537(Mod) - PFAS Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	7.4		1.9	0.55	ng/L		10/29/21 03:11	10/30/21 06:54	1
Perfluoroheptanoic acid (PFHpA)	2.1		1.9	0.24	ng/L		10/29/21 03:11	10/30/21 06:54	1
Perfluorooctanoic acid (PFOA)	0.98	J	1.9	0.81	ng/L		10/29/21 03:11	10/30/21 06:54	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		10/29/21 03:11	10/30/21 06:54	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		10/29/21 03:11	10/30/21 06:54	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		10/29/21 03:11	10/30/21 06:54	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		10/29/21 03:11	10/30/21 06:54	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		10/29/21 03:11	10/30/21 06:54	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.70	ng/L		10/29/21 03:11	10/30/21 06:54	1
Perfluorobutanesulfonic acid (PFBS)	0.52	J	1.9	0.19	ng/L		10/29/21 03:11	10/30/21 06:54	1
Perfluorohexanesulfonic acid (PFHxS)	9.2		1.9	0.54	ng/L		10/29/21 03:11	10/30/21 06:54	1
Perfluorooctanesulfonic acid (PFOS)	43		1.9	0.52	_		10/29/21 03:11	10/30/21 06:54	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.8	1.1	ng/L		10/29/21 03:11	10/30/21 06:54	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.8	1.2	ng/L		10/29/21 03:11	10/30/21 06:54	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.9	0.23	ng/L		10/29/21 03:11	10/30/21 06:54	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.8	1.4	ng/L		10/29/21 03:11	10/30/21 06:54	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.9	0.31	ng/L		10/29/21 03:11	10/30/21 06:54	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.38	ng/L		10/29/21 03:11	10/30/21 06:54	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	73		50 - 150				10/29/21 03:11	10/30/21 06:54	1
13C4 PFHpA	78		50 - 150				10/29/21 03:11	10/30/21 06:54	1
13C4 PFOA	83		50 - 150				10/29/21 03:11	10/30/21 06:54	1
13C5 PFNA	83		50 - 150				10/29/21 03:11	10/30/21 06:54	1
13C2 PFDA	79		50 - 150				10/29/21 03:11	10/30/21 06:54	1
13C2 PFUnA	70		50 - 150				10/29/21 03:11	10/30/21 06:54	1
13C2 PFDoA	63		50 - 150				10/29/21 03:11	10/30/21 06:54	1
13C2 PFTeDA	61		50 - 150				10/29/21 03:11	10/30/21 06:54	1
13C3 PFBS	82		50 <sub>-</sub> 150				10/29/21 03:11	10/30/21 06:54	1
1802 PFHxS	78		50 - 150				10/29/21 03:11	10/30/21 06:54	1
13C4 PFOS	82		50 - 150					10/30/21 06:54	1
d3-NMeFOSAA	76		50 - 150					10/30/21 06:54	1
d5-NEtFOSAA	77		50 - 150					10/30/21 06:54	1
13C3 HFPO-DA	73		50 <sub>-</sub> 150					10/30/21 06:54	1

Client: Shannon & Wilson, Inc Job ID: 320-80911-1 Project/Site: SC Surface Water

Client Sample ID: 21GST-SW-124

Lab Sample ID: 320-80911-4

Date Collected: 10/17/21 10:05 **Matrix: Water** Date Received: 10/27/21 12:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	7.3		1.9	0.56	ng/L		10/29/21 03:11	10/30/21 07:05	1
Perfluoroheptanoic acid (PFHpA)	2.1		1.9	0.24	ng/L		10/29/21 03:11	10/30/21 07:05	1
Perfluorooctanoic acid (PFOA)	1.1	J	1.9	0.83	ng/L		10/29/21 03:11	10/30/21 07:05	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		10/29/21 03:11	10/30/21 07:05	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		10/29/21 03:11	10/30/21 07:05	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		10/29/21 03:11	10/30/21 07:05	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		10/29/21 03:11	10/30/21 07:05	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.3	ng/L		10/29/21 03:11	10/30/21 07:05	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.71	ng/L		10/29/21 03:11	10/30/21 07:05	1
Perfluorobutanesulfonic acid (PFBS)	0.57	J	1.9	0.19	ng/L		10/29/21 03:11	10/30/21 07:05	1
Perfluorohexanesulfonic acid (PFHxS)	9.5		1.9		ng/L		10/29/21 03:11	10/30/21 07:05	1
Perfluorooctanesulfonic acid (PFOS)	30		1.9	0.52	ng/L		10/29/21 03:11	10/30/21 07:05	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.9	1.2	ng/L		10/29/21 03:11	10/30/21 07:05	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.9	1.3	ng/L		10/29/21 03:11	10/30/21 07:05	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.9		ng/L		10/29/21 03:11	10/30/21 07:05	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.9	1.5	ng/L		10/29/21 03:11	10/30/21 07:05	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.9	0.31	ng/L		10/29/21 03:11	10/30/21 07:05	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.39	ng/L		10/29/21 03:11	10/30/21 07:05	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	83		50 - 150				10/29/21 03:11	10/30/21 07:05	1
13C4 PFHpA	87		50 - 150				10/29/21 03:11	10/30/21 07:05	1
13C4 PFOA	94		50 - 150				10/29/21 03:11	10/30/21 07:05	1
13C5 PFNA	92		50 - 150				10/29/21 03:11	10/30/21 07:05	1
13C2 PFDA	84		50 - 150				10/29/21 03:11	10/30/21 07:05	1
13C2 PFUnA	82		50 - 150				10/29/21 03:11	10/30/21 07:05	1
13C2 PFDoA	84		50 - 150				10/29/21 03:11	10/30/21 07:05	1
13C2 PFTeDA	90		50 <sub>-</sub> 150				10/29/21 03:11	10/30/21 07:05	1
13C3 PFBS	85		50 <sub>-</sub> 150				10/29/21 03:11	10/30/21 07:05	1
1802 PFHxS	79		50 - 150				10/29/21 03:11	10/30/21 07:05	1
13C4 PFOS	87		50 - 150					10/30/21 07:05	1
d3-NMeFOSAA	96		50 - 150					10/30/21 07:05	1
d5-NEtFOSAA	97		50 - 150					10/30/21 07:05	1
13C3 HFPO-DA	85		50 - 150					10/30/21 07:05	1

11/8/2021

Client: Shannon & Wilson, Inc Job ID: 320-80911-1 Project/Site: SC Surface Water

Client Sample ID: 21GST-SW-005

Date Received: 10/27/21 12:25

d5-NEtFOSAA

13C3 HFPO-DA

Lab Sample ID: 320-80911-5 Date Collected: 10/17/21 11:15

**Matrix: Water** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.56	ng/L		10/29/21 03:11	10/30/21 07:15	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.24	ng/L		10/29/21 03:11	10/30/21 07:15	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.82	ng/L		10/29/21 03:11	10/30/21 07:15	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		10/29/21 03:11	10/30/21 07:15	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		10/29/21 03:11	10/30/21 07:15	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		10/29/21 03:11	10/30/21 07:15	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		10/29/21 03:11	10/30/21 07:15	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		10/29/21 03:11	10/30/21 07:15	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.70	ng/L		10/29/21 03:11	10/30/21 07:15	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.19	ng/L		10/29/21 03:11	10/30/21 07:15	1
Perfluorohexanesulfonic acid (PFHxS)	1.4	J	1.9	0.55	ng/L		10/29/21 03:11	10/30/21 07:15	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	0.52	ng/L		10/29/21 03:11	10/30/21 07:15	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.8	1.2	ng/L		10/29/21 03:11	10/30/21 07:15	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.8	1.2	ng/L		10/29/21 03:11	10/30/21 07:15	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.9	0.23	ng/L		10/29/21 03:11	10/30/21 07:15	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.8	1.4	ng/L		10/29/21 03:11	10/30/21 07:15	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.9	0.31	ng/L		10/29/21 03:11	10/30/21 07:15	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.38	ng/L		10/29/21 03:11	10/30/21 07:15	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	50		50 - 150				10/29/21 03:11	10/30/21 07:15	1
13C4 PFHpA	54		50 - 150				10/29/21 03:11	10/30/21 07:15	1
13C4 PFOA	58		50 - 150				10/29/21 03:11	10/30/21 07:15	1
13C5 PFNA	60		50 - 150				10/29/21 03:11	10/30/21 07:15	1
13C2 PFDA	52		50 - 150				10/29/21 03:11	10/30/21 07:15	1
13C2 PFUnA	49	*5-	50 - 150				10/29/21 03:11	10/30/21 07:15	1
13C2 PFDoA	48	*5-	50 - 150				10/29/21 03:11	10/30/21 07:15	1
13C2 PFTeDA	48	*5-	50 - 150				10/29/21 03:11	10/30/21 07:15	1
13C3 PFBS	59		50 - 150				10/29/21 03:11	10/30/21 07:15	1
1802 PFHxS	51		50 - 150				10/29/21 03:11	10/30/21 07:15	1
13C4 PFOS	59		50 - 150				10/29/21 03:11	10/30/21 07:15	1
d3-NMeFOSAA	59		50 <sub>-</sub> 150				10/29/21 03:11	10/30/21 07:15	1

10/29/21 03:11 10/30/21 07:15

10/29/21 03:11 10/30/21 07:15

50 - 150

50 - 150

48 \*5-

Client: Shannon & Wilson, Inc Job ID: 320-80911-1 Project/Site: SC Surface Water

Client Sample ID: 21GST-SW-006

Lab Sample ID: 320-80911-6 Date Collected: 10/17/21 12:00

**Matrix: Water** Date Received: 10/27/21 12:25

Analyte	Result	Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.55	ng/L		10/29/21 03:11	10/30/21 07:26	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.24	ng/L		10/29/21 03:11	10/30/21 07:26	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.81	ng/L		10/29/21 03:11	10/30/21 07:26	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		10/29/21 03:11	10/30/21 07:26	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.29	ng/L		10/29/21 03:11	10/30/21 07:26	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		10/29/21 03:11	10/30/21 07:26	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.52	ng/L		10/29/21 03:11	10/30/21 07:26	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		10/29/21 03:11	10/30/21 07:26	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.69	ng/L		10/29/21 03:11	10/30/21 07:26	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.19	ng/L		10/29/21 03:11	10/30/21 07:26	1
Perfluorohexanesulfonic acid (PFHxS)	6.3		1.9	0.54	ng/L		10/29/21 03:11	10/30/21 07:26	1
Perfluorooctanesulfonic acid (PFOS)	8.6		1.9	0.51	ng/L		10/29/21 03:11	10/30/21 07:26	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.7	1.1	ng/L		10/29/21 03:11	10/30/21 07:26	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.7	1.2	ng/L		10/29/21 03:11	10/30/21 07:26	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.9	0.23	ng/L		10/29/21 03:11	10/30/21 07:26	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.8	1.4	ng/L		10/29/21 03:11	10/30/21 07:26	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.9	0.30	ng/L		10/29/21 03:11	10/30/21 07:26	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.38	ng/L		10/29/21 03:11	10/30/21 07:26	1
Isotope Dilution	%Recovery	Qualifier Li	mits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	78	50	150				10/29/21 03:11	10/30/21 07:26	1
13C4 PFHpA	85	50	- 150				10/29/21 03:11	10/30/21 07:26	1
13C4 PFOA	85	50	- 150				10/29/21 03:11	10/30/21 07:26	1
13C5 PFNA	87	50	- 150				10/29/21 03:11	10/30/21 07:26	1
13C2 PFDA	83	50	- 150				10/29/21 03:11	10/30/21 07:26	1
13C2 PFUnA	73	50	- 150				10/29/21 03:11	10/30/21 07:26	1
13C2 PFDoA	66	50	- 150				10/29/21 03:11	10/30/21 07:26	1
13C2 PFTeDA	63	50	- 150				10/29/21 03:11	10/30/21 07:26	1
13C3 PFBS	83		- 150					10/30/21 07:26	1
1802 PFHxS	84	50	150				10/29/21 03:11	10/30/21 07:26	
13C4 PFOS	86		150					10/30/21 07:26	1
d3-NMeFOSAA	87		- 150					10/30/21 07:26	1
d5-NEtFOSAA	83		150					10/30/21 07:26	
13C3 HFPO-DA	79		150					10/30/21 07:26	1

Client: Shannon & Wilson, Inc Job ID: 320-80911-1 Project/Site: SC Surface Water

Client Sample ID: 21GST-SW-007

Lab Sample ID: 320-80911-7 Date Collected: 10/17/21 12:20

**Matrix: Water** Date Received: 10/27/21 12:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.56	ng/L		10/29/21 03:11	10/30/21 07:36	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.24	ng/L		10/29/21 03:11	10/30/21 07:36	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.82	ng/L		10/29/21 03:11	10/30/21 07:36	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		10/29/21 03:11	10/30/21 07:36	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		10/29/21 03:11	10/30/21 07:36	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		10/29/21 03:11	10/30/21 07:36	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		10/29/21 03:11	10/30/21 07:36	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		10/29/21 03:11	10/30/21 07:36	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.70	ng/L		10/29/21 03:11	10/30/21 07:36	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.19	ng/L		10/29/21 03:11	10/30/21 07:36	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	0.55	ng/L		10/29/21 03:11	10/30/21 07:36	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	0.52	ng/L		10/29/21 03:11	10/30/21 07:36	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.8	1.2	ng/L		10/29/21 03:11	10/30/21 07:36	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.8	1.2	ng/L		10/29/21 03:11	10/30/21 07:36	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.9	0.23	ng/L		10/29/21 03:11	10/30/21 07:36	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.8	1.4	ng/L		10/29/21 03:11	10/30/21 07:36	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.9	0.31	ng/L		10/29/21 03:11	10/30/21 07:36	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.38	ng/L		10/29/21 03:11	10/30/21 07:36	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	42	*5-	50 - 150				10/29/21 03:11	10/30/21 07:36	1
13C4 PFHpA	43	*5-	50 - 150				10/29/21 03:11	10/30/21 07:36	1
13C4 PFOA	44	*5-	50 <sub>-</sub> 150				10/29/21 03:11	10/30/21 07:36	1
13C5 PFNA	45	*5-	50 - 150				10/29/21 03:11	10/30/21 07:36	1
13C2 PFDA	45	*5-	50 - 150				10/29/21 03:11	10/30/21 07:36	1
13C2 PFUnA	39	*5-	50 <sub>-</sub> 150					10/30/21 07:36	1
13C2 PFDoA	38	*5-	50 - 150					10/30/21 07:36	1
13C2 PFTeDA	34	*5-	50 - 150					10/30/21 07:36	1
13C3 PFBS	47	*5-	50 <sub>-</sub> 150					10/30/21 07:36	1
1802 PFHxS		*5-	50 - 150					10/30/21 07:36	1
13C4 PFOS	41	*5-	50 - 150					10/30/21 07:36	. 1
d3-NMeFOSAA	49	*5-	50 - 150					10/30/21 07:36	. 1
d5-NEtFOSAA	48		50 - 150 50 - 150					10/30/21 07:36	
13C3 HFPO-DA		*5-	50 - 150					10/30/21 07:36	1

Client: Shannon & Wilson, Inc Job ID: 320-80911-1 Project/Site: SC Surface Water

Client Sample ID: 21GST-SW-011

Lab Sample ID: 320-80911-8

Date Collected: 10/17/21 12:40 **Matrix: Water** Date Received: 10/27/21 12:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	5.9		1.9	0.56	ng/L		10/29/21 03:11	10/30/21 08:07	
Perfluoroheptanoic acid (PFHpA)	0.59	J	1.9	0.24	ng/L		10/29/21 03:11	10/30/21 08:07	1
Perfluorooctanoic acid (PFOA)	3.7		1.9	0.82	ng/L		10/29/21 03:11	10/30/21 08:07	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		10/29/21 03:11	10/30/21 08:07	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		10/29/21 03:11	10/30/21 08:07	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		10/29/21 03:11	10/30/21 08:07	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		10/29/21 03:11	10/30/21 08:07	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.3	ng/L		10/29/21 03:11	10/30/21 08:07	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.71	ng/L		10/29/21 03:11	10/30/21 08:07	1
Perfluorobutanesulfonic acid (PFBS)	1.2	J	1.9	0.19	ng/L		10/29/21 03:11	10/30/21 08:07	1
Perfluorohexanesulfonic acid (PFHxS)	48		1.9	0.55	ng/L		10/29/21 03:11	10/30/21 08:07	1
Perfluorooctanesulfonic acid (PFOS)	67		1.9	0.52	ng/L		10/29/21 03:11	10/30/21 08:07	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.8	1.2	ng/L		10/29/21 03:11	10/30/21 08:07	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.8		ng/L		10/29/21 03:11	10/30/21 08:07	•
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.9	0.23	ng/L		10/29/21 03:11	10/30/21 08:07	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.9		ng/L		10/29/21 03:11	10/30/21 08:07	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.9		ng/L		10/29/21 03:11	10/30/21 08:07	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.39	ng/L		10/29/21 03:11	10/30/21 08:07	•
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	82		50 - 150				10/29/21 03:11	10/30/21 08:07	
13C4 PFHpA	77		50 - 150				10/29/21 03:11	10/30/21 08:07	1
13C4 PFOA	87		50 - 150				10/29/21 03:11	10/30/21 08:07	1
13C5 PFNA	88		50 - 150				10/29/21 03:11	10/30/21 08:07	1
13C2 PFDA	87		50 - 150				10/29/21 03:11	10/30/21 08:07	1
13C2 PFUnA	90		50 - 150				10/29/21 03:11	10/30/21 08:07	1
13C2 PFDoA	84		50 - 150				10/29/21 03:11	10/30/21 08:07	1
13C2 PFTeDA	83		50 - 150				10/29/21 03:11	10/30/21 08:07	1
13C3 PFBS	90		50 - 150				10/29/21 03:11	10/30/21 08:07	
1802 PFHxS	78		50 - 150				10/29/21 03:11	10/30/21 08:07	
13C4 PFOS	87		50 - 150				10/29/21 03:11	10/30/21 08:07	-
d3-NMeFOSAA	102		50 - 150				10/29/21 03:11	10/30/21 08:07	-
d5-NEtFOSAA	102		50 - 150				10/29/21 03:11	10/30/21 08:07	
13C3 HFPO-DA	78		50 <sub>-</sub> 150				10/20/21 03:11	10/30/21 08:07	1

Client: Shannon & Wilson, Inc Job ID: 320-80911-1 Project/Site: SC Surface Water

Client Sample ID: 21GST-SW-017

Lab Sample ID: 320-80911-9 Date Collected: 10/17/21 13:15

**Matrix: Water** Date Received: 10/27/21 12:25

Analyte	Result	Qualifier	RL _	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	32		2.0	0.58	ng/L		10/29/21 03:11	10/30/21 08:18	1
Perfluoroheptanoic acid (PFHpA)	44		2.0	0.25	ng/L		10/29/21 03:11	10/30/21 08:18	1
Perfluorooctanoic acid (PFOA)	27		2.0	0.85	ng/L		10/29/21 03:11	10/30/21 08:18	1
Perfluorononanoic acid (PFNA)	9.2		2.0	0.27	ng/L		10/29/21 03:11	10/30/21 08:18	1
Perfluorodecanoic acid (PFDA)	2.4		2.0	0.31	ng/L		10/29/21 03:11	10/30/21 08:18	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		10/29/21 03:11	10/30/21 08:18	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		10/29/21 03:11	10/30/21 08:18	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		10/29/21 03:11	10/30/21 08:18	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.73	ng/L		10/29/21 03:11	10/30/21 08:18	1
Perfluorobutanesulfonic acid	2.1		2.0	0.20	ng/L		10/29/21 03:11	10/30/21 08:18	1
(PFBS)									
Perfluorohexanesulfonic acid (PFHxS)	47		2.0	0.57	ng/L		10/29/21 03:11	10/30/21 08:18	1
Perfluorooctanesulfonic acid (PFOS)	14		2.0	0.54	ng/L		10/29/21 03:11	10/30/21 08:18	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		5.0	1.2	ng/L		10/29/21 03:11	10/30/21 08:18	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		5.0	1.3	ng/L		10/29/21 03:11	10/30/21 08:18	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		2.0	0.24	ng/L		10/29/21 03:11	10/30/21 08:18	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		4.0	1.5	ng/L		10/29/21 03:11	10/30/21 08:18	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		2.0	0.32	ng/L		10/29/21 03:11	10/30/21 08:18	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	0.40	ng/L		10/29/21 03:11	10/30/21 08:18	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	82		50 - 150					10/30/21 08:18	
13C4 PFHpA	86		50 <sub>-</sub> 150				10/29/21 03:11	10/30/21 08:18	1
13C4 PFOA	95		50 <sub>-</sub> 150				10/29/21 03:11	10/30/21 08:18	1
13C5 PFNA	95		50 - 150				10/29/21 03:11	10/30/21 08:18	1
13C2 PFDA	90		50 <sub>-</sub> 150				10/29/21 03:11	10/30/21 08:18	1
13C2 PFUnA	84		50 - 150					10/30/21 08:18	1
13C2 PFDoA	79		50 <sub>-</sub> 150					10/30/21 08:18	1
13C2 PFTeDA	73		50 - 150					10/30/21 08:18	1
13C3 PFBS	102		50 - 150					10/30/21 08:18	1
1802 PFHxS	83		50 <sub>-</sub> 150					10/30/21 08:18	
13C4 PFOS	87		50 - 150					10/30/21 08:18	
d3-NMeFOSAA	91		50 <sub>-</sub> 150					10/30/21 08:18	
d5-NEtFOSAA	88		50 - 150					10/30/21 08:18	
13C3 HFPO-DA	81		50 - 150					10/30/21 08:18	

Client: Shannon & Wilson, Inc Job ID: 320-80911-1 Project/Site: SC Surface Water

Client Sample ID: 21GST-SW-019 Lab Sample ID: 320-80911-10 Date Collected: 10/17/21 13:45

**Matrix: Water** 

Date Received: 10/27/21 12:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.55	ng/L		10/29/21 03:11	10/30/21 08:28	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.24	ng/L		10/29/21 03:11	10/30/21 08:28	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.81	ng/L		10/29/21 03:11	10/30/21 08:28	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		10/29/21 03:11	10/30/21 08:28	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		10/29/21 03:11	10/30/21 08:28	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		10/29/21 03:11	10/30/21 08:28	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.52	ng/L		10/29/21 03:11	10/30/21 08:28	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		10/29/21 03:11	10/30/21 08:28	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.69	ng/L		10/29/21 03:11	10/30/21 08:28	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.19	ng/L		10/29/21 03:11	10/30/21 08:28	
Perfluorohexanesulfonic acid (PFHxS)	1.2	J	1.9	0.54	ng/L		10/29/21 03:11	10/30/21 08:28	1
Perfluorooctanesulfonic acid (PFOS)	4.2		1.9	0.51	ng/L		10/29/21 03:11	10/30/21 08:28	1
N-methylperfluorooctanesulfonamidoa	ND		4.8	1.1	ng/L		10/29/21 03:11	10/30/21 08:28	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.8	1.2	ng/L		10/29/21 03:11	10/30/21 08:28	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.9	0.23	ng/L		10/29/21 03:11	10/30/21 08:28	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.8	1.4	ng/L		10/29/21 03:11	10/30/21 08:28	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.9	0.30	ng/L		10/29/21 03:11	10/30/21 08:28	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.38	ng/L		10/29/21 03:11	10/30/21 08:28	1
Isotope Dilution	%Recovery	Qualifier L	imits.				Prepared	Analyzed	Dil Fac
13C2 PFHxA	88		50 - 150				10/29/21 03:11	10/30/21 08:28	1
13C4 PFHpA	92	5	50 - 150				10/29/21 03:11	10/30/21 08:28	1
13C4 PFOA	97	5	50 - 150				10/29/21 03:11	10/30/21 08:28	
13C5 PFNA	100	5	50 - 150				10/29/21 03:11	10/30/21 08:28	
13C2 PFDA	94	5	50 - 150				10/29/21 03:11	10/30/21 08:28	
13C2 PFUnA	91	5	50 - 150				10/29/21 03:11	10/30/21 08:28	
13C2 PFDoA	92	5	50 - 150				10/29/21 03:11	10/30/21 08:28	
13C2 PFTeDA	91	5	50 - 150					10/30/21 08:28	1
13C3 PFBS	102	5	50 - 150				10/29/21 03:11	10/30/21 08:28	
1802 PFHxS	89	5	50 - 150				10/29/21 03:11	10/30/21 08:28	
13C4 PFOS	94		50 - 150				10/29/21 03:11	10/30/21 08:28	
d3-NMeFOSAA	107		50 - 150					10/30/21 08:28	1
d5-NEtFOSAA	100		50 - 150					10/30/21 08:28	
13C3 HFPO-DA	86		50 - 150					10/30/21 08:28	1

Client: Shannon & Wilson, Inc Job ID: 320-80911-1 Project/Site: SC Surface Water

Client Sample ID: 21GST-SW-016

Lab Sample ID: 320-80911-11

Date Collected: 10/17/21 14:05 **Matrix: Water** Date Received: 10/27/21 12:25

Analyte	Result	Qualifier	RL _	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	15		2.0	0.58	ng/L		10/29/21 03:11	10/30/21 08:38	1
Perfluoroheptanoic acid (PFHpA)	4.7		2.0	0.25	ng/L		10/29/21 03:11	10/30/21 08:38	1
Perfluorooctanoic acid (PFOA)	3.8		2.0	0.84	ng/L		10/29/21 03:11	10/30/21 08:38	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		10/29/21 03:11	10/30/21 08:38	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		10/29/21 03:11	10/30/21 08:38	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		10/29/21 03:11	10/30/21 08:38	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		10/29/21 03:11	10/30/21 08:38	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		10/29/21 03:11	10/30/21 08:38	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.73	ng/L		10/29/21 03:11	10/30/21 08:38	1
Perfluorobutanesulfonic acid (PFBS)	2.5		2.0	0.20	ng/L		10/29/21 03:11	10/30/21 08:38	1
Perfluorohexanesulfonic acid (PFHxS)	31		2.0	0.57	ng/L		10/29/21 03:11	10/30/21 08:38	1
Perfluorooctanesulfonic acid (PFOS)	160		2.0		ng/L		10/29/21 03:11	10/30/21 08:38	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		5.0	1.2	ng/L		10/29/21 03:11	10/30/21 08:38	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		5.0	1.3	ng/L		10/29/21 03:11	10/30/21 08:38	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		2.0	0.24	ng/L		10/29/21 03:11	10/30/21 08:38	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		4.0	1.5	ng/L		10/29/21 03:11	10/30/21 08:38	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		2.0	0.32	ng/L		10/29/21 03:11	10/30/21 08:38	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	0.40	ng/L		10/29/21 03:11	10/30/21 08:38	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	81		50 - 150				10/29/21 03:11	10/30/21 08:38	1
13C4 PFHpA	81		50 - 150				10/29/21 03:11	10/30/21 08:38	1
13C4 PFOA	86		50 - 150				10/29/21 03:11	10/30/21 08:38	1
13C5 PFNA	90		50 - 150				10/29/21 03:11	10/30/21 08:38	1
13C2 PFDA	84		50 - 150				10/29/21 03:11	10/30/21 08:38	1
13C2 PFUnA	85		50 - 150				10/29/21 03:11	10/30/21 08:38	1
13C2 PFDoA	85		50 - 150				10/29/21 03:11	10/30/21 08:38	1
13C2 PFTeDA	87		50 - 150				10/29/21 03:11	10/30/21 08:38	1
13C3 PFBS	92		50 - 150				10/29/21 03:11	10/30/21 08:38	1
1802 PFHxS	80		50 - 150				10/29/21 03:11	10/30/21 08:38	1
13C4 PFOS	85		50 - 150				10/29/21 03:11	10/30/21 08:38	1
d3-NMeFOSAA	92		50 - 150				10/29/21 03:11	10/30/21 08:38	1
d5-NEtFOSAA	90		50 - 150				10/29/21 03:11	10/30/21 08:38	1
13C3 HFPO-DA	78		50 <sub>-</sub> 150				10/29/21 03:11	10/30/21 08:38	1

Client: Shannon & Wilson, Inc Job ID: 320-80911-1 Project/Site: SC Surface Water

Client Sample ID: 21GST-SW-013

Lab Sample ID: 320-80911-12

**Matrix: Water** 

Date Collected: 10/17/21 14:40 Date Received: 10/27/21 12:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	30		1.9	0.56	ng/L		10/29/21 03:11	10/30/21 08:49	
Perfluoroheptanoic acid (PFHpA)	9.0		1.9	0.24	ng/L		10/29/21 03:11	10/30/21 08:49	1
Perfluorooctanoic acid (PFOA)	8.5		1.9	0.81	ng/L		10/29/21 03:11	10/30/21 08:49	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		10/29/21 03:11	10/30/21 08:49	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		10/29/21 03:11	10/30/21 08:49	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		10/29/21 03:11	10/30/21 08:49	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		10/29/21 03:11	10/30/21 08:49	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		10/29/21 03:11	10/30/21 08:49	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.70	ng/L		10/29/21 03:11	10/30/21 08:49	1
Perfluorobutanesulfonic acid (PFBS)	4.5		1.9	0.19	ng/L		10/29/21 03:11	10/30/21 08:49	1
Perfluorohexanesulfonic acid (PFHxS)	79		1.9	0.55	ng/L		10/29/21 03:11	10/30/21 08:49	1
Perfluorooctanesulfonic acid (PFOS)	260		1.9	0.52	ng/L		10/29/21 03:11	10/30/21 08:49	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.8	1.1	ng/L		10/29/21 03:11	10/30/21 08:49	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.8	1.2	ng/L		10/29/21 03:11	10/30/21 08:49	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.9	0.23	ng/L		10/29/21 03:11	10/30/21 08:49	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.8	1.4	ng/L		10/29/21 03:11	10/30/21 08:49	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.9	0.31	ng/L		10/29/21 03:11	10/30/21 08:49	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.38	ng/L		10/29/21 03:11	10/30/21 08:49	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	87		50 - 150				10/29/21 03:11	10/30/21 08:49	
13C4 PFHpA	90		50 - 150				10/29/21 03:11	10/30/21 08:49	1
13C4 PFOA	97		50 - 150				10/29/21 03:11	10/30/21 08:49	1
13C5 PFNA	100		50 - 150				10/29/21 03:11	10/30/21 08:49	
13C2 PFDA	97		50 - 150				10/29/21 03:11	10/30/21 08:49	1
13C2 PFUnA	90		50 - 150				10/29/21 03:11	10/30/21 08:49	1
13C2 PFDoA	92		50 - 150				10/29/21 03:11	10/30/21 08:49	
13C2 PFTeDA	91		50 - 150				10/29/21 03:11	10/30/21 08:49	1
13C3 PFBS	95		50 - 150				10/29/21 03:11	10/30/21 08:49	1
1802 PFHxS	86		50 - 150				10/29/21 03:11	10/30/21 08:49	
13C4 PFOS	93		50 - 150				10/29/21 03:11	10/30/21 08:49	1
d3-NMeFOSAA	101		50 - 150				10/29/21 03:11	10/30/21 08:49	1
d5-NEtFOSAA	100		50 - 150				10/29/21 03:11	10/30/21 08:49	1
13C3 HFPO-DA	97		50 <sub>-</sub> 150				10/29/21 03:11	10/30/21 08:49	1

Client: Shannon & Wilson, Inc Job ID: 320-80911-1 Project/Site: SC Surface Water

Client Sample ID: 21GST-SW-014

Lab Sample ID: 320-80911-13

Date Collected: 10/17/21 15:00 **Matrix: Water** Date Received: 10/27/21 12:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	2.5		2.0	0.57	ng/L		10/29/21 03:11	10/30/21 08:59	1
Perfluoroheptanoic acid (PFHpA)	1.3	J	2.0	0.25	ng/L		10/29/21 03:11	10/30/21 08:59	1
Perfluorooctanoic acid (PFOA)	0.96	J	2.0	0.84	ng/L		10/29/21 03:11	10/30/21 08:59	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		10/29/21 03:11	10/30/21 08:59	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.30	ng/L		10/29/21 03:11	10/30/21 08:59	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		10/29/21 03:11	10/30/21 08:59	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.54	ng/L		10/29/21 03:11	10/30/21 08:59	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		10/29/21 03:11	10/30/21 08:59	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.72	ng/L		10/29/21 03:11	10/30/21 08:59	1
Perfluorobutanesulfonic acid (PFBS)	0.39	J	2.0	0.20	ng/L			10/30/21 08:59	1
Perfluorohexanesulfonic acid (PFHxS)	5.2		2.0		ng/L		10/29/21 03:11	10/30/21 08:59	1
Perfluorooctanesulfonic acid (PFOS)	42		2.0		ng/L		10/29/21 03:11	10/30/21 08:59	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.9	1.2	ng/L		10/29/21 03:11	10/30/21 08:59	•
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.9	1.3	ng/L		10/29/21 03:11	10/30/21 08:59	•
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		2.0	0.24	ng/L		10/29/21 03:11	10/30/21 08:59	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.9	1.5	ng/L		10/29/21 03:11	10/30/21 08:59	,
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		2.0	0.31	ng/L		10/29/21 03:11	10/30/21 08:59	,
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	0.39	ng/L		10/29/21 03:11	10/30/21 08:59	•
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	88		50 - 150				10/29/21 03:11	10/30/21 08:59	-
13C4 PFHpA	91		50 - 150				10/29/21 03:11	10/30/21 08:59	1
13C4 PFOA	96		50 - 150				10/29/21 03:11	10/30/21 08:59	1
13C5 PFNA	92		50 - 150				10/29/21 03:11	10/30/21 08:59	1
13C2 PFDA	93		50 - 150				10/29/21 03:11	10/30/21 08:59	1
13C2 PFUnA	88		50 - 150				10/29/21 03:11	10/30/21 08:59	-
13C2 PFDoA	93		50 - 150				10/29/21 03:11	10/30/21 08:59	
13C2 PFTeDA	93		50 - 150				10/29/21 03:11	10/30/21 08:59	
13C3 PFBS	98		50 - 150				10/29/21 03:11	10/30/21 08:59	
1802 PFHxS	83		50 - 150				10/29/21 03:11	10/30/21 08:59	
13C4 PFOS	92		50 - 150				10/29/21 03:11	10/30/21 08:59	
d3-NMeFOSAA	105		50 - 150				10/29/21 03:11	10/30/21 08:59	-
d5-NEtFOSAA	97		50 - 150				10/29/21 03:11	10/30/21 08:59	
13C3 HFPO-DA	85		50 <sub>-</sub> 150				10/20/21 03:11	10/30/21 08:59	

Client: Shannon & Wilson, Inc Job ID: 320-80911-1 Project/Site: SC Surface Water

Client Sample ID: 21GST-SW-015

Lab Sample ID: 320-80911-14

Date Collected: 10/17/21 15:15 **Matrix: Water** Date Received: 10/27/21 12:25

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	11		1.9	0.56	ng/L		10/29/21 03:11	10/30/21 09:10	
Perfluoroheptanoic acid (PFHpA)	2.8		1.9	0.24	ng/L		10/29/21 03:11	10/30/21 09:10	•
Perfluorooctanoic acid (PFOA)	3.3		1.9	0.83	ng/L		10/29/21 03:11	10/30/21 09:10	•
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		10/29/21 03:11	10/30/21 09:10	
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		10/29/21 03:11	10/30/21 09:10	•
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		10/29/21 03:11	10/30/21 09:10	
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.54	ng/L		10/29/21 03:11	10/30/21 09:10	
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.3	ng/L		10/29/21 03:11	10/30/21 09:10	
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.71	ng/L		10/29/21 03:11	10/30/21 09:10	
Perfluorobutanesulfonic acid (PFBS)	2.4		1.9	0.19	ng/L		10/29/21 03:11	10/30/21 09:10	
Perfluorohexanesulfonic acid (PFHxS)	25		1.9		ng/L		10/29/21 03:11	10/30/21 09:10	•
Perfluorooctanesulfonic acid (PFOS)	220		1.9		ng/L		10/29/21 03:11	10/30/21 09:10	
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.9		ng/L		10/29/21 03:11	10/30/21 09:10	
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.9		ng/L		10/29/21 03:11	10/30/21 09:10	
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.9		ng/L		10/29/21 03:11	10/30/21 09:10	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.9	1.5	ng/L		10/29/21 03:11	10/30/21 09:10	
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.9	0.31	ng/L		10/29/21 03:11	10/30/21 09:10	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.39	ng/L		10/29/21 03:11	10/30/21 09:10	
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	85		50 - 150				10/29/21 03:11	10/30/21 09:10	
13C4 PFHpA	85		50 - 150				10/29/21 03:11	10/30/21 09:10	
13C4 PFOA	91		50 - 150				10/29/21 03:11	10/30/21 09:10	
13C5 PFNA	90		50 - 150				10/29/21 03:11	10/30/21 09:10	
13C2 PFDA	88		50 - 150				10/29/21 03:11	10/30/21 09:10	
13C2 PFUnA	75		50 - 150				10/29/21 03:11	10/30/21 09:10	
13C2 PFDoA	59		50 - 150				10/29/21 03:11	10/30/21 09:10	
13C2 PFTeDA	49	*5-	50 - 150				10/29/21 03:11	10/30/21 09:10	
13C3 PFBS	94		50 - 150				10/29/21 03:11	10/30/21 09:10	
1802 PFHxS	85		50 - 150				10/29/21 03:11	10/30/21 09:10	
13C4 PFOS	88		50 - 150				10/29/21 03:11	10/30/21 09:10	
d3-NMeFOSAA	86		50 - 150				10/29/21 03:11	10/30/21 09:10	
d5-NEtFOSAA	82		50 - 150				10/29/21 03:11	10/30/21 09:10	
13C3 HFPO-DA	87		50 <sub>-</sub> 150				10/29/21 03:11	10/30/21 09:10	

Client: Shannon & Wilson, Inc Job ID: 320-80911-1 Project/Site: SC Surface Water

Client Sample ID: 21GST-SW-018

Lab Sample ID: 320-80911-15

**Matrix: Water** 

Date Collected: 10/17/21 15:40 Date Received: 10/27/21 12:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.56	ng/L		10/29/21 03:11	10/30/21 09:20	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.24	ng/L		10/29/21 03:11	10/30/21 09:20	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.82	ng/L		10/29/21 03:11	10/30/21 09:20	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		10/29/21 03:11	10/30/21 09:20	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		10/29/21 03:11	10/30/21 09:20	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		10/29/21 03:11	10/30/21 09:20	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		10/29/21 03:11	10/30/21 09:20	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.3	ng/L		10/29/21 03:11	10/30/21 09:20	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.70	ng/L		10/29/21 03:11	10/30/21 09:20	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.19	ng/L		10/29/21 03:11	10/30/21 09:20	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	0.55	ng/L		10/29/21 03:11	10/30/21 09:20	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	0.52	ng/L		10/29/21 03:11	10/30/21 09:20	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.8	1.2	ng/L		10/29/21 03:11	10/30/21 09:20	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.8	1.3	ng/L		10/29/21 03:11	10/30/21 09:20	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.9	0.23	ng/L		10/29/21 03:11	10/30/21 09:20	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.9	1.4	ng/L		10/29/21 03:11	10/30/21 09:20	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.9	0.31	ng/L		10/29/21 03:11	10/30/21 09:20	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.39	ng/L		10/29/21 03:11	10/30/21 09:20	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	94		50 - 150				10/29/21 03:11	10/30/21 09:20	1
13C4 PFHpA	95		50 - 150				10/29/21 03:11	10/30/21 09:20	1
13C4 PFOA	101		50 - 150				10/29/21 03:11	10/30/21 09:20	1
13C5 PFNA	104		50 <sub>-</sub> 150				10/29/21 03:11	10/30/21 09:20	
13C2 PFDA	98		50 - 150				10/29/21 03:11	10/30/21 09:20	1
13C2 PFUnA	102		50 <sub>-</sub> 150				10/29/21 03:11	10/30/21 09:20	1
13C2 PFDoA	95		50 - 150				10/29/21 03:11	10/30/21 09:20	
13C2 PFTeDA	104		50 <sub>-</sub> 150				10/29/21 03:11	10/30/21 09:20	1
13C3 PFBS	110		50 <sub>-</sub> 150				10/29/21 03:11	10/30/21 09:20	1
1802 PFHxS	95		50 <sub>-</sub> 150					10/30/21 09:20	1
13C4 PFOS	105		50 - 150 50 - 150					10/30/21 09:20	
d3-NMeFOSAA	105		50 <sub>-</sub> 150					10/30/21 09:20	1
d5-NEtFOSAA	101		50 - 150					10/30/21 09:20	· · · · · · · · · · · · · · · · · · ·
13C3 HFPO-DA	95		50 <sub>-</sub> 150					10/30/21 09:20	

Client: Shannon & Wilson, Inc Job ID: 320-80911-1

Project/Site: SC Surface Water

Client Sample ID: 21GST-SW-118 Lab Sample ID: 320-80911-16

Date Collected: 10/17/21 15:30 **Matrix: Water** Date Received: 10/27/21 12:25

Analyte	Result	Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.57	ng/L		10/29/21 03:11	10/30/21 09:31	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		10/29/21 03:11	10/30/21 09:31	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.84	ng/L		10/29/21 03:11	10/30/21 09:31	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		10/29/21 03:11	10/30/21 09:31	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		10/29/21 03:11	10/30/21 09:31	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		10/29/21 03:11	10/30/21 09:31	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.54	ng/L		10/29/21 03:11	10/30/21 09:31	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		10/29/21 03:11	10/30/21 09:31	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.72	ng/L		10/29/21 03:11	10/30/21 09:31	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		10/29/21 03:11	10/30/21 09:31	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.56	ng/L		10/29/21 03:11	10/30/21 09:31	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.53	ng/L		10/29/21 03:11	10/30/21 09:31	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.9	1.2	ng/L		10/29/21 03:11	10/30/21 09:31	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.9	1.3	ng/L		10/29/21 03:11	10/30/21 09:31	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		2.0	0.24	ng/L		10/29/21 03:11	10/30/21 09:31	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.9	1.5	ng/L		10/29/21 03:11	10/30/21 09:31	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		2.0	0.32	ng/L		10/29/21 03:11	10/30/21 09:31	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	0.39	ng/L		10/29/21 03:11	10/30/21 09:31	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	90		50 - 150				10/29/21 03:11	10/30/21 09:31	1
13C4 PFHpA	92		50 - 150				10/29/21 03:11	10/30/21 09:31	1
13C4 PFOA	100		50 - 150				10/29/21 03:11	10/30/21 09:31	1
13C5 PFNA	106		50 - 150				10/29/21 03:11	10/30/21 09:31	1
13C2 PFDA	95		50 - 150				10/29/21 03:11	10/30/21 09:31	1
13C2 PFUnA	93		50 - 150				10/29/21 03:11	10/30/21 09:31	1
13C2 PFDoA	91		50 - 150				10/29/21 03:11	10/30/21 09:31	1
13C2 PFTeDA	94		50 - 150				10/29/21 03:11	10/30/21 09:31	1
13C3 PFBS	103		50 - 150				10/29/21 03:11	10/30/21 09:31	1
1802 PFHxS	92		50 - 150				10/29/21 03:11	10/30/21 09:31	1
13C4 PFOS	100		50 <sub>-</sub> 150				10/29/21 03:11	10/30/21 09:31	1
d3-NMeFOSAA	101		50 <sub>-</sub> 150				10/29/21 03:11	10/30/21 09:31	1
d5-NEtFOSAA	100		50 - 150					10/30/21 09:31	1
13C3 HFPO-DA	83		50 <sub>-</sub> 150					10/30/21 09:31	1

Client: Shannon & Wilson, Inc Job ID: 320-80911-1

Project/Site: SC Surface Water

d3-NMeFOSAA

d5-NEtFOSAA

13C3 HFPO-DA

Client Sample ID: 21GST-SW-020 Lab Sample ID: 320-80911-17

Date Collected: 10/17/21 16:10 Matrix: Water
Date Received: 10/27/21 12:25

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	2.4		2.0	0.57	ng/L		10/29/21 03:11	10/30/21 09:41	1
Perfluoroheptanoic acid (PFHpA)	1.0	J	2.0	0.24	ng/L		10/29/21 03:11	10/30/21 09:41	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.83	ng/L		10/29/21 03:11	10/30/21 09:41	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.26	ng/L		10/29/21 03:11	10/30/21 09:41	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.30	ng/L		10/29/21 03:11	10/30/21 09:41	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		10/29/21 03:11	10/30/21 09:41	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.54	ng/L		10/29/21 03:11	10/30/21 09:41	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		10/29/21 03:11	10/30/21 09:41	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.72	ng/L		10/29/21 03:11	10/30/21 09:41	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		10/29/21 03:11	10/30/21 09:41	1
Perfluorohexanesulfonic acid (PFHxS)	5.8		2.0	0.56	ng/L		10/29/21 03:11	10/30/21 09:41	1
Perfluorooctanesulfonic acid (PFOS)	27		2.0		ng/L			10/30/21 09:41	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.9		ng/L			10/30/21 09:41	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.9		ng/L			10/30/21 09:41	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		2.0		ng/L			10/30/21 09:41	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.9		ng/L			10/30/21 09:41	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		2.0		ng/L			10/30/21 09:41	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	0.39	ng/L		10/29/21 03:11	10/30/21 09:41	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	91		50 - 150				10/29/21 03:11	10/30/21 09:41	1
13C4 PFHpA	90		50 - 150				10/29/21 03:11	10/30/21 09:41	1
13C4 PFOA	102		50 - 150				10/29/21 03:11	10/30/21 09:41	1
13C5 PFNA	96		50 - 150				10/29/21 03:11	10/30/21 09:41	1
13C2 PFDA	98		50 - 150				10/29/21 03:11	10/30/21 09:41	1
13C2 PFUnA	90		50 - 150				10/29/21 03:11	10/30/21 09:41	1
13C2 PFDoA	91		50 - 150				10/29/21 03:11	10/30/21 09:41	1
13C2 PFTeDA	99		50 - 150				10/29/21 03:11	10/30/21 09:41	1
13C3 PFBS	110		50 - 150				10/29/21 03:11	10/30/21 09:41	1
1802 PFHxS	88		50 - 150				10/29/21 03:11	10/30/21 09:41	1
13C4 PFOS	96		50 - 150				10/29/21 03:11	10/30/21 09:41	1

50 - 150

50 - 150

50 - 150

104

105

92

2

3

5

7

9

11

12

14

15

10/29/21 03:11 10/30/21 09:41

10/29/21 03:11 10/30/21 09:41

10/29/21 03:11 10/30/21 09:41

Client: Shannon & Wilson, Inc Job ID: 320-80911-1 Project/Site: SC Surface Water

Client Sample ID: 21GST-SW-021

Lab Sample ID: 320-80911-18

Date Collected: 10/17/21 16:45 **Matrix: Water** Date Received: 10/27/21 12:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	2.3		1.9	0.56	ng/L		10/29/21 03:11	10/30/21 10:12	1
Perfluoroheptanoic acid (PFHpA)	0.79	J	1.9	0.24	ng/L		10/29/21 03:11	10/30/21 10:12	1
Perfluorooctanoic acid (PFOA)	0.85	J	1.9	0.83	ng/L		10/29/21 03:11	10/30/21 10:12	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		10/29/21 03:11	10/30/21 10:12	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		10/29/21 03:11	10/30/21 10:12	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		10/29/21 03:11	10/30/21 10:12	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.54	ng/L		10/29/21 03:11	10/30/21 10:12	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.3	ng/L		10/29/21 03:11	10/30/21 10:12	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.71	ng/L		10/29/21 03:11	10/30/21 10:12	1
Perfluorobutanesulfonic acid (PFBS)	0.37	J	1.9	0.19	ng/L		10/29/21 03:11	10/30/21 10:12	1
Perfluorohexanesulfonic acid (PFHxS)	5.2		1.9		ng/L		10/29/21 03:11	10/30/21 10:12	1
Perfluorooctanesulfonic acid (PFOS)	24		1.9	0.53	ng/L		10/29/21 03:11	10/30/21 10:12	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.9	1.2	ng/L		10/29/21 03:11	10/30/21 10:12	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.9	1.3	ng/L		10/29/21 03:11	10/30/21 10:12	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.9		ng/L		10/29/21 03:11	10/30/21 10:12	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.9	1.5	ng/L		10/29/21 03:11	10/30/21 10:12	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.9	0.31	ng/L		10/29/21 03:11	10/30/21 10:12	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.39	ng/L		10/29/21 03:11	10/30/21 10:12	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	85		50 - 150				10/29/21 03:11	10/30/21 10:12	1
13C4 PFHpA	89		50 - 150				10/29/21 03:11	10/30/21 10:12	1
13C4 PFOA	102		50 - 150				10/29/21 03:11	10/30/21 10:12	1
13C5 PFNA	96		50 - 150				10/29/21 03:11	10/30/21 10:12	1
13C2 PFDA	92		50 <sub>-</sub> 150				10/29/21 03:11	10/30/21 10:12	1
13C2 PFUnA	94		50 - 150				10/29/21 03:11	10/30/21 10:12	1
13C2 PFDoA	88		50 <sub>-</sub> 150				10/29/21 03:11	10/30/21 10:12	1
13C2 PFTeDA	97		50 <sub>-</sub> 150				10/29/21 03:11	10/30/21 10:12	1
13C3 PFBS	101		50 <sub>-</sub> 150				10/29/21 03:11	10/30/21 10:12	1
1802 PFHxS	85		50 <sub>-</sub> 150				10/29/21 03:11	10/30/21 10:12	1
13C4 PFOS	95		50 - 150				10/29/21 03:11	10/30/21 10:12	1
d3-NMeFOSAA	100		50 <sub>-</sub> 150					10/30/21 10:12	1
d5-NEtFOSAA	102		50 - 150					10/30/21 10:12	1
13C3 HFPO-DA	88		50 <sub>-</sub> 150					10/30/21 10:12	1

Client: Shannon & Wilson, Inc Job ID: 320-80911-1

Project/Site: SC Surface Water

Client Sample ID: 21GST-SW-012

Lab Sample ID: 320-80911-19 Date Collected: 10/17/21 17:20 Date Received: 10/27/21 12:25

**Matrix: Water** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.56	ng/L		10/29/21 03:11	10/30/21 10:23	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.24	ng/L		10/29/21 03:11	10/30/21 10:23	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.82	ng/L		10/29/21 03:11	10/30/21 10:23	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		10/29/21 03:11	10/30/21 10:23	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		10/29/21 03:11	10/30/21 10:23	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		10/29/21 03:11	10/30/21 10:23	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		10/29/21 03:11	10/30/21 10:23	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.3	ng/L		10/29/21 03:11	10/30/21 10:23	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.70	ng/L		10/29/21 03:11	10/30/21 10:23	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.19	ng/L		10/29/21 03:11	10/30/21 10:23	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	0.55	ng/L		10/29/21 03:11	10/30/21 10:23	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	0.52	ng/L		10/29/21 03:11	10/30/21 10:23	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.8	1.2	ng/L		10/29/21 03:11	10/30/21 10:23	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.8		ng/L		10/29/21 03:11	10/30/21 10:23	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.9	0.23	ng/L		10/29/21 03:11	10/30/21 10:23	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.8	1.4	ng/L		10/29/21 03:11	10/30/21 10:23	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.9	0.31	ng/L		10/29/21 03:11	10/30/21 10:23	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.38	ng/L		10/29/21 03:11	10/30/21 10:23	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	86		50 - 150				10/29/21 03:11	10/30/21 10:23	1
13C4 PFHpA	88		50 - 150				10/29/21 03:11	10/30/21 10:23	1
13C4 PFOA	97		50 - 150				10/29/21 03:11	10/30/21 10:23	1
13C5 PFNA	98		50 - 150				10/29/21 03:11	10/30/21 10:23	1
13C2 PFDA	91		50 - 150				10/29/21 03:11	10/30/21 10:23	1
13C2 PFUnA	96		50 <sub>-</sub> 150				10/29/21 03:11	10/30/21 10:23	1
13C2 PFDoA	91		50 - 150				10/29/21 03:11	10/30/21 10:23	1
13C2 PFTeDA	86		50 <sub>-</sub> 150				10/29/21 03:11	10/30/21 10:23	1
13C3 PFBS	97		50 <sub>-</sub> 150				10/29/21 03:11	10/30/21 10:23	1
1802 PFHxS	83		50 <sub>-</sub> 150				10/29/21 03:11	10/30/21 10:23	1
13C4 PFOS	96		50 <sub>-</sub> 150					10/30/21 10:23	1
d3-NMeFOSAA	101		50 <sub>-</sub> 150				10/29/21 03:11	10/30/21 10:23	1
d5-NEtFOSAA	95		50 - 150				10/29/21 03:11	10/30/21 10:23	1
13C3 HFPO-DA	79		50 - 150					10/30/21 10:23	1

Client: Shannon & Wilson, Inc Job ID: 320-80911-1 Project/Site: SC Surface Water

Client Sample ID: 21GST-EB-012

Lab Sample ID: 320-80911-20

Date Collected: 10/17/21 17:10 **Matrix: Water** Date Received: 10/27/21 12:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.57	ng/L		10/29/21 03:11	10/30/21 10:33	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		10/29/21 03:11	10/30/21 10:33	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.84	ng/L		10/29/21 03:11	10/30/21 10:33	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		10/29/21 03:11	10/30/21 10:33	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		10/29/21 03:11	10/30/21 10:33	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		10/29/21 03:11	10/30/21 10:33	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.54	ng/L		10/29/21 03:11	10/30/21 10:33	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		10/29/21 03:11	10/30/21 10:33	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.72	ng/L		10/29/21 03:11	10/30/21 10:33	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		10/29/21 03:11	10/30/21 10:33	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.56	ng/L		10/29/21 03:11	10/30/21 10:33	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.53	ng/L		10/29/21 03:11	10/30/21 10:33	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.9	1.2	ng/L		10/29/21 03:11	10/30/21 10:33	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.9	1.3	ng/L		10/29/21 03:11	10/30/21 10:33	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		2.0	0.24	ng/L		10/29/21 03:11	10/30/21 10:33	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.9		ng/L		10/29/21 03:11	10/30/21 10:33	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		2.0		ng/L		10/29/21 03:11	10/30/21 10:33	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	0.39	ng/L		10/29/21 03:11	10/30/21 10:33	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	88		50 - 150				10/29/21 03:11	10/30/21 10:33	1
13C4 PFHpA	93		50 - 150				10/29/21 03:11	10/30/21 10:33	1
13C4 PFOA	101		50 - 150				10/29/21 03:11	10/30/21 10:33	1
13C5 PFNA	101		50 - 150				10/29/21 03:11	10/30/21 10:33	1
13C2 PFDA	96		50 - 150				10/29/21 03:11	10/30/21 10:33	1
13C2 PFUnA	94		50 <sub>-</sub> 150				10/29/21 03:11	10/30/21 10:33	1
13C2 PFDoA	96		50 - 150				10/29/21 03:11	10/30/21 10:33	1
13C2 PFTeDA	103		50 <sub>-</sub> 150					10/30/21 10:33	1
13C3 PFBS	101		50 <sub>-</sub> 150				10/29/21 03:11	10/30/21 10:33	1
1802 PFHxS	90		50 <sub>-</sub> 150				10/29/21 03:11	10/30/21 10:33	1
13C4 PFOS	97		50 - 150					10/30/21 10:33	1
d3-NMeFOSAA	106		50 <sub>-</sub> 150					10/30/21 10:33	1
d5-NEtFOSAA	112		50 <sub>-</sub> 150					10/30/21 10:33	
13C3 HFPO-DA	88		50 <sub>-</sub> 150					10/30/21 10:33	1

Client: Shannon & Wilson, Inc Job ID: 320-80911-1 Project/Site: SC Surface Water

Client Sample ID: 21GST-SW-001

Lab Sample ID: 320-80911-21

Date Collected: 10/18/21 09:00 **Matrix: Water** Date Received: 10/27/21 12:25

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.56	ng/L		10/29/21 12:41	10/30/21 22:09	1
Perfluoroheptanoic acid (PFHpA)	0.31	J	1.9	0.24	ng/L		10/29/21 12:41	10/30/21 22:09	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.82	ng/L		10/29/21 12:41	10/30/21 22:09	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		10/29/21 12:41	10/30/21 22:09	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		10/29/21 12:41	10/30/21 22:09	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		10/29/21 12:41	10/30/21 22:09	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		10/29/21 12:41	10/30/21 22:09	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.3	ng/L		10/29/21 12:41	10/30/21 22:09	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.71	ng/L		10/29/21 12:41	10/30/21 22:09	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.19	ng/L		10/29/21 12:41	10/30/21 22:09	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	0.55	ng/L		10/29/21 12:41	10/30/21 22:09	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	0.52	ng/L		10/29/21 12:41	10/30/21 22:09	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.8	1.2	ng/L		10/29/21 12:41	10/30/21 22:09	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.8		ng/L			10/30/21 22:09	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.9		ng/L			10/30/21 22:09	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.9		ng/L			10/30/21 22:09	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.9		ng/L		10/29/21 12:41	10/30/21 22:09	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.39	ng/L		10/29/21 12:41	10/30/21 22:09	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	60		50 - 150				10/29/21 12:41	10/30/21 22:09	1
13C4 PFHpA	65		50 - 150				10/29/21 12:41	10/30/21 22:09	1
13C4 PFOA	66		50 - 150				10/29/21 12:41	10/30/21 22:09	1
13C5 PFNA	61		50 - 150				10/29/21 12:41	10/30/21 22:09	1
13C2 PFDA	65		50 - 150				10/29/21 12:41	10/30/21 22:09	1
13C2 PFUnA	62		50 - 150				10/29/21 12:41	10/30/21 22:09	1
13C2 PFDoA	61		50 - 150				10/29/21 12:41	10/30/21 22:09	1
13C2 PFTeDA	49	*5-	50 <sub>-</sub> 150				10/29/21 12:41	10/30/21 22:09	1
13C3 PFBS	70		50 <sub>-</sub> 150				10/29/21 12:41	10/30/21 22:09	1
1802 PFHxS	57		50 - 150				10/29/21 12:41	10/30/21 22:09	
13C4 PFOS	57		50 <sub>-</sub> 150				10/29/21 12:41	10/30/21 22:09	1
d3-NMeFOSAA	72		50 <sub>-</sub> 150					10/30/21 22:09	1
d5-NEtFOSAA	77		50 <sub>-</sub> 150					10/30/21 22:09	1
13C3 HFPO-DA	56		50 <sub>-</sub> 150				40/00/04 40:44	10/30/21 22:09	1

Client: Shannon & Wilson, Inc Job ID: 320-80911-1

Project/Site: SC Surface Water

Client Sample ID: 21GST-SW-002 Lab Sample ID: 320-80911-22

Date Collected: 10/18/21 09:05 **Matrix: Water** Date Received: 10/27/21 12:25

Analyte	Result	Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.56	ng/L		10/29/21 12:41	10/30/21 22:37	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.24	ng/L		10/29/21 12:41	10/30/21 22:37	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.82	ng/L		10/29/21 12:41	10/30/21 22:37	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		10/29/21 12:41	10/30/21 22:37	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		10/29/21 12:41	10/30/21 22:37	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		10/29/21 12:41	10/30/21 22:37	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		10/29/21 12:41	10/30/21 22:37	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.3	ng/L		10/29/21 12:41	10/30/21 22:37	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.71	ng/L		10/29/21 12:41	10/30/21 22:37	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.19	ng/L		10/29/21 12:41	10/30/21 22:37	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	0.55	ng/L		10/29/21 12:41	10/30/21 22:37	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	0.52	ng/L		10/29/21 12:41	10/30/21 22:37	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.8	1.2	ng/L		10/29/21 12:41	10/30/21 22:37	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.8	1.3	ng/L		10/29/21 12:41	10/30/21 22:37	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.9	0.23	ng/L		10/29/21 12:41	10/30/21 22:37	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.9	1.5	ng/L		10/29/21 12:41	10/30/21 22:37	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.9	0.31	ng/L		10/29/21 12:41	10/30/21 22:37	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.39	ng/L		10/29/21 12:41	10/30/21 22:37	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	69		50 - 150				10/29/21 12:41	10/30/21 22:37	1
13C4 PFHpA	76		50 - 150				10/29/21 12:41	10/30/21 22:37	1
13C4 PFOA	80		50 <sub>-</sub> 150				10/29/21 12:41	10/30/21 22:37	1
13C5 PFNA	72		50 <sub>-</sub> 150				10/29/21 12:41	10/30/21 22:37	1
13C2 PFDA	73		50 - 150				10/29/21 12:41	10/30/21 22:37	1
13C2 PFUnA	74		50 <sub>-</sub> 150				10/29/21 12:41	10/30/21 22:37	1
13C2 PFDoA	70		50 - 150				10/29/21 12:41	10/30/21 22:37	1
13C2 PFTeDA	55		50 <sub>-</sub> 150				10/29/21 12:41	10/30/21 22:37	1
13C3 PFBS	72		50 <sub>-</sub> 150				10/29/21 12:41	10/30/21 22:37	1
1802 PFHxS	71		50 <sub>-</sub> 150				10/29/21 12:41	10/30/21 22:37	1
13C4 PFOS	63		50 <sub>-</sub> 150				10/29/21 12:41	10/30/21 22:37	1
d3-NMeFOSAA	81		50 - 150					10/30/21 22:37	1
d5-NEtFOSAA	87		50 - 150					10/30/21 22:37	
13C3 HFPO-DA	72		50 - 150					10/30/21 22:37	1

Client: Shannon & Wilson, Inc Job ID: 320-80911-1

Project/Site: SC Surface Water

Client Sample ID: 21GST-SW-003 Lab Sample ID: 320-80911-23

Date Collected: 10/18/21 09:15 **Matrix: Water** Date Received: 10/27/21 12:25

Analyte	Result Q	ualifier RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND	2.0	0.57	ng/L		10/29/21 12:41	10/30/21 22:46	1
Perfluoroheptanoic acid (PFHpA)	ND	2.0	0.24	ng/L		10/29/21 12:41	10/30/21 22:46	1
Perfluorooctanoic acid (PFOA)	ND	2.0	0.83	ng/L		10/29/21 12:41	10/30/21 22:46	1
Perfluorononanoic acid (PFNA)	ND	2.0	0.26	ng/L		10/29/21 12:41	10/30/21 22:46	1
Perfluorodecanoic acid (PFDA)	ND	2.0	0.30	ng/L		10/29/21 12:41	10/30/21 22:46	1
Perfluoroundecanoic acid (PFUnA)	ND	2.0	1.1	ng/L		10/29/21 12:41	10/30/21 22:46	1
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.54	ng/L		10/29/21 12:41	10/30/21 22:46	1
Perfluorotridecanoic acid (PFTriA)	ND	2.0	1.3	ng/L		10/29/21 12:41	10/30/21 22:46	1
Perfluorotetradecanoic acid (PFTeA)	ND	2.0	0.71	ng/L		10/29/21 12:41	10/30/21 22:46	1
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	0.20	ng/L		10/29/21 12:41	10/30/21 22:46	1
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	0.56	ng/L		10/29/21 12:41	10/30/21 22:46	1
Perfluorooctanesulfonic acid (PFOS)	ND	2.0		ng/L		10/29/21 12:41	10/30/21 22:46	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND	4.9	1.2	ng/L		10/29/21 12:41	10/30/21 22:46	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND	4.9	1.3	ng/L		10/29/21 12:41	10/30/21 22:46	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND	2.0	0.23	ng/L		10/29/21 12:41	10/30/21 22:46	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	3.9	1.5	ng/L		10/29/21 12:41	10/30/21 22:46	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND	2.0	0.31	ng/L		10/29/21 12:41	10/30/21 22:46	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	0.39	ng/L		10/29/21 12:41	10/30/21 22:46	1
Isotope Dilution	%Recovery Q	ualifier Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	85	50 - 150				10/29/21 12:41	10/30/21 22:46	1
13C4 PFHpA	100	50 - 150				10/29/21 12:41	10/30/21 22:46	1
13C4 PFOA	97	50 - 150				10/29/21 12:41	10/30/21 22:46	1
13C5 PFNA	88	50 <sub>-</sub> 150				10/29/21 12:41	10/30/21 22:46	1
13C2 PFDA	98	50 - 150				10/29/21 12:41	10/30/21 22:46	1
13C2 PFUnA	88	50 <sub>-</sub> 150				10/29/21 12:41	10/30/21 22:46	1
13C2 PFDoA	90	50 - 150				10/29/21 12:41	10/30/21 22:46	1
13C2 PFTeDA	73	50 <sub>-</sub> 150				10/29/21 12:41	10/30/21 22:46	1
13C3 PFBS	92	50 <sub>-</sub> 150				10/29/21 12:41	10/30/21 22:46	1
1802 PFHxS	86	50 - 150				10/29/21 12:41	10/30/21 22:46	1
13C4 PFOS	85	50 - 150					10/30/21 22:46	1
d3-NMeFOSAA	95	50 - 150					10/30/21 22:46	1
d5-NEtFOSAA	109	50 - 150					10/30/21 22:46	
13C3 HFPO-DA	83	50 - 150					10/30/21 22:46	. 1

Client: Shannon & Wilson, Inc Job ID: 320-80911-1

Project/Site: SC Surface Water

Client Sample ID: 21GST-SW-022 Lab Sample ID: 320-80911-24

Date Collected: 10/18/21 09:30 **Matrix: Water** Date Received: 10/27/21 12:25

Analyte	Result (	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.56	ng/L		10/29/21 12:41	10/30/21 22:55	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.24	ng/L		10/29/21 12:41	10/30/21 22:55	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.82	ng/L		10/29/21 12:41	10/30/21 22:55	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		10/29/21 12:41	10/30/21 22:55	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		10/29/21 12:41	10/30/21 22:55	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		10/29/21 12:41	10/30/21 22:55	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		10/29/21 12:41	10/30/21 22:55	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		10/29/21 12:41	10/30/21 22:55	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.70	ng/L		10/29/21 12:41	10/30/21 22:55	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.19	ng/L		10/29/21 12:41	10/30/21 22:55	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	0.55	ng/L		10/29/21 12:41	10/30/21 22:55	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	0.52	ng/L		10/29/21 12:41	10/30/21 22:55	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.8		ng/L		10/29/21 12:41	10/30/21 22:55	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.8	1.2	ng/L		10/29/21 12:41	10/30/21 22:55	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.9	0.23	ng/L		10/29/21 12:41	10/30/21 22:55	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.8	1.4	ng/L		10/29/21 12:41	10/30/21 22:55	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.9	0.31	ng/L		10/29/21 12:41	10/30/21 22:55	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.38	ng/L		10/29/21 12:41	10/30/21 22:55	1
Isotope Dilution	%Recovery (	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	69		50 - 150				10/29/21 12:41	10/30/21 22:55	1
13C4 PFHpA	68		50 - 150				10/29/21 12:41	10/30/21 22:55	1
13C4 PFOA	68		50 - 150				10/29/21 12:41	10/30/21 22:55	1
13C5 PFNA	66		50 - 150				10/29/21 12:41	10/30/21 22:55	1
13C2 PFDA	76		50 - 150				10/29/21 12:41	10/30/21 22:55	1
13C2 PFUnA	66		50 <sub>-</sub> 150				10/29/21 12:41	10/30/21 22:55	1
13C2 PFDoA	64		50 - 150				10/29/21 12:41	10/30/21 22:55	1
13C2 PFTeDA	56		50 <sub>-</sub> 150				10/29/21 12:41	10/30/21 22:55	1
13C3 PFBS	71		50 <sub>-</sub> 150				10/29/21 12:41	10/30/21 22:55	1
1802 PFHxS	65		50 - 150				10/29/21 12:41	10/30/21 22:55	1
13C4 PFOS	67		50 <sub>-</sub> 150				10/29/21 12:41	10/30/21 22:55	1
d3-NMeFOSAA	77		50 - 150					10/30/21 22:55	1
d5-NEtFOSAA	83		50 - 150					10/30/21 22:55	
13C3 HFPO-DA	63		50 - 150					10/30/21 22:55	1

Client: Shannon & Wilson, Inc Job ID: 320-80911-1

Project/Site: SC Surface Water

Client Sample ID: 21GST-SW-009 Lab Sample ID: 320-80911-25

Date Collected: 10/18/21 10:45 **Matrix: Water** Date Received: 10/27/21 12:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Perfluorohexanoic acid (PFHxA)	1.7	J	1.9	0.56	ng/L		10/29/21 12:41	10/30/21 23:04	
Perfluoroheptanoic acid (PFHpA)	1.1	J	1.9	0.24	ng/L		10/29/21 12:41	10/30/21 23:04	
Perfluorooctanoic acid (PFOA)	1.1	J	1.9	0.82	ng/L		10/29/21 12:41	10/30/21 23:04	
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		10/29/21 12:41	10/30/21 23:04	
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		10/29/21 12:41	10/30/21 23:04	
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		10/29/21 12:41	10/30/21 23:04	
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		10/29/21 12:41	10/30/21 23:04	
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.3	ng/L		10/29/21 12:41	10/30/21 23:04	
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.70	ng/L		10/29/21 12:41	10/30/21 23:04	
Perfluorobutanesulfonic acid (PFBS)	0.31	J	1.9	0.19	ng/L		10/29/21 12:41	10/30/21 23:04	
Perfluorohexanesulfonic acid (PFHxS)	7.7		1.9	0.55	ng/L		10/29/21 12:41	10/30/21 23:04	
Perfluorooctanesulfonic acid (PFOS)	6.7		1.9	0.52	ng/L		10/29/21 12:41	10/30/21 23:04	
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.8	1.2	ng/L		10/29/21 12:41	10/30/21 23:04	
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.8	1.3	ng/L		10/29/21 12:41	10/30/21 23:04	
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.9	0.23	ng/L		10/29/21 12:41	10/30/21 23:04	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.9	1.4	ng/L		10/29/21 12:41	10/30/21 23:04	
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.9	0.31	ng/L		10/29/21 12:41	10/30/21 23:04	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.39	ng/L		10/29/21 12:41	10/30/21 23:04	
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	65		50 - 150				10/29/21 12:41	10/30/21 23:04	
13C4 PFHpA	67		50 - 150				10/29/21 12:41	10/30/21 23:04	
13C4 PFOA	72		50 - 150				10/29/21 12:41	10/30/21 23:04	
13C5 PFNA	68		50 - 150				10/29/21 12:41	10/30/21 23:04	
13C2 PFDA	73		50 - 150				10/29/21 12:41	10/30/21 23:04	
13C2 PFUnA	73		50 - 150				10/29/21 12:41	10/30/21 23:04	
13C2 PFDoA	76		50 - 150				10/29/21 12:41	10/30/21 23:04	
13C2 PFTeDA	56		50 <sub>-</sub> 150				10/29/21 12:41	10/30/21 23:04	
13C3 PFBS	69		50 - 150				10/29/21 12:41	10/30/21 23:04	
1802 PFHxS	71		50 - 150				10/29/21 12:41	10/30/21 23:04	
13C4 PFOS	68		50 - 150				10/29/21 12:41	10/30/21 23:04	
d3-NMeFOSAA	84		50 - 150					10/30/21 23:04	
d5-NEtFOSAA	90		50 - 150					10/30/21 23:04	
13C3 HFPO-DA	63		50 <sub>-</sub> 150					10/30/21 23:04	

Client: Shannon & Wilson, Inc Job ID: 320-80911-1 Project/Site: SC Surface Water

Client Sample ID: 21GST-SW-023

Lab Sample ID: 320-80911-26 Date Collected: 10/18/21 11:50

**Matrix: Water** 

Date Received: 10/27/21 12:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	7.9		2.0	0.58	ng/L		10/29/21 12:41	10/30/21 23:13	1
Perfluoroheptanoic acid (PFHpA)	1.8	J	2.0	0.25	ng/L		10/29/21 12:41	10/30/21 23:13	1
Perfluorooctanoic acid (PFOA)	0.90	J	2.0	0.86	ng/L		10/29/21 12:41	10/30/21 23:13	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		10/29/21 12:41	10/30/21 23:13	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		10/29/21 12:41	10/30/21 23:13	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		10/29/21 12:41	10/30/21 23:13	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		10/29/21 12:41	10/30/21 23:13	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		10/29/21 12:41	10/30/21 23:13	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.74	ng/L		10/29/21 12:41	10/30/21 23:13	1
Perfluorobutanesulfonic acid (PFBS)	0.41	J	2.0	0.20	ng/L		10/29/21 12:41	10/30/21 23:13	1
Perfluorohexanesulfonic acid (PFHxS)	7.0		2.0	0.57	ng/L		10/29/21 12:41	10/30/21 23:13	1
Perfluorooctanesulfonic acid (PFOS)	16		2.0		ng/L		10/29/21 12:41	10/30/21 23:13	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		5.0		ng/L		10/29/21 12:41	10/30/21 23:13	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		5.0		ng/L		10/29/21 12:41	10/30/21 23:13	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		2.0	0.24	ng/L			10/30/21 23:13	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		4.0	1.5	ng/L		10/29/21 12:41	10/30/21 23:13	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		2.0	0.32	ng/L		10/29/21 12:41	10/30/21 23:13	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	0.40	ng/L		10/29/21 12:41	10/30/21 23:13	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	78		50 - 150				10/29/21 12:41	10/30/21 23:13	
13C4 PFHpA	94		50 - 150				10/29/21 12:41	10/30/21 23:13	1
13C4 PFOA	93		50 - 150				10/29/21 12:41	10/30/21 23:13	1
13C5 PFNA	85		50 - 150				10/29/21 12:41	10/30/21 23:13	1
13C2 PFDA	86		50 - 150				10/29/21 12:41	10/30/21 23:13	1
13C2 PFUnA	85		50 - 150				10/29/21 12:41	10/30/21 23:13	1
13C2 PFDoA	82		50 <sub>-</sub> 150				10/29/21 12:41	10/30/21 23:13	
13C2 PFTeDA	70		50 - 150				10/29/21 12:41	10/30/21 23:13	1
13C3 PFBS	84		50 - 150				10/29/21 12:41	10/30/21 23:13	1
1802 PFHxS	78		50 - 150				10/29/21 12:41	10/30/21 23:13	1
13C4 PFOS	81		50 - 150				10/29/21 12:41	10/30/21 23:13	1
d3-NMeFOSAA	99		50 <sub>-</sub> 150				10/29/21 12:41	10/30/21 23:13	1
d5-NEtFOSAA	98		50 - 150				10/29/21 12:41	10/30/21 23:13	1
13C3 HFPO-DA	78		50 <sub>-</sub> 150				10/29/21 12:41	10/30/21 23:13	1

Client: Shannon & Wilson, Inc Job ID: 320-80911-1 Project/Site: SC Surface Water

Client Sample ID: 21GST-SW-030

Lab Sample ID: 320-80911-27

Date Collected: 10/18/21 13:25 **Matrix: Water** Date Received: 10/27/21 12:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.55	ng/L		10/29/21 12:41	10/30/21 23:22	1
Perfluoroheptanoic acid (PFHpA)	0.48	J	1.9	0.24	ng/L		10/29/21 12:41	10/30/21 23:22	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.81	ng/L		10/29/21 12:41	10/30/21 23:22	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		10/29/21 12:41	10/30/21 23:22	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		10/29/21 12:41	10/30/21 23:22	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		10/29/21 12:41	10/30/21 23:22	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.52	ng/L		10/29/21 12:41	10/30/21 23:22	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		10/29/21 12:41	10/30/21 23:22	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.70	ng/L		10/29/21 12:41	10/30/21 23:22	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.19	ng/L		10/29/21 12:41	10/30/21 23:22	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	0.54	ng/L		10/29/21 12:41	10/30/21 23:22	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	0.51	ng/L		10/29/21 12:41	10/30/21 23:22	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.8	1.1	ng/L		10/29/21 12:41	10/30/21 23:22	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.8	1.2	ng/L		10/29/21 12:41	10/30/21 23:22	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.9	0.23	ng/L		10/29/21 12:41	10/30/21 23:22	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.8	1.4	ng/L		10/29/21 12:41	10/30/21 23:22	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.9	0.30	ng/L		10/29/21 12:41	10/30/21 23:22	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.38	ng/L		10/29/21 12:41	10/30/21 23:22	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	66		50 - 150				10/29/21 12:41	10/30/21 23:22	1
13C4 PFHpA	70		50 - 150				10/29/21 12:41	10/30/21 23:22	1
13C4 PFOA	72		50 <sub>-</sub> 150				10/29/21 12:41	10/30/21 23:22	1
13C5 PFNA	72		50 - 150				10/29/21 12:41	10/30/21 23:22	1
13C2 PFDA	67		50 - 150				10/29/21 12:41	10/30/21 23:22	1
13C2 PFUnA	73		50 <sub>-</sub> 150					10/30/21 23:22	1
13C2 PFDoA	72		50 - 150				10/29/21 12:41	10/30/21 23:22	1
13C2 PFTeDA	60		50 <sub>-</sub> 150				10/29/21 12:41	10/30/21 23:22	1
13C3 PFBS	70		50 <sub>-</sub> 150				10/29/21 12:41	10/30/21 23:22	1
1802 PFHxS	65		50 <sub>-</sub> 150				10/29/21 12:41	10/30/21 23:22	1
13C4 PFOS	67		50 <sub>-</sub> 150					10/30/21 23:22	1
d3-NMeFOSAA	76		50 <sub>-</sub> 150					10/30/21 23:22	1
d5-NEtFOSAA	84		50 - 150					10/30/21 23:22	1
13C3 HFPO-DA	64		50 <sub>-</sub> 150					10/30/21 23:22	. 1

Client: Shannon & Wilson, Inc Job ID: 320-80911-1 Project/Site: SC Surface Water

Client Sample ID: 21GST-SW-028 Lab Sample ID: 320-80911-28

Date Collected: 10/18/21 13:45 **Matrix: Water** Date Received: 10/27/21 12:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	8.8		2.0	0.58	ng/L		10/29/21 12:41	11/03/21 04:02	1
Perfluoroheptanoic acid (PFHpA)	2.5		2.0	0.25	ng/L		10/29/21 12:41	11/03/21 04:02	1
Perfluorooctanoic acid (PFOA)	1.3	J	2.0	0.84	ng/L		10/29/21 12:41	11/03/21 04:02	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		10/29/21 12:41	11/03/21 04:02	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		10/29/21 12:41	11/03/21 04:02	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		10/29/21 12:41	11/03/21 04:02	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		10/29/21 12:41	11/03/21 04:02	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		10/29/21 12:41	11/03/21 04:02	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.73	ng/L		10/29/21 12:41	11/03/21 04:02	1
Perfluorobutanesulfonic acid (PFBS)	0.69	J	2.0	0.20	ng/L		10/29/21 12:41	11/03/21 04:02	1
Perfluorohexanesulfonic acid (PFHxS)	11		2.0	0.57	ng/L		10/29/21 12:41	11/03/21 04:02	1
Perfluorooctanesulfonic acid (PFOS)	33		2.0	0.54	ng/L		10/29/21 12:41	11/03/21 04:02	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		5.0	1.2	ng/L		10/29/21 12:41	11/03/21 04:02	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		5.0	1.3	ng/L		10/29/21 12:41	11/03/21 04:02	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		2.0	0.24	ng/L		10/29/21 12:41	11/03/21 04:02	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		4.0	1.5	ng/L		10/29/21 12:41	11/03/21 04:02	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		2.0	0.32	ng/L		10/29/21 12:41	11/03/21 04:02	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	0.40	ng/L		10/29/21 12:41	11/03/21 04:02	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	93		50 - 150				10/29/21 12:41	11/03/21 04:02	
13C4 PFHpA	94		50 - 150				10/29/21 12:41	11/03/21 04:02	1
13C4 PFOA	109		50 - 150				10/29/21 12:41	11/03/21 04:02	1
13C5 PFNA	100		50 - 150				10/29/21 12:41	11/03/21 04:02	1
13C2 PFDA	104		50 - 150				10/29/21 12:41	11/03/21 04:02	1
13C2 PFUnA	102		50 - 150				10/29/21 12:41	11/03/21 04:02	1
13C2 PFDoA	103		50 - 150				10/29/21 12:41	11/03/21 04:02	1
13C2 PFTeDA	102		50 - 150				10/29/21 12:41	11/03/21 04:02	1
13C3 PFBS	101		50 - 150				10/29/21 12:41	11/03/21 04:02	1
1802 PFHxS	93		50 - 150				10/29/21 12:41	11/03/21 04:02	1
13C4 PFOS	106		50 - 150				10/29/21 12:41	11/03/21 04:02	1
d3-NMeFOSAA	101		50 <sub>-</sub> 150				10/29/21 12:41	11/03/21 04:02	1
d5-NEtFOSAA	107		50 - 150				10/29/21 12:41	11/03/21 04:02	1
13C3 HFPO-DA	83		50 <sub>-</sub> 150				10/29/21 12:41	11/03/21 04:02	1

Client: Shannon & Wilson, Inc Job ID: 320-80911-1 Project/Site: SC Surface Water

Client Sample ID: 21GST-SW-029

Date Received: 10/27/21 12:25

13C3 HFPO-DA

Lab Sample ID: 320-80911-29 Date Collected: 10/18/21 14:15

**Matrix: Water** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.55	ng/L		10/29/21 12:41	10/30/21 23:41	1
Perfluoroheptanoic acid (PFHpA)	0.41	J	1.9	0.24	ng/L		10/29/21 12:41	10/30/21 23:41	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.81	ng/L		10/29/21 12:41	10/30/21 23:41	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		10/29/21 12:41	10/30/21 23:41	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		10/29/21 12:41	10/30/21 23:41	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		10/29/21 12:41	10/30/21 23:41	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.52	ng/L		10/29/21 12:41	10/30/21 23:41	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		10/29/21 12:41	10/30/21 23:41	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.70	ng/L		10/29/21 12:41	10/30/21 23:41	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.19	ng/L		10/29/21 12:41	10/30/21 23:41	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	0.54	ng/L		10/29/21 12:41	10/30/21 23:41	1
Perfluorooctanesulfonic acid (PFOS)	0.55	J	1.9	0.51	ng/L		10/29/21 12:41	10/30/21 23:41	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.8	1.1	ng/L		10/29/21 12:41	10/30/21 23:41	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.8	1.2	ng/L		10/29/21 12:41	10/30/21 23:41	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.9	0.23	ng/L		10/29/21 12:41	10/30/21 23:41	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.8	1.4	ng/L		10/29/21 12:41	10/30/21 23:41	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.9	0.30	ng/L		10/29/21 12:41	10/30/21 23:41	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.38	ng/L		10/29/21 12:41	10/30/21 23:41	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	73		50 - 150				10/29/21 12:41	10/30/21 23:41	1
13C4 PFHpA	82		50 - 150				10/29/21 12:41	10/30/21 23:41	1
13C4 PFOA	91		50 - 150				10/29/21 12:41	10/30/21 23:41	1
13C5 PFNA	83		50 - 150				10/29/21 12:41	10/30/21 23:41	1
13C2 PFDA	87		50 - 150				10/29/21 12:41	10/30/21 23:41	1
13C2 PFUnA	80		50 - 150				10/29/21 12:41	10/30/21 23:41	1
13C2 PFDoA	85		50 - 150				10/29/21 12:41	10/30/21 23:41	1
13C2 PFTeDA	64		50 <sub>-</sub> 150				10/29/21 12:41	10/30/21 23:41	1
13C3 PFBS	83		50 <sub>-</sub> 150				10/29/21 12:41	10/30/21 23:41	1
1802 PFHxS	75		50 <sub>-</sub> 150					10/30/21 23:41	1
13C4 PFOS	77		50 - 150				10/29/21 12:41	10/30/21 23:41	1
d3-NMeFOSAA	90		50 <sub>-</sub> 150					10/30/21 23:41	1
d5-NEtFOSAA	107		50 - 150				10/29/21 12:41		1

10/29/21 12:41 10/30/21 23:41

50 - 150

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Client: Shannon & Wilson, Inc Job ID: 320-80911-1 Project/Site: SC Surface Water

Client Sample ID: 21GST-SW-027

Lab Sample ID: 320-80911-30

Date Collected: 10/18/21 14:35 **Matrix: Water** Date Received: 10/27/21 12:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	2.1		1.9	0.55	ng/L		10/29/21 12:41	10/30/21 23:50	
Perfluoroheptanoic acid (PFHpA)	1.3	J	1.9	0.24	ng/L		10/29/21 12:41	10/30/21 23:50	•
Perfluorooctanoic acid (PFOA)	ND		1.9	0.81	ng/L		10/29/21 12:41	10/30/21 23:50	•
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		10/29/21 12:41	10/30/21 23:50	· · · · · · · · ·
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		10/29/21 12:41	10/30/21 23:50	•
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		10/29/21 12:41	10/30/21 23:50	•
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		10/29/21 12:41	10/30/21 23:50	· · · · · · · · ·
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		10/29/21 12:41	10/30/21 23:50	
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.70	ng/L		10/29/21 12:41	10/30/21 23:50	
Perfluorobutanesulfonic acid (PFBS)	0.28	J	1.9	0.19	ng/L		10/29/21 12:41	10/30/21 23:50	
Perfluorohexanesulfonic acid (PFHxS)	3.8		1.9	0.54	ng/L		10/29/21 12:41	10/30/21 23:50	•
Perfluorooctanesulfonic acid (PFOS)	41		1.9		ng/L		10/29/21 12:41	10/30/21 23:50	
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.8		ng/L		10/29/21 12:41	10/30/21 23:50	
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.8		ng/L		10/29/21 12:41	10/30/21 23:50	
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.9		ng/L		10/29/21 12:41	10/30/21 23:50	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.8	1.4	ng/L		10/29/21 12:41	10/30/21 23:50	
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.9	0.31	ng/L			10/30/21 23:50	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.38	ng/L		10/29/21 12:41	10/30/21 23:50	
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	62		50 - 150				10/29/21 12:41	10/30/21 23:50	
13C4 PFHpA	63		50 - 150				10/29/21 12:41	10/30/21 23:50	
13C4 PFOA	68		50 - 150				10/29/21 12:41	10/30/21 23:50	
13C5 PFNA	63		50 - 150				10/29/21 12:41	10/30/21 23:50	
13C2 PFDA	67		50 - 150				10/29/21 12:41	10/30/21 23:50	
13C2 PFUnA	67		50 - 150				10/29/21 12:41	10/30/21 23:50	
13C2 PFDoA	64		50 - 150				10/29/21 12:41	10/30/21 23:50	
13C2 PFTeDA	52		50 - 150				10/29/21 12:41	10/30/21 23:50	
13C3 PFBS	64		50 - 150				10/29/21 12:41	10/30/21 23:50	
1802 PFHxS	56		50 - 150				10/29/21 12:41	10/30/21 23:50	
13C4 PFOS	59		50 - 150				10/29/21 12:41	10/30/21 23:50	
d3-NMeFOSAA	75		50 - 150				10/29/21 12:41	10/30/21 23:50	
d5-NEtFOSAA	79		50 - 150				10/29/21 12:41	10/30/21 23:50	
13C3 HFPO-DA	58		50 <sub>-</sub> 150				10/20/21 12:41	10/30/21 23:50	

Client: Shannon & Wilson, Inc Job ID: 320-80911-1

Project/Site: SC Surface Water

Client Sample ID: 21GST-SW-026

Lab Sample ID: 320-80911-31 Date Collected: 10/18/21 15:00 **Matrix: Water** 

Date Received: 10/27/21 12:25

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	4.0		1.9	0.56	ng/L		10/29/21 12:41	10/30/21 23:59	1
Perfluoroheptanoic acid (PFHpA)	1.3	J	1.9	0.24	ng/L		10/29/21 12:41	10/30/21 23:59	1
Perfluorooctanoic acid (PFOA)	1.3	J	1.9	0.82	ng/L		10/29/21 12:41	10/30/21 23:59	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		10/29/21 12:41	10/30/21 23:59	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		10/29/21 12:41	10/30/21 23:59	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		10/29/21 12:41	10/30/21 23:59	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		10/29/21 12:41	10/30/21 23:59	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		10/29/21 12:41	10/30/21 23:59	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.70	ng/L		10/29/21 12:41	10/30/21 23:59	1
Perfluorobutanesulfonic acid (PFBS)	0.85	J	1.9	0.19	ng/L		10/29/21 12:41	10/30/21 23:59	1
Perfluorohexanesulfonic acid (PFHxS)	7.0		1.9	0.55	ng/L		10/29/21 12:41	10/30/21 23:59	1
Perfluorooctanesulfonic acid (PFOS)	15		1.9		ng/L		10/29/21 12:41	10/30/21 23:59	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.8	1.2	ng/L		10/29/21 12:41	10/30/21 23:59	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.8	1.2	ng/L		10/29/21 12:41	10/30/21 23:59	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.9	0.23	ng/L		10/29/21 12:41	10/30/21 23:59	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.8	1.4	ng/L		10/29/21 12:41	10/30/21 23:59	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.9	0.31	ng/L		10/29/21 12:41	10/30/21 23:59	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.38	ng/L		10/29/21 12:41	10/30/21 23:59	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	60		50 - 150				10/29/21 12:41	10/30/21 23:59	1
13C4 PFHpA	64		50 - 150				10/29/21 12:41	10/30/21 23:59	1
13C4 PFOA	68		50 - 150				10/29/21 12:41	10/30/21 23:59	1
13C5 PFNA	60		50 - 150				10/29/21 12:41	10/30/21 23:59	1
13C2 PFDA	66		50 - 150				10/29/21 12:41	10/30/21 23:59	1
13C2 PFUnA	57		50 - 150				10/29/21 12:41	10/30/21 23:59	1
13C2 PFDoA	55		50 <sub>-</sub> 150				10/29/21 12:41	10/30/21 23:59	1
13C2 PFTeDA	50		50 - 150				10/29/21 12:41	10/30/21 23:59	1
13C3 PFBS	67		50 <sub>-</sub> 150				10/29/21 12:41	10/30/21 23:59	1
1802 PFHxS	59		50 - 150				10/29/21 12:41	10/30/21 23:59	1
13C4 PFOS	64		50 - 150				10/29/21 12:41	10/30/21 23:59	1
d3-NMeFOSAA	63		50 - 150					10/30/21 23:59	1
d5-NEtFOSAA	70		50 - 150					10/30/21 23:59	1
13C3 HFPO-DA	55		50 - 150					10/30/21 23:59	1

Client: Shannon & Wilson, Inc Job ID: 320-80911-1

Project/Site: SC Surface Water

Client Sample ID: 21GST-SW-025

Lab Sample ID: 320-80911-32 Date Collected: 10/18/21 15:20 **Matrix: Water** 

Date Received: 10/27/21 12:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	37		1.9	0.55	ng/L		10/29/21 12:41	10/31/21 00:26	1
Perfluoroheptanoic acid (PFHpA)	8.2		1.9	0.24	ng/L		10/29/21 12:41	10/31/21 00:26	1
Perfluorooctanoic acid (PFOA)	3.8		1.9	0.80	ng/L		10/29/21 12:41	10/31/21 00:26	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		10/29/21 12:41	10/31/21 00:26	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.29	ng/L		10/29/21 12:41	10/31/21 00:26	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		10/29/21 12:41	10/31/21 00:26	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.52	ng/L		10/29/21 12:41	10/31/21 00:26	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		10/29/21 12:41	10/31/21 00:26	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.69	ng/L		10/29/21 12:41	10/31/21 00:26	1
Perfluorobutanesulfonic acid (PFBS)	2.5		1.9	0.19	ng/L		10/29/21 12:41	10/31/21 00:26	1
Perfluorohexanesulfonic acid (PFHxS)	33		1.9	0.54	ng/L		10/29/21 12:41	10/31/21 00:26	1
Perfluorooctanesulfonic acid (PFOS)	130		1.9	0.51	ng/L		10/29/21 12:41	10/31/21 00:26	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.7	1.1	ng/L		10/29/21 12:41	10/31/21 00:26	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.7	1.2	ng/L		10/29/21 12:41	10/31/21 00:26	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.9	0.23	ng/L		10/29/21 12:41	10/31/21 00:26	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.8	1.4	ng/L		10/29/21 12:41	10/31/21 00:26	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.9	0.30	ng/L		10/29/21 12:41	10/31/21 00:26	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.38	ng/L		10/29/21 12:41	10/31/21 00:26	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	71		50 - 150					10/31/21 00:26	1
13C4 PFHpA	75		50 <sub>-</sub> 150				10/29/21 12:41	10/31/21 00:26	1
13C4 PFOA	80		50 <sub>-</sub> 150				10/29/21 12:41	10/31/21 00:26	1
13C5 PFNA	78		50 <sub>-</sub> 150				10/29/21 12:41	10/31/21 00:26	1
13C2 PFDA	69		50 <sub>-</sub> 150				10/29/21 12:41	10/31/21 00:26	1
13C2 PFUnA	75		50 - 150				10/29/21 12:41	10/31/21 00:26	1
13C2 PFDoA	73		50 <sub>-</sub> 150					10/31/21 00:26	1
13C2 PFTeDA	60		50 <sub>-</sub> 150					10/31/21 00:26	1
13C3 PFBS	72		50 <sub>-</sub> 150					10/31/21 00:26	1
1802 PFHxS	69		50 <sub>-</sub> 150				10/29/21 12:41	10/31/21 00:26	1
13C4 PFOS	76		50 - 150				10/29/21 12:41	10/31/21 00:26	1
d3-NMeFOSAA	83		50 <sub>-</sub> 150					10/31/21 00:26	1
d5-NEtFOSAA	87		50 - 150					10/31/21 00:26	
13C3 HFPO-DA	73		50 - 150 50 - 150					10/31/21 00:26	1

Eurofins TestAmerica, Sacramento

Client: Shannon & Wilson, Inc Job ID: 320-80911-1 Project/Site: SC Surface Water

Client Sample ID: 21GST-EB-025

Lab Sample ID: 320-80911-33 Date Collected: 10/18/21 15:30

**Matrix: Water** 

Method: EPA 537(Mod) - PFAS	for QSM 5	3, Table B	-15						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.8	0.54	ng/L		10/29/21 12:41	10/31/21 00:35	1
Perfluoroheptanoic acid (PFHpA)	ND		1.8	0.23	ng/L		10/29/21 12:41	10/31/21 00:35	1
Perfluorooctanoic acid (PFOA)	ND		1.8	0.79	ng/L		10/29/21 12:41	10/31/21 00:35	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.25	ng/L		10/29/21 12:41	10/31/21 00:35	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.29	ng/L		10/29/21 12:41	10/31/21 00:35	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	1.0	ng/L		10/29/21 12:41	10/31/21 00:35	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.51	ng/L		10/29/21 12:41	10/31/21 00:35	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		10/29/21 12:41	10/31/21 00:35	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.67	ng/L		10/29/21 12:41	10/31/21 00:35	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.8	0.18	ng/L		10/29/21 12:41	10/31/21 00:35	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.8	0.53	ng/L		10/29/21 12:41	10/31/21 00:35	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.8	0.50	ng/L		10/29/21 12:41	10/31/21 00:35	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.6	1.1	ng/L		10/29/21 12:41	10/31/21 00:35	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.6	1.2	ng/L		10/29/21 12:41	10/31/21 00:35	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.8	0.22	ng/L		10/29/21 12:41	10/31/21 00:35	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.7	1.4	ng/L		10/29/21 12:41	10/31/21 00:35	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.8	0.30	ng/L		10/29/21 12:41	10/31/21 00:35	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.8	0.37	ng/L		10/29/21 12:41	10/31/21 00:35	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	64		50 - 150				10/29/21 12:41	10/31/21 00:35	1
13C4 PFHpA	65		50 - 150				10/29/21 12:41	10/31/21 00:35	1
13C4 PFOA	68		50 - 150				10/29/21 12:41	10/31/21 00:35	1
13C5 PENA	62		50 150				10/29/21 12:41	10/31/21 00:35	1

13C2 PFHxA	64	50 - 150	10/29/21 12:41 10/31/21 00:35	1
13C4 PFHpA	65	50 - 150	10/29/21 12:41 10/31/21 00:35	1
13C4 PFOA	68	50 <sub>-</sub> 150	10/29/21 12:41 10/31/21 00:35	1
13C5 PFNA	62	50 - 150	10/29/21 12:41 10/31/21 00:35	1
13C2 PFDA	64	50 - 150	10/29/21 12:41 10/31/21 00:35	1
13C2 PFUnA	61	50 <sub>-</sub> 150	10/29/21 12:41 10/31/21 00:35	1
13C2 PFDoA	67	50 - 150	10/29/21 12:41 10/31/21 00:35	1
13C2 PFTeDA	58	50 <sub>-</sub> 150	10/29/21 12:41 10/31/21 00:35	1
13C3 PFBS	67	50 <sub>-</sub> 150	10/29/21 12:41 10/31/21 00:35	1
1802 PFHxS	60	50 - 150	10/29/21 12:41 10/31/21 00:35	1
13C4 PFOS	61	50 <sub>-</sub> 150	10/29/21 12:41 10/31/21 00:35	1
d3-NMeFOSAA	77	50 <sub>-</sub> 150	10/29/21 12:41 10/31/21 00:35	1
d5-NEtFOSAA	82	50 - 150	10/29/21 12:41 10/31/21 00:35	1
13C3 HFPO-DA	59	50 <sub>-</sub> 150	10/29/21 12:41 10/31/21 00:35	1

Client: Shannon & Wilson, Inc Job ID: 320-80911-1 Project/Site: SC Surface Water

Client Sample ID: 21GST-SW-127

Lab Sample ID: 320-80911-34

**Matrix: Water** 

Date Collected: 10/18/21 14:25 Date Received: 10/27/21 12:25

13C3 HFPO-DA

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Perfluorohexanoic acid (PFHxA)	3.5	1.9	0.55	ng/L		10/29/21 12:41	10/31/21 00:45	
Perfluoroheptanoic acid (PFHpA)	2.1	1.9	0.24	ng/L		10/29/21 12:41	10/31/21 00:45	
Perfluorooctanoic acid (PFOA)	ND	1.9	0.81	ng/L		10/29/21 12:41	10/31/21 00:45	
Perfluorononanoic acid (PFNA)	ND	1.9	0.26	ng/L		10/29/21 12:41	10/31/21 00:45	
Perfluorodecanoic acid (PFDA)	ND	1.9	0.30	ng/L		10/29/21 12:41	10/31/21 00:45	
Perfluoroundecanoic acid (PFUnA)	ND	1.9	1.0	ng/L		10/29/21 12:41	10/31/21 00:45	
Perfluorododecanoic acid (PFDoA)	ND	1.9	0.52	ng/L		10/29/21 12:41	10/31/21 00:45	
Perfluorotridecanoic acid (PFTriA)	ND	1.9	1.2	ng/L		10/29/21 12:41	10/31/21 00:45	
Perfluorotetradecanoic acid (PFTeA)	ND	1.9	0.69	ng/L		10/29/21 12:41	10/31/21 00:45	
Perfluorobutanesulfonic acid	0.30 J	1.9	0.19	ng/L		10/29/21 12:41	10/31/21 00:45	
Perfluorohexanesulfonic acid (PFHxS)	4.1	1.9	0.54	ng/L			10/31/21 00:45	
Perfluorooctanesulfonic acid PFOS)	57	1.9	0.51	ng/L		10/29/21 12:41	10/31/21 00:45	
N-methylperfluorooctanesulfonamidoa etic acid (NMeFOSAA)	ND	4.8		ng/L		10/29/21 12:41	10/31/21 00:45	
l-ethylperfluorooctanesulfonamidoac tic acid (NEtFOSAA)	ND	4.8	1.2	ng/L		10/29/21 12:41	10/31/21 00:45	
-Chlorohexadecafluoro-3-oxanonan -1-sulfonic acid	ND	1.9	0.23	ng/L			10/31/21 00:45	
lexafluoropropylene Oxide Dimer .cid (HFPO-DA)	ND	3.8	1.4	ng/L		10/29/21 12:41	10/31/21 00:45	
1-Chloroeicosafluoro-3-oxaundecan -1-sulfonic acid	ND	1.9	0.30	ng/L		10/29/21 12:41	10/31/21 00:45	
,8-Dioxa-3H-perfluorononanoic acid ADONA)	ND	1.9	0.38	ng/L		10/29/21 12:41	10/31/21 00:45	
sotope Dilution	%Recovery Qualifier	Limits				Prepared	Analyzed	Dil F
3C2 PFHxA	88	50 - 150				10/29/21 12:41	10/31/21 00:45	
3C4 PFHpA	92	50 - 150				10/29/21 12:41	10/31/21 00:45	
3C4 PFOA	99	50 - 150				10/29/21 12:41	10/31/21 00:45	
3C5 PFNA	89	50 - 150				10/29/21 12:41	10/31/21 00:45	
3C2 PFDA	87	50 <sub>-</sub> 150				10/29/21 12:41	10/31/21 00:45	
3C2 PFUnA	84	50 - 150				10/29/21 12:41	10/31/21 00:45	
3C2 PFDoA	87	50 - 150				10/29/21 12:41	10/31/21 00:45	
3C2 PFTeDA	73	50 - 150				10/29/21 12:41	10/31/21 00:45	
3C3 PFBS	88	50 - 150					10/31/21 00:45	
8O2 PFHxS	81	50 - 150					10/31/21 00:45	
3C4 PFOS	82	50 - 150					10/31/21 00:45	
I3-NMeFOSAA	97	50 <sub>-</sub> 150					10/31/21 00:45	
d5-NEtFOSAA	105	50 - 150					10/31/21 00:45	

10/29/21 12:41 10/31/21 00:45

50 - 150

# **Isotope Dilution Summary**

Client: Shannon & Wilson, Inc Job ID: 320-80911-1 Project/Site: SC Surface Water

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15

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

			Perce	ent Isotope	Dilution Re	covery (Ac	ceptance L	imits)	
		PFHxA	C4PFHA	PFOA	PFNA	PFDA	PFUnA	PFDoA	PFTDA
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)
320-80911-1	21GST-SW-010	80	83	94	89	89	86	83	84
320-80911-2	21GST-SW-008	41 *5-	41 *5-	44 *5-	41 *5-	41 *5-	36 *5-	31 *5-	26 *5-
320-80911-3	21GST-SW-024	73	78	83	83	79	70	63	61
320-80911-4	21GST-SW-124	83	87	94	92	84	82	84	90
320-80911-5	21GST-SW-005	50	54	58	60	52	49 *5-	48 *5-	48 *5-
320-80911-6	21GST-SW-006	78	85	85	87	83	73	66	63
320-80911-7	21GST-SW-007	42 *5-	43 *5-	44 *5-	45 *5-	45 *5-	39 *5-	38 *5-	34 *5-
320-80911-8	21GST-SW-011	82	77	87	88	87	90	84	83
320-80911-9	21GST-SW-017	82	86	95	95	90	84	79	73
320-80911-10	21GST-SW-019	88	92	97	100	94	91	92	91
320-80911-11	21GST-SW-016	81	81	86	90	84	85	85	87
320-80911-12	21GST-SW-013	87	90	97	100	97	90	92	91
320-80911-13	21GST-SW-014	88	91	96	92	93	88	93	93
320-80911-14	21GST-SW-015	85	85	91	90	88	75	59	49 *5-
320-80911-15	21GST-SW-018	94	95	101	104	98	102	95	104
320-80911-16	21GST-SW-118	90	92	100	106	95	93	91	94
320-80911-17	21GST-SW-020	91	90	102	96	98	90	91	99
320-80911-18	21GST-SW-021	85	89	102	96	92	94	88	97
320-80911-19	21GST-SW-012	86	88	97	98	91	96	91	86
320-80911-20	21GST-EB-012	88	93	101	101	96	94	96	103
320-80911-21	21GST-SW-001	60	65	66	61	65	62	61	49 *5-
320-80911-22	21GST-SW-002	69	76	80	72	73	74	70	55
320-80911-23	21GST-SW-003	85	100	97	88	98	88	90	73
320-80911-24	21GST-SW-022	69	68	68	66	76	66	64	56
320-80911-25	21GST-SW-009	65	67	72	68	73	73	76	56
320-80911-26	21GST-SW-023	78	94	93	85	86	85	82	70
320-80911-27	21GST-SW-030	66	70	72	72	67	73	72	60
320-80911-28	21GST-SW-028	93	94	109	100	104	102	103	102
320-80911-29	21GST-SW-029	73	82	91	83	87	80	85	64
320-80911-30	21GST-SW-027	62	63	68	63	67	67	64	52
320-80911-31	21GST-SW-026	60	64	68	60	66	57	55	50
320-80911-32	21GST-SW-025	71	75	80	78	69	75	73	60
320-80911-33	21GST-EB-025	64	65	68	62	64	61	67	58
320-80911-34	21GST-SW-127	88	92	99	89	87	84	87	73
LCS 320-538117/2-A	Lab Control Sample	92	94	102	99	98	93	98	99
LCS 320-538280/2-A	Lab Control Sample	82	85	85	79	82	79	86	69
LCSD 320-538117/3-A	Lab Control Sample Dup	95	100	102	105	101	105	100	105
LCSD 320-538280/3-A	Lab Control Sample Dup	86	86	91	84	82	87	88	74
MB 320-538117/1-A	Method Blank	95	100	105	102	108	101	95	111

			Perce	ent Isotope	Dilution Re	covery (Ac	ceptance Lim	iits)
		C3PFBS	PFHxS	PFOS	d3NMFOS	d5NEFOS	HFPODA	
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	
320-80911-1	21GST-SW-010	94	86	87	96	93	79	
320-80911-2	21GST-SW-008	43 *5-	40 *5-	41 *5-	45 *5-	42 *5-	36 *5-	
320-80911-3	21GST-SW-024	82	78	82	76	77	73	
320-80911-4	21GST-SW-124	85	79	87	96	97	85	
320-80911-5	21GST-SW-005	59	51	59	59	60	48 *5-	
320-80911-6	21GST-SW-006	83	84	86	87	83	79	
320-80911-7	21GST-SW-007	47 *5-	42 *5-	41 *5-	49 *5-	48 *5-	44 *5-	

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#### **Isotope Dilution Summary**

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Matrix: Water Prep Type: Total/NA

			Perce	ent Isotope	Dilution Re	covery (Ac	ceptance Limits)
		C3PFBS	PFHxS	PFOS	d3NMFOS	d5NEFOS	HFPODA
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)
320-80911-8	21GST-SW-011	90	78	87	102	102	78
320-80911-9	21GST-SW-017	102	83	87	91	88	81
320-80911-10	21GST-SW-019	102	89	94	107	100	86
320-80911-11	21GST-SW-016	92	80	85	92	90	78
320-80911-12	21GST-SW-013	95	86	93	101	100	97
320-80911-13	21GST-SW-014	98	83	92	105	97	85
320-80911-14	21GST-SW-015	94	85	88	86	82	87
320-80911-15	21GST-SW-018	110	95	105	105	101	95
320-80911-16	21GST-SW-118	103	92	100	101	100	83
320-80911-17	21GST-SW-020	110	88	96	104	105	92
320-80911-18	21GST-SW-021	101	85	95	100	102	88
320-80911-19	21GST-SW-012	97	83	96	101	95	79
320-80911-20	21GST-EB-012	101	90	97	106	112	88
320-80911-21	21GST-SW-001	70	57	57	72	77	56
320-80911-22	21GST-SW-002	72	71	63	81	87	72
320-80911-23	21GST-SW-003	92	86	85	95	109	83
320-80911-24	21GST-SW-022	71	65	67	77	83	63
320-80911-25	21GST-SW-009	69	71	68	84	90	63
320-80911-26	21GST-SW-023	84	78	81	99	98	78
320-80911-27	21GST-SW-030	70	65	67	76	84	64
320-80911-28	21GST-SW-028	101	93	106	101	107	83
320-80911-29	21GST-SW-029	83	75	77	90	107	73
320-80911-30	21GST-SW-027	64	56	59	75	79	58
320-80911-31	21GST-SW-026	67	59	64	63	70	55
320-80911-32	21GST-SW-025	72	69	76	83	87	73
320-80911-33	21GST-EB-025	67	60	61	77	82	59
320-80911-34	21GST-SW-127	88	81	82	97	105	80
LCS 320-538117/2-A	Lab Control Sample	103	94	103	105	101	98
LCS 320-538280/2-A	Lab Control Sample	92	77	84	92	98	81
LCSD 320-538117/3-A	Lab Control Sample Dup	106	93	105	112	101	100
LCSD 320-538280/3-A	Lab Control Sample Dup	90	80	80	98	98	86
MB 320-538117/1-A	Method Blank	104	92	104	111	111	99

#### Surrogate Legend

PFHxA = 13C2 PFHxA

C4PFHA = 13C4 PFHpA

PFOA = 13C4 PFOA

PFNA = 13C5 PFNA

PFDA = 13C2 PFDA PFUnA = 13C2 PFUnA

PFDoA = 13C2 PFDoA

PFTDA = 13C2 PFTeDA

C3PFBS = 13C3 PFBS

PFHxS = 1802 PFHxS

PFOS = 13C4 PFOS

d3NMFOS = d3-NMeFOSAA

d5NEFOS = d5-NEtFOSAA

HFPODA = 13C3 HFPO-DA

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Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15

Lab Sample ID: MB 320-538117/1-A

**Matrix: Water** 

**Analysis Batch: 538672** 

Client Sample ID: Method Blank

Prep Type: Total/NA Prep Batch: 538117

7									••••
	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		10/29/21 03:11	10/30/21 06:02	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		10/29/21 03:11	10/30/21 06:02	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		10/29/21 03:11	10/30/21 06:02	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		10/29/21 03:11	10/30/21 06:02	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		10/29/21 03:11	10/30/21 06:02	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		10/29/21 03:11	10/30/21 06:02	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		10/29/21 03:11	10/30/21 06:02	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		10/29/21 03:11	10/30/21 06:02	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.73	ng/L		10/29/21 03:11	10/30/21 06:02	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		10/29/21 03:11	10/30/21 06:02	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.57	ng/L		10/29/21 03:11	10/30/21 06:02	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		10/29/21 03:11	10/30/21 06:02	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		5.0	1.2	ng/L		10/29/21 03:11	10/30/21 06:02	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		5.0	1.3	ng/L		10/29/21 03:11	10/30/21 06:02	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		2.0	0.24	ng/L		10/29/21 03:11	10/30/21 06:02	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		4.0	1.5	ng/L		10/29/21 03:11	10/30/21 06:02	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		2.0	0.32	ng/L		10/29/21 03:11	10/30/21 06:02	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	0.40	ng/L		10/29/21 03:11	10/30/21 06:02	1

	IVID	INID			
Isotope Dilution	%Recovery	Qualifier Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	95	50 - 150	10/29/21 03:11	10/30/21 06:02	1
13C4 PFHpA	100	50 - 150	10/29/21 03:11	10/30/21 06:02	1
13C4 PFOA	105	50 - 150	10/29/21 03:11	10/30/21 06:02	1
13C5 PFNA	102	50 - 150	10/29/21 03:11	10/30/21 06:02	1
13C2 PFDA	108	50 - 150	10/29/21 03:11	10/30/21 06:02	1
13C2 PFUnA	101	50 - 150	10/29/21 03:11	10/30/21 06:02	1
13C2 PFDoA	95	50 - 150	10/29/21 03:11	10/30/21 06:02	1
13C2 PFTeDA	111	50 - 150	10/29/21 03:11	10/30/21 06:02	1
13C3 PFBS	104	50 - 150	10/29/21 03:11	10/30/21 06:02	1
1802 PFHxS	92	50 - 150	10/29/21 03:11	10/30/21 06:02	1
13C4 PFOS	104	50 - 150	10/29/21 03:11	10/30/21 06:02	1
d3-NMeFOSAA	111	50 - 150	10/29/21 03:11	10/30/21 06:02	1
d5-NEtFOSAA	111	50 - 150	10/29/21 03:11	10/30/21 06:02	1
13C3 HFPO-DA	99	50 - 150	10/29/21 03:11	10/30/21 06:02	1

Lab Sample ID: LCS 320-538117/2-A

**Matrix: Water** 

**Analysis Batch: 538672** 

Client Sample ID:	Lab Control Sample
	Prep Type: Total/NA
	<b>Prep Batch: 538117</b>

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorohexanoic acid (PFHxA)	40.0	39.6		ng/L		99	72 - 129	
Perfluoroheptanoic acid (PFHpA)	40.0	38.9		ng/L		97	72 - 130	
Perfluorooctanoic acid (PFOA)	40.0	38.6		ng/L		97	71 - 133	
Perfluorononanoic acid (PFNA)	40.0	43.4		ng/L		108	69 - 130	

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Client: Shannon & Wilson, Inc Job ID: 320-80911-1

Project/Site: SC Surface Water

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

**Matrix: Water** 

**Analysis Batch: 538672** 

Lab Sample ID: LCS 320-538117/2-A

**Client Sample ID: Lab Control Sample** Prep Type: Total/NA

**Prep Batch: 538117** 

	Spike	LCS LC	S		%Rec.	
Analyte	Added	Result Qu	alifier Unit	D %Rec	Limits	
Perfluorodecanoic acid (PFDA)	40.0	36.5	ng/L	91	71 - 129	
Perfluoroundecanoic acid	40.0	39.5	ng/L	99	69 - 133	
(PFUnA)						
Perfluorododecanoic acid	40.0	38.9	ng/L	97	72 - 134	
(PFDoA)						
Perfluorotridecanoic acid	40.0	39.0	ng/L	98	65 - 144	
(PFTriA)						
Perfluorotetradecanoic acid	40.0	34.6	ng/L	87	71 - 132	
(PFTeA)						
Perfluorobutanesulfonic acid	35.4	29.7	ng/L	84	72 - 130	
(PFBS)						
Perfluorohexanesulfonic acid	36.4	35.0	ng/L	96	68 - 131	
(PFHxS)						
Perfluorooctanesulfonic acid	37.1	33.7	ng/L	91	65 - 140	
(PFOS)						
N-methylperfluorooctanesulfona	40.0	35.7	ng/L	89	65 - 136	
midoacetic acid (NMeFOSAA)						
N-ethylperfluorooctanesulfonami	40.0	38.7	ng/L	97	61 - 135	
doacetic acid (NEtFOSAA)						
9-Chlorohexadecafluoro-3-oxan	37.3	34.5	ng/L	92	77 - 137	
onane-1-sulfonic acid						
Hexafluoropropylene Oxide	40.0	42.6	ng/L	106	72 - 132	
Dimer Acid (HFPO-DA)	07.7	04.0		0.4	70 400	
11-Chloroeicosafluoro-3-oxaund	37.7	31.6	ng/L	84	76 - 136	
ecane-1-sulfonic acid	27.7	24.5	m er /1	00	04 444	
4,8-Dioxa-3H-perfluorononanoic	37.7	34.5	ng/L	92	81 - 141	
acid (ADONA)						

LCS LCS

	LUS	LUJ	
Isotope Dilution	%Recovery	Qualifier	Limits
13C2 PFHxA	92		50 - 150
13C4 PFHpA	94		50 - 150
13C4 PFOA	102		50 - 150
13C5 PFNA	99		50 - 150
13C2 PFDA	98		50 - 150
13C2 PFUnA	93		50 - 150
13C2 PFDoA	98		50 - 150
13C2 PFTeDA	99		50 - 150
13C3 PFBS	103		50 - 150
1802 PFHxS	94		50 - 150
13C4 PFOS	103		50 - 150
d3-NMeFOSAA	105		50 - 150
d5-NEtFOSAA	101		50 - 150
13C3 HFPO-DA	98		50 - 150
13C3 HFPO-DA	98		50 -

Lab Sample ID: LCSD 320-538117/3-A

**Matrix: Water** 

**Client Sample ID: Lab Control Sample Dup** 

Prep Type: Total/NA

**Analysis Batch: 538672 Prep Batch: 538117** Spike LCSD LCSD %Rec. **RPD** Analyte Added Result Qualifier Unit D %Rec Limits RPD Limit Perfluorohexanoic acid (PFHxA) 40.0 39.3 98 72 - 129 30 ng/L Perfluoroheptanoic acid (PFHpA) 40.0 39.2 ng/L 98 72 - 130 30 Perfluorooctanoic acid (PFOA) 40.0 37.3 ng/L 93 71 - 133 3 30

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Client: Shannon & Wilson, Inc Job ID: 320-80911-1

Project/Site: SC Surface Water

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

**Matrix: Water** 

Analysis Batch: 538672

Lab Sample ID: LCSD 320-538117/3-A

**Client Sample ID: Lab Control Sample Dup** 

Prep Type: Total/NA Prep Batch: 538117

LCSD LCSD **RPD** Spike %Rec. Added Result Qualifier Unit %Rec Limits RPD Limit Perfluorononanoic acid (PFNA) 40.0 41.1 ng/L 103 69 - 130 5 30 Perfluorodecanoic acid (PFDA) 40.0 38.2 ng/L 95 71 - 129 5 30 Perfluoroundecanoic acid 40.0 30 39.9 ng/L 100 69 - 133 (PFUnA) 40.0 30 Perfluorododecanoic acid 38.6 ng/L 97 72 - 134(PFDoA) 40.0 41.6 104 65 - 144 30 Perfluorotridecanoic acid ng/L (PFTriA) 40.0 35.7 30 Perfluorotetradecanoic acid ng/L 89 71 - 132 3 (PFTeA) Perfluorobutanesulfonic acid 35.4 29.6 84 72 - 130 30 ng/L (PFBS) 36.4 2 Perfluorohexanesulfonic acid 34.4 ng/L 94 68 - 131 30 (PFHxS) 37.1 35.5 65 - 140 30 Perfluorooctanesulfonic acid ng/L (PFOS) N-methylperfluorooctanesulfona 40.0 36.8 65 - 136 30 ng/L midoacetic acid (NMeFOSAA) 40.0 107 30 N-ethylperfluorooctanesulfonami 42.7 ng/L 61 - 135 10 doacetic acid (NEtFOSAA) 9-Chlorohexadecafluoro-3-oxan 37.3 36.1 ng/L 97 77 - 137 5 30 onane-1-sulfonic acid 40.0 43.4 ng/L 108 72 - 132 2 Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaund 37.7 34.1 91 76 - 136 8 30 ng/L

37.7

34.0

ng/L

LCSD LCSD

	LUSD	LUJD	
Isotope Dilution	%Recovery	Qualifier	Limits
13C2 PFHxA	95		50 - 150
13C4 PFHpA	100		50 <sub>-</sub> 150
13C4 PFOA	102		50 <sub>-</sub> 150
13C5 PFNA	105		50 - 150
13C2 PFDA	101		50 <sub>-</sub> 150
13C2 PFUnA	105		50 - 150
13C2 PFDoA	100		50 <sub>-</sub> 150
13C2 PFTeDA	105		50 - 150
13C3 PFBS	106		50 <sub>-</sub> 150
1802 PFHxS	93		50 - 150
13C4 PFOS	105		50 - 150
d3-NMeFOSAA	112		50 <sub>-</sub> 150
d5-NEtFOSAA	101		50 - 150
13C3 HFPO-DA	100		50 - 150

Lab Sample ID: LCS 320-538280/2-A

**Matrix: Water** 

ecane-1-sulfonic acid

acid (ADONA)

4,8-Dioxa-3H-perfluorononanoic

**Analysis Batch: 538508** 

Client Sample ID:	Lab Control Sample
	Prep Type: Total/NA
	<b>Prep Batch: 538280</b>
	0/ Dee

90

81 - 141

2

30

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorohexanoic acid (PFHxA)	40.0	37.5		ng/L		94	72 - 129	
Perfluoroheptanoic acid (PFHpA)	40.0	37.4		ng/L		94	72 - 130	

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Client: Shannon & Wilson, Inc Job ID: 320-80911-1

Project/Site: SC Surface Water Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

**Matrix: Water** 

**Client Sample ID: Lab Control Sample** 

81

65 - 136

**Prep Type: Total/NA** 

Analysis Batch: 538508							Prep Batch	: 538280
	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorooctanoic acid (PFOA)	40.0	36.8		ng/L		92	71 - 133	
Perfluorononanoic acid (PFNA)	40.0	38.0		ng/L		95	69 - 130	
Perfluorodecanoic acid (PFDA)	40.0	37.8		ng/L		95	71 - 129	

Perfluoroundecanoic acid 40.0 31.9 ng/L 80 69 - 133 (PFUnA) Perfluorododecanoic acid 40.0 39.0 ng/L 97 72 - 134 (PFDoA) 40.0 34.8 87 65 - 144Perfluorotridecanoic acid ng/L

(PFTriA) Perfluorotetradecanoic acid 40.0 37.9 ng/L 95 71 - 132 (PFTeA) 35.4 28.9 72 - 130 Perfluorobutanesulfonic acid ng/L (PFBS) Perfluorohexanesulfonic acid 36.4 32.9 ng/L 90 68 - 131 (PFHxS) 89 37.1 33.0 Perfluorooctanesulfonic acid ng/L 65 - 140 (PFOS)

32.3

ng/L

midoacetic acid (NMeFOSAA) N-ethylperfluorooctanesulfonami 40.0 31.0 78 61 - 135 ng/L doacetic acid (NEtFOSAA) 9-Chlorohexadecafluoro-3-oxan 37.3 35.2 ng/L 77 - 137 onane-1-sulfonic acid Hexafluoropropylene Oxide 40.0 40.7 ng/L 102 72 - 132

40.0

Dimer Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaund 37.7 35.3 ng/L 94 76 - 136 ecane-1-sulfonic acid 37.4 4,8-Dioxa-3H-perfluorononanoic 37.7 99 81 - 141 ng/L

acid (ADONA)

N-methylperfluorooctanesulfona

LCS LCS

Isotope Dilution	%Recovery Quality	fier Limits
13C2 PFHxA	82	50 - 150
13C4 PFHpA	85	50 - 150
13C4 PFOA	85	50 - 150
13C5 PFNA	79	50 - 150
13C2 PFDA	82	50 - 150
13C2 PFUnA	79	50 - 150
13C2 PFDoA	86	50 - 150
13C2 PFTeDA	69	50 - 150
13C3 PFBS	92	50 - 150
1802 PFHxS	77	50 - 150
13C4 PFOS	84	50 - 150
d3-NMeFOSAA	92	50 - 150
d5-NEtFOSAA	98	50 - 150
13C3 HFPO-DA	81	50 - 150

**Client Sample ID: Lab Control Sample Dup** 

**Matrix: Water** 

Lab Sample ID: LCSD 320-538280/3-A

Analysis Batch: 538508							Prep B	atch: 5	38280
	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluorohexanoic acid (PFHxA)	40.0	38.1		ng/L		95	72 - 129	2	30

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Prep Type: Total/NA

# **QC Sample Results**

Client: Shannon & Wilson, Inc Job ID: 320-80911-1 Project/Site: SC Surface Water

#### Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

ab Sample ID: LCSD 320-538280/3-A	Client Sample ID: Lab Control Sample Dup
Matrix: Water	Prep Type: Total/NA

Matrix: Water Analysis Batch: 538508					Prep Type: Total/NA Prep Batch: 538280				
Tananyon Zanom cocco	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluoroheptanoic acid (PFHpA)	40.0	40.7		ng/L		102	72 - 130	9	30
Perfluorooctanoic acid (PFOA)	40.0	37.2		ng/L		93	71 - 133	1	30
Perfluorononanoic acid (PFNA)	40.0	40.0		ng/L		100	69 - 130	5	30
Perfluorodecanoic acid (PFDA)	40.0	40.8		ng/L		102	71 - 129	7	30
Perfluoroundecanoic acid (PFUnA)	40.0	34.7		ng/L		87	69 - 133	8	30
Perfluorododecanoic acid (PFDoA)	40.0	39.5		ng/L		99	72 - 134	1	30
Perfluorotridecanoic acid (PFTriA)	40.0	38.2		ng/L		95	65 - 144	9	30
Perfluorotetradecanoic acid (PFTeA)	40.0	37.0		ng/L		93	71 - 132	2	30
Perfluorobutanesulfonic acid (PFBS)	35.4	31.4		ng/L		89	72 - 130	8	30
Perfluorohexanesulfonic acid (PFHxS)	36.4	33.0		ng/L		91	68 - 131	0	30
Perfluorooctanesulfonic acid (PFOS)	37.1	36.2		ng/L		98	65 - 140	9	30
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	40.0	32.3		ng/L		81	65 - 136	0	30
N-ethylperfluorooctanesulfonami doacetic acid (NEtFOSAA)	40.0	34.4		ng/L		86	61 - 135	10	30
9-Chlorohexadecafluoro-3-oxan onane-1-sulfonic acid	37.3	38.6		ng/L		103	77 - 137	9	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	40.0	40.5		ng/L		101	72 - 132	1	30
11-Chloroeicosafluoro-3-oxaund	37.7	40.3		ng/L		107	76 - 136	13	30

37.7

50 - 150

42.3

ng/L

112

81 - 141

acid (ADONA)			
	LCSD	LCSD	
Isotope Dilution	%Recovery	Qualifier	Limits
13C2 PFHxA	86		50 - 150
13C4 PFHpA	86		50 - 150
13C4 PFOA	91		50 - 150
13C5 PFNA	84		50 - 150
13C2 PFDA	82		50 - 150
13C2 PFUnA	87		50 <sub>-</sub> 150
13C2 PFDoA	88		50 - 150
13C2 PFTeDA	74		50 <sub>-</sub> 150
13C3 PFBS	90		50 - 150
1802 PFHxS	80		50 - 150
13C4 PFOS	80		50 <sub>-</sub> 150
d3-NMeFOSAA	98		50 - 150
d5-NEtFOSAA	98		50 - 150

86

ecane-1-sulfonic acid

13C3 HFPO-DA

4,8-Dioxa-3H-perfluorononanoic

30

# **QC Association Summary**

Client: Shannon & Wilson, Inc Job ID: 320-80911-1 Project/Site: SC Surface Water

#### LCMS

**Prep Batch: 538117** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-80911-1	21GST-SW-010	Total/NA	Water	3535	
320-80911-2	21GST-SW-008	Total/NA	Water	3535	
320-80911-3	21GST-SW-024	Total/NA	Water	3535	
320-80911-4	21GST-SW-124	Total/NA	Water	3535	
320-80911-5	21GST-SW-005	Total/NA	Water	3535	
320-80911-6	21GST-SW-006	Total/NA	Water	3535	
320-80911-7	21GST-SW-007	Total/NA	Water	3535	
320-80911-8	21GST-SW-011	Total/NA	Water	3535	
320-80911-9	21GST-SW-017	Total/NA	Water	3535	
320-80911-10	21GST-SW-019	Total/NA	Water	3535	
320-80911-11	21GST-SW-016	Total/NA	Water	3535	
320-80911-12	21GST-SW-013	Total/NA	Water	3535	
320-80911-13	21GST-SW-014	Total/NA	Water	3535	
320-80911-14	21GST-SW-015	Total/NA	Water	3535	
320-80911-15	21GST-SW-018	Total/NA	Water	3535	
320-80911-16	21GST-SW-118	Total/NA	Water	3535	
320-80911-17	21GST-SW-020	Total/NA	Water	3535	
320-80911-18	21GST-SW-021	Total/NA	Water	3535	
320-80911-19	21GST-SW-012	Total/NA	Water	3535	
320-80911-20	21GST-EB-012	Total/NA	Water	3535	
MB 320-538117/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-538117/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-538117/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

#### **Prep Batch: 538280**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-80911-21	21GST-SW-001	Total/NA	Water	3535	<u> </u>
320-80911-22	21GST-SW-002	Total/NA	Water	3535	
320-80911-23	21GST-SW-003	Total/NA	Water	3535	
320-80911-24	21GST-SW-022	Total/NA	Water	3535	
320-80911-25	21GST-SW-009	Total/NA	Water	3535	
320-80911-26	21GST-SW-023	Total/NA	Water	3535	
320-80911-27	21GST-SW-030	Total/NA	Water	3535	
320-80911-28	21GST-SW-028	Total/NA	Water	3535	
320-80911-29	21GST-SW-029	Total/NA	Water	3535	
320-80911-30	21GST-SW-027	Total/NA	Water	3535	
320-80911-31	21GST-SW-026	Total/NA	Water	3535	
320-80911-32	21GST-SW-025	Total/NA	Water	3535	
320-80911-33	21GST-EB-025	Total/NA	Water	3535	
320-80911-34	21GST-SW-127	Total/NA	Water	3535	
LCS 320-538280/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-538280/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

#### **Analysis Batch: 538508**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-80911-21	21GST-SW-001	Total/NA	Water	EPA 537(Mod)	538280
320-80911-22	21GST-SW-002	Total/NA	Water	EPA 537(Mod)	538280
320-80911-23	21GST-SW-003	Total/NA	Water	EPA 537(Mod)	538280
320-80911-24	21GST-SW-022	Total/NA	Water	EPA 537(Mod)	538280
320-80911-25	21GST-SW-009	Total/NA	Water	EPA 537(Mod)	538280
320-80911-26	21GST-SW-023	Total/NA	Water	EPA 537(Mod)	538280

# **QC Association Summary**

Client: Shannon & Wilson, Inc Job ID: 320-80911-1 Project/Site: SC Surface Water

#### **LCMS (Continued)**

#### **Analysis Batch: 538508 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-80911-27	21GST-SW-030	Total/NA	Water	EPA 537(Mod)	538280
320-80911-29	21GST-SW-029	Total/NA	Water	EPA 537(Mod)	538280
320-80911-30	21GST-SW-027	Total/NA	Water	EPA 537(Mod)	538280
320-80911-31	21GST-SW-026	Total/NA	Water	EPA 537(Mod)	538280
320-80911-32	21GST-SW-025	Total/NA	Water	EPA 537(Mod)	538280
320-80911-33	21GST-EB-025	Total/NA	Water	EPA 537(Mod)	538280
320-80911-34	21GST-SW-127	Total/NA	Water	EPA 537(Mod)	538280
LCS 320-538280/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	538280
LCSD 320-538280/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	538280

#### **Analysis Batch: 538672**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-80911-1	21GST-SW-010	Total/NA	Water	EPA 537(Mod)	538117
320-80911-2	21GST-SW-008	Total/NA	Water	EPA 537(Mod)	538117
320-80911-3	21GST-SW-024	Total/NA	Water	EPA 537(Mod)	538117
320-80911-4	21GST-SW-124	Total/NA	Water	EPA 537(Mod)	538117
320-80911-5	21GST-SW-005	Total/NA	Water	EPA 537(Mod)	538117
320-80911-6	21GST-SW-006	Total/NA	Water	EPA 537(Mod)	538117
320-80911-7	21GST-SW-007	Total/NA	Water	EPA 537(Mod)	538117
320-80911-8	21GST-SW-011	Total/NA	Water	EPA 537(Mod)	538117
320-80911-9	21GST-SW-017	Total/NA	Water	EPA 537(Mod)	538117
320-80911-10	21GST-SW-019	Total/NA	Water	EPA 537(Mod)	538117
320-80911-11	21GST-SW-016	Total/NA	Water	EPA 537(Mod)	538117
320-80911-12	21GST-SW-013	Total/NA	Water	EPA 537(Mod)	538117
320-80911-13	21GST-SW-014	Total/NA	Water	EPA 537(Mod)	538117
320-80911-14	21GST-SW-015	Total/NA	Water	EPA 537(Mod)	538117
320-80911-15	21GST-SW-018	Total/NA	Water	EPA 537(Mod)	538117
320-80911-16	21GST-SW-118	Total/NA	Water	EPA 537(Mod)	538117
320-80911-17	21GST-SW-020	Total/NA	Water	EPA 537(Mod)	538117
320-80911-18	21GST-SW-021	Total/NA	Water	EPA 537(Mod)	538117
320-80911-19	21GST-SW-012	Total/NA	Water	EPA 537(Mod)	538117
320-80911-20	21GST-EB-012	Total/NA	Water	EPA 537(Mod)	538117
MB 320-538117/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	538117
LCS 320-538117/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	538117
LCSD 320-538117/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	538117

#### **Analysis Batch: 539378**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-80911-28	21GST-SW-028	Total/NA	Water	EPA 537(Mod)	538280

Job ID: 320-80911-1

Client: Shannon & Wilson, Inc Project/Site: SC Surface Water

Client Sample ID: 21GST-SW-010

Date Collected: 10/17/21 09:15 Date Received: 10/27/21 12:25 Lab Sample ID: 320-80911-1

**Matrix: Water** 

**Matrix: Water** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			257.1 mL	10.0 mL	538117	10/29/21 03:11	EG	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538672	10/30/21 06:34	RS1	TAL SAC

Lab Sample ID: 320-80911-2 Client Sample ID: 21GST-SW-008 **Matrix: Water** 

Date Collected: 10/17/21 09:45 Date Received: 10/27/21 12:25

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			263 mL	10.0 mL	538117	10/29/21 03:11	EG	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538672	10/30/21 06:44	RS1	TAL SAC

Client Sample ID: 21GST-SW-024 Lab Sample ID: 320-80911-3

Date Collected: 10/17/21 10:15 Date Received: 10/27/21 12:25

Batch Batch Dil Initial Final Batch Prepared **Prep Type** Method Amount Number or Analyzed Analyst Type Run **Factor** Amount Lab Total/NA Prep 3535 261.7 mL 10.0 mL 538117 10/29/21 03:11 EG TAL SAC Total/NA Analysis EPA 537(Mod) 538672 10/30/21 06:54 RS1 TAL SAC 1

Client Sample ID: 21GST-SW-124

Date Received: 10/27/21 12:25

Lab Sample ID: 320-80911-4 Date Collected: 10/17/21 10:05 **Matrix: Water** 

		Batch	Batch		Dil	Initial	Final	Batch	Prepared		
	Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
	Total/NA	Prep	3535			257.3 mL	10.0 mL	538117	10/29/21 03:11	EG	TAL SAC
l	Total/NA	Analysis	EPA 537(Mod)		1			538672	10/30/21 07:05	RS1	TAL SAC

Client Sample ID: 21GST-SW-005 Lab Sample ID: 320-80911-5 **Matrix: Water** 

Date Collected: 10/17/21 11:15 Date Received: 10/27/21 12:25

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			260.6 mL	10.0 mL	538117	10/29/21 03:11	EG	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538672	10/30/21 07:15	RS1	TAL SAC

Client Sample ID: 21GST-SW-006 Lab Sample ID: 320-80911-6 **Matrix: Water** 

Date Collected: 10/17/21 12:00 Date Received: 10/27/21 12:25

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			263.3 mL	10.0 mL	538117	10/29/21 03:11	EG	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538672	10/30/21 07:26	RS1	TAL SAC

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Job ID: 320-80911-1

Client: Shannon & Wilson, Inc Project/Site: SC Surface Water

Client Sample ID: 21GST-SW-007

Date Collected: 10/17/21 12:20 Date Received: 10/27/21 12:25 Lab Sample ID: 320-80911-7

**Matrix: Water** 

**Matrix: Water** 

**Matrix: Water** 

**Matrix: Water** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			260.7 mL	10.0 mL	538117	10/29/21 03:11	EG	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538672	10/30/21 07:36	RS1	TAL SAC

Client Sample ID: 21GST-SW-011

Date Collected: 10/17/21 12:40

Matrix: Water

Date Collected: 10/17/21 12:40 Date Received: 10/27/21 12:25

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			258 mL	10.0 mL	538117	10/29/21 03:11	EG	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538672	10/30/21 08:07	RS1	TAL SAC

Client Sample ID: 21GST-SW-017 Lab Sample ID: 320-80911-9

Date Collected: 10/17/21 13:15 Date Received: 10/27/21 12:25

Batch Batch Dil Initial Final Batch Prepared Number Method Amount or Analyzed **Prep Type** Type Run **Factor** Amount Analyst Lab Total/NA Prep 3535 249 mL 10.0 mL 538117 10/29/21 03:11 EG TAL SAC Total/NA Analysis EPA 537(Mod) 538672 10/30/21 08:18 RS1 TAL SAC 1

Client Sample ID: 21GST-SW-019 Lab Sample ID: 320-80911-10

Date Collected: 10/17/21 13:45 Date Received: 10/27/21 12:25

Batch Batch Dil Initial Final Batch Prepared **Prep Type** Method Factor Amount Amount Number or Analyzed Analyst Type Run Lab Total/NA 3535 538117 10/29/21 03:11 EG Prep 262.7 mL 10.0 mL TAL SAC Total/NA Analysis EPA 537(Mod) 1 538672 10/30/21 08:28 RS1 TAL SAC

Client Sample ID: 21GST-SW-016 Lab Sample ID: 320-80911-11

Date Collected: 10/17/21 14:05 Date Received: 10/27/21 12:25

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			251.5 mL	10.0 mL	538117	10/29/21 03:11	EG	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538672	10/30/21 08:38	RS1	TAL SAC

Client Sample ID: 21GST-SW-013

Date Collected: 10/17/21 14:40

Lab Sample ID: 320-80911-12

Matrix: Water

Date Received: 10/27/21 12:25

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			261.2 mL	10.0 mL	538117	10/29/21 03:11	EG	TAL SAC
Total/NA	Analysis	FPA 537(Mod)		1			538672	10/30/21 08:49	RS1	TAL SAC

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Job ID: 320-80911-1

Client: Shannon & Wilson, Inc Project/Site: SC Surface Water

Client Sample ID: 21GST-SW-014

Date Collected: 10/17/21 15:00 Date Received: 10/27/21 12:25 Lab Sample ID: 320-80911-13

**Matrix: Water** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			254.3 mL	10.0 mL	538117	10/29/21 03:11	EG	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538672	10/30/21 08:59	RS1	TAL SAC

Client Sample ID: 21GST-SW-015

Date Collected: 10/17/21 15:15 Date Received: 10/27/21 12:25

Lab Sample ID: 320-80911-14

**Matrix: Water** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			256.7 mL	10.0 mL	538117	10/29/21 03:11	EG	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538672	10/30/21 09:10	RS1	TAL SAC

Client Sample ID: 21GST-SW-018

Date Collected: 10/17/21 15:40 Date Received: 10/27/21 12:25

Lab Sample ID: 320-80911-15

**Matrix: Water** 

<b>.</b>	Batch	Batch	D	Dil	Initial	Final	Batch	Prepared	Amalmat	1 -1-
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			259.5 mL	10.0 mL	538117	10/29/21 03:11	EG	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538672	10/30/21 09:20	RS1	TAL SAC

Client Sample ID: 21GST-SW-118

Date Collected: 10/17/21 15:30 Date Received: 10/27/21 12:25

Lab Sample ID: 320-80911-16

Lab Sample ID: 320-80911-17

Lab Sample ID: 320-80911-18

**Matrix: Water** 

**Matrix: Water** 

**Matrix: Water** 

11/8/2021

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			253.5 mL	10.0 mL	538117	10/29/21 03:11	EG	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538672	10/30/21 09:31	RS1	TAL SAC

Client Sample ID: 21GST-SW-020

Date Collected: 10/17/21 16:10

Date Received: 10/27/21 12:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			255.2 mL	10.0 mL	538117	10/29/21 03:11	EG	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538672	10/30/21 09:41	RS1	TAL SAC

Client Sample ID: 21GST-SW-021

Date Collected: 10/17/21 16:45

Date Received: 10/27/21 12:25

	Batch	Batch	_	Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			256.9 mL	10.0 mL	538117	10/29/21 03:11	EG	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538672	10/30/21 10:12	RS1	TAL SAC

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Job ID: 320-80911-1

Client: Shannon & Wilson, Inc Project/Site: SC Surface Water

Client Sample ID: 21GST-SW-012

Date Collected: 10/17/21 17:20 Date Received: 10/27/21 12:25 Lab Sample ID: 320-80911-19

**Matrix: Water** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			259.9 mL	10.0 mL	538117	10/29/21 03:11	EG	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538672	10/30/21 10:23	RS1	TAL SAC

**Client Sample ID: 21GST-EB-012** 

Date Collected: 10/17/21 17:10 Date Received: 10/27/21 12:25 Lab Sample ID: 320-80911-20

Matrix: Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			253.4 mL	10.0 mL	538117	10/29/21 03:11	EG	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538672	10/30/21 10:33	RS1	TAL SAC

Client Sample ID: 21GST-SW-001

Date Collected: 10/18/21 09:00

Date Received: 10/27/21 12:25

Lab Sample ID: 320-80911-21

Matrix: Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			258.6 mL	10.0 mL	538280	10/29/21 12:41	KJW	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538508	10/30/21 22:09	RS1	TAL SAC

Client Sample ID: 21GST-SW-002

Date Collected: 10/18/21 09:05

Date Received: 10/27/21 12:25

Lab Sample ID: 320-80911-22

Lab Sample ID: 320-80911-23

Lab Sample ID: 320-80911-24

Matrix: Water

**Matrix: Water** 

**Matrix: Water** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			258.5 mL	10.0 mL	538280	10/29/21 12:41	KJW	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538508	10/30/21 22:37	RS1	TAL SAC

Client Sample ID: 21GST-SW-003

Date Collected: 10/18/21 09:15

Date Received: 10/27/21 12:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			255.6 mL	10.0 mL	538280	10/29/21 12:41	KJW	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538508	10/30/21 22:46	RS1	TAL SAC

Client Sample ID: 21GST-SW-022

Date Collected: 10/18/21 09:30

Date Received: 10/27/21 12:25

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			260.2 mL	10.0 mL	538280	10/29/21 12:41	KJW	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538508	10/30/21 22:55	RS1	TAL SAC

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Job ID: 320-80911-1

Client: Shannon & Wilson, Inc Project/Site: SC Surface Water

Client Sample ID: 21GST-SW-009

Date Collected: 10/18/21 10:45 Date Received: 10/27/21 12:25

Lab Sample ID: 320-80911-25

**Matrix: Water** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			259.5 mL	10.0 mL	538280	10/29/21 12:41	KJW	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538508	10/30/21 23:04	RS1	TAL SAC

Client Sample ID: 21GST-SW-023

Date Collected: 10/18/21 11:50 Date Received: 10/27/21 12:25

Lab Sample ID: 320-80911-26

**Matrix: Water** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			248.2 mL	10.0 mL	538280	10/29/21 12:41	KJW	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538508	10/30/21 23:13	RS1	TAL SAC

Client Sample ID: 21GST-SW-030

Date Collected: 10/18/21 13:25 Date Received: 10/27/21 12:25

Lab Sample ID: 320-80911-27

**Matrix: Water** 

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			262.3 mL	10.0 mL	538280	10/29/21 12:41	KJW	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538508	10/30/21 23:22	RS1	TAL SAC

Client Sample ID: 21GST-SW-028

Date Collected: 10/18/21 13:45

Date Received: 10/27/21 12:25

Lab Sample	ID:	320-	8	09	11	-28	

Lab Sample ID: 320-80911-29

**Matrix: Water** 

**Matrix: Water** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			251.5 mL	10.0 mL	538280	10/29/21 12:41	KJW	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			539378	11/03/21 04:02	S1M	TAL SAC

Client Sample ID: 21GST-SW-029

Date Collected: 10/18/21 14:15

Date Received: 1	0/27/21 1	2:25									_
	Batch	Batch		Dil	Initial	Final	Batch	Prepared			
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab	
Total/NA	Prep	3535			262.4 mL	10.0 mL	538280	10/29/21 12:41	KJW	TAL SAC	_

Client Sample ID: 21GST-SW-027

Analysis EPA 537(Mod)

Date Collected: 10/18/21 14:35

Total/NA

Date Received: 10/27/21 12:25

Lab San	nple ID	):	320	8-(	309	911	-30

10/30/21 23:41 RS1

538508

**Matrix: Water** 

TAL SAC

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			261.5 mL	10.0 mL	538280	10/29/21 12:41	KJW	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538508	10/30/21 23:50	RS1	TAL SAC

Eurofins TestAmerica, Sacramento

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11/8/2021

#### **Lab Chronicle**

Client: Shannon & Wilson, Inc Job ID: 320-80911-1 Project/Site: SC Surface Water

Client Sample ID: 21GST-SW-026

Lab Sample ID: 320-80911-31 Date Collected: 10/18/21 15:00

**Matrix: Water** 

Date Received: 10/27/21 12:25

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			260.4 mL	10.0 mL	538280	10/29/21 12:41	KJW	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538508	10/30/21 23:59	RS1	TAL SAC

Client Sample ID: 21GST-SW-025 Lab Sample ID: 320-80911-32 **Matrix: Water** 

Date Collected: 10/18/21 15:20 Date Received: 10/27/21 12:25

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			264.6 mL	10.0 mL	538280	10/29/21 12:41	KJW	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538508	10/31/21 00:26	RS1	TAL SAC

Lab Sample ID: 320-80911-33 Client Sample ID: 21GST-EB-025

Date Collected: 10/18/21 15:30

Date Received: 10/27/21 12:25

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			270.5 mL	10.0 mL	538280	10/29/21 12:41	KJW	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538508	10/31/21 00:35	RS1	TAL SAC

Client Sample ID: 21GST-SW-127 Lab Sample ID: 320-80911-34 **Matrix: Water** 

Date Collected: 10/18/21 14:25

Date Received: 10/27/21 12:25

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			262.7 mL	10.0 mL	538280	10/29/21 12:41	KJW	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538508	10/31/21 00:45	RS1	TAL SAC

**Laboratory References:** 

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

Eurofins TestAmerica, Sacramento

**Matrix: Water** 

# **Accreditation/Certification Summary**

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

#### Laboratory: Eurofins TestAmerica, Sacramento

The accreditations/certifications listed below are applicable to this report.

Authority	Program	<b>Identification Number</b>	<b>Expiration Date</b>
Alaska (UST)	State	17-020	02-20-24

11/8/2021

Eurofins TestAmerica, Sacramento

#### **Method Summary**

Client: Shannon & Wilson, Inc Project/Site: SC Surface Water Job ID: 320-80911-1

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.3, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

#### **Protocol References:**

EPA = US Environmental Protection Agency

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

#### Laboratory References:

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

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# **Sample Summary**

320-80911-34

21GST-SW-127

Job ID: 320-80911-1 Client: Shannon & Wilson, Inc Project/Site: SC Surface Water

Lab Camula ID	Olient Commis ID	B# a4min	O alla ata d	Deschool
Lab Sample ID	Client Sample ID	Matrix	Collected	Received 10/27/21 12:25
320-80911-1	21GST-SW-010	Water		
320-80911-2	21GST-SW-008	Water		10/27/21 12:25
320-80911-3	21GST-SW-024	Water		10/27/21 12:25
320-80911-4	21GST-SW-124	Water		10/27/21 12:25
320-80911-5	21GST-SW-005	Water	10/17/21 11:15	10/27/21 12:25
320-80911-6	21GST-SW-006	Water	10/17/21 12:00	10/27/21 12:25
320-80911-7	21GST-SW-007	Water	10/17/21 12:20	10/27/21 12:25
320-80911-8	21GST-SW-011	Water	10/17/21 12:40	10/27/21 12:25
320-80911-9	21GST-SW-017	Water	10/17/21 13:15	10/27/21 12:25
320-80911-10	21GST-SW-019	Water	10/17/21 13:45	10/27/21 12:25
320-80911-11	21GST-SW-016	Water	10/17/21 14:05	10/27/21 12:25
320-80911-12	21GST-SW-013	Water	10/17/21 14:40	10/27/21 12:25
320-80911-13	21GST-SW-014	Water	10/17/21 15:00	10/27/21 12:25
320-80911-14	21GST-SW-015	Water	10/17/21 15:15	10/27/21 12:25
320-80911-15	21GST-SW-018	Water	10/17/21 15:40	10/27/21 12:25
320-80911-16	21GST-SW-118	Water	10/17/21 15:30	10/27/21 12:25
320-80911-17	21GST-SW-020	Water	10/17/21 16:10	10/27/21 12:25
20-80911-18	21GST-SW-021	Water	10/17/21 16:45	10/27/21 12:25
320-80911-19	21GST-SW-012	Water	10/17/21 17:20	10/27/21 12:25
320-80911-20	21GST-EB-012	Water	10/17/21 17:10	10/27/21 12:25
320-80911-21	21GST-SW-001	Water	10/18/21 09:00	10/27/21 12:25
320-80911-22	21GST-SW-002	Water	10/18/21 09:05	10/27/21 12:25
320-80911-23	21GST-SW-003	Water	10/18/21 09:15	10/27/21 12:25
320-80911-24	21GST-SW-022	Water	10/18/21 09:30	10/27/21 12:25
320-80911-25	21GST-SW-009	Water	10/18/21 10:45	10/27/21 12:25
320-80911-26	21GST-SW-023	Water	10/18/21 11:50	10/27/21 12:25
320-80911-27	21GST-SW-030	Water	10/18/21 13:25	10/27/21 12:25
320-80911-28	21GST-SW-028	Water		10/27/21 12:25
320-80911-29	21GST-SW-029	Water		10/27/21 12:25
320-80911-30	21GST-SW-027	Water	10/18/21 14:35	10/27/21 12:25
320-80911-31	21GST-SW-026	Water		10/27/21 12:25
320-80911-32	21GST-SW-025	Water		10/27/21 12:25
320-80911-33	21GST-EB-025	Water		10/27/21 12:25

Water

10/18/21 14:25 10/27/21 12:25

SHANNON & WILSON, INC.

2355 Hill Road Fairbanks, AK 99709	<b>31</b> 17 (11	. 01 00010	DI KEGOI	Labo Attn:	eratory ENDYING
(907) 479-0600			Analytical Method	ds (include preservativ	
www.shannonwilson.co	Quote No:	ı /	25////		///&/
Normal Rush	J-Flags: Yes No	]			Remarks/Matrix Composition/Grab? Sample Containers
Please Specify		1,5/			surrite.
Sample Identity		Date /			Remarks/Matrix Composition/Grab?
		mpled			
2 GST-5W-010		7/21 X			go water
2/45T-SW-008	945	X			8
21G5T-SW-024	1015	320	0-80911 Chain of Custody		
2/GST-SW-124	1005		J		
2/GST-5W-005	1115	X			
21 C1ST SW 00+	10 (- 6)	V			
2165T-5W-006	1260	X			
21G5T-5W-007	1220	X			
2165T-SW-011	1240	X		1	
21GST-SW-017	1315	TX		V	V
Project Information	Sample Receipt	Reliquished By:	1. Reliquish	ed By: 2.	Reliquished By: 3.
Number: 102599 -008 Name: SC Suffuse Water	Total No. of Containers: 68  COC Seals/intact? Y/N/NA	Signature: Tim	e: 4400 Signature:	Time:	Signature: Time:
Contact: VI Sten	Received Good Cond./Cold	Printed Name: Da	e: 6/24/2 Printed Name:	Date:	Printed Name: Date:
Ongoing Project? Yes 📈 No 🗌	Temp:	Veselina Jakan	nòva		
Sampler: AP W	Delivery Method: godstreak	IICompany: ( ).	Company:		Company:
No	otes:	Received By:	Receive	d By: 2.	Received By: 3.
		11/1/2/	Signature:	Time:	Signature: Time:
		dand to	e: Printed Name:	Date:	Printed Name: Date:
Distribution: White - w/shipment - returne Yellow - w/shipment - for cor Pink - Shannon & Wilson - jo	rd to Shannon & Wilson w/ laboratory repor nsignee files ob file	Company:	Company:		Сотрапу:

**CHAIN-OF-CUSTODY RECORD** 

1 1/0/2021

Laboratory Enoting

Client: Shannon & Wilson, Inc

Job Number: 320-80911-1

Login Number: 80911 List Number: 1

Creator: Her, David A

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	1519066/1519067/1503337/1503336/105338/15 19065
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

**Eurofins TestAmerica, Sacramento** 

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## **Laboratory Data Review Checklist**

Completed By:
Justin Risley
Title:
Engineering Staff
Date:
November 11, 2021
Consultant Firm:
Shannon & Wilson, Inc.
Laboratory Name:
Eurofins / TestAmerica Laboratories, Inc. (TestAmerica)
Laboratory Report Number:
320-80911-1
Laboratory Report Date:
11/08/2021
CS Site Name:
DOT&PF Gustavus Airport Statewide PFAS
ADEC File Number:
1507.38.017
Hazard Identification Number:
26904

May 2020 Page 1

Laboratory Report Date:
Note: Any N/A or No box checked must have an explanation in the comments box.
1. <u>Laboratory</u>
<ul> <li>a. Did an ADEC CS approved laboratory receive and <u>perform</u> all of the submitted sample analyses?</li> <li>Yes⊠ No□ N/A□ Comments:</li> </ul>
TestAmerica/Eurofins Laboratories West Sacramento, CA is CS certified for the analysis of perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) by method 537. The laboratory is also certified under the Department of Defense Environmental Laboratory Accreditation Program (DoD ELAP) for the requested analyses.
b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?
Yes□ No□ N/A⊠ Comments:
The samples were not transferred to a network laboratory or subcontracted out.
2. Chain of Custody (CoC)
<ul> <li>a. CoC information completed, signed, and dated (including released/received by)?</li> <li>Yes⊠ No□ N/A□ Comments:</li> </ul>
b. Correct analyses requested?
$Yes \boxtimes No \square N/A \square$ Comments:
3. <u>Laboratory Sample Receipt Documentation</u>
a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?
$Yes \boxtimes No \square N/A \square$ Comments:
b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?
$Yes \square No \square N/A \boxtimes Comments:$
Samples analyzed for PFAS do not require preservation other than temperature control.
c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?
$Yes \boxtimes No \square N/A \square$ Comments:
The sample receipt form notes that the samples arrived in good condition.

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320-80911-1

#### Laboratory Report Date:

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

Yes  $\square$  No  $\square$  N/A $\boxtimes$  Comments:

No discrepancies were noted in the sample receipt documentation.

e. Data quality or usability affected?

Comments:

The data quality/usability was not affected.

#### 4. Case Narrative

a. Present and understandable?

Yes  $\boxtimes$  No  $\square$  N/A  $\square$  Comments:

Method EPA 537(Mod): The transition mass ratio was outside of the established ratio limit for HFPO-DA (GenX) in CCV 320-538508/15, CCV 320-538508/32 and CCV 320-538508/3 associated with this data set. This is indicated by the "R" flag in the raw data. As the flagged data is in control in the continuing calibration verification (CCV), there is no adverse impact to the data.

Method EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit: 21GST-SW-008, 21GST-SW-005, 21GST-SW-007 and 21GST-SW-015. Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in these samples.

Method EPA 537(Mod): The IDA recovery associated with the sample 21GST-SW-001 is below the method recommended limit. Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which was achieved for all IDA in this sample.

Method 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-538117.

Method 3535: The following samples contained floating particulates in the sample bottle prior to extraction: 21GST-SW-010, 21GST-SW-008, 21GST-SW-024, 21GST-SW-124, 21GST-SW-005, 21GST-SW-006, 21GST-SW-007, 21GST-SW-011, 21GST-SW-017, 21GST-SW-019, 21GST-SW-016, 21GST-SW-013, 21GST-SW-014, 21GST-SW-015, 21GST-SW-018, 21GST-SW-118, 21GST-SW-020, 21GST-SW-021 and 21GST-SW-012.

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Labora	atory Report Date:			
	b. Discrepancies, errors, or QC failures identified by the lab?			
	Yes⊠ No□ N/A□ Comments:  Method 3535: The following samples contained a thin layer of sediment at the bottom of the bottle prior to extraction: 21GST-SW-008, 21GST-SW-005 and 21GST-SW-007.			
	Method 3535: The following samples exhibited a brown hue prior to extraction: 21GST-SW-008, 21GST-SW-006, 21GST-SW-013 and 21GST-SW-015.			
	Method 3535: During the solid phase extraction process, the following samples contain non-settable particulates which clogged the solid phase extraction column: 21GST-SW-008, 21GST-SW-024, 21GST-SW-005, 21GST-SW-006, 21GST-SW-007 and 21GST-SW-015.			
	Method 3535: Insufficient sample volume was available to perform MS/MSD associated with preparation batch 320-538280.			
	Method 3535: The sample 21GST-SW-002 contained floating particulates in the sample bottle prior to extraction.			
	Method 3535: The following samples exhibited a yellow hue and contained a thin layer of sediment at the bottom of the bottle prior to extraction: 21GST-SW-009, 21GST-SW-030, 21GST-SW-028, 21GST-SW-029, 21GST-SW-027, 21GST-SW-026, 21GST-SW-025 and 21GST-SW-127.			
	c. Were all corrective actions documented?			
	Yes $\square$ No $\square$ N/A $\boxtimes$ Comments:			
	No corrective actions were documented in the case narrative.			
	d. What is the effect on data quality/usability according to the case narrative?			
	Comments:			
	The case narrative does not note an effect on data quality/usability.			
5. <u>Sa</u>	mples Results			
	a. Correct analyses performed/reported as requested on COC?			
	Yes⊠ No□ N/A□ Comments:			
	TOUR TOUR TOUR COMMISSION			
	b. All applicable holding times met?			
	Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:			

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320-80911-1

atory Report Date:
c. All soils reported on a dry weight basis?
Yes $\square$ No $\square$ N/A $\boxtimes$ Comments:
Soil samples were not submitted with this work order.
d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?
Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:
The reporting limits (RL) are less than the applicable DEC regulatory limits for the project.
e. Data quality or usability affected?
The data quality/usability is not affected.
C Samples C Samples
a. Method Blank
i. One method blank reported per matrix, analysis and 20 samples?
Yes⊠ No□ N/A□ Comments:
ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?
Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:
iii. If above LOQ or project specified objectives, what samples are affected?  Comments:
None; target PFAS were not detected in the method blank sample.
iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes $\square$ No $\square$ N/A $\boxtimes$ Comments:
The samples were not affected by laboratory contamination; see above.
v. Data quality or usability affected?  Comments:
The data quality/usability is not affected.

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320-80911-1
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# Laboratory Report Date:

b. Laboratory Control Sample/Duplicate (LCS/LCSD)
<ul> <li>Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)</li> </ul>
Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:
ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?
$Yes \square No \square N/A \boxtimes Comments:$
Metals/Inorganics analyses were not requested for this work order.
iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)
Yes⊠ No□ N/A□ Comments:
iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from LCS/LCSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)
Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:
v. If %R or RPD is outside of acceptable limits, what samples are affected?  Comments:
None; method accuracy and precision were demonstrated to be within acceptable limits.
vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
$Yes \square No \square N/A \boxtimes Comments:$
Qualification was not required; see above.
vii. Data quality or usability affected? (Use comment box to explain.)
vii. Data quality or usability affected? (Use comment box to explain.)  Comments:  The data quality/usability is not affected.

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	320-80911-1
La	boratory Report Date:
	c. Matrix Spike/Matrix Spike Duplicate (MS/MSD)
	Note: Leave blank if not required for project
	i. Organics – One MS/MSD reported per matrix, analysis and 20 samples?
	Yes $\square$ No $\square$ N/A $\boxtimes$ Comments:
	Insufficient sample volume was available to perform MS/MSD samples with the associated preparatory batches. However, the laboratory analyzed LCS and LCSDs to assess laboratory accuracy and precision.
	ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?
	$Yes \square No \square N/A \boxtimes Comments:$
	Metals/Inorganics analyses were not requested for this work order.
	iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?
	$Yes \square No \square N/A \boxtimes Comments:$
	MS and MSD samples were not analyzed for this work order.
	iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from MS/MSD, and or sample/sample duplicate.
	$Yes \square No \square N/A \boxtimes Comments:$
	MS and MSD samples were not analyzed for this work order.
	v. If %R or RPD is outside of acceptable limits, what samples are affected?  Comments:
	N/A; MS and MSD samples were not analyzed for this work order.
	vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
	Yes $\square$ No $\square$ N/A $\boxtimes$ Comments:

MS and MSD samples were not analyzed for this work order.

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320-80911-1	
320-80911-1	

Labor

atory Report Date:		
vii. Data quality or usability affected? (Use comment box to explain.)  Comments:		
The data quality/usability is not affected.		
d. Surrogates – Organics Only or Isotope Dilution Analytes (IDA) – Isotope Dilution Methods Only		
i. Are surrogate/IDA recoveries reported for organic analyses – field, QC and laboratory samples?		
$Yes \boxtimes No \square N/A \square$ Comments:		
ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods 50-150 %R for field samples and 60-120 %R for QC samples; all other analyses see the laboratory report pages)		
Yes□ No⊠ N/A□ Comments:		
All IDA recoveries for project samples 21GST-SW-007 and 21GST-SW-008 were below laboratory control limits.		
The recoveries for the IDAs 13C2 PFUnA, 13C2 PFDoA, 13C2 PFTeDA, and 13C3 HFPO-DA were below laboratory control limits in sample <i>21GST-SW-005</i> .		
The recovery of the IDA 13C PFTeDA was below the laboratory's lower control limit in the samples 21GST-SW-001 and 21GST-SW-015.		
iii. Do the sample results with failed surrogate/IDA recoveries have data flags? If so, are the data flags clearly defined?		
Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:		
All reported PFAS results of samples 21GST-SW-007 and 21GST-SW-008 are affected by low IDA recovery. Affected results are considered estimations with no direction of bias; detected results have been flagged 'J' and not-detected results have been flagged 'UJ' to denote the uncertainty.		
The PFUnA, PFDoA, PFTriA, PFTeA, and HFPO-DA results of sample 21GST-SW-005 are affected by low IDA recovery. Affected results are considered estimations with no direction of bias. There were no detections in the project sample; therefore, all results have been flagged 'UJ' to denote the uncertainty.		
The PFTeA results of samples 21GST-SW-001 and 21GST-SW-015 are affected by low IDA recovery. The affected results are considered estimations with no direction of bias and has been flagged 'UJ' to denote the uncertainty.		
iv. Data quality or usability affected?		
Comments:		
The data quality is affected; see above for applied qualifiers.		

Page 8 May 2020

320-80911-1
Laboratory Report Date:
e. Trip Blanks
<ul> <li>i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples?</li> <li>(If not, enter explanation below.)</li> </ul>
Yes $\square$ No $\square$ N/A $\boxtimes$ Comments:
PFAS are not volatile compounds. A trip blank is not required for the requested analysis.
ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)
Yes $\square$ No $\square$ N/A $\boxtimes$ Comments:
A trip blank is not required for the requested analysis.
iii. All results less than LOQ and project specified objectives?
Yes $\square$ No $\square$ N/A $\boxtimes$ Comments:
A trip blank is not required for the requested analysis.
iv. If above LOQ or project specified objectives, what samples are affected?  Comments:
N/A; a trip blank is not required for the requested analysis.
v. Data quality or usability affected?  Comments:
The data quality/usability is not affected.
f. Field Duplicate
i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes⊠ No□ N/A□ Comments:

ii. Submitted blind to lab?

Yes  $\boxtimes$  No  $\square$  N/A  $\square$  Comments:

The field duplicate pairs 21GST-SW-024 / 21GST-SW-124, 21GST-SW-027 / 21GST-SW-127, and 21GST-SW-018 / 21GST-SW-118 were submitted with this work order.

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320-80911-1
Laboratory Report Date:
iii. Precision – All relative percent differences (RPD) less than specified project objectives? (Recommended: 30% water, 50% soil) $ \text{RPD (\%)} = \text{Absolute value of:}  \frac{(R_1 \text{-}R_2)}{((R_1 \text{+}R_2)/2)} \times 100 $ Where $R_1 = \text{Sample Concentration} $ $R_2 = \text{Field Duplicate Concentration} $
Yes No N/A Comments:  The RPD for PFOS in the field duplicate pair 21GST-SW-024 / 21GST-SW-124 was outside of laboratory control limits. These results are considered estimations with no direction of bias and have been flagged 'J' to denote the uncertainty.
The RPDs for PFOS, PFHxA, and PFHpA in the field duplicate pair 21GST-SW-027 / 21GST-SW-12 were outside of laboratory control limits. These results are considered estimations with no direction of bias and have been flagged 'J' to denote the uncertainty.
iv. Data quality or usability affected? (Use the comment box to explain why or why not.)  Comments:
The data quality is affected; see above for applied qualifiers.
g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below)?
Yes⊠ No□ N/A□ Comments:
The equipment blank sample 21GST-EB-012 was submitted with this work order.
<ul> <li>i. All results less than LOQ and project specified objectives?</li> <li>Yes ⋈ No ⋈ N/A ⋈ Comments:</li> </ul>
1 CS M INOL IN/AL COMMICIES.
ii. If above LOQ or project specified objectives, what samples are affected?  Comments:
None; target PFAS were not detected in the equipment blank sample.

May 2020 Page 10

iii. Data quality or usability affected?

The data quality/usability is not affected.

Comments:

320-80911-1

Laboratory Report Date:

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a.	Defined	and	appropriate?
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Yes $\square$ No $\square$ N/A $\boxtimes$ Co
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No additional data flags/qualifiers were required.

May 2020 Page 11



# **Environment Testing America**

# **ANALYTICAL REPORT**

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

Laboratory Job ID: 320-81054-1 Client Project/Site: SC Soil

For:

Shannon & Wilson, Inc 2355 Hill Rd. Fairbanks, Alaska 99709-5244

Attn: Kristen Freiburger

Vani altimo

Authorized for release by: 11/8/2021 1:29:06 PM

David Alltucker, Project Manager I (916)374-4383

David.Alltucker@Eurofinset.com

·····LINKS ······

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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Client: Shannon & Wilson, Inc Project/Site: SC Soil

Laboratory Job ID: 320-81054-1

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### **Definitions/Glossary**

Client: Shannon & Wilson, Inc Job ID: 320-81054-1

Project/Site: SC Soil

#### **Qualifiers**

		N/I	C
Ц	U	IVI	J

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

#### **Glossary**

Abbreviation	These commonly used abbreviations may or may not be present in this report.
~	Listed under the "D" column to design at that the requit is reported an admission to be a

Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery
CFL Contains Free Liquid
CFU Colony Forming Unit
CNF Contains No Free Liquid

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL Detection Limit (DoD/DOE)

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision Level Concentration (Radiochemistry)

EDL Estimated Detection Limit (Dioxin)

LOD Limit of Detection (DoD/DOE)

LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level"

MDA Minimum Detectable Activity (Radiochemistry)

MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit
ML Minimum Level (Dioxin)
MPN Most Probable Number
MQL Method Quantitation Limit

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent
POS Positive / Present

PQL Practical Quantitation Limit

PRES Presumptive
QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

TNTC Too Numerous To Count

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#### **Case Narrative**

Client: Shannon & Wilson, Inc Job ID: 320-81054-1

Project/Site: SC Soil

Job ID: 320-81054-1

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative 320-81054-1

#### Receipt

The samples were received on 10/29/2021 3:04 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 6.0° C.

#### LCMS

Method EPA 537(Mod): The transition mass ratio was above of the established ratio limit for Perfluorohexanoic acid (PFHxA) and Perfluorodecanoic acid (PFDA) in (CCVL 320-539660/2) associated to this data set. This is indicated by the "R" flag in the raw data. As the flagged data is in control in the CCVL, there is no adverse impact to the data. (CCVL 320-539660/2)

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

#### **General Chemistry**

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

#### **Organic Prep**

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

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# **Detection Summary**

Client: Shannon & Wilson, Inc Job ID: 320-81054-1

Project/Site: SC Soil

Client Sample ID: 21GST-MW22-01 Lab Sample ID: 320-81054-1 No Detections.

Lab Sample ID: 320-81054-2 Client Sample ID: 21GST-MW22-02

No Detections.

Client Sample ID: 21GST-MW24-01 Lab Sample ID: 320-81054-3

Analyte	Result Qualifier	RL	MDL U	Jnit	Dil Fac	D	Method	Prep Type
Perfluorotetradecanoic acid (PFTeA)	0.042 J	0.21	0.039 u	ıg/Kg	1	₽	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-MW24-02 Lab Sample ID: 320-81054-4

No Detections.

Lab Sample ID: 320-81054-5 Client Sample ID: 21GST-MW21-01

Analyte	Result Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorotetradecanoic acid (PFTeA)	0.046 J	0.24	0.044	ug/Kg	1	₩	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-MW21-02 Lab Sample ID: 320-81054-6

No Detections.

Client: Shannon & Wilson, Inc Job ID: 320-81054-1

Project/Site: SC Soil

**Percent Solids** 

Client Sample ID: 21GST-MW22-01 Lab Sample ID: 320-81054-1

Date Collected: 10/25/21 10:10 **Matrix: Solid** Date Received: 10/29/21 15:04 Percent Solids: 80.2

Method: EPA 537(Mod) - PFAS Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.23		ug/Kg	— <u> </u>	11/02/21 18:31	11/03/21 20:12	
Perfluoroheptanoic acid (PFHpA)	ND		0.23		ug/Kg	₩	11/02/21 18:31	11/03/21 20:12	1
Perfluorooctanoic acid (PFOA)	ND		0.23		ug/Kg	₩	11/02/21 18:31	11/03/21 20:12	1
Perfluorononanoic acid (PFNA)	ND		0.23		ug/Kg		11/02/21 18:31	11/03/21 20:12	1
Perfluorodecanoic acid (PFDA)	ND		0.23		ug/Kg	₩	11/02/21 18:31	11/03/21 20:12	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23		ug/Kg	₩	11/02/21 18:31	11/03/21 20:12	1
Perfluorododecanoic acid (PFDoA)	ND		0.23		ug/Kg		11/02/21 18:31	11/03/21 20:12	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23		ug/Kg	₩	11/02/21 18:31	11/03/21 20:12	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23		ug/Kg	₩	11/02/21 18:31	11/03/21 20:12	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23		ug/Kg		11/02/21 18:31	11/03/21 20:12	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.23		ug/Kg	☆	11/02/21 18:31	11/03/21 20:12	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.23		ug/Kg		11/02/21 18:31		1
N-methylperfluorooctanesulfonamidoa	ND		0.23		ug/Kg		11/02/21 18:31		 1
cetic acid (NMeFOSAA)			0.20	0.02.	~g,g		,02,2		
9-Chlorohexadecafluoro-3-oxanonan	ND		0.23	0.041	ug/Kg	₩	11/02/21 18:31	11/03/21 20:12	1
e-1-sulfonic acid									
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23	0.048	ug/Kg	₩	11/02/21 18:31	11/03/21 20:12	1
11-Chloroeicosafluoro-3-oxaundecan	ND		0.23	0.036	ug/Kg	₩	11/02/21 18:31	11/03/21 20:12	1
e-1-sulfonic acid									
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.045	ug/Kg	₩	11/02/21 18:31	11/03/21 20:12	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	110		50 - 150				11/02/21 18:31	11/03/21 20:12	1
13C4 PFHpA	106		50 - 150				11/02/21 18:31	11/03/21 20:12	1
13C4 PFOA	111		50 - 150				11/02/21 18:31	11/03/21 20:12	1
13C5 PFNA	113		50 - 150				11/02/21 18:31	11/03/21 20:12	1
13C2 PFDA	115		50 - 150				11/02/21 18:31	11/03/21 20:12	1
13C2 PFUnA	123		50 - 150				11/02/21 18:31	11/03/21 20:12	1
13C2 PFDoA	124		50 - 150				11/02/21 18:31	11/03/21 20:12	1
13C2 PFTeDA	129		50 <sub>-</sub> 150				11/02/21 18:31	11/03/21 20:12	1
13C3 PFBS	133		50 <sub>-</sub> 150				11/02/21 18:31	11/03/21 20:12	1
1802 PFHxS	96		50 - 150				11/02/21 18:31	11/03/21 20:12	1
13C4 PFOS	111		50 <sub>-</sub> 150				11/02/21 18:31	11/03/21 20:12	1
d3-NMeFOSAA	137		50 - 150				11/02/21 18:31	11/03/21 20:12	1
13C3 HFPO-DA	112		50 - 150					11/03/21 20:12	1
Method: EPA 537(Mod) - PFAS		•		MDI	1114	_	Dunnanad	A malumad	Dil Fac
Analyte		Qualifier	RL		Unit	— <u> </u>	Prepared	Analyzed	Dil Fac
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.23	0.056	ug/Kg	☼	11/02/21 18:31	11/05/21 05:27	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	111		50 - 150				11/02/21 18:31	11/05/21 05:27	1
General Chemistry									
Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	19.8		0.1	0.1	%			11/01/21 16:00	1
			0.4	~ .	0/			11/01/01 16:00	

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0.1

0.1 %

80.2

11/01/21 16:00

Client: Shannon & Wilson, Inc Job ID: 320-81054-1

Project/Site: SC Soil

**Percent Moisture** 

**Percent Solids** 

Client Sample ID: 21GST-MW22-02 Lab Sample ID: 320-81054-2

Date Collected: 10/25/21 12:20

Matrix: Solid

Date Received: 10/29/21 15:04

Percent Solids: 82.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.23	0.035	ug/Kg	— <u></u>	11/02/21 18:31	11/03/21 20:43	
Perfluoroheptanoic acid (PFHpA)	ND		0.23		ug/Kg	₽	11/02/21 18:31	11/03/21 20:43	1
Perfluorooctanoic acid (PFOA)	ND		0.23	0.061	ug/Kg	₽	11/02/21 18:31	11/03/21 20:43	1
Perfluorononanoic acid (PFNA)	ND		0.23		ug/Kg	ф	11/02/21 18:31	11/03/21 20:43	1
Perfluorodecanoic acid (PFDA)	ND		0.23		ug/Kg	₽	11/02/21 18:31	11/03/21 20:43	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.048	ug/Kg	₽	11/02/21 18:31	11/03/21 20:43	1
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.034	ug/Kg	₩	11/02/21 18:31	11/03/21 20:43	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23		ug/Kg	₽	11/02/21 18:31	11/03/21 20:43	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23		ug/Kg	₩	11/02/21 18:31	11/03/21 20:43	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.043	ug/Kg		11/02/21 18:31	11/03/21 20:43	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.23		ug/Kg	₩	11/02/21 18:31	11/03/21 20:43	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.23	0.049	ug/Kg	₩	11/02/21 18:31	11/03/21 20:43	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.23	0.026	ug/Kg		11/02/21 18:31	11/03/21 20:43	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.23	0.040	ug/Kg	₽	11/02/21 18:31	11/03/21 20:43	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23	0.047	ug/Kg	₽	11/02/21 18:31	11/03/21 20:43	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.23	0.035	ug/Kg		11/02/21 18:31	11/03/21 20:43	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.045	ug/Kg	₽	11/02/21 18:31	11/03/21 20:43	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	109		50 - 150				11/02/21 18:31	11/03/21 20:43	1
13C4 PFHpA	96		50 - 150				11/02/21 18:31	11/03/21 20:43	1
13C4 PFOA	102		50 - 150				11/02/21 18:31	11/03/21 20:43	
13C5 PFNA	105		50 - 150				11/02/21 18:31	11/03/21 20:43	
13C2 PFDA	104		50 - 150				11/02/21 18:31	11/03/21 20:43	1
13C2 PFUnA	114		50 - 150				11/02/21 18:31	11/03/21 20:43	1
13C2 PFDoA	110		50 - 150				11/02/21 18:31	11/03/21 20:43	1
13C2 PFTeDA	118		50 - 150				11/02/21 18:31	11/03/21 20:43	1
13C3 PFBS	125		50 - 150				11/02/21 18:31	11/03/21 20:43	1
1802 PFHxS	92		50 - 150				11/02/21 18:31	11/03/21 20:43	1
13C4 PFOS	103		50 - 150				11/02/21 18:31	11/03/21 20:43	1
d3-NMeFOSAA	133		50 - 150				11/02/21 18:31	11/03/21 20:43	1
13C3 HFPO-DA	98		50 - 150				11/02/21 18:31	11/03/21 20:43	1
Method: EPA 537(Mod) - PFAS	for QSM 5	.3, Table B	-15 - RA						
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.23	0.055	ug/Kg	<u></u>	11/02/21 18:31	11/05/21 05:58	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	104		50 - 150						
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
					0/			44 104 104 40 00	

Eurofins TestAmerica, Sacramento

11/01/21 16:00

11/01/21 16:00

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# **Client Sample Results**

Client: Shannon & Wilson, Inc Job ID: 320-81054-1

Project/Site: SC Soil

**Percent Solids** 

Client Sample ID: 21GST-MW24-01 Lab Sample ID: 320-81054-3

Date Collected: 10/24/21 15:00 **Matrix: Solid** Date Received: 10/29/21 15:04 Percent Solids: 88.6

Perfluorotoeptanoic acid (PFDA)   ND   0.21   0.041   ug/Kg   0   11/02/21 18.31   11/03/21 20.53	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorococianoic acid (PFOA)	Perfluorohexanoic acid (PFHxA)	ND		0.21	0.033	ug/Kg	<u></u>	11/02/21 18:31	11/03/21 20:53	1
Perfluorononanola acid (PFNA)	Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.041	ug/Kg	₩	11/02/21 18:31	11/03/21 20:53	1
Perfluorodecanoic acid (PFDA)   ND   0.21   0.051   ug/Kg   0   11/02/21   18.31   11/03/21 20.53	Perfluorooctanoic acid (PFOA)	ND		0.21	0.057	ug/Kg	₩	11/02/21 18:31	11/03/21 20:53	1
Perfluoroundecanoic acid (PFUnA)   ND   0.21   0.045   ug/Kg   0   11/02/21 18.31   11/03/21 20.53   Perfluorotodecanoic acid (PFDA)   ND   0.21   0.032   ug/Kg   0   11/02/21 18.31   11/03/21 20.53   Perfluorototecanoic acid (PFTinA)   ND   0.21   0.039   ug/Kg   0   11/02/21 18.31   11/03/21 20.53   Perfluorototradecanoic acid (PFDR)   ND   0.21   0.039   ug/Kg   0   11/02/21 18.31   11/03/21 20.53   Perfluorobutanesulfonic acid (PFDS)   ND   0.21   0.041   ug/Kg   0   11/02/21 18.31   11/03/21 20.53   Perfluorobutanesulfonic acid (PFDS)   ND   0.21   0.031   ug/Kg   0   11/02/21 18.31   11/03/21 20.53   Perfluorobutanesulfonic acid (PFDS)   ND   0.21   0.040   ug/Kg   0   11/02/21 18.31   11/03/21 20.53   Perfluorobutanesulfonic acid (PFDS)   ND   0.21   0.040   ug/Kg   0   11/02/21 18.31   11/03/21 20.53   Perfluorobutanesulfonic acid (PFDS)   ND   0.21   0.037   ug/Kg   0   11/02/21 18.31   11/03/21 20.53   Perfluorobexadecalfuoro-3-exanonan   ND   0.21   0.044   ug/Kg   0   11/02/21 18.31   11/03/21 20.53   Perfluoroproproplene Oxide Dimer   ND   0.21   0.044   ug/Kg   0   11/02/21 18.31   11/03/21 20.53   Perfluoroproproplene Oxide Dimer   ND   0.21   0.044   ug/Kg   0   11/02/21 18.31   11/03/21 20.53   Perfluoroproproplene Oxide Dimer   ND   0.21   0.044   ug/Kg   0   11/02/21 18.31   11/03/21 20.53   Perfluoroproproplene Oxide Dimer   ND   0.21   0.042   ug/Kg   0   11/02/21 18.31   11/03/21 20.53   Perfluoroproproplene Oxide Dimer   ND   0.21   0.042   ug/Kg   0   11/02/21 18.31   11/03/21 20.53   Perfluoroproproplene Oxide Dimer   ND   0.21   0.042   ug/Kg   0   11/02/21 18.31   11/03/21 20.53   Perfluoroproproplene Oxide Dimer   ND   0.21   0.042   ug/Kg   0   11/02/21 18.31   11/03/21 20.53   Perfluoroproproproproproproproproproproproprop	Perfluorononanoic acid (PFNA)	ND		0.21	0.023	ug/Kg	₩	11/02/21 18:31	11/03/21 20:53	1
Perfluorododecenolo acid (PFDoA) Perfluorotridecanoic acid (PFDriA) ND 0.21 0.022 ug/Kg 0 11/02/21 18.31 11/03/21 20.53 Perfluorotridecanoic acid (PFTiA) ND 0.21 0.022 ug/Kg 0 11/02/21 18.31 11/03/21 20.53 Perfluorotridecanoic acid (PFTiA) Perfluorotridecanoic acid (PFTiA) ND 0.21 0.039 ug/Kg 0 11/02/21 18.31 11/03/21 20.53 Perfluorobexanesulfonic acid (PFTiAS) ND 0.21 0.041 ug/Kg 0 11/02/21 18.31 11/03/21 20.53 Perfluorobexanesulfonic acid (PFTiAS) ND 0.21 0.041 ug/Kg 0 11/02/21 18.31 11/03/21 20.53 Perfluorobexanesulfonic acid (PFTiAS) ND 0.21 0.042 ug/Kg 0 11/02/21 18.31 11/03/21 20.53 N-methylperfluorocctanesulfonamidoa cetic acid (NMeFOSAA) ND 0.21 0.037 ug/Kg 0 11/02/21 18.31 11/03/21 20.53 Perfluorotridecanduror-3-oxanonan PND 0.21 0.037 ug/Kg 0 11/02/21 18.31 11/03/21 20.53 Perfluorocctanesulfonamidoa cetic acid (NMeFOSAA) ND 0.21 0.037 ug/Kg 0 11/02/21 18.31 11/03/21 20.53 Perfluorocctanesulfonic acid ND 0.21 0.044 ug/Kg 0 11/02/21 18.31 11/03/21 20.53 Perfluorocctanesulfonic acid ND 0.21 0.042 ug/Kg 0 11/02/21 18.31 11/03/21 20.53 Perfluorocctanesulfonic acid ND 0.21 0.042 ug/Kg 0 11/02/21 18.31 11/03/21 20.53 Perfluorocctanesulfonic acid ND 0.21 0.042 ug/Kg 0 11/02/21 18.31 11/03/21 20.53 Perfluorocctanesulfonic acid ND 0.21 0.042 ug/Kg 0 11/02/21 18.31 11/03/21 20.53 Perfluorocctanesulfonic acid ND 0.21 0.042 ug/Kg 0 11/02/21 18.31 11/03/21 20.53 Perfluorocctanesulfonic acid ND 0.21 0.042 ug/Kg 0 11/02/21 18.31 11/03/21 20.53 Perfluorocctanesulfonic acid ND 0.21 0.043 ug/Kg 0 11/02/21 18.31 11/03/21 20.53 Perfluorocctanesulfonic acid ND 0.21 0.044 ug/Kg 0 11/02/21 18.31 11/03/21 20.53 Perfluorocctanesulfonic acid ND 0.21 0.043 ug/Kg 0 11/02/21 18.31 11/03/21 20.53 Perfluorocctanesulfonic acid ND 0.21 0.044 ug/Kg 0 11/02/21 18.31 11/03/21 20.53 Perfluorocctanesulfonic acid ND 0.21 0.044 ug/Kg 0 11/02/21 18.31 11/03/21 20.53 Perfluorocctanesulfonic acid ND 0.21 0.044 ug/Kg 0 11/02/21 18.31 11/03/21 20.53 Perfluorocctanesulfonic acid ND 0.21 0.044 ug/Kg 0 11/02/21 18.31 11/03/21 20.53 Perfluorocctanesu	Perfluorodecanoic acid (PFDA)	ND		0.21	0.051	ug/Kg	☼	11/02/21 18:31	11/03/21 20:53	1
Perfluorotridecanoic acid (PFTiA)   ND   0.21   0.022   ug/Kg   0   11/02/21   18.31   11/03/21   20.53   Porfluorotradecanoic acid   O.042   J   0.21   0.039   ug/Kg   0   11/02/21   18.31   11/03/21   20.53   Perfluorobutanesulfonic acid (PFBS)   ND   0.21   0.031   ug/Kg   0   11/02/21   18.31   11/03/21   20.53   Perfluorocanesulfonic acid (PFWs)   ND   0.21   0.031   ug/Kg   0   11/02/21   18.31   11/03/21   20.53   Perfluorocanesulfonic acid (PFWs)   ND   0.21   0.046   ug/Kg   0   11/02/21   18.31   11/03/21   20.53   Perfluorocanesulfonic acid (PFOS)   ND   0.21   0.046   ug/Kg   0   11/02/21   18.31   11/03/21   20.53   Perfluorocanesulfonic acid (PFOSA)   ND   0.21   0.037   ug/Kg   0   11/02/21   18.31   11/03/21   20.53   Perfluoropcanesulfonic acid (PFOSA)   ND   0.21   0.037   ug/Kg   0   11/02/21   18.31   11/03/21   20.53   Perfluoropcanesulfonic acid   Perfluoropcanesulfonic   Pe	Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.045	ug/Kg	☼	11/02/21 18:31	11/03/21 20:53	1
Perfluorototradecanoic acid   0.042 J   0.21   0.039 ug/Kg   0.11/02/21 18:31 11/03/21 20:53	Perfluorododecanoic acid (PFDoA)	ND		0.21	0.032	ug/Kg	₩	11/02/21 18:31	11/03/21 20:53	1
Perfluorobutanesulfonic acid (PFBS)	Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.022	ug/Kg	☼	11/02/21 18:31	11/03/21 20:53	1
Perfluorobutanesulfonic acid (PFBS)   ND   0.21   0.041   ug/Kg   0   11/02/21 18:31   11/03/21 20:53	Perfluorotetradecanoic acid	0.042	J	0.21	0.039	ug/Kg	☼	11/02/21 18:31	11/03/21 20:53	1
Perfluorohexanesulfonic acid (PFHxS)   ND   0.21   0.031   ug/Kg   0.11/02/21 18:31   11/03/21 20:53   Perfluorocatenesulfonic acid (PFOS)   ND   0.21   0.046   ug/Kg   0.11/02/21 18:31   11/03/21 20:53   Perfluorocatenesulfonic acid (PFOS)   ND   0.21   0.025   ug/Kg   0.11/02/21 18:31   11/03/21 20:53   Perfluorocatenesulfonic acid (PMeFOSAA)	(PFTeA)									
Perfluorooctanesulfonic acid (PFOS)   ND   0.21   0.046   ug/Kg   0.11/02/21 18:31   11/03/21 20:53	Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.041	ug/Kg	₩	11/02/21 18:31	11/03/21 20:53	1
N-methylperfluorooctanesulfonamidoa celic acid (NMeFOSA)   ND   0.21   0.025   0.037	Perfluorohexanesulfonic acid (PFHxS)	ND		0.21	0.031	ug/Kg	₩	11/02/21 18:31	11/03/21 20:53	1
Debt	Perfluorooctanesulfonic acid (PFOS)	ND		0.21	0.046	ug/Kg	☼	11/02/21 18:31	11/03/21 20:53	1
e-1-sulfonic acid Hexafluoropropylene Oxide Dimer ND 0.21 0.044 ug/Kg 11/02/21 18:31 11/03/21 20:53 Acid (HFPO-DA) 11-Chloroelcosafluoro-3-oxaundecan e-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid ND 0.21 0.042 ug/Kg 11/02/21 18:31 11/03/21 20:531-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid ND 0.21 0.042 ug/Kg 11/02/21 18:31 11/03/21 20:531-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid ND 0.21 0.042 ug/Kg 11/02/21 18:31 11/03/21 20:531-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid ND 0.21 0.042 ug/Kg 11/02/21 18:31 11/03/21 20:531-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid ND 0.21 0.042 ug/Kg 11/02/21 18:31 11/03/21 20:531-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid ND 0.21 0.042 ug/Kg 11/02/21 18:31 11/03/21 20:531-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid ND 0.21 0.042 ug/Kg 11/02/21 18:31 11/03/21 20:53	N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.21	0.025	ug/Kg	☼	11/02/21 18:31	11/03/21 20:53	1
Acid (HFPO-DA) 11-Chloreicosafiuoro-3-oxaundecan e-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid 4,8-Dioxa-3H-perfluorononanoic acid A,8-Dioxa-3H-perfluorononanoic acid A,8-Dioxa-3H-perfluoronoic acid A,8-Dioxa-3H-perfluoronoic acid A,8-Dioxa-3H-perfluoronoic acid A,8-Dioxa-3H-perfluoronoic acid A,8-Dioxa-3H-perfluoronoic acid A,8-Dioxa-3H-perflu		ND		0.21			₩	11/02/21 18:31	11/03/21 20:53	1
e-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid 4,8-Dioxa-3H-perfluoronoic acid 4,8-Dioxa-4Dioxa-10	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.044	ug/Kg	₩	11/02/21 18:31	11/03/21 20:53	1
		ND		0.21	0.033	ug/Kg	₩	11/02/21 18:31	11/03/21 20:53	1
11/02/21 18:31   11/03/21 20:53   13C4 PFHpA	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.042	ug/Kg	₩	11/02/21 18:31	11/03/21 20:53	1
13C4 PFHpA	Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA 103 50 - 150 11/02/21 18:31 11/03/21 20:53 13C5 PFNA 105 50 - 150 11/02/21 18:31 11/03/21 20:53 13C2 PFDA 104 50 - 150 11/02/21 18:31 11/03/21 20:53 13C2 PFUNA 124 50 - 150 11/02/21 18:31 11/03/21 20:53 13C2 PFDOA 128 50 - 150 11/02/21 18:31 11/03/21 20:53 13C2 PFDOA 128 50 - 150 11/02/21 18:31 11/03/21 20:53 13C2 PFDOA 116 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFBS 112 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFBS 112 50 - 150 11/02/21 18:31 11/03/21 20:53 13C4 PFOS 105 50 - 150 11/02/21 18:31 11/03/21 20:53 13C4 PFOS 105 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFPO-DA 89 50 - 150 11/0	13C2 PFHxA	104		50 - 150				11/02/21 18:31	11/03/21 20:53	1
13C5 PFNA 105 50 - 150 11/02/21 18:31 11/03/21 20:53 13C2 PFDA 104 50 - 150 11/02/21 18:31 11/03/21 20:53 13C2 PFDA 124 50 - 150 11/02/21 18:31 11/03/21 20:53 13C2 PFDA 128 50 - 150 11/02/21 18:31 11/03/21 20:53 13C2 PFDA 116 50 - 150 11/02/21 18:31 11/03/21 20:53 13C2 PFDA 116 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFBS 112 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFBS 12 50 - 150 11/02/21 18:31 11/03/21 20:53 13C4 PFOS 105 50 - 150 11/02/21 18:31 11/03/21 20:53 13C4 PFOS 105 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 13/02/21 18:31 11/03/21 20:53 13/02/21 18:31 11/03/21 20:53 13/02/21 18:31 11/03/21 20:53 13/02/21 18:31 11/03/21 20:53 13/02/21 18:31 11/03/21 20:53 13/02/21 18:31 11/03/21 20:53 13/02/21 18:31 11/03/21 20:53 13/02/21 18:31 11/03/21 20:53 13/02/21 18:31 11/03/21 20:53 13/02/21 18:31 11/03/21 20:53 13/02/21 18:31 11/03/21 20:53 13/02/21 18:31 11/03/21 20:53 13/02/21 18:31 11/03/21 20:53 13/02/21 18:31 11/03/21 20:53 13/02/21 18:31 11/03/21 20:53 13/02/21 18:31 11/03/2	13C4 PFHpA	92		50 - 150				11/02/21 18:31	11/03/21 20:53	1
13C2 PFDA 104 50 - 150 11/02/21 18:31 11/03/21 20:53 13C2 PFUnA 124 50 - 150 11/02/21 18:31 11/03/21 20:53 13C2 PFDOA 128 50 - 150 11/02/21 18:31 11/03/21 20:53 13C2 PFDOA 116 50 - 150 11/02/21 18:31 11/03/21 20:53 13C2 PFTEDA 116 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFBS 112 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFBS 92 50 - 150 11/02/21 18:31 11/03/21 20:53 13C4 PFOS 105 50 - 150 11/02/21 18:31 11/03/21 20:53 13C4 PFOS 105 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 11/02/21 18:31 11/03/21 20:53 13C3 PFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 10:53 11/03/21 1	13C4 PFOA	103		50 - 150				11/02/21 18:31	11/03/21 20:53	1
13C2 PFUNA 124 50 - 150 11/02/21 18:31 11/03/21 20:53 13C2 PFDOA 116 50 - 150 11/02/21 18:31 11/03/21 20:53 13C2 PFEDA 116 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFBS 112 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFBS 112 50 - 150 11/02/21 18:31 11/03/21 20:53 13C4 PFOS 105 50 - 150 11/02/21 18:31 11/03/21 20:53 13C4 PFOS 105 50 - 150 11/02/21 18:31 11/03/21 20:53 13C4 PFOS 105 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFBS 110 11/02/21 18:31 11/03/21 20:53 13C4 PFOS 13C3 PFOSAA 124 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 HFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 HFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 11/02/21 18:31 11/03/21 20:53 13C3 HFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 11/02/21 18:31 11/03/21 20:53 13C3 HFPO-DA 11/02/21 18:31 11/03/21 20:53 13C3 HFPO-DA 11/02/21 18:31 11/03/21 20:53 13C3 HFPO-DA 11/02/21 18:31 11/03/21 20:53 13C3 HFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 HFPO-DA 11/02/21 18:31 11/03/21 20:53 13C3 HFPO-DA 11/02/21 18:31 11/03/21 20:53 13C3 HFPO-DA 13/03/21 20:53 13/03/21 18:31 11/03/21 18:31 11/03/21 20:53 13/03/21 18:31 11/03/21 18:	13C5 PFNA	105		50 - 150				11/02/21 18:31	11/03/21 20:53	1
13C2 PFDoA 128 50 - 150 11/02/21 18:31 11/03/21 20:53 13C2 PFTeDA 116 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFBS 112 50 - 150 11/02/21 18:31 11/03/21 20:53 18O2 PFHxS 92 50 - 150 11/02/21 18:31 11/03/21 20:53 13C4 PFOS 105 50 - 150 11/02/21 18:31 11/03/21 20:53 13C4 PFOS 105 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFDOA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFO-DA 89 11/02/21 18:31 11/03/21 20:53 13C3 PFO-DA 89 11/02/21 18:31 11/03/21 20:53 13C3 PFO-DA 89 11/02/21 18:31 11/03/21 20:53 13C3 PFO-DA 89 11/02/21 18:31 11/03/21 20:53 13C3 PFO-DA 89 11/02/21 18:31 11/03/21 20:53 13C3 PFO-DA 89 11/02/21 18:31 11/03/21 20:53 13C3 PFO-DA 89 11/02/21 18:31 11/03/21 20:53 13C3 PFO-DA 89 11/02/21 18:31 11/03/21 20:53 13C3 PFO-DA 89 11/02/21 18:31 11/03/21 20:53 13C3 PFO-DA 89 11/02/21 18:31 11/03/21 20:53 13C3 PFO-DA 89 11/02/21 18:31 11/03/21 20:53 13C3 PFO-DA 89 11/02/21 18:31 11/03/21 20:53 13C3 PFO-DA 89 11/02/21 18:31 11/03/21 20:53 13C3 PFO-DA 89 11/02/21 18:31 11/03/21 20:53 13C3 PFO-DA 89 1	13C2 PFDA	104		50 - 150				11/02/21 18:31	11/03/21 20:53	1
13C2 PFTeDA 116 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 PFBS 112 50 - 150 11/02/21 18:31 11/03/21 20:53 1802 PFHxS 92 50 - 150 11/02/21 18:31 11/03/21 20:53 13C4 PFOS 105 50 - 150 11/02/21 18:31 11/03/21 20:53 13C4 PFOS 105 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 NMeFOSAA 124 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 NMeFOSAA 124 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 NMeFOSAA 124 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 NMeFOSAA 124 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 NMeFOSAA 124 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 NMeFOSAA 13C3 NFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53 11/02/21 18:31	13C2 PFUnA	124		50 - 150				11/02/21 18:31	11/03/21 20:53	1
13C3 PFBS	13C2 PFDoA	128		50 - 150				11/02/21 18:31	11/03/21 20:53	1
1802 PFHxS 92 50 - 150 11/02/21 18:31 11/03/21 20:53 13C4 PFOS 105 50 - 150 11/02/21 18:31 11/03/21 20:53 d3-NMeFOSAA 124 50 - 150 11/02/21 18:31 11/03/21 20:53 13C3 HFPO-DA 89 50 - 150 11/02/21 18:31 11/03/21 20:53	13C2 PFTeDA	116		50 - 150				11/02/21 18:31	11/03/21 20:53	1
13C4 PFOS	13C3 PFBS	112		50 - 150				11/02/21 18:31	11/03/21 20:53	1
11/02/21 18:31   11/03/21 20:53   13C3 HFPO-DA   89   50 - 150   11/02/21 18:31   11/03/21 20:53   11/02/21 18:31   11/03/21 06:08   11/02/21 18:31   11/03/21 06:08   11/02/21 18:31   11/05/21 06:08   11/02/2	1802 PFHxS	92		50 - 150				11/02/21 18:31	11/03/21 20:53	1
Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 - RA   Analyte   Result   Qualifier   RL   MDL   Unit   Unit   D   Prepared   Analyzed   Dil Factoria   Dil Factoria   Analyzed   Dil Factoria   Dil Factoria   Analyzed   Dil Factoria   Di	13C4 PFOS	105		50 - 150				11/02/21 18:31	11/03/21 20:53	1
Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 - RA  Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac  N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)  Isotope Dilution %Recovery Qualifier Limits 50 - 150  General Chemistry  Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac  MDL Unit D Prepared Analyzed Dil Fac  MDL Unit D Prepared Analyzed Dil Fac  MDL Unit D Prepared Analyzed Dil Fac	d3-NMeFOSAA	124		50 - 150				11/02/21 18:31	11/03/21 20:53	1
Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Factoria (NEtFOSAA)    Sotope Dilution   WRecovery   Qualifier   Limits   Dualifier   Limits   Prepared   Analyzed   Dil Factoria   Dil Fact	13C3 HFPO-DA	89		50 - 150				11/02/21 18:31	11/03/21 20:53	1
No.ethylperfluorooctanesulfonamidoac   ND					BAD!	Unit	Б	Dropered	Analyza	Dil Es-
etic acid (NEtFOSAA)  Isotope Dilution			Quaimer							Dii Fac
d5-NEtFOSAA         98         50 - 150         11/02/21 18:31         11/05/21 06:08           General Chemistry           Analyte         Result Qualifier         RL         MDL Unit         D         Prepared         Analyzed         Dil Factoria	etic acid (NEtFOSAA)			U.Z I	0.051	ug/Ng	†	11/02/21 10:31	11/05/21 00:08	1
General Chemistry Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac	Isotope Dilution	%Recovery	Qualifier							Dil Fac
Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac	d5-NEtFOSAA	98		50 - 150				11/02/21 18:31	11/05/21 06:08	1
	General Chemistry									
		Dagu-I4	Ouglifier	DI	MIDI	l Init	_ D	Droporod	Analyzad	Dil Eco

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0.1

88.6

0.1 %

11/01/21 16:00

# **Client Sample Results**

Client: Shannon & Wilson, Inc Job ID: 320-81054-1

Project/Site: SC Soil

Client Sample ID: 21GST-MW24-02 Lab Sample ID: 320-81054-4

Date Collected: 10/24/21 16:50 **Matrix: Solid** Date Received: 10/29/21 15:04 Percent Solids: 84.3

Method: EPA 537(Mod) - PFAS <sup>Analyte</sup>		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Perfluorohexanoic acid (PFHxA)	ND	<del></del>	0.23		ug/Kg	— <u>-</u>	11/02/21 18:31	11/03/21 21:04	
Perfluoroheptanoic acid (PFHpA)	ND		0.23		ug/Kg	₩	11/02/21 18:31	11/03/21 21:04	
Perfluorooctanoic acid (PFOA)	ND		0.23		ug/Kg	₩	11/02/21 18:31	11/03/21 21:04	
Perfluorononanoic acid (PFNA)	ND		0.23		ug/Kg			11/03/21 21:04	
Perfluorodecanoic acid (PFDA)	ND		0.23		ug/Kg		11/02/21 18:31	11/03/21 21:04	
Perfluoroundecanoic acid (PFUnA)	ND		0.23		ug/Kg			11/03/21 21:04	
Perfluorododecanoic acid (PFDoA)	ND		0.23		ug/Kg			11/03/21 21:04	
Perfluorotridecanoic acid (PFTriA)	ND		0.23		ug/Kg	~ ☆		11/03/21 21:04	
Perfluorotetradecanoic acid (PFTeA)	ND		0.23		ug/Kg	~ ☆		11/03/21 21:04	
Perfluorobutanesulfonic acid (PFBS)	ND		0.23		ug/Kg ug/Kg			11/03/21 21:04	
Perfluorobatanesulfonic acid (PFHxS)	ND ND		0.23		ug/Kg ug/Kg	<b>☆</b>		11/03/21 21:04	
Perfluorooctanesulfonic acid (PFOS)	ND ND		0.23		ug/Kg ug/Kg	<b>☆</b>		11/03/21 21:04	
N-methylperfluorooctanesulfonamidoa	ND		0.23		ug/Kg			11/03/21 21:04	
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.23		ug/Kg			11/03/21 21:04	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23		ug/Kg			11/03/21 21:04	
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.23	0.035		₽	11/02/21 18:31	11/03/21 21:04	
I,8-Dioxa-3H-perfluorononanoic acid ADONA)	ND		0.23	0.044	ug/Kg	₩	11/02/21 18:31	11/03/21 21:04	
sotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	110		50 - 150				11/02/21 18:31	11/03/21 21:04	
13C4 PFHpA	104		50 - 150				11/02/21 18:31	11/03/21 21:04	
13C4 PFOA	98		50 <sub>-</sub> 150				11/02/21 18:31	11/03/21 21:04	
13C5 PFNA	96		50 - 150				11/02/21 18:31	11/03/21 21:04	
13C2 PFDA	100		50 <sub>-</sub> 150				11/02/21 18:31	11/03/21 21:04	
13C2 PFUnA	103		50 <sub>-</sub> 150				11/02/21 18:31	11/03/21 21:04	
13C2 PFDoA	105		50 - 150				11/02/21 18:31	11/03/21 21:04	
13C2 PFTeDA	105		50 <sub>-</sub> 150				11/02/21 18:31	11/03/21 21:04	
13C3 PFBS	125		50 <sub>-</sub> 150				11/02/21 18:31	11/03/21 21:04	
1802 PFHxS	93		50 - 150				11/02/21 18:31	11/03/21 21:04	
13C4 PFOS	95		50 <sub>-</sub> 150					11/03/21 21:04	
d3-NMeFOSAA	112		50 - 150					11/03/21 21:04	
13C3 HFPO-DA	97		50 - 150					11/03/21 21:04	
Method: EPA 537(Mod) - PFAS		•							
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.23	0.055	ug/Kg	☼	11/02/21 18:31	11/05/21 06:19	
sotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil F
d5-NEtFOSAA	94		50 - 150				11/02/21 18:31		
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Percent Moisture	15.7		0.1	0.1				11/01/21 16:00	

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Client: Shannon & Wilson, Inc Job ID: 320-81054-1

Project/Site: SC Soil

Client Sample ID: 21GST-MW21-01 Lab Sample ID: 320-81054-5

Date Collected: 10/25/21 15:45 **Matrix: Solid** Date Received: 10/29/21 15:04 Percent Solids: 81.4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Perfluorohexanoic acid (PFHxA)	ND		0.24	0.037	ug/Kg	<u></u>	11/02/21 18:31	11/03/21 21:14	
Perfluoroheptanoic acid (PFHpA)	ND		0.24	0.045	ug/Kg	₩	11/02/21 18:31	11/03/21 21:14	
Perfluorooctanoic acid (PFOA)	ND		0.24	0.063	ug/Kg	₩	11/02/21 18:31	11/03/21 21:14	
Perfluorononanoic acid (PFNA)	ND		0.24	0.026	ug/Kg	₩	11/02/21 18:31	11/03/21 21:14	
Perfluorodecanoic acid (PFDA)	ND		0.24	0.057	ug/Kg	₩	11/02/21 18:31	11/03/21 21:14	
Perfluoroundecanoic acid (PFUnA)	ND		0.24	0.050	ug/Kg	₩	11/02/21 18:31	11/03/21 21:14	•
Perfluorododecanoic acid (PFDoA)	ND		0.24	0.036	ug/Kg	₩	11/02/21 18:31	11/03/21 21:14	
Perfluorotridecanoic acid (PFTriA)	ND		0.24	0.025	ug/Kg	₩	11/02/21 18:31	11/03/21 21:14	•
Perfluorotetradecanoic acid (PFTeA)	0.046	J	0.24	0.044	ug/Kg	₩	11/02/21 18:31	11/03/21 21:14	
Perfluorobutanesulfonic acid (PFBS)	ND		0.24	0.045	ug/Kg	₩	11/02/21 18:31	11/03/21 21:14	
Perfluorohexanesulfonic acid (PFHxS)	ND		0.24	0.035	ug/Kg	₩	11/02/21 18:31	11/03/21 21:14	•
Perfluorooctanesulfonic acid (PFOS)	ND		0.24	0.051	ug/Kg	₩	11/02/21 18:31	11/03/21 21:14	
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.24	0.027	ug/Kg	☼	11/02/21 18:31	11/03/21 21:14	
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.24		ug/Kg	₩	11/02/21 18:31	11/03/21 21:14	•
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.24	0.049	ug/Kg		11/02/21 18:31	11/03/21 21:14	
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.24	0.037	ug/Kg	₩	11/02/21 18:31	11/03/21 21:14	,
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.24	0.047	ug/Kg	₩	11/02/21 18:31	11/03/21 21:14	,
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	124		50 - 150				11/02/21 18:31	11/03/21 21:14	
13C4 PFHpA	108		50 - 150				11/02/21 18:31	11/03/21 21:14	
13C4 PFOA	107		50 - 150				11/02/21 18:31	11/03/21 21:14	
13C5 PFNA	98		50 - 150				11/02/21 18:31	11/03/21 21:14	
13C2 PFDA	109		50 - 150				11/02/21 18:31	11/03/21 21:14	
13C2 PFUnA	116		50 - 150				11/02/21 18:31	11/03/21 21:14	
13C2 PFDoA	117		50 - 150				11/02/21 18:31	11/03/21 21:14	
13C2 PFTeDA	109		50 - 150				11/02/21 18:31	11/03/21 21:14	
13C3 PFBS	122		50 - 150				11/02/21 18:31	11/03/21 21:14	
18O2 PFHxS	97		50 - 150				11/02/21 18:31	11/03/21 21:14	
13C4 PFOS	103		50 - 150				11/02/21 18:31	11/03/21 21:14	
d3-NMeFOSAA	129		50 - 150				11/02/21 18:31	11/03/21 21:14	
13C3 HFPO-DA	112		50 - 150				11/02/21 18:31	11/03/21 21:14	
Method: EPA 537(Mod) - PFAS				BATC!	Unit	ъ	Dronovad	Analyza	Dil E-
Analyte N-ethylperfluorooctanesulfonamidoac	ND	Qualifier	RL 0.24		Unit ug/Kg	<u>D</u>	Prepared 11/02/21 18:31	Analyzed 11/05/21 06:29	Dil Fa
etic acid (NEtFOSAA)	ND		0.24	0.057	ug/Kg	₩	11/02/21 16.31	11/05/21 06:29	
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
d5-NEtFOSAA	104		50 - 150				11/02/21 18:31	11/05/21 06:29	
General Chemistry									
Analyte		Qualifier	— RL 0.1	MDL 0.1	Unit	D	Prepared	Analyzed	Dil Fa
Percent Moisture	18.6							11/01/21 16:00	

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Client: Shannon & Wilson, Inc Project/Site: SC Soil

**Percent Solids** 

Client Sample ID: 21GST-MW21-02

Lab Sample ID: 320-81054-6 Date Collected: 10/25/21 17:35 **Matrix: Solid** Date Received: 10/29/21 15:04

Percent Solids: 74.7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND	Qualifier	0.26	0.041	ug/Kg			11/03/21 21:24	1
Perfluoroheptanoic acid (PFHpA)	ND		0.26		ug/Kg		11/02/21 18:31	11/03/21 21:24	1
Perfluorooctanoic acid (PFOA)	ND		0.26		ug/Kg			11/03/21 21:24	1
Perfluorononanoic acid (PFNA)	ND		0.26		ug/Kg			11/03/21 21:24	· · · · · · · · · · · · · · · · · · ·
Perfluorodecanoic acid (PFDA)	ND.		0.26		ug/Kg	₩		11/03/21 21:24	. 1
Perfluoroundecanoic acid (PFUnA)	ND.		0.26		ug/Kg	₩		11/03/21 21:24	1
Perfluorododecanoic acid (PFDoA)	ND		0.26		ug/Kg			11/03/21 21:24	· · · · · · · · · · · · · · · · · · ·
Perfluorotridecanoic acid (PFTriA)	ND ND		0.26		ug/Kg ug/Kg	₩		11/03/21 21:24	1
Perfluorotetradecanoic acid (PFTeA)	ND ND		0.26		ug/Kg ug/Kg			11/03/21 21:24	1
Perfluorobutanesulfonic acid (PFBS)						<u>.</u> .		11/03/21 21:24	
, ,	ND		0.26		ug/Kg				1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.26		ug/Kg	<b>‡</b>		11/03/21 21:24	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.26		ug/Kg			11/03/21 21:24	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.26		ug/Kg			11/03/21 21:24	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.26		ug/Kg	₽		11/03/21 21:24	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.26		ug/Kg			11/03/21 21:24	
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.26	0.041	ug/Kg	≎	11/02/21 18:31	11/03/21 21:24	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.26	0.051	ug/Kg	₩	11/02/21 18:31	11/03/21 21:24	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	137		50 - 150				11/02/21 18:31	11/03/21 21:24	1
13C4 PFHpA	116		50 - 150				11/02/21 18:31	11/03/21 21:24	1
13C4 PFOA	109		50 - 150				11/02/21 18:31	11/03/21 21:24	
13C5 PFNA	118		50 - 150				11/02/21 18:31	11/03/21 21:24	
13C2 PFDA	111		50 - 150				11/02/21 18:31	11/03/21 21:24	
13C2 PFUnA	119		50 - 150				11/02/21 18:31	11/03/21 21:24	
13C2 PFDoA	133		50 - 150				11/02/21 18:31	11/03/21 21:24	
13C2 PFTeDA	119		50 <sub>-</sub> 150				11/02/21 18:31	11/03/21 21:24	
13C3 PFBS	143		50 <sub>-</sub> 150				11/02/21 18:31	11/03/21 21:24	
18O2 PFHxS	108		50 - 150				11/02/21 18:31	11/03/21 21:24	
13C4 PFOS	113		50 <sub>-</sub> 150				11/02/21 18:31	11/03/21 21:24	
d3-NMeFOSAA	144		50 - 150					11/03/21 21:24	
13C3 HFPO-DA	113		50 - 150					11/03/21 21:24	
Method: EPA 537(Mod) - PFAS	for QSM 5	.3, Table B	-15 - RA						
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.26	0.063	ug/Kg	₩	11/02/21 18:31	11/05/21 06:39	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	97		50 - 150				11/02/21 18:31		1
General Chemistry							_		
Analyte		Qualifier	RL _		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	25.3		0.1	0.1	%			11/01/21 16:00	1

11/01/21 16:00

11/8/2021

0.1

0.1 %

74.7

Job ID: 320-81054-1

Client: Shannon & Wilson, Inc Project/Site: SC Soil

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15

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

			Perce	ent Isotope	Dilution Re	covery (Ac	ceptance L	imits)	
		PFHxA	C4PFHA	PFOA	PFNA	PFDA	PFUnA	PFDoA	PFTDA
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)
320-81054-1	21GST-MW22-01	110	106	111	113	115	123	124	129
320-81054-1 MS	21GST-MW22-01	105	103	110	107	111	110	121	129
320-81054-1 MSD	21GST-MW22-01	127	111	103	109	104	117	128	118
320-81054-2	21GST-MW22-02	109	96	102	105	104	114	110	118
320-81054-3	21GST-MW24-01	104	92	103	105	104	124	128	116
320-81054-4	21GST-MW24-02	110	104	98	96	100	103	105	105
320-81054-5	21GST-MW21-01	124	108	107	98	109	116	117	109
320-81054-6	21GST-MW21-02	137	116	109	118	111	119	133	119
LCS 320-539413/2-A	Lab Control Sample	100	94	95	98	105	108	105	111
MB 320-539413/1-A	Method Blank	110	100	108	107	107	124	120	127
			Perce	ent Isotope	Dilution Re	covery (Ac	ceptance L	imits)	
		C3PFBS	PFHxS	PFOS	d3NMFOS	HFPODA		·	
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)			
320-81054-1	21GST-MW22-01	133	96	111	137	112			
320-81054-1 MS	21GST-MW22-01	119	95	103	124	102			
320-81054-1 MSD	21GST-MW22-01	129	98	109	136	101			
320-81054-2	21GST-MW22-02	125	92	103	133	98			
320-81054-3	21GST-MW24-01	112	92	105	124	89			
320-81054-4	21GST-MW24-02	125	93	95	112	97			
320-81054-5	21GST-MW21-01	122	97	103	129	112			
320-81054-6	21GST-MW21-02	143	108	113	144	113			
LCS 320-539413/2-A	Lab Control Sample	117	90	100	112	103			
MB 320-539413/1-A	Method Blank	133	99	105	130	100			

#### Surrogate Legend

PFHxA = 13C2 PFHxA

C4PFHA = 13C4 PFHpA

PFOA = 13C4 PFOA

PFNA = 13C5 PFNA

PFDA = 13C2 PFDA

PFUnA = 13C2 PFUnA

PFDoA = 13C2 PFDoA

PFTDA = 13C2 PFTeDA

C3PFBS = 13C3 PFBS PFHxS = 18O2 PFHxS

PFOS = 13C4 PFOS

d3NMFOS = d3-NMeFOSAA

HFPODA = 13C3 HFPO-DA

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15

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

		Percent Isotope Dilution Recovery (Acceptance Limits)						
		d5NEFOS						
Lab Sample ID	Client Sample ID	(50-150)						
320-81054-1 - RA	21GST-MW22-01	111						
320-81054-1 MS - RA	21GST-MW22-01	107						
320-81054-1 MSD - RA	21GST-MW22-01	93						
320-81054-2 - RA	21GST-MW22-02	104						
320-81054-3 - RA	21GST-MW24-01	98						

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## **Isotope Dilution Summary**

Client: Shannon & Wilson, Inc Job ID: 320-81054-1

Project/Site: SC Soil

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

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

			Percent Isotope Dilution Recovery (Acceptance Limits)
		d5NEFOS	
Lab Sample ID	Client Sample ID	(50-150)	
320-81054-4 - RA	21GST-MW24-02	94	
320-81054-5 - RA	21GST-MW21-01	104	
320-81054-6 - RA	21GST-MW21-02	97	
_CS 320-539413/2-A - RA	Lab Control Sample	88	
MB 320-539413/1-A - RA	Method Blank	105	
Surrogate Legend			

Client: Shannon & Wilson, Inc Job ID: 320-81054-1

Project/Site: SC Soil

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15

Lab Sample ID: MB 320-539413/1-A
Matrix: Solid
Analysis Batch: 539660
MB MB

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 539413

	IVID	IVID							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.031	ug/Kg		11/02/21 18:31	11/03/21 19:51	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.038	ug/Kg		11/02/21 18:31	11/03/21 19:51	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.053	ug/Kg		11/02/21 18:31	11/03/21 19:51	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.022	ug/Kg		11/02/21 18:31	11/03/21 19:51	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.048	ug/Kg		11/02/21 18:31	11/03/21 19:51	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.042	ug/Kg		11/02/21 18:31	11/03/21 19:51	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.030	ug/Kg		11/02/21 18:31	11/03/21 19:51	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.021	ug/Kg		11/02/21 18:31	11/03/21 19:51	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.037	ug/Kg		11/02/21 18:31	11/03/21 19:51	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.038	ug/Kg		11/02/21 18:31	11/03/21 19:51	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.029	ug/Kg		11/02/21 18:31	11/03/21 19:51	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.20	0.043	ug/Kg		11/02/21 18:31	11/03/21 19:51	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg		11/02/21 18:31	11/03/21 19:51	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.20	0.035	ug/Kg		11/02/21 18:31	11/03/21 19:51	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.20	0.041	ug/Kg		11/02/21 18:31	11/03/21 19:51	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.20	0.031	ug/Kg		11/02/21 18:31	11/03/21 19:51	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.039	ug/Kg		11/02/21 18:31	11/03/21 19:51	1
	MD	MD							

(ADONA)					
	MB MB				
Isotope Dilution	%Recovery Qualifie	er Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	110	50 - 150	11/02/21 18:31	11/03/21 19:51	1
13C4 PFHpA	100	50 <sub>-</sub> 150	11/02/21 18:31	11/03/21 19:51	1
13C4 PFOA	108	50 - 150	11/02/21 18:31	11/03/21 19:51	1
13C5 PFNA	107	50 - 150	11/02/21 18:31	11/03/21 19:51	1
13C2 PFDA	107	50 <sub>-</sub> 150	11/02/21 18:31	11/03/21 19:51	1
13C2 PFUnA	124	50 - 150	11/02/21 18:31	11/03/21 19:51	1
13C2 PFDoA	120	50 - 150	11/02/21 18:31	11/03/21 19:51	1
13C2 PFTeDA	127	50 - 150	11/02/21 18:31	11/03/21 19:51	1
13C3 PFBS	133	50 <sub>-</sub> 150	11/02/21 18:31	11/03/21 19:51	1
1802 PFHxS	99	50 - 150	11/02/21 18:31	11/03/21 19:51	1
13C4 PFOS	105	50 <sub>-</sub> 150	11/02/21 18:31	11/03/21 19:51	1
d3-NMeFOSAA	130	50 <sub>-</sub> 150	11/02/21 18:31	11/03/21 19:51	1
13C3 HFPO-DA	100	50 - 150	11/02/21 18:31	11/03/21 19:51	1

Lab Sample ID: LCS 320-539413/2-A

**Matrix: Solid** 

**Analysis Batch: 539660** 

Client Sample ID:	Lab Control Sample
	Dune Trunce Total/NIA

Prep Type: Total/NA Prep Batch: 539413

_	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorohexanoic acid (PFHxA)	2.00	1.90		ug/Kg		95	70 - 132	
Perfluoroheptanoic acid (PFHpA)	2.00	1.87		ug/Kg		93	71 - 131	
Perfluorooctanoic acid (PFOA)	2.00	1.77		ug/Kg		89	69 - 133	
Perfluorononanoic acid (PFNA)	2.00	1.82		ug/Kg		91	72 - 129	
Perfluorodecanoic acid (PFDA)	2.00	1.74		ug/Kg		87	69 - 133	
Perfluoroundecanoic acid	2.00	1.77		ug/Kg		89	64 - 136	
(PFUnA)								

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Client: Shannon & Wilson, Inc

Project/Site: SC Soil

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Samp	le ID:	LCS	320-5	39413/2-A
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**Matrix: Solid** 

Analysis Batch: 539660

**Client Sample ID: Lab Control Sample** 

**Prep Type: Total/NA** 

Job ID: 320-81054-1

**Prep Batch: 539413** 

•	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorododecanoic acid (PFDoA)	2.00	1.89		ug/Kg		94	69 - 135	
Perfluorotridecanoic acid (PFTriA)	2.00	2.11		ug/Kg		106	66 - 139	
Perfluorotetradecanoic acid (PFTeA)	2.00	1.63		ug/Kg		82	69 - 133	
Perfluorobutanesulfonic acid (PFBS)	1.77	1.43		ug/Kg		81	72 - 128	
Perfluorohexanesulfonic acid (PFHxS)	1.82	1.66		ug/Kg		91	67 - 130	
Perfluorooctanesulfonic acid (PFOS)	1.86	1.68		ug/Kg		90	68 - 136	
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	2.00	1.78		ug/Kg		89	63 - 144	
9-Chlorohexadecafluoro-3-oxan onane-1-sulfonic acid	1.86	1.72		ug/Kg		92	75 - 135	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	2.00	1.88		ug/Kg		94	77 - 137	
11-Chloroeicosafluoro-3-oxaund ecane-1-sulfonic acid	1.88	1.70		ug/Kg		90	76 - 136	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.88	1.80		ug/Kg		95	79 - 139	

LCS LCS

	LUS	LUS	
Isotope Dilution	%Recovery	Qualifier	Limits
13C2 PFHxA	100		50 - 150
13C4 PFHpA	94		50 <sub>-</sub> 150
13C4 PFOA	95		50 - 150
13C5 PFNA	98		50 - 150
13C2 PFDA	105		50 - 150
13C2 PFUnA	108		50 <sub>-</sub> 150
13C2 PFDoA	105		50 - 150
13C2 PFTeDA	111		50 - 150
13C3 PFBS	117		50 - 150
1802 PFHxS	90		50 - 150
13C4 PFOS	100		50 - 150
d3-NMeFOSAA	112		50 - 150
13C3 HFPO-DA	103		50 - 150

Lab Sample ID: 320-81054-1 MS

**Matrix: Solid** 

Client Sample ID: 21GST-MW22-01

Prep Type: Total/NA

Prep Batch: 539413

Analysis Batch: 539660	Sample	Sample	Spike	MS	MS				Prep Batch: 539413 %Rec.
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Perfluorohexanoic acid (PFHxA)	ND		2.29	2.07		ug/Kg	☼	90	70 - 132
Perfluoroheptanoic acid (PFHpA)	ND		2.29	2.17		ug/Kg	≎	95	71 - 131
Perfluorooctanoic acid (PFOA)	ND		2.29	1.85		ug/Kg	☼	81	69 - 133
Perfluorononanoic acid (PFNA)	ND		2.29	2.01		ug/Kg	≎	88	72 - 129
Perfluorodecanoic acid (PFDA)	ND		2.29	2.09		ug/Kg	≎	91	69 - 133
Perfluoroundecanoic acid (PFUnA)	ND		2.29	2.25		ug/Kg	₩	98	64 - 136
Perfluorododecanoic acid (PFDoA)	ND		2.29	2.08		ug/Kg	☼	91	69 - 135

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Client: Shannon & Wilson, Inc Job ID: 320-81054-1

Project/Site: SC Soil

#### Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: 320-81054-1 MS Client Sample ID: 21GST-MW22-01 **Matrix: Solid** Prep Type: Total/NA Analysis Batch: 539660 **Prep Batch: 539413** MS MS %Rec. Sample Sample Spike

	oup.o	oup.o	Opino						/0.100.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorotridecanoic acid (PFTriA)	ND		2.29	2.21		ug/Kg	<u></u>	97	66 - 139	
Perfluorotetradecanoic acid (PFTeA)	ND		2.29	1.99		ug/Kg	₽	87	69 - 133	
Perfluorobutanesulfonic acid (PFBS)	ND		2.02	1.64		ug/Kg	≎	81	72 - 128	
Perfluorohexanesulfonic acid (PFHxS)	ND		2.08	2.03		ug/Kg	≎	97	67 - 130	
Perfluorooctanesulfonic acid (PFOS)	ND		2.12	1.96		ug/Kg	₽	92	68 - 136	
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	ND		2.29	2.17		ug/Kg	₽	95	63 - 144	
9-Chlorohexadecafluoro-3-oxan onane-1-sulfonic acid	ND		2.13	2.00		ug/Kg	≎	94	75 - 135	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		2.29	2.21		ug/Kg	₽	97	77 - 137	
11-Chloroeicosafluoro-3-oxaund ecane-1-sulfonic acid	ND		2.15	2.20		ug/Kg	₽	102	76 - 136	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.15	2.01		ug/Kg	₩	93	79 - 139	

MS MS Isotope Dilution Qualifier Limits %Recovery 13C2 PFHxA 105 50 - 150 13C4 PFHpA 103 50 - 150 13C4 PFOA 110 50 - 150 13C5 PFNA 107 50 - 150 13C2 PFDA 111 50 - 150 13C2 PFUnA 110 50 - 150 13C2 PFDoA 121 50 - 150 13C2 PFTeDA 50 - 150 129 13C3 PFBS 119 50 - 150 1802 PFHxS 95 50 - 150 13C4 PFOS 103 50 - 150 d3-NMeFOSAA 50 - 150 124 13C3 HFPO-DA 102 50 - 150

Lab Sample ID: 320-81054-1 MSD

**Matrix: Solid** 

Analysis Batch: 539660									Prep Ba	atch: 5	39413
-	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluorohexanoic acid (PFHxA)	ND		2.41	2.04		ug/Kg	<del>*</del>	85	70 - 132	1	30
Perfluoroheptanoic acid (PFHpA)	ND		2.41	2.05		ug/Kg	₩	85	71 - 131	6	30
Perfluorooctanoic acid (PFOA)	ND		2.41	2.05		ug/Kg	₩	85	69 - 133	10	30
Perfluorononanoic acid (PFNA)	ND		2.41	2.10		ug/Kg	☆	87	72 - 129	4	30
Perfluorodecanoic acid (PFDA)	ND		2.41	2.33		ug/Kg	₩	96	69 - 133	11	30
Perfluoroundecanoic acid	ND		2.41	2.21		ug/Kg	₩	92	64 - 136	2	30
(PFUnA)											
Perfluorododecanoic acid	ND		2.41	2.13		ug/Kg	₩	88	69 - 135	2	30
(PFDoA)											
Perfluorotridecanoic acid	ND		2.41	2.19		ug/Kg	₽	91	66 - 139	1	30
(PFTriA)											

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Client Sample ID: 21GST-MW22-01

Prep Type: Total/NA

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Client: Shannon & Wilson, Inc Job ID: 320-81054-1

Project/Site: SC Soil

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: 320-81054-1 MSD Client Sample ID: 21GST-MW22-01

**Matrix: Solid** 

acid (ADONA)

Analysis Batch: 539660

Prep Type: Total/NA

**Prep Batch: 539413** 

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluorotetradecanoic acid (PFTeA)	ND		2.41	2.07		ug/Kg	<del>*</del>	86	69 - 133	4	30
Perfluorobutanesulfonic acid (PFBS)	ND		2.13	1.79		ug/Kg	₩	84	72 - 128	9	30
Perfluorohexanesulfonic acid (PFHxS)	ND		2.19	2.06		ug/Kg	₩	94	67 - 130	2	30
Perfluorooctanesulfonic acid (PFOS)	ND		2.24	2.01		ug/Kg	₩	90	68 - 136	2	30
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	ND		2.41	2.09		ug/Kg	₩	87	63 - 144	3	30
9-Chlorohexadecafluoro-3-oxan onane-1-sulfonic acid	ND		2.25	1.98		ug/Kg	₩	88	75 - 135	1	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		2.41	2.45		ug/Kg	₩	101	77 - 137	10	30
11-Chloroeicosafluoro-3-oxaund ecane-1-sulfonic acid	ND		2.27	2.12		ug/Kg	₩	93	76 - 136	4	30
4,8-Dioxa-3H-perfluorononanoic	ND		2.27	2.13		ug/Kg	₽	94	79 - 139	6	30

MSD MSD

	MSD	MSD	
Isotope Dilution	%Recovery	Qualifier	Limits
13C2 PFHxA	127		50 - 150
13C4 PFHpA	111		50 - 150
13C4 PFOA	103		50 - 150
13C5 PFNA	109		50 - 150
13C2 PFDA	104		50 - 150
13C2 PFUnA	117		50 - 150
13C2 PFDoA	128		50 - 150
13C2 PFTeDA	118		50 - 150
13C3 PFBS	129		50 - 150
1802 PFHxS	98		50 - 150
13C4 PFOS	109		50 - 150
d3-NMeFOSAA	136		50 - 150
13C3 HFPO-DA	101		50 - 150

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 - RA

Lab Sample ID: MB 320-539413/1-A

**Matrix: Solid** 

**Analysis Batch: 540057** 

**Client Sample ID: Method Blank** 

Prep Type: Total/NA **Prep Batch: 539413** 

MB MB Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac N-ethylperfluorooctanesulfonamidoac ND 0.20 0.048 ug/Kg 11/02/21 18:31 11/05/21 05:06 etic acid (NEtFOSAA) - RA

MB MB

Isotope Dilution %Recovery Qualifier Limits Prepared Analyzed Dil Fac d5-NEtFOSAA - RA 105 50 - 150 11/02/21 18:31 11/05/21 05:06

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Spike

Limits

50 - 150

Spike

Added

2.29

Client: Shannon & Wilson, Inc Job ID: 320-81054-1

Project/Site: SC Soil

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 - RA (Continued)

Lab Sample ID: LCS 320-539413/2-A **Matrix: Solid** 

Analysis Batch: 540057

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 539413 %Rec.

Limits

Added Result Qualifier %Rec Unit D 2.00 1.68 ug/Kg 84 61 - 139

LCS LCS

MS MS

1.96

Result Qualifier

Unit

ug/Kg

D

N-ethylperfluorooctanesulfonami doacetic acid (NEtFOSAA) - RA

Lab Sample ID: 320-81054-1 MS

Analyte

LCS LCS Isotope Dilution %Recovery Qualifier d5-NEtFOSAA - RA 88

Client Sample ID: 21GST-MW22-01

Prep Type: Total/NA

**Prep Batch: 539413** 

%Rec. %Rec Limits 86 61 - 139

N-ethylperfluorooctanesulfonami doacetic acid (NEtFOSAA) - RA

**Analysis Batch: 540057** 

MS MS

ND

Sample Sample

Result Qualifier

Isotope Dilution Qualifier Limits %Recovery d5-NEtFOSAA - RA 107 50 - 150

Client Sample ID: 21GST-MW22-01 Lab Sample ID: 320-81054-1 MSD

**Matrix: Solid** 

**Matrix: Solid** 

Analyte

Analysis Batch: 540057

Prep Type: Total/NA

**Prep Batch: 539413** 

RPD MSD MSD %Rec. Sample Sample Spike Result Qualifier Added Result Qualifier Unit D Limits RPD Analyte %Rec Limit ND 2.41 2.18 <u>~</u> 91 61 - 139 N-ethylperfluorooctanesulfonami ug/Kg 11

doacetic acid (NEtFOSAA) - RA

MSD MSD

Isotope Dilution %Recovery Qualifier Limits d5-NEtFOSAA - RA 50 - 150

Method: D 2216 - Percent Moisture

Lab Sample ID: 320-81054-1 DU Client Sample ID: 21GST-MW22-01 **Prep Type: Total/NA** 

**Matrix: Solid** 

**Analysis Batch: 538967** 

DU DU **RPD** Sample Sample Result Qualifier **RPD** Analyte Result Qualifier Unit D Limit Percent Moisture 19.8 % 3 19.1 20 80.2 80.9 Percent Solids % 0.8 20

# **QC Association Summary**

Client: Shannon & Wilson, Inc Job ID: 320-81054-1 Project/Site: SC Soil

LCMS

**Prep Batch: 539413** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81054-1 - RA	21GST-MW22-01	Total/NA	Solid	SHAKE	
320-81054-1	21GST-MW22-01	Total/NA	Solid	SHAKE	
320-81054-2 - RA	21GST-MW22-02	Total/NA	Solid	SHAKE	
320-81054-2	21GST-MW22-02	Total/NA	Solid	SHAKE	
320-81054-3 - RA	21GST-MW24-01	Total/NA	Solid	SHAKE	
20-81054-3	21GST-MW24-01	Total/NA	Solid	SHAKE	
20-81054-4 - RA	21GST-MW24-02	Total/NA	Solid	SHAKE	
320-81054-4	21GST-MW24-02	Total/NA	Solid	SHAKE	
20-81054-5 - RA	21GST-MW21-01	Total/NA	Solid	SHAKE	
20-81054-5	21GST-MW21-01	Total/NA	Solid	SHAKE	
320-81054-6 - RA	21GST-MW21-02	Total/NA	Solid	SHAKE	
20-81054-6	21GST-MW21-02	Total/NA	Solid	SHAKE	
MB 320-539413/1-A - RA	Method Blank	Total/NA	Solid	SHAKE	
/IB 320-539413/1-A	Method Blank	Total/NA	Solid	SHAKE	
CS 320-539413/2-A - RA	Lab Control Sample	Total/NA	Solid	SHAKE	
.CS 320-539413/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
20-81054-1 MS - RA	21GST-MW22-01	Total/NA	Solid	SHAKE	
320-81054-1 MS	21GST-MW22-01	Total/NA	Solid	SHAKE	
320-81054-1 MSD - RA	21GST-MW22-01	Total/NA	Solid	SHAKE	
320-81054-1 MSD	21GST-MW22-01	Total/NA	Solid	SHAKE	

**Analysis Batch: 539660** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81054-1	21GST-MW22-01	Total/NA	Solid	EPA 537(Mod)	539413
320-81054-2	21GST-MW22-02	Total/NA	Solid	EPA 537(Mod)	539413
320-81054-3	21GST-MW24-01	Total/NA	Solid	EPA 537(Mod)	539413
320-81054-4	21GST-MW24-02	Total/NA	Solid	EPA 537(Mod)	539413
320-81054-5	21GST-MW21-01	Total/NA	Solid	EPA 537(Mod)	539413
320-81054-6	21GST-MW21-02	Total/NA	Solid	EPA 537(Mod)	539413
MB 320-539413/1-A	Method Blank	Total/NA	Solid	EPA 537(Mod)	539413
LCS 320-539413/2-A	Lab Control Sample	Total/NA	Solid	EPA 537(Mod)	539413
320-81054-1 MS	21GST-MW22-01	Total/NA	Solid	EPA 537(Mod)	539413
320-81054-1 MSD	21GST-MW22-01	Total/NA	Solid	EPA 537(Mod)	539413

**Analysis Batch: 540057** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81054-1 - RA	21GST-MW22-01	Total/NA	Solid	EPA 537(Mod)	539413
320-81054-2 - RA	21GST-MW22-02	Total/NA	Solid	EPA 537(Mod)	539413
320-81054-3 - RA	21GST-MW24-01	Total/NA	Solid	EPA 537(Mod)	539413
320-81054-4 - RA	21GST-MW24-02	Total/NA	Solid	EPA 537(Mod)	539413
320-81054-5 - RA	21GST-MW21-01	Total/NA	Solid	EPA 537(Mod)	539413
320-81054-6 - RA	21GST-MW21-02	Total/NA	Solid	EPA 537(Mod)	539413
MB 320-539413/1-A - RA	Method Blank	Total/NA	Solid	EPA 537(Mod)	539413
LCS 320-539413/2-A - RA	Lab Control Sample	Total/NA	Solid	EPA 537(Mod)	539413
320-81054-1 MS - RA	21GST-MW22-01	Total/NA	Solid	EPA 537(Mod)	539413
320-81054-1 MSD - RA	21GST-MW22-01	Total/NA	Solid	EPA 537(Mod)	539413

# **QC Association Summary**

Client: Shannon & Wilson, Inc Job ID: 320-81054-1

Project/Site: SC Soil

## **General Chemistry**

#### Analysis Batch: 538967

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81054-1	21GST-MW22-01	Total/NA	Solid	D 2216	
320-81054-2	21GST-MW22-02	Total/NA	Solid	D 2216	
320-81054-3	21GST-MW24-01	Total/NA	Solid	D 2216	
320-81054-4	21GST-MW24-02	Total/NA	Solid	D 2216	
320-81054-5	21GST-MW21-01	Total/NA	Solid	D 2216	
320-81054-6	21GST-MW21-02	Total/NA	Solid	D 2216	
320-81054-1 DU	21GST-MW22-01	Total/NA	Solid	D 2216	

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Job ID: 320-81054-1

Client: Shannon & Wilson, Inc Project/Site: SC Soil

Client Sample ID: 21GST-MW22-01

Date Collected: 10/25/21 10:10 Date Received: 10/29/21 15:04 Lab Sample ID: 320-81054-1

**Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			538967	11/01/21 16:00	TCS	TAL SAC

Client Sample ID: 21GST-MW22-01

Date Collected: 10/25/21 10:10 Date Received: 10/29/21 15:04

Lab Sample ID: 320-81054-1 Matrix: Solid Percent Solids: 80.2

Prep Type Total/NA	Batch Type Prep	Batch Method SHAKE	Run RA	Dil Factor	Initial Amount 5.35 g	Final Amount 10.0 mL	Batch Number 539413	Prepared or Analyzed 11/02/21 18:31	Analyst AM	Lab TAL SAC
Total/NA	Analysis	EPA 537(Mod)	RA	1			540057	11/05/21 05:27	AF	TAL SAC
Total/NA Total/NA	Prep Analysis	SHAKE EPA 537(Mod)		1	5.35 g	10.0 mL	539413 539660	11/02/21 18:31 11/03/21 20:12	AM D1R	TAL SAC TAL SAC

Client Sample ID: 21GST-MW22-02

Date Collected: 10/25/21 12:20 Date Received: 10/29/21 15:04

Lab Sample ID: 320-81054-2 Matrix: Solid

Batch Batch Dil Initial Final Batch Prepared Prep Type Method Amount Number or Analyzed Analyst Type Run Factor **Amount** Lab Total/NA Analysis D 2216 538967 11/01/21 16:00 TCS TAL SAC

Client Sample ID: 21GST-MW22-02

Date Collected: 10/25/21 12:20 Date Received: 10/29/21 15:04

Lab Sample ID: 320-81054-2 Matrix: Solid Percent Solids: 82.3

Prep Type Total/NA Total/NA	Batch Type Prep Analysis	Batch Method SHAKE EPA 537(Mod)	Run RA RA	Pactor 1	Initial Amount 5.32 g	Final Amount 10.0 mL	Batch Number 539413 540057	Prepared or Analyzed 11/02/21 18:31 11/05/21 05:58	Analyst AM AF	Lab TAL SAC TAL SAC
Total/NA Total/NA	Prep Analysis	SHAKE EPA 537(Mod)		1	5.32 g	10.0 mL	539413 539660	11/02/21 18:31 11/03/21 20:43	AM D1R	TAL SAC TAL SAC

Client Sample ID: 21GST-MW24-01

Lab Sample ID: 320-81054-3 Date Collected: 10/24/21 15:00 **Matrix: Solid** Date Received: 10/29/21 15:04

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			538967	11/01/21 16:00	TCS	TAL SAC

Client Sample ID: 21GST-MW24-01

Lab Sample ID: 320-81054-3 Date Collected: 10/24/21 15:00 **Matrix: Solid** Date Received: 10/29/21 15:04 Percent Solids: 88.6

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE	RA		5.29 g	10.0 mL	539413	11/02/21 18:31	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)	RA	1			540057	11/05/21 06:08	AF	TAL SAC
Total/NA	Prep	SHAKE			5.29 g	10.0 mL	539413	11/02/21 18:31	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			539660	11/03/21 20:53	D1R	TAL SAC

Eurofins TestAmerica, Sacramento

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11/8/2021

Job ID: 320-81054-1

Client: Shannon & Wilson, Inc Project/Site: SC Soil

Client Sample ID: 21GST-MW24-02

Lab Sample ID: 320-81054-4 Date Collected: 10/24/21 16:50

**Matrix: Solid** 

Date Received: 10/29/21 15:04

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			538967	11/01/21 16:00	TCS	TAL SAC

Client Sample ID: 21GST-MW24-02

Lab Sample ID: 320-81054-4 Date Collected: 10/24/21 16:50 **Matrix: Solid** Date Received: 10/29/21 15:04 Percent Solids: 84.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
				1 40101						
Total/NA	Prep	SHAKE	RA		5.21 g	10.0 mL	539413	11/02/21 18:31	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)	RA	1			540057	11/05/21 06:19	AF	TAL SAC
Total/NA	Prep	SHAKE			5.21 g	10.0 mL	539413	11/02/21 18:31	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			539660	11/03/21 21:04	D1R	TAL SAC

Client Sample ID: 21GST-MW21-01

Lab Sample ID: 320-81054-5 Date Collected: 10/25/21 15:45 **Matrix: Solid** 

Date Received: 10/29/21 15:04

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			538967	11/01/21 16:00	TCS	TAL SAC

Client Sample ID: 21GST-MW21-01

Lab Sample ID: 320-81054-5 Date Collected: 10/25/21 15:45 **Matrix: Solid** Date Received: 10/29/21 15:04 Percent Solids: 81.4

Prep Type Total/NA Total/NA	Batch Type Prep Analysis	Batch Method SHAKE EPA 537(Mod)	Run RA RA	Factor	Initial Amount 5.15 g	Final Amount 10.0 mL	Batch Number 539413 540057	Prepared or Analyzed 11/02/21 18:31 11/05/21 06:29	Analyst AM AF	Lab TAL SAC TAL SAC
Total/NA Total/NA	Prep Analysis	SHAKE EPA 537(Mod)		1	5.15 g	10.0 mL	539413 539660	11/02/21 18:31 11/03/21 21:14	AM D1R	TAL SAC TAL SAC

Client Sample ID: 21GST-MW21-02

Date Collected: 10/25/21 17:35 **Matrix: Solid** 

Date Received: 10/29/21 15:04

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			538967	11/01/21 16:00	TCS	TAL SAC

Client Sample ID: 21GST-MW21-02

Date Collected: 10/25/21 17:35 Date Received: 10/29/21 15:04 Percent Solids: 74.7

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE	RA		5.12 g	10.0 mL	539413	11/02/21 18:31	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)	RA	1			540057	11/05/21 06:39	AF	TAL SAC
Total/NA	Prep	SHAKE			5.12 g	10.0 mL	539413	11/02/21 18:31	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			539660	11/03/21 21:24	D1R	TAL SAC

Eurofins TestAmerica, Sacramento

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Lab Sample ID: 320-81054-6

11/8/2021

# **Lab Chronicle**

Client: Shannon & Wilson, Inc Job ID: 320-81054-1

Project/Site: SC Soil

#### **Laboratory References:**

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

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# **Accreditation/Certification Summary**

Client: Shannon & Wilson, Inc Job ID: 320-81054-1

Project/Site: SC Soil

# **Laboratory: Eurofins TestAmerica, Sacramento**

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

Authority		rogram	Identification Number	Expiration Date
Alaska (UST)	S	State	17-020	02-20-24
The following analyte the agency does not Analysis Method		oort, but the laboratory is r Matrix	not certified by the governing authority.  Analyte	This list may include analytes for which
D 2216	<u> </u>	Solid	Percent Moisture	
D 2216		Solid	Percent Solids	

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# **Method Summary**

Client: Shannon & Wilson, Inc

Project/Site: SC Soil

Job ID: 320-81054-1

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.3, Table B-15	EPA	TAL SAC
D 2216	Percent Moisture	ASTM	TAL SAC
SHAKE	Shake Extraction with Ultrasonic Bath Extraction	SW846	TAL SAC

#### **Protocol References:**

ASTM = ASTM International

EPA = US Environmental Protection Agency

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

#### **Laboratory References:**

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

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# **Sample Summary**

Client: Shannon & Wilson, Inc Job ID: 320-81054-1

Project/Site: SC Soil

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-81054-1	21GST-MW22-01	Solid	10/25/21 10:10	10/29/21 15:04
320-81054-2	21GST-MW22-02	Solid	10/25/21 12:20	10/29/21 15:04
320-81054-3	21GST-MW24-01	Solid	10/24/21 15:00	10/29/21 15:04
320-81054-4	21GST-MW24-02	Solid	10/24/21 16:50	10/29/21 15:04
320-81054-5	21GST-MW21-01	Solid	10/25/21 15:45	10/29/21 15:04
320-81054-6	21GST-MW21-02	Solid	10/25/21 17:35	10/29/21 15:04

11/8/2021

Client: Shannon & Wilson, Inc

Job Number: 320-81054-1

Login Number: 81054

List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Cahill, Nicholas P

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

# **Laboratory Data Review Checklist**

Completed By:
Justin Risley
Title:
Engineering Staff
Date:
November 11, 2021
Consultant Firm:
Shannon & Wilson, Inc.
Laboratory Name:
Eurofins / TestAmerica Laboratories, Inc. (TestAmerica)
Laboratory Report Number:
320-81054-1
Laboratory Report Date:
11/08/2021
CS Site Name:
DOT&PF Gustavus Airport Statewide PFAS
ADEC File Number:
2569.38.033
Hazard Identification Number:
26981

May 2020 Page 1

Laboratory Report Date:	
Note: Any N/A or No box checked must have an explanation in the comments box.	
1. <u>Laboratory</u>	
<ul> <li>a. Did an ADEC CS approved laboratory receive and <u>perform</u> all the submitted sample analyses?</li> <li>Yes⊠ No□ N/A□ Comments:</li> </ul>	
TestAmerica/Eurofins Laboratories West Sacramento, CA is CS certified for the analysis of perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) by method 537. The laboratory is also certified under the Department of Defense Environmental Laboratory Accreditation Program (DoD ELAP) for the requested analyses.	
b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?	
$Yes \square No \square N/A \boxtimes Comments:$	
The samples were not transferred to a network laboratory or subcontracted out.	
2. <u>Chain of Custody (CoC)</u>	
<ul> <li>a. CoC information completed, signed, and dated (including released/received by)?</li> <li>Yes⊠ No□ N/A□ Comments:</li> </ul>	
b. Correct analyses requested?	
$Yes \boxtimes No \square N/A \square$ Comments:	
3. <u>Laboratory Sample Receipt Documentation</u>	
a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?	
$Yes \boxtimes No \square N/A \square$ Comments:	_
b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?	
$Yes \square No \square N/A \boxtimes Comments:$	_
Samples analyzed for PFAS do not require preservation other than temperature control.	
c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?	
$Yes \boxtimes No \square N/A \square$ Comments:	_
The sample receipt form noted the samples arrived in good condition.	

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320-81054-1
Laboratory Report Date:
d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?
$Yes \boxtimes No \square N/A \square$ Comments:
The sample receipt form indicates that the sampler was not identified on the COC. However, this note is an error because the sampler's initials are present and legible on the COC.
e. Data quality or usability affected?
Comments:
The data quality/usability was not affected.
4. <u>Case Narrative</u>
a. Present and understandable?
Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:
b. Discrepancies, errors, or QC failures identified by the lab?
$Yes \boxtimes No \square N/A \square$ Comments:
Method EPA 537(Mod): The transition mass ratio was above of the established ratio limit for Perfluorohexanoic acid (PFHxA) and Perfluorodecanoic acid (PFDA) in CCVL 320-539660/2 associated with this data set. This is indicated by the "R" flag in the raw data. As the flagged data is in control in the CCVL, there is no adverse impact to the quality of the field sample results.
c. Were all corrective actions documented?
$Yes \square No \square N/A \boxtimes Comments:$
No corrective actions were documented in the case narrative.
d. What is the effect on data quality/usability according to the case narrative?
Comments:
Per the case narrative, the sample results were not affected by the transition mass ratio failure exhibited by the CCVL.
5. <u>Samples Results</u>
a. Correct analyses performed/reported as requested on COC?
Yes⊠ No□ N/A□ Comments:

May 2020 Page 3

Laborate	ory Report Date:
b	b. All applicable holding times met?
	Yes⊠ No□ N/A□ Comments:
c	e. All soils reported on a dry weight basis?
	Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:
d	d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?
	Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:
e	e. Data quality or usability affected?
Т	The data quality/usability is not affected.
6. <u>QC S</u>	<u>Samples</u>
a	a. Method Blank
	i. One method blank reported per matrix, analysis and 20 samples?
	Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:
	<ul><li>ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?</li><li>Yes⊠ No□ N/A□ Comments:</li></ul>
	iii. If above LOQ or project specified objectives, what samples are affected?  Comments:
N	None; target PFAS were not detected in the method blank samples.
	iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Γ	Yes□ No□ N/A⊠ Comments:
(	Qualification was not required; see above.
	v. Data quality or usability affected?

Comments:

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The data quality/usability is not affected.

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# Laboratory Report Date:

b. Laboratory Control Sample/Duplicate (LCS/LCSD)
<ul> <li>i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)</li> </ul>
Yes⊠ No□ N/A□ Comments:
LCS samples were reported. See MS/MSD discussion for assessment of method precision.
ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?
Yes $\square$ No $\boxtimes$ N/A $\boxtimes$ Comments:
Metals/Inorganics analyses were not requested for this work order.
iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)  Yes⊠ No□ N/A□ Comments:
iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from LCS/LCSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)
Yes $\square$ No $\square$ N/A $\boxtimes$ Comments:
An LCSD was not reported with this work order. However, the laboratory analyzed MS/MSD samples to assess method precision.
v. If %R or RPD is outside of acceptable limits, what samples are affected?  Comments:
None; method accuracy was demonstrated to be within acceptable limits.
vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes $\square$ No $\square$ N/A $\boxtimes$ Comments:
Qualification of the data was not required; see above.
vii. Data quality or usability affected? (Use comment box to explain.)  Comments:
The data quality/usability is not affected.

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Laboratory Report Date:

c. Matrix Spike/Matrix Spike Duplicate (MS/MSD)  Note: Leave blank if not required for project
i. Organics – One MS/MSD reported per matrix, analysis and 20 samples?
Yes ⊠ No□ N/A□ Comments:
Tese Note NATE Comments.
ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?
Yes $\square$ No $\square$ N/A $\boxtimes$ Comments:
Metals/Inorganics analyses were not requested for this work order.
iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?
$Yes \boxtimes No \square N/A \square$ Comments:
iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from MS/MSD, and or sample/sample duplicate.
Yes⊠ No□ N/A□ Comments:
v. If %R or RPD is outside of acceptable limits, what samples are affected?  Comments:
None; method accuracy and precision were demonstrated to be within acceptable limits.
vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
$Yes \square No \square N/A \boxtimes Comments:$
The results did not require qualification; see above.
vii. Data quality or usability affected? (Use comment box to explain.)  Comments:
The data quality/usability is not affected.
d. Surrogates – Organics Only or Isotope Dilution Analytes (IDA) – Isotope Dilution Methods Only
<ul> <li>i. Are surrogate/IDA recoveries reported for organic analyses – field, QC and laboratory samples?</li> </ul>
Yes⊠ No□ N/A□ Comments:

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boratory Repor	t Date:
pı sa	ccuracy – All percent recoveries (%R) reported and within method or laboratory limits and roject specified objectives, if applicable? (AK Petroleum methods 50-150 %R for field amples and 60-120 %R for QC samples; all other analyses see the laboratory report pages)
Ye	$No \square N/A \square$ Comments:
	o the sample results with failed surrogate/IDA recoveries have data flags? If so, are the data ags clearly defined?
Ye	$S \square No \square N/A \boxtimes Comments:$
There wer	e no IDA recovery failures associated with this work order.
iv. I	Oata quality or usability affected?  Comments:
The data of	quality/usability is not affected.
(I	lanks ne trip blank reported per matrix, analysis and for each cooler containing volatile samples? f not, enter explanation below.) s   No N/A   Comments:
PFAS are	not volatile compounds. A trip blank is not required for the requested analysis.
(I	the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? f not, a comment explaining why must be entered below)  s \Boxtim No\Boxtim N/A\Boxtim Comments:
	nk is not required for the requested analysis.
iii. A	Ill results less than LOQ and project specified objectives?  Solution $N/A \boxtimes C$ Comments:
See above	
iv. I	f above LOQ or project specified objectives, what samples are affected?  Comments:
N/A; see a	above
v. D	Data quality or usability affected?

Comments:

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The data quality/usability was not affected.

320-81054-1

320-81054-1	
boratory Report Da	ate:
f. Field Dupl	licate ield duplicate submitted per matrix, analysis and 10 project samples?
Yes□	$No \boxtimes N/A \square$ Comments:
	es were not submitted with this work order. However, field duplicate samples were e frequency required by the project specifications.
ii. Subm	aitted blind to lab?
Yes□	No $\square$ N/A $\boxtimes$ Comments:
See above.	
	sion – All relative percent differences (RPD) less than specified project objectives? ommended: 30% water, 50% soil)  RPD (%) = Absolute value of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$
	Where $R_1$ = Sample Concentration $R_2$ = Field Duplicate Concentration
Yes□	$No \square N/A \boxtimes Comments:$
See above.	
iv. Data	quality or usability affected? (Use the comment box to explain why or why not.)  Comments:
The data quali	ity/usability was not affected.
g. Decontam below)?	ination or Equipment Blank (If not applicable, a comment stating why must be entered
Yes□	No $\square$ N/A $\boxtimes$ Comments:
	es were not collected with reusable equipment, so the prospect of foreign contaminants ced through equipment contamination is not plausible.
i. All re	sults less than LOQ and project specified objectives?
Yes□	No $\square$ N/A $\boxtimes$ Comments:
See above.	
ii. If abo	ove LOQ or project specified objectives, what samples are affected?  Comments:
N/A; see abov	re.
iii. Data	quality or usability affected?  Comments:
The data qual	ity/usability was not affected.

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# **Environment Testing America**

# **ANALYTICAL REPORT**

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

Laboratory Job ID: 320-81055-1 Client Project/Site: SC water(MWs)

For:

Shannon & Wilson, Inc 2355 Hill Rd. Fairbanks, Alaska 99709-5244

Attn: Kristen Freiburger

Jamil altina

Authorized for release by: 11/12/2021 4:03:28 PM

David Alltucker, Project Manager I (916)374-4383

David.Alltucker@Eurofinset.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Client: Shannon & Wilson, Inc Project/Site: SC water(MWs)

Laboratory Job ID: 320-81055-1

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# **Definitions/Glossary**

Client: Shannon & Wilson, Inc

Project/Site: SC water(MWs)

Job ID: 320-81055-1

**Qualifiers** 

**LCMS** 

Qualifier	Qualifier Description
*5-	Isotope dilution analyte is outside acceptance limits, low biased.
1	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

**Glossary** 

Appreviation	These commonly used abbreviations may of may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
0.51	

CFL Contains Free Liquid
CFU Colony Forming Unit
CNF Contains No Free Liquid

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL Detection Limit (DoD/DOE)

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

These commonly used abbreviations may be may not be present in this report

DLC Decision Level Concentration (Radiochemistry)

EDL Estimated Detection Limit (Dioxin)

LOD Limit of Detection (DoD/DOE)

LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level"

MDA Minimum Detectable Activity (Radiochemistry)

MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit
ML Minimum Level (Dioxin)
MPN Most Probable Number
MQL Method Quantitation Limit

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent POS Positive / Present

PQL Practical Quantitation Limit

PRES Presumptive
QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

TNTC Too Numerous To Count

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#### **Case Narrative**

Client: Shannon & Wilson, Inc Project/Site: SC water(MWs)

Job ID: 320-81055-1

Job ID: 320-81055-1

Laboratory: Eurofins TestAmerica, Sacramento

**Narrative** 

Job Narrative 320-81055-1

#### Receipt

The samples were received on 10/29/2021 3:04 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 6.0° C.

#### **LCMS**

Method EPA 537(Mod): The "I" qualifier means the transition mass ratio for the indicated analyte was above the established ratio limits. The qualitative identification of the analyte has some degree of uncertainty, and the reported value may have some high bias. However, analyst judgment was used to positively identify the analyte.

Method EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the following samples are below the method recommended limit: MW-23-50 (320-81055-2), MW-123-50 (320-81055-3), MW-17-40 (320-81055-6) and 21GST-TWP-114 (320-81055-10). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the samples.

Method EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommended limits: PW-016 (320-81055-11). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the sample.

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

#### **Organic Prep**

Method 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-539600.

Method 3535: The following sample was preserved with trizma: PW-016 (320-81055-11). Thus, the MB, LCS and LCSD also contain trizma.

preparation batch 320-539600.

Method 3535: The following sample was yellow prior to extraction: PW-016 (320-81055-11). preparation batch 320-539600.

Method 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-539611.

Method 3535: The following sample was yellow prior to extraction: 21GST-TWP-13 (320-81055-8). preparation batch 320-539611.

Method 3535: The following samples contain a thin layer of sediments at the bottom of the bottle prior to extraction: MW-23-20 (320-81055-1), MW-9-10 (320-81055-4), MW-17-20 (320-81055-5), 21GST-TWP-14 (320-81055-9) and 21GST-TWP-114 (320-81055-10). preparation batch 320-539611.

Method 3535: The following samples were yellow and contain a thin layer of sediment at the bottom of the bottle prior to extraction: MW-23-50 (320-81055-2), MW-123-50 (320-81055-3), MW-17-40 (320-81055-6) and MW-117-40 (320-81055-7). preparation batch 320-539611.

Method 3535: During the solid phase extraction process, the following samples contain non-settleable particulates which clogged the solid phase extraction column: MW-23-20 (320-81055-1), MW-23-50 (320-81055-2) and MW-123-50 (320-81055-3). preparation batch 320-539611.

Method 3535: The following samples are yellow after extraction/final volume: MW-17-40 (320-81055-6) and MW-117-40 (320-81055-7).

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#### **Case Narrative**

Client: Shannon & Wilson, Inc
Project/Site: SC water(MWs)

Job ID: 320-81055-1

Job ID: 320-81055-1 (Continued)

Laboratory: Eurofins TestAmerica, Sacramento (Continued)

preparation batch 320-539611.

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

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Client: Shannon & Wilson, Inc Job ID: 320-81055-1

Project/Site: SC water(MWs)

Client Sample ID: MW-23-20	Lab Sample ID: 320-81055-1
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Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	1.4	J	1.9	0.54	ng/L	1	_	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	2.5		1.9	0.80	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.65	J	1.9	0.25	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	1.2	J	1.9	0.29	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.0	J	1.9	0.54	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	11		1.9	0.51	ng/L	1		EPA 537(Mod)	Total/NA

Client Sample ID: MW-23-50 Lab Sample ID: 320-81055-2

No Detections.

Client Sample ID: MW-123-50 Lab Sample ID: 320-81055-3

No Detections.

Client Sample ID: MW-9-10 Lab Sample ID: 320-81055-4

No Detections.

Client Sample ID: MW-17-20 Lab Sample ID: 320-81055-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	11		2.0	0.57	ng/L	1	_	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.8	J	2.0	0.25	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	1.6	J	2.0	0.84	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.98	J	2.0	0.20	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	16		2.0	0.56	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	130		2.0	0.53	ng/L	1		EPA 537(Mod)	Total/NA

Client Sample ID: MW-17-40 Lab Sample ID: 320-81055-6

No Detections.

Client Sample ID: MW-117-40 Lab Sample ID: 320-81055-7

No Detections.

# Client Sample ID: 21GST-TWP-13 Lab Sample ID: 320-81055-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	11		1.9	0.55	ng/L		_	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	5.0		1.9	0.24	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	1.3	J	1.9	0.81	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.61	J	1.9	0.19	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	14		1.9	0.54	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	41		1.9	0.51	ng/L	1		EPA 537(Mod)	Total/NA

# Client Sample ID: 21GST-TWP-14 Lab Sample ID: 320-81055-9

Analyte	Result Qualifier	RL	MDL	Unit	Dil Fac [	) Method	Prep Type
Perfluorohexanoic acid (PFHxA)	3.1	2.0	0.58	ng/L	1	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.1 J	2.0	0.25	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.9	2.0	0.57	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	23	2.0	0.54	ng/L	1	EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

11/12/2021

# **Detection Summary**

Client: Shannon & Wilson, Inc Job ID: 320-81055-1

Project/Site: SC water(MWs)

# Lab Sample ID: 320-81055-10

Analyte	Result Qualifier	RL	MDL Unit	Dil Fac D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	2.9	2.0	0.57 ng/L		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.8	2.0	0.56 ng/L	1	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	26	2.0	0.53 ng/L	1	EPA 537(Mod)	Total/NA

# Client Sample ID: PW-016

# Lab Sample ID: 320-81055-11

Analyte	Result Q	ualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	3.8		1.9	0.56	ng/L			EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.9 I		1.9	0.24	ng/L	•		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	4.2		1.9	0.82	ng/L	•		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.5 J		1.9	0.55	ng/L			EPA 537(Mod)	Total/NA

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Client: Shannon & Wilson, Inc Job ID: 320-81055-1

Project/Site: SC water(MWs)

Date Received: 10/29/21 15:04

d5-NEtFOSAA

13C3 HFPO-DA

Client Sample ID: MW-23-20 Lab Sample ID: 320-81055-1 Date Collected: 10/24/21 16:50

**Matrix: Water** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	1.4	J	1.9	0.54	ng/L		11/03/21 12:12	11/04/21 16:37	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.23	ng/L		11/03/21 12:12	11/04/21 16:37	1
Perfluorooctanoic acid (PFOA)	2.5		1.9	0.80	ng/L		11/03/21 12:12	11/04/21 16:37	1
Perfluorononanoic acid (PFNA)	0.65	J	1.9	0.25	ng/L		11/03/21 12:12	11/04/21 16:37	1
Perfluorodecanoic acid (PFDA)	1.2	J	1.9	0.29	ng/L		11/03/21 12:12	11/04/21 16:37	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		11/03/21 12:12	11/04/21 16:37	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.52	ng/L		11/03/21 12:12	11/04/21 16:37	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		11/03/21 12:12	11/04/21 16:37	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.69	ng/L		11/03/21 12:12	11/04/21 16:37	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.19	ng/L		11/03/21 12:12	11/04/21 16:37	1
Perfluorohexanesulfonic acid (PFHxS)	1.0	J	1.9	0.54	ng/L		11/03/21 12:12	11/04/21 16:37	1
Perfluorooctanesulfonic acid (PFOS)	11		1.9	0.51	ng/L		11/03/21 12:12	11/04/21 16:37	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.7	1.1	ng/L		11/03/21 12:12	11/04/21 16:37	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.7	1.2	ng/L		11/03/21 12:12	11/04/21 16:37	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.9	0.23	ng/L		11/03/21 12:12	11/04/21 16:37	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.8	1.4	ng/L		11/03/21 12:12	11/04/21 16:37	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.9	0.30	ng/L		11/03/21 12:12	11/04/21 16:37	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.38	ng/L		11/03/21 12:12	11/04/21 16:37	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	65		50 - 150				11/03/21 12:12	11/04/21 16:37	1
13C4 PFHpA	67		50 - 150				11/03/21 12:12	11/04/21 16:37	1
13C4 PFOA	90		50 <sub>-</sub> 150				11/03/21 12:12	11/04/21 16:37	1
13C5 PFNA	69		50 - 150				11/03/21 12:12	11/04/21 16:37	1
13C2 PFDA	76		50 <sub>-</sub> 150				11/03/21 12:12	11/04/21 16:37	1
13C2 PFUnA	68		50 <sub>-</sub> 150				11/03/21 12:12	11/04/21 16:37	1
13C2 PFDoA	70		50 - 150				11/03/21 12:12	11/04/21 16:37	1
13C2 PFTeDA	78		50 - 150					11/04/21 16:37	1
13C3 PFBS	81		50 - 150					11/04/21 16:37	1
1802 PFHxS	90		50 - 150					11/04/21 16:37	1
13C4 PFOS	79		50 <sub>-</sub> 150					11/04/21 16:37	1
d3-NMeFOSAA	65		50 - 150					11/04/21 16:37	1

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11/03/21 12:12 11/04/21 16:37

11/03/21 12:12 11/04/21 16:37

Client: Shannon & Wilson, Inc Job ID: 320-81055-1 Project/Site: SC water(MWs)

Client Sample ID: MW-23-50

Lab Sample ID: 320-81055-2

Date Collected: 10/25/21 14:39 **Matrix: Water** Date Received: 10/29/21 15:04

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.9		ng/L		11/03/21 12:12	11/04/21 16:48	•
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.24	ng/L		11/03/21 12:12	11/04/21 16:48	•
Perfluorooctanoic acid (PFOA)	ND		1.9	0.81	ng/L		11/03/21 12:12	11/04/21 16:48	•
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		11/03/21 12:12	11/04/21 16:48	· · · · · · · · ·
Perfluorodecanoic acid (PFDA)	ND		1.9	0.29	ng/L		11/03/21 12:12	11/04/21 16:48	•
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		11/03/21 12:12	11/04/21 16:48	
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.52	ng/L		11/03/21 12:12	11/04/21 16:48	
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		11/03/21 12:12	11/04/21 16:48	•
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.69	ng/L		11/03/21 12:12	11/04/21 16:48	•
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.19	ng/L		11/03/21 12:12	11/04/21 16:48	
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	0.54	ng/L		11/03/21 12:12	11/04/21 16:48	
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	0.51	ng/L		11/03/21 12:12	11/04/21 16:48	
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.8	1.1	ng/L		11/03/21 12:12	11/04/21 16:48	
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.8	1.2	ng/L		11/03/21 12:12	11/04/21 16:48	•
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.9	0.23	ng/L		11/03/21 12:12	11/04/21 16:48	•
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.8	1.4	ng/L		11/03/21 12:12	11/04/21 16:48	,
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.9	0.30	ng/L		11/03/21 12:12	11/04/21 16:48	•
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.38	ng/L		11/03/21 12:12	11/04/21 16:48	•
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	32	*5-	50 - 150				11/03/21 12:12	11/04/21 16:48	
13C4 PFHpA	33	*5-	50 - 150				11/03/21 12:12	11/04/21 16:48	
13C4 PFOA	51		50 - 150				11/03/21 12:12	11/04/21 16:48	
13C5 PFNA	34	*5-	50 - 150				11/03/21 12:12	11/04/21 16:48	
13C2 PFDA	45	*5-	50 - 150				11/03/21 12:12	11/04/21 16:48	
13C2 PFUnA	39	*5-	50 - 150				11/03/21 12:12	11/04/21 16:48	
13C2 PFDoA	47	*5-	50 - 150				11/03/21 12:12	11/04/21 16:48	
13C2 PFTeDA	47	*5-	50 <sub>-</sub> 150					11/04/21 16:48	
13C3 PFBS	43	*5-	50 - 150				11/03/21 12:12	11/04/21 16:48	
1802 PFHxS	49	*5-	50 - 150				11/03/21 12:12	11/04/21 16:48	
13C4 PFOS	46	*5-	50 <sub>-</sub> 150					11/04/21 16:48	
d3-NMeFOSAA	33	*5-	50 <sub>-</sub> 150					11/04/21 16:48	
d5-NEtFOSAA	37	*5-	50 - 150					11/04/21 16:48	
13C3 HFPO-DA	21	*5-	50 <sub>-</sub> 150				11/02/21 12:12	11/04/21 16:48	

Client: Shannon & Wilson, Inc Job ID: 320-81055-1

Project/Site: SC water(MWs)

13C3 HFPO-DA

Client Sample ID: MW-123-50 Lab Sample ID: 320-81055-3

Date Collected: 10/25/21 14:29 **Matrix: Water** 

Date Received: 10/29/21 15:04

Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.56	ng/L		11/03/21 12:12	11/04/21 16:58	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.24	ng/L		11/03/21 12:12	11/04/21 16:58	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.82	ng/L		11/03/21 12:12	11/04/21 16:58	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		11/03/21 12:12	11/04/21 16:58	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		11/03/21 12:12	11/04/21 16:58	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		11/03/21 12:12	11/04/21 16:58	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		11/03/21 12:12	11/04/21 16:58	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.3	ng/L		11/03/21 12:12	11/04/21 16:58	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.71	ng/L		11/03/21 12:12	11/04/21 16:58	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.19	ng/L		11/03/21 12:12	11/04/21 16:58	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	0.55	ng/L		11/03/21 12:12	11/04/21 16:58	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	0.52	ng/L		11/03/21 12:12	11/04/21 16:58	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.8	1.2	ng/L		11/03/21 12:12	11/04/21 16:58	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.8		ng/L		11/03/21 12:12	11/04/21 16:58	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.9		ng/L		11/03/21 12:12	11/04/21 16:58	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.9	1.5	ng/L		11/03/21 12:12	11/04/21 16:58	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.9		ng/L		11/03/21 12:12	11/04/21 16:58	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.39	ng/L		11/03/21 12:12	11/04/21 16:58	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	32	*5-	50 - 150				11/03/21 12:12	11/04/21 16:58	1
13C4 PFHpA	34	*5-	50 - 150				11/03/21 12:12	11/04/21 16:58	1
13C4 PFOA	47	*5-	50 - 150				11/03/21 12:12	11/04/21 16:58	1
13C5 PFNA	33	*5-	50 - 150				11/03/21 12:12	11/04/21 16:58	1
13C2 PFDA	43	*5-	50 - 150				11/03/21 12:12	11/04/21 16:58	1
13C2 PFUnA	40	*5-	50 - 150				11/03/21 12:12	11/04/21 16:58	1
13C2 PFDoA	42	*5-	50 - 150				11/03/21 12:12	11/04/21 16:58	1
13C2 PFTeDA	46	*5-	50 - 150				11/03/21 12:12	11/04/21 16:58	1
13C3 PFBS	38	*5-	50 - 150				11/03/21 12:12	11/04/21 16:58	1
1802 PFHxS	47	*5-	50 - 150				11/03/21 12:12	11/04/21 16:58	1
13C4 PFOS	40	*5-	50 - 150				11/03/21 12:12	11/04/21 16:58	1
d3-NMeFOSAA	34	*5-	50 - 150				11/03/21 12:12	11/04/21 16:58	1
d5-NEtFOSAA	35	*5-	50 - 150				11/03/21 12:12	11/04/21 16:58	1

11/03/21 12:12 11/04/21 16:58

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Client: Shannon & Wilson, Inc Job ID: 320-81055-1

Project/Site: SC water(MWs)

Date Received: 10/29/21 15:04

Client Sample ID: MW-9-10 Lab Sample ID: 320-81055-4 Date Collected: 10/25/21 18:01

**Matrix: Water** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.57	ng/L		11/03/21 12:12	11/04/21 17:08	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		11/03/21 12:12	11/04/21 17:08	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.84	ng/L		11/03/21 12:12	11/04/21 17:08	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		11/03/21 12:12	11/04/21 17:08	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		11/03/21 12:12	11/04/21 17:08	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		11/03/21 12:12	11/04/21 17:08	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.54	ng/L		11/03/21 12:12	11/04/21 17:08	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		11/03/21 12:12	11/04/21 17:08	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.72	ng/L		11/03/21 12:12	11/04/21 17:08	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		11/03/21 12:12	11/04/21 17:08	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.56	ng/L		11/03/21 12:12	11/04/21 17:08	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.53	ng/L		11/03/21 12:12	11/04/21 17:08	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.9	1.2	ng/L		11/03/21 12:12	11/04/21 17:08	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.9	1.3	ng/L		11/03/21 12:12	11/04/21 17:08	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		2.0	0.24	ng/L			11/04/21 17:08	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.9	1.5	ng/L		11/03/21 12:12	11/04/21 17:08	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		2.0	0.32	ng/L		11/03/21 12:12	11/04/21 17:08	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	0.39	ng/L		11/03/21 12:12	11/04/21 17:08	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	57		50 - 150				11/03/21 12:12	11/04/21 17:08	1
13C4 PFHpA	57		50 - 150				11/03/21 12:12	11/04/21 17:08	1
13C4 PFOA	71		50 - 150				11/03/21 12:12	11/04/21 17:08	1
13C5 PFNA	54		50 - 150				11/03/21 12:12	11/04/21 17:08	1
13C2 PFDA	63		50 - 150				11/03/21 12:12	11/04/21 17:08	1
13C2 PFUnA	66		50 <sub>-</sub> 150				11/03/21 12:12	11/04/21 17:08	1
13C2 PFDoA	76		50 - 150				11/03/21 12:12	11/04/21 17:08	1
13C2 PFTeDA	79		50 <sub>-</sub> 150				11/03/21 12:12	11/04/21 17:08	1
13C3 PFBS	66		50 <sub>-</sub> 150				11/03/21 12:12	11/04/21 17:08	1
1802 PFHxS	67		50 - 150				11/03/21 12:12	11/04/21 17:08	1
13C4 PFOS	65		50 <sub>-</sub> 150					11/04/21 17:08	1
d3-NMeFOSAA	58		50 <sub>-</sub> 150					11/04/21 17:08	1
d5-NEtFOSAA	61		50 <sub>-</sub> 150					11/04/21 17:08	
13C3 HFPO-DA	51		50 <sub>-</sub> 150					11/04/21 17:08	1

Client: Shannon & Wilson, Inc Job ID: 320-81055-1

Project/Site: SC water(MWs)

Date Received: 10/29/21 15:04

Client Sample ID: MW-17-20 Lab Sample ID: 320-81055-5 Date Collected: 10/26/21 12:58

**Matrix: Water** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	11		2.0	0.57	ng/L		11/03/21 12:12	11/04/21 17:19	1
Perfluoroheptanoic acid (PFHpA)	1.8	J	2.0	0.25	ng/L		11/03/21 12:12	11/04/21 17:19	1
Perfluorooctanoic acid (PFOA)	1.6	J	2.0	0.84	ng/L		11/03/21 12:12	11/04/21 17:19	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		11/03/21 12:12	11/04/21 17:19	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		11/03/21 12:12	11/04/21 17:19	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		11/03/21 12:12	11/04/21 17:19	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.54	ng/L		11/03/21 12:12	11/04/21 17:19	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		11/03/21 12:12	11/04/21 17:19	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.72	ng/L		11/03/21 12:12	11/04/21 17:19	1
Perfluorobutanesulfonic acid (PFBS)	0.98	J	2.0	0.20	ng/L		11/03/21 12:12	11/04/21 17:19	1
Perfluorohexanesulfonic acid (PFHxS)	16		2.0	0.56	ng/L		11/03/21 12:12	11/04/21 17:19	1
Perfluorooctanesulfonic acid (PFOS)	130		2.0	0.53	ng/L		11/03/21 12:12	11/04/21 17:19	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.9	1.2	ng/L		11/03/21 12:12	11/04/21 17:19	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.9	1.3	ng/L		11/03/21 12:12	11/04/21 17:19	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		2.0	0.24	ng/L		11/03/21 12:12	11/04/21 17:19	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.9	1.5	ng/L		11/03/21 12:12	11/04/21 17:19	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		2.0	0.32	ng/L		11/03/21 12:12	11/04/21 17:19	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	0.39	ng/L		11/03/21 12:12	11/04/21 17:19	1

(ADONA)						
Isotope Dilution	%Recovery Q	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	73		50 - 150	11/03/21 12:12	11/04/21 17:19	1
13C4 PFHpA	77		50 - 150	11/03/21 12:12	11/04/21 17:19	1
13C4 PFOA	101		50 - 150	11/03/21 12:12	11/04/21 17:19	1
13C5 PFNA	72		50 - 150	11/03/21 12:12	11/04/21 17:19	1
13C2 PFDA	90		50 - 150	11/03/21 12:12	11/04/21 17:19	1
13C2 PFUnA	88		50 - 150	11/03/21 12:12	11/04/21 17:19	1
13C2 PFDoA	102		50 - 150	11/03/21 12:12	11/04/21 17:19	1
13C2 PFTeDA	104		50 - 150	11/03/21 12:12	11/04/21 17:19	1
13C3 PFBS	89		50 - 150	11/03/21 12:12	11/04/21 17:19	1
1802 PFHxS	96		50 - 150	11/03/21 12:12	11/04/21 17:19	1
13C4 PFOS	84		50 - 150	11/03/21 12:12	11/04/21 17:19	1
d3-NMeFOSAA	84		50 - 150	11/03/21 12:12	11/04/21 17:19	1
d5-NEtFOSAA	87		50 - 150	11/03/21 12:12	11/04/21 17:19	1
13C3 HFPO-DA	70		50 - 150	11/03/21 12:12	11/04/21 17:19	1

Client: Shannon & Wilson, Inc Job ID: 320-81055-1

Project/Site: SC water(MWs)

Client Sample ID: MW-17-40 Lab Sample ID: 320-81055-6

Date Collected: 10/26/21 14:54 **Matrix: Water** Date Received: 10/29/21 15:04

Method: EPA 537(Mod) - PFAS Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.56	ng/L		11/03/21 12:12	11/04/21 17:29	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.24	ng/L		11/03/21 12:12	11/04/21 17:29	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.82	ng/L		11/03/21 12:12	11/04/21 17:29	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		11/03/21 12:12	11/04/21 17:29	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		11/03/21 12:12	11/04/21 17:29	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		11/03/21 12:12	11/04/21 17:29	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		11/03/21 12:12	11/04/21 17:29	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.3	ng/L		11/03/21 12:12	11/04/21 17:29	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.70	ng/L		11/03/21 12:12	11/04/21 17:29	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.19	ng/L		11/03/21 12:12	11/04/21 17:29	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	0.55	ng/L		11/03/21 12:12	11/04/21 17:29	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	0.52	ng/L		11/03/21 12:12	11/04/21 17:29	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.8	1.2	ng/L		11/03/21 12:12	11/04/21 17:29	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.8	1.3	ng/L		11/03/21 12:12	11/04/21 17:29	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.9	0.23	ng/L		11/03/21 12:12	11/04/21 17:29	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.9	1.4	ng/L		11/03/21 12:12	11/04/21 17:29	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.9	0.31	ng/L		11/03/21 12:12	11/04/21 17:29	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.39	ng/L		11/03/21 12:12	11/04/21 17:29	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	48	*5-	50 - 150				11/03/21 12:12	11/04/21 17:29	1
13C4 PFHpA	46	*5-	50 - 150				11/03/21 12:12	11/04/21 17:29	1
13C4 PFOA	75		50 - 150				11/03/21 12:12	11/04/21 17:29	1
13C5 PFNA	44	*5-	50 - 150				11/03/21 12:12	11/04/21 17:29	1
13C2 PFDA	65		50 - 150				11/03/21 12:12	11/04/21 17:29	1
13C2 PFUnA	62		50 - 150				11/03/21 12:12	11/04/21 17:29	1
13C2 PFDoA	70		50 - 150				11/03/21 12:12	11/04/21 17:29	1
13C2 PFTeDA	88		50 <sub>-</sub> 150				11/03/21 12:12	11/04/21 17:29	1
13C3 PFBS	59		50 <sub>-</sub> 150				11/03/21 12:12	11/04/21 17:29	1
1802 PFHxS	70		50 - 150				11/03/21 12:12	11/04/21 17:29	1
13C4 PFOS	67		50 - 150					11/04/21 17:29	1
d3-NMeFOSAA	46	*5-	50 - 150				11/03/21 12:12	11/04/21 17:29	1
d5-NEtFOSAA	53		50 <sub>-</sub> 150				11/03/21 12:12	11/04/21 17:29	1
13C3 HFPO-DA		*5-	50 <sub>-</sub> 150				11/03/21 12:12	11/04/21 17:29	1

Client: Shannon & Wilson, Inc Job ID: 320-81055-1

Project/Site: SC water(MWs)

Client Sample ID: MW-117-40 Lab Sample ID: 320-81055-7

Date Collected: 10/26/21 14:44 **Matrix: Water** Date Received: 10/29/21 15:04

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.54	ng/L		11/03/21 12:12	11/04/21 17:40	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.23	ng/L		11/03/21 12:12	11/04/21 17:40	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.79	ng/L		11/03/21 12:12	11/04/21 17:40	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.25	ng/L		11/03/21 12:12	11/04/21 17:40	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.29	ng/L		11/03/21 12:12	11/04/21 17:40	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		11/03/21 12:12	11/04/21 17:40	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.51	ng/L		11/03/21 12:12	11/04/21 17:40	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		11/03/21 12:12	11/04/21 17:40	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.68	ng/L		11/03/21 12:12	11/04/21 17:40	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.19	ng/L		11/03/21 12:12	11/04/21 17:40	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	0.53	ng/L		11/03/21 12:12	11/04/21 17:40	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9		ng/L		11/03/21 12:12	11/04/21 17:40	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.7	1.1	ng/L		11/03/21 12:12	11/04/21 17:40	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.7	1.2	ng/L		11/03/21 12:12	11/04/21 17:40	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.9	0.22	ng/L		11/03/21 12:12	11/04/21 17:40	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.7		ng/L		11/03/21 12:12	11/04/21 17:40	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.9		ng/L		11/03/21 12:12	11/04/21 17:40	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.37	ng/L		11/03/21 12:12	11/04/21 17:40	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	63		50 - 150				11/03/21 12:12	11/04/21 17:40	
13C4 PFHpA	61		50 - 150				11/03/21 12:12	11/04/21 17:40	1
13C4 PFOA	95		50 - 150				11/03/21 12:12	11/04/21 17:40	1
13C5 PFNA	57		50 - 150				11/03/21 12:12	11/04/21 17:40	
13C2 PFDA	80		50 - 150				11/03/21 12:12	11/04/21 17:40	1
13C2 PFUnA	74		50 <sub>-</sub> 150				11/03/21 12:12	11/04/21 17:40	1
13C2 PFDoA	92		50 - 150				11/03/21 12:12	11/04/21 17:40	
13C2 PFTeDA	116		50 <sub>-</sub> 150				11/03/21 12:12	11/04/21 17:40	1
13C3 PFBS	72		50 - 150				11/03/21 12:12	11/04/21 17:40	1
1802 PFHxS	90		50 - 150				11/03/21 12:12	11/04/21 17:40	
13C4 PFOS	78		50 <sub>-</sub> 150				11/03/21 12:12	11/04/21 17:40	1
d3-NMeFOSAA	61		50 <sub>-</sub> 150				11/03/21 12:12	11/04/21 17:40	1
d5-NEtFOSAA	58		50 - 150				11/03/21 12:12	11/04/21 17:40	
13C3 HFPO-DA	58		50 <sub>-</sub> 150					11/04/21 17:40	1

Client: Shannon & Wilson, Inc Job ID: 320-81055-1

Project/Site: SC water(MWs)

Client Sample ID: 21GST-TWP-13

Lab Sample ID: 320-81055-8 Date Collected: 10/24/21 15:15

**Matrix: Water** Date Received: 10/29/21 15:04

Analyte	Result	Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	11		1.9	0.55	ng/L		11/03/21 12:12	11/04/21 18:11	1
Perfluoroheptanoic acid (PFHpA)	5.0		1.9	0.24	ng/L		11/03/21 12:12	11/04/21 18:11	1
Perfluorooctanoic acid (PFOA)	1.3	J	1.9	0.81	ng/L		11/03/21 12:12	11/04/21 18:11	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		11/03/21 12:12	11/04/21 18:11	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.29	ng/L		11/03/21 12:12	11/04/21 18:11	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		11/03/21 12:12	11/04/21 18:11	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.52	ng/L		11/03/21 12:12	11/04/21 18:11	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		11/03/21 12:12	11/04/21 18:11	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.69	ng/L		11/03/21 12:12	11/04/21 18:11	1
Perfluorobutanesulfonic acid (PFBS)	0.61	J	1.9	0.19	ng/L		11/03/21 12:12	11/04/21 18:11	1
Perfluorohexanesulfonic acid (PFHxS)	14		1.9	0.54	ng/L		11/03/21 12:12	11/04/21 18:11	1
Perfluorooctanesulfonic acid (PFOS)	41		1.9	0.51	ng/L		11/03/21 12:12	11/04/21 18:11	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.8	1.1	ng/L		11/03/21 12:12	11/04/21 18:11	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.8	1.2	ng/L		11/03/21 12:12	11/04/21 18:11	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.9	0.23	ng/L		11/03/21 12:12	11/04/21 18:11	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.8	1.4	ng/L		11/03/21 12:12	11/04/21 18:11	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.9	0.30	ng/L		11/03/21 12:12	11/04/21 18:11	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.38	ng/L		11/03/21 12:12	11/04/21 18:11	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	59		50 - 150				11/03/21 12:12	11/04/21 18:11	1
13C4 PFHpA	63		50 - 150				11/03/21 12:12	11/04/21 18:11	1
13C4 PFOA	88		50 - 150				11/03/21 12:12	11/04/21 18:11	1
13C5 PFNA	64		50 - 150				11/03/21 12:12	11/04/21 18:11	1
13C2 PFDA	80		50 - 150				11/03/21 12:12	11/04/21 18:11	1
13C2 PFUnA	75		50 - 150				11/03/21 12:12	11/04/21 18:11	1
13C2 PFDoA	82		50 - 150				11/03/21 12:12	11/04/21 18:11	1
13C2 PFTeDA	94		50 - 150				11/03/21 12:12	11/04/21 18:11	1
13C3 PFBS	68		50 - 150				11/03/21 12:12	11/04/21 18:11	1
1802 PFHxS	83		50 - 150				11/03/21 12:12	11/04/21 18:11	1
13C4 PFOS	73		50 - 150				11/03/21 12:12	11/04/21 18:11	1
d3-NMeFOSAA	66		50 - 150				11/03/21 12:12	11/04/21 18:11	1
d5-NEtFOSAA	74		50 - 150				11/03/21 12:12	11/04/21 18:11	1
13C3 HFPO-DA	52		50 <sub>-</sub> 150				11/03/21 12:12	11/04/21 18:11	1

11/12/2021

Client: Shannon & Wilson, Inc Job ID: 320-81055-1

Project/Site: SC water(MWs)

Client Sample ID: 21GST-TWP-14

Lab Sample ID: 320-81055-9 Date Collected: 10/24/21 16:42

**Matrix: Water** Date Received: 10/29/21 15:04

Analyte	Result	Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	3.1		2.0	0.58	ng/L		11/03/21 12:12	11/04/21 18:21	1
Perfluoroheptanoic acid (PFHpA)	1.1	J	2.0	0.25	ng/L		11/03/21 12:12	11/04/21 18:21	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		11/03/21 12:12	11/04/21 18:21	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		11/03/21 12:12	11/04/21 18:21	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		11/03/21 12:12	11/04/21 18:21	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		11/03/21 12:12	11/04/21 18:21	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		11/03/21 12:12	11/04/21 18:21	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		11/03/21 12:12	11/04/21 18:21	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.73	ng/L		11/03/21 12:12	11/04/21 18:21	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		11/03/21 12:12	11/04/21 18:21	1
Perfluorohexanesulfonic acid (PFHxS)	3.9		2.0	0.57	ng/L		11/03/21 12:12	11/04/21 18:21	1
Perfluorooctanesulfonic acid (PFOS)	23		2.0	0.54	ng/L		11/03/21 12:12	11/04/21 18:21	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		5.0		ng/L		11/03/21 12:12	11/04/21 18:21	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		5.0	1.3	ng/L		11/03/21 12:12	11/04/21 18:21	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		2.0	0.24	ng/L		11/03/21 12:12	11/04/21 18:21	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		4.0	1.5	ng/L		11/03/21 12:12	11/04/21 18:21	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		2.0	0.32	ng/L		11/03/21 12:12	11/04/21 18:21	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	0.40	ng/L		11/03/21 12:12	11/04/21 18:21	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	66		50 - 150				11/03/21 12:12	11/04/21 18:21	1
13C4 PFHpA	68		50 - 150				11/03/21 12:12	11/04/21 18:21	1
13C4 PFOA	98		50 - 150				11/03/21 12:12	11/04/21 18:21	1
13C5 PFNA	70		50 - 150				11/03/21 12:12	11/04/21 18:21	1
13C2 PFDA	87		50 <sub>-</sub> 150				11/03/21 12:12	11/04/21 18:21	1
13C2 PFUnA	86		50 <sub>-</sub> 150				11/03/21 12:12	11/04/21 18:21	1
13C2 PFDoA	90		50 - 150				11/03/21 12:12	11/04/21 18:21	1
13C2 PFTeDA	98		50 <sub>-</sub> 150				11/03/21 12:12	11/04/21 18:21	1
13C3 PFBS	83		50 <sub>-</sub> 150				11/03/21 12:12	11/04/21 18:21	1
1802 PFHxS	93		50 <sub>-</sub> 150				11/03/21 12:12	11/04/21 18:21	1
13C4 PFOS	91		50 <sub>-</sub> 150				11/03/21 12:12	11/04/21 18:21	1
d3-NMeFOSAA	76		50 - 150				11/03/21 12:12	11/04/21 18:21	1
d5-NEtFOSAA	81		50 <sub>-</sub> 150				11/03/21 12:12	11/04/21 18:21	1
13C3 HFPO-DA	73		50 - 150					11/04/21 18:21	1

Client: Shannon & Wilson, Inc Job ID: 320-81055-1 Project/Site: SC water(MWs)

Client Sample ID: 21GST-TWP-114

Lab Sample ID: 320-81055-10 Date Collected: 10/24/21 16:32

**Matrix: Water** 

Date Received: 10/29/21 15:04

Analyte	Result	Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	2.9		2.0	0.57	ng/L		11/03/21 12:12	11/04/21 18:31	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		11/03/21 12:12	11/04/21 18:31	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.84	ng/L		11/03/21 12:12	11/04/21 18:31	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		11/03/21 12:12	11/04/21 18:31	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		11/03/21 12:12	11/04/21 18:31	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		11/03/21 12:12	11/04/21 18:31	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.54	ng/L		11/03/21 12:12	11/04/21 18:31	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		11/03/21 12:12	11/04/21 18:31	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.72	ng/L		11/03/21 12:12	11/04/21 18:31	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		11/03/21 12:12	11/04/21 18:31	1
Perfluorohexanesulfonic acid (PFHxS)	3.8		2.0	0.56	ng/L		11/03/21 12:12	11/04/21 18:31	1
Perfluorooctanesulfonic acid (PFOS)	26		2.0	0.53	ng/L		11/03/21 12:12	11/04/21 18:31	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		5.0	1.2	ng/L		11/03/21 12:12	11/04/21 18:31	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		5.0	1.3	ng/L		11/03/21 12:12	11/04/21 18:31	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		2.0	0.24	ng/L		11/03/21 12:12	11/04/21 18:31	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		4.0	1.5	ng/L		11/03/21 12:12	11/04/21 18:31	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		2.0	0.32	ng/L		11/03/21 12:12	11/04/21 18:31	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	0.40	ng/L		11/03/21 12:12	11/04/21 18:31	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	51	-	50 - 150				11/03/21 12:12	11/04/21 18:31	1
13C4 PFHpA	52		50 - 150				11/03/21 12:12	11/04/21 18:31	1
13C4 PFOA	72		50 <sub>-</sub> 150				11/03/21 12:12	11/04/21 18:31	1
13C5 PFNA	49	*5-	50 - 150				11/03/21 12:12	11/04/21 18:31	1
13C2 PFDA	62		50 <sub>-</sub> 150				11/03/21 12:12	11/04/21 18:31	1
13C2 PFUnA	57		50 <sub>-</sub> 150				11/03/21 12:12	11/04/21 18:31	1
13C2 PFDoA	69		50 - 150				11/03/21 12:12	11/04/21 18:31	1
13C2 PFTeDA	75		50 <sub>-</sub> 150					11/04/21 18:31	1
13C3 PFBS	56		50 <sub>-</sub> 150				11/03/21 12:12	11/04/21 18:31	1
1802 PFHxS	66		50 - 150				11/03/21 12:12	11/04/21 18:31	1
13C4 PFOS	60		50 <sub>-</sub> 150					11/04/21 18:31	1
d3-NMeFOSAA	53		50 - 150					11/04/21 18:31	1
d5-NEtFOSAA	57		50 - 150					11/04/21 18:31	
	57		55 - 755				, 00, 21 12.12	, 0 ., = 1 10.01	,

Client: Shannon & Wilson, Inc Job ID: 320-81055-1

Project/Site: SC water(MWs)

Client Sample ID: PW-016

Date Collected: 10/26/21 08:38

Lab Sample ID: 320-81055-11

Matrix: Water

Date Received: 10/29/21 15:04

Analyte	Result	Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	3.8		1.9	0.56	ng/L		11/03/21 12:06	11/04/21 13:30	1
Perfluoroheptanoic acid (PFHpA)	1.9	1	1.9	0.24	ng/L		11/03/21 12:06	11/04/21 13:30	1
Perfluorooctanoic acid (PFOA)	4.2		1.9	0.82	ng/L		11/03/21 12:06	11/04/21 13:30	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		11/03/21 12:06	11/04/21 13:30	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		11/03/21 12:06	11/04/21 13:30	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		11/03/21 12:06	11/04/21 13:30	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		11/03/21 12:06	11/04/21 13:30	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.3	ng/L		11/03/21 12:06	11/04/21 13:30	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.71	ng/L		11/03/21 12:06	11/04/21 13:30	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.19	ng/L		11/03/21 12:06	11/04/21 13:30	1
Perfluorohexanesulfonic acid (PFHxS)	1.5	J	1.9	0.55	ng/L		11/03/21 12:06	11/04/21 13:30	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	0.52	ng/L		11/03/21 12:06	11/04/21 13:30	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.8	1.2	ng/L		11/03/21 12:06	11/04/21 13:30	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.8	1.3	ng/L		11/03/21 12:06	11/04/21 13:30	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.9	0.23	ng/L		11/03/21 12:06	11/04/21 13:30	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.9	1.5	ng/L		11/03/21 12:06	11/04/21 13:30	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.9	0.31	ng/L		11/03/21 12:06	11/04/21 13:30	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.39	ng/L		11/03/21 12:06	11/04/21 13:30	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	52		50 - 150				11/03/21 12:06	11/04/21 13:30	1
13C4 PFHpA	54		50 <sub>-</sub> 150				11/03/21 12:06	11/04/21 13:30	1
13C4 PFOA	70		50 <sub>-</sub> 150				11/03/21 12:06	11/04/21 13:30	1
13C5 PFNA	51		50 - 150				11/03/21 12:06	11/04/21 13:30	1
13C2 PFDA	60		50 <sub>-</sub> 150				11/03/21 12:06	11/04/21 13:30	1
13C2 PFUnA	56		50 - 150				11/03/21 12:06	11/04/21 13:30	1
13C2 PFDoA	61		50 - 150					11/04/21 13:30	1
13C2 PFTeDA	67		50 <sub>-</sub> 150					11/04/21 13:30	1
13C3 PFBS	61		50 <sub>-</sub> 150					11/04/21 13:30	1
1802 PFHxS	64		50 <sub>-</sub> 150					11/04/21 13:30	
13C4 PFOS	59		50 - 150					11/04/21 13:30	1
d3-NMeFOSAA	47	*5-	50 - 150					11/04/21 13:30	1
d5-NEtFOSAA	46	*5-	50 - 150					11/04/21 13:30	1

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Job ID: 320-81055-1

Client: Shannon & Wilson, Inc Project/Site: SC water(MWs)

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15

Lab Control Sample

Method Blank

Method Blank

Lab Control Sample Dup

Lab Control Sample Dup

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

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFHxA	C4PFHA	PFOA	PFNA	PFDA	PFUnA	PFDoA	PFTDA
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)
320-81055-1	MW-23-20	65	67	90	69	76	68	70	78
320-81055-2	MW-23-50	32 *5-	33 *5-	51	34 *5-	45 *5-	39 *5-	47 *5-	47 *5-
320-81055-3	MW-123-50	32 *5-	34 *5-	47 *5-	33 *5-	43 *5-	40 *5-	42 *5-	46 *5-
320-81055-4	MW-9-10	57	57	71	54	63	66	76	79
320-81055-5	MW-17-20	73	77	101	72	90	88	102	104
320-81055-6	MW-17-40	48 *5-	46 *5-	75	44 *5-	65	62	70	88
320-81055-7	MW-117-40	63	61	95	57	80	74	92	116
320-81055-8	21GST-TWP-13	59	63	88	64	80	75	82	94
320-81055-9	21GST-TWP-14	66	68	98	70	87	86	90	98
320-81055-10	21GST-TWP-114	51	52	72	49 *5-	62	57	69	75
320-81055-11	PW-016	52	54	70	51	60	56	61	67
LCS 320-539600/2-A	Lab Control Sample	63	62	73	56	61	61	63	70
LCS 320-539611/2-A	Lab Control Sample	70	75	82	70	70	68	77	83
LCSD 320-539600/3-A	Lab Control Sample Dup	62	58	70	57	59	60	65	71
LCSD 320-539611/3-A	Lab Control Sample Dup	104	103	116	98	108	104	105	104
MB 320-539600/1-A	Method Blank	91	94	114	84	97	89	109	106
MB 320-539611/1-A	Method Blank	67	75	87	70	75	77	78	89
		Percent Isotope Dilution Recovery (Acceptance Limits)							
		C3PFBS PFHxS PFOS d3NMFOS d5NEFOS HFPODA							
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)		
320-81055-1	MW-23-20	81	90	79	65	66	69		
320-81055-2	MW-23-50	43 *5-	49 *5-	46 *5-	33 *5-	37 *5-	34 *5-		
320-81055-3	MW-123-50	38 *5-	47 *5-	40 *5-	34 *5-	35 *5-	34 *5-		
320-81055-4	MW-9-10	66	67	65	58	61	51		
320-81055-5	MW-17-20	89	96	84	84	87	70		
320-81055-6	MW-17-40	59	70	67	46 *5-	53	46 *5-		
320-81055-7	MW-117-40	72	90	78	61	58	58		
320-81055-8	21GST-TWP-13	68	83	73	66	74	52		
320-81055-9	21GST-TWP-14	83	93	91	76	81	73		
320-81055-10	21GST-TWP-114	56	66	60	53	57	48 *5-		
320-81055-11	PW-016	61	64	59	47 *5-	46 *5-	52		
LCS 320-539600/2-A	Lab Control Sample	71	71	64	51	55	66		

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104

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82

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117

109

86

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106

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102

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#### **Surrogate Legend**

LCS 320-539611/2-A

LCSD 320-539600/3-A

LCSD 320-539611/3-A

MB 320-539600/1-A

MB 320-539611/1-A

PFHxA = 13C2 PFHxA

C4PFHA = 13C4 PFHpA

PFOA = 13C4 PFOA

PFNA = 13C5 PFNA

PFDA = 13C2 PFDA

PFUnA = 13C2 PFUnA

PFDoA = 13C2 PFDoA

PFTDA = 13C2 PFTeDA

C3PFBS = 13C3 PFBS

PFHxS = 18O2 PFHxS

PFOS = 13C4 PFOS

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# **Isotope Dilution Summary**

Client: Shannon & Wilson, Inc Project/Site: SC water(MWs) d3NMFOS = d3-NMeFOSAA d5NEFOS = d5-NEtFOSAA HFPODA = 13C3 HFPO-DA Job ID: 320-81055-1

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Client: Shannon & Wilson, Inc Job ID: 320-81055-1

Project/Site: SC water(MWs) Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15

Lab Sample ID: MB 320-539600/1-A

**Matrix: Water** 

Analysis Batch: 539954

Client Sample ID: Method Blank

Prep Type: Total/NA **Prep Batch: 539600** 

MB MB Dil Fac Result Qualifier RL **MDL** Unit Prepared Analyzed Analyte Perfluorohexanoic acid (PFHxA) ND 2.0 0.58 ng/L 11/03/21 12:06 11/04/21 12:59 Perfluoroheptanoic acid (PFHpA) ND 2.0 0.25 ng/L 11/03/21 12:06 11/04/21 12:59 Perfluorooctanoic acid (PFOA) ND 2.0 0.85 ng/L 11/03/21 12:06 11/04/21 12:59 0.27 ng/L Perfluorononanoic acid (PFNA) 11/03/21 12:06 11/04/21 12:59 ND 2.0 Perfluorodecanoic acid (PFDA) ND 2.0 0.31 ng/L 11/03/21 12:06 11/04/21 12:59 Perfluoroundecanoic acid (PFUnA) ND 2.0 11/03/21 12:06 11/04/21 12:59 1.1 ng/L Perfluorododecanoic acid (PFDoA) ND 2.0 11/03/21 12:06 11/04/21 12:59 0.55 ng/L Perfluorotridecanoic acid (PFTriA) ND 2.0 1.3 ng/L 11/03/21 12:06 11/04/21 12:59 Perfluorotetradecanoic acid (PFTeA) ND 20 0.73 ng/L 11/03/21 12:06 11/04/21 12:59

Perfluorobutanesulfonic acid (PFBS) ND 2.0 0.20 ng/L 11/03/21 12:06 11/04/21 12:59 Perfluorohexanesulfonic acid (PFHxS) ND 2.0 0.57 ng/L 11/03/21 12:06 11/04/21 12:59 Perfluorooctanesulfonic acid (PFOS) ND 2.0 0.54 ng/L 11/03/21 12:06 11/04/21 12:59 N-methylperfluorooctanesulfonamidoa ND 5.0 1.2 ng/L 11/03/21 12:06 11/04/21 12:59 cetic acid (NMeFOSAA)

ND 5.0 1.3 ng/L 11/03/21 12:06 11/04/21 12:59 N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA) 9-Chlorohexadecafluoro-3-oxanonan ND 2.0 0.24 ng/L 11/03/21 12:06 11/04/21 12:59 e-1-sulfonic acid ND 4.0 1.5 ng/L 11/03/21 12:06 11/04/21 12:59 Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)

11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid ND 2.0 0.40 na/L 11/03/21 12:06 11/04/21 12:59

2.0

0.32 ng/L

(ADONA)

ND

	MB	MB				
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	91		50 - 150	11/03/21 12:06	11/04/21 12:59	1
13C4 PFHpA	94		50 - 150	11/03/21 12:06	11/04/21 12:59	1
13C4 PFOA	114		50 - 150	11/03/21 12:06	11/04/21 12:59	1
13C5 PFNA	84		50 - 150	11/03/21 12:06	11/04/21 12:59	1
13C2 PFDA	97		50 - 150	11/03/21 12:06	11/04/21 12:59	1
13C2 PFUnA	89		50 - 150	11/03/21 12:06	11/04/21 12:59	1
13C2 PFDoA	109		50 - 150	11/03/21 12:06	11/04/21 12:59	1
13C2 PFTeDA	106		50 - 150	11/03/21 12:06	11/04/21 12:59	1
13C3 PFBS	104		50 - 150	11/03/21 12:06	11/04/21 12:59	1
1802 PFHxS	109		50 - 150	11/03/21 12:06	11/04/21 12:59	1
13C4 PFOS	98		50 - 150	11/03/21 12:06	11/04/21 12:59	1
d3-NMeFOSAA	83		50 - 150	11/03/21 12:06	11/04/21 12:59	1
d5-NEtFOSAA	85		50 - 150	11/03/21 12:06	11/04/21 12:59	1
13C3 HFPO-DA	90		50 - 150	11/03/21 12:06	11/04/21 12:59	1

Lab Sample ID: LCS 320-539600/2-A

**Matrix: Water** 

Analysis Batch: 539954

**Client Sample ID: Lab Control Sample** Prep Type: Total/NA **Prep Batch: 539600** 

11/03/21 12:06 11/04/21 12:59

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorohexanoic acid (PFHxA)	40.0	37.9		ng/L		95	72 - 129	
Perfluoroheptanoic acid (PFHpA)	40.0	36.0		ng/L		90	72 - 130	
Perfluorooctanoic acid (PFOA)	40.0	33.4		ng/L		83	71 - 133	
Perfluorononanoic acid (PFNA)	40.0	40.7		ng/L		102	69 - 130	

Eurofins TestAmerica, Sacramento

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Client: Shannon & Wilson, Inc Project/Site: SC water(MWs)

#### Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: LCS 320-539600/2-A

**Matrix: Water** 

Analysis Batch: 539954

**Client Sample ID: Lab Control Sample** 

•	Prep Type: Total/NA
	Prep Batch: 539600
	%Rec.

7 maryoto Batom cocco.	Spike	LCS LCS			%Rec.
Analyte	Added	Result Qualif	ier Unit	D %Rec	Limits
Perfluorodecanoic acid (PFDA)	40.0	38.0	ng/L	95	71 - 129
Perfluoroundecanoic acid	40.0	39.1	ng/L	98	69 - 133
(PFUnA)					
Perfluorododecanoic acid	40.0	38.8	ng/L	97	72 - 134
(PFDoA)					
Perfluorotridecanoic acid	40.0	42.5	ng/L	106	65 - 144
(PFTriA)					
Perfluorotetradecanoic acid	40.0	38.0	ng/L	95	71 - 132
(PFTeA)					
Perfluorobutanesulfonic acid	35.4	28.5	ng/L	81	72 - 130
(PFBS)					
Perfluorohexanesulfonic acid	36.4	34.1	ng/L	94	68 - 131
(PFHxS)					
Perfluorooctanesulfonic acid	37.1	35.5	ng/L	96	65 - 140
(PFOS)					
N-methylperfluorooctanesulfona	40.0	34.8	ng/L	87	65 - 136
midoacetic acid (NMeFOSAA)					
N-ethylperfluorooctanesulfonami	40.0	37.4	ng/L	93	61 - 135
doacetic acid (NEtFOSAA)	07.0	20.0	,,		77 407
9-Chlorohexadecafluoro-3-oxan	37.3	33.6	ng/L	90	77 - 137
onane-1-sulfonic acid					70. 400
Hexafluoropropylene Oxide	40.0	35.5	ng/L	89	72 - 132
Dimer Acid (HFPO-DA)	27.7	20.7	· /I	400	70 400
11-Chloroeicosafluoro-3-oxaund	37.7	38.7	ng/L	103	76 - 136
ecane-1-sulfonic acid	97 7	25.6	ng/l	O.F.	81 - 141
4,8-Dioxa-3H-perfluorononanoic	37.7	35.6	ng/L	95	01-141
acid (ADONA)					

LCS LCS

	LUS	LUS	
Isotope Dilution	%Recovery	Qualifier	Limits
13C2 PFHxA	63		50 - 150
13C4 PFHpA	62		50 - 150
13C4 PFOA	73		50 - 150
13C5 PFNA	56		50 - 150
13C2 PFDA	61		50 - 150
13C2 PFUnA	61		50 - 150
13C2 PFDoA	63		50 - 150
13C2 PFTeDA	70		50 - 150
13C3 PFBS	71		50 - 150
1802 PFHxS	71		50 - 150
13C4 PFOS	64		50 - 150
d3-NMeFOSAA	51		50 - 150
d5-NEtFOSAA	55		50 - 150
13C3 HFPO-DA	66		50 - 150
_			

Lab Sample ID: LCSD 320-539600/3-A

**Matrix: Water** 

**Client Sample ID: Lab Control Sample Dup** 

Prep Type: Total/NA

Analysis Batch: 539954 **Prep Batch: 539600** Spike LCSD LCSD %Rec. **RPD** Analyte Added Result Qualifier Unit D %Rec Limits RPD Limit Perfluorohexanoic acid (PFHxA) 40.0 35.5 89 72 - 129 6 30 ng/L Perfluoroheptanoic acid (PFHpA) 40.0 40.6 ng/L 102 72 - 130 12 30 Perfluorooctanoic acid (PFOA) 40.0 38.0 ng/L 95 71 - 133 13 30

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Client: Shannon & Wilson, Inc Project/Site: SC water(MWs)

#### Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: LCSD 320-539600/3-A

**Matrix: Water** 

Analysis Batch: 539954

**Client Sample ID: Lab Control Sample Dup** 

Prep Type: Total/NA Prep Batch: 539600

	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluorononanoic acid (PFNA)	40.0	38.2		ng/L		95	69 - 130	6	30
Perfluorodecanoic acid (PFDA)	40.0	44.0		ng/L		110	71 - 129	15	30
Perfluoroundecanoic acid (PFUnA)	40.0	38.5		ng/L		96	69 - 133	1	30
Perfluorododecanoic acid (PFDoA)	40.0	39.5		ng/L		99	72 - 134	2	30
Perfluorotridecanoic acid (PFTriA)	40.0	42.9		ng/L		107	65 - 144	1	30
Perfluorotetradecanoic acid (PFTeA)	40.0	38.3		ng/L		96	71 - 132	1	30
Perfluorobutanesulfonic acid (PFBS)	35.4	30.9		ng/L		87	72 - 130	8	30
Perfluorohexanesulfonic acid (PFHxS)	36.4	33.0		ng/L		91	68 - 131	3	30
Perfluorooctanesulfonic acid (PFOS)	37.1	33.3		ng/L		90	65 - 140	6	30
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	40.0	33.6		ng/L		84	65 - 136	3	30
N-ethylperfluorooctanesulfonami doacetic acid (NEtFOSAA)	40.0	40.2		ng/L		101	61 - 135	7	30
9-Chlorohexadecafluoro-3-oxan onane-1-sulfonic acid	37.3	34.0		ng/L		91	77 - 137	1	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	40.0	38.8		ng/L		97	72 - 132	9	30
11-Chloroeicosafluoro-3-oxaund ecane-1-sulfonic acid	37.7	40.8		ng/L		108	76 - 136	5	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	37.7	35.6		ng/L		94	81 - 141	0	30

LCSD LCSD

MB MB

Isotope Dilution	%Recovery Qualifier	Limits
13C2 PFHxA	62	50 - 150
13C4 PFHpA	58	50 <sub>-</sub> 150
13C4 PFOA	70	50 <sub>-</sub> 150
13C5 PFNA	57	50 - 150
13C2 PFDA	59	50 <sub>-</sub> 150
13C2 PFUnA	60	50 - 150
13C2 PFDoA	65	50 - 150
13C2 PFTeDA	71	50 <sub>-</sub> 150
13C3 PFBS	75	50 <sub>-</sub> 150
1802 PFHxS	80	50 <sub>-</sub> 150
13C4 PFOS	65	50 - 150
d3-NMeFOSAA	54	50 <sub>-</sub> 150
d5-NEtFOSAA	50	50 <sub>-</sub> 150
13C3 HFPO-DA	60	50 <sub>-</sub> 150

Lab Sample ID: MB 320-539611/1-A

**Matrix: Water** 

**Analysis Batch: 540030** 

**Client Sample ID: Method Blank** Prep Type: Total/NA **Prep Batch: 539611** 

> Analyzed Dil Fac

Result Qualifier RLMDL Unit Prepared Perfluorohexanoic acid (PFHxA) ND 2.0 0.58 ng/L 11/03/21 12:12 11/04/21 16:06 Perfluoroheptanoic acid (PFHpA) ND 2.0 0.25 ng/L 11/03/21 12:12 11/04/21 16:06

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11/12/2021

Client: Shannon & Wilson, Inc Project/Site: SC water(MWs)

#### Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: MB 320-539611/1-A **Client Sample ID: Method Blank Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 540030** 

MB MB Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac Perfluorooctanoic acid (PFOA) ND 2.0 0.85 ng/L 11/03/21 12:12 11/04/21 16:06 Perfluorononanoic acid (PFNA) ND 2.0 0.27 ng/L 11/03/21 12:12 11/04/21 16:06 Perfluorodecanoic acid (PFDA) ND 11/03/21 12:12 11/04/21 16:06 2.0 0.31 ng/L Perfluoroundecanoic acid (PFUnA) ND 2.0 1.1 ng/L 11/03/21 12:12 11/04/21 16:06 Perfluorododecanoic acid (PFDoA) ND 2.0 11/03/21 12:12 11/04/21 16:06 0.55 ng/L Perfluorotridecanoic acid (PFTriA) ND 2.0 1.3 ng/L 11/03/21 12:12 11/04/21 16:06 Perfluorotetradecanoic acid (PFTeA) ND 2.0 0.73 ng/L 11/03/21 12:12 11/04/21 16:06 Perfluorobutanesulfonic acid (PFBS) 0.20 ng/L ND 2.0 11/03/21 12:12 11/04/21 16:06 Perfluorohexanesulfonic acid (PFHxS) ND 2.0 0.57 ng/L 11/03/21 12:12 11/04/21 16:06 Perfluorooctanesulfonic acid (PFOS) ND 2.0 0.54 ng/L 11/03/21 12:12 11/04/21 16:06 11/03/21 12:12 11/04/21 16:06 N-methylperfluorooctanesulfonamidoa ND 5.0 1.2 ng/L cetic acid (NMeFOSAA) N-ethylperfluorooctanesulfonamidoac ND 5.0 1.3 ng/L 11/03/21 12:12 11/04/21 16:06 etic acid (NEtFOSAA) ND 2.0 11/03/21 12:12 11/04/21 16:06 9-Chlorohexadecafluoro-3-oxanonan 0.24 ng/L e-1-sulfonic acid Hexafluoropropylene Oxide Dimer ND 4.0 1.5 ng/L 11/03/21 12:12 11/04/21 16:06 Acid (HFPO-DA) ND 2.0 0.32 ng/L 11/03/21 12:12 11/04/21 16:06 11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid ND 2.0 0.40 ng/L 11/03/21 12:12 11/04/21 16:06 (ADONA)

MD MD

	MB	MB				
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	67		50 - 150	11/03/21 12:12	11/04/21 16:06	1
13C4 PFHpA	75		50 - 150	11/03/21 12:12	11/04/21 16:06	1
13C4 PFOA	87		50 - 150	11/03/21 12:12	11/04/21 16:06	1
13C5 PFNA	70		50 - 150	11/03/21 12:12	11/04/21 16:06	1
13C2 PFDA	75		50 - 150	11/03/21 12:12	11/04/21 16:06	1
13C2 PFUnA	77		50 - 150	11/03/21 12:12	11/04/21 16:06	1
13C2 PFDoA	78		50 - 150	11/03/21 12:12	11/04/21 16:06	1
13C2 PFTeDA	89		50 - 150	11/03/21 12:12	11/04/21 16:06	1
13C3 PFBS	78		50 - 150	11/03/21 12:12	11/04/21 16:06	1
1802 PFHxS	86		50 - 150	11/03/21 12:12	11/04/21 16:06	1
13C4 PFOS	77		50 - 150	11/03/21 12:12	11/04/21 16:06	1
d3-NMeFOSAA	81		50 - 150	11/03/21 12:12	11/04/21 16:06	1
d5-NEtFOSAA	78		50 - 150	11/03/21 12:12	11/04/21 16:06	1
13C3 HFPO-DA	70		50 - 150	11/03/21 12:12	11/04/21 16:06	1

Lab Sample ID: LCS 320-539611/2-A

**Matrix: Water** 

**Analysis Batch: 540030** 

**Client Sample ID: Lab Control Sample** Prep Type: Total/NA **Prep Batch: 539611** 

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorohexanoic acid (PFHxA)	40.0	36.5		ng/L		91	72 - 129	
Perfluoroheptanoic acid (PFHpA)	40.0	40.0		ng/L		100	72 - 130	
Perfluorooctanoic acid (PFOA)	40.0	34.8		ng/L		87	71 - 133	
Perfluorononanoic acid (PFNA)	40.0	39.0		ng/L		98	69 - 130	
Perfluorodecanoic acid (PFDA)	40.0	42.2		ng/L		106	71 - 129	
Perfluoroundecanoic acid	40.0	41.3		ng/L		103	69 - 133	
(PFUnA)								

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**Prep Batch: 539611** 

Client: Shannon & Wilson, Inc Job ID: 320-81055-1 Project/Site: SC water(MWs)

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: LCS 320-539611/2-A

**Matrix: Water** 

Analysis Batch: 540030

**Client Sample ID: Lab Control Sample Prep Type: Total/NA** 

Prep Batch: 539611

Analysis Batch: 540030	0	1.00	1.00				Prep Batch: 539611
	Spike		LCS		_	0/ 5	%Rec.
Analyte	Added		Qualifier	Unit	D	%Rec	Limits
Perfluorododecanoic acid	40.0	37.9		ng/L		95	72 - 134
(PFDoA)							
Perfluorotridecanoic acid	40.0	43.9		ng/L		110	65 - 144
(PFTriA)							
Perfluorotetradecanoic acid	40.0	38.1		ng/L		95	71 - 132
(PFTeA)							
Perfluorobutanesulfonic acid	35.4	25.6		ng/L		72	72 - 130
(PFBS)							
Perfluorohexanesulfonic acid	36.4	34.5		ng/L		95	68 - 131
(PFHxS)							
Perfluorooctanesulfonic acid	37.1	31.4		ng/L		85	65 - 140
(PFOS)							
N-methylperfluorooctanesulfona	40.0	39.0		ng/L		97	65 - 136
midoacetic acid (NMeFOSAA)							
N-ethylperfluorooctanesulfonami	40.0	38.3		ng/L		96	61 - 135
doacetic acid (NEtFOSAA)							
9-Chlorohexadecafluoro-3-oxan	37.3	32.7		ng/L		88	77 - 137
onane-1-sulfonic acid							
Hexafluoropropylene Oxide	40.0	34.9		ng/L		87	72 - 132
Dimer Acid (HFPO-DA)							
11-Chloroeicosafluoro-3-oxaund	37.7	37.4		ng/L		99	76 - 136
ecane-1-sulfonic acid							
4,8-Dioxa-3H-perfluorononanoic	37.7	34.1		ng/L		90	81 - 141
acid (ADONA)							

LCS LCS

	LUS	LUJ	
Isotope Dilution	%Recovery	Qualifier	Limits
13C2 PFHxA	70		50 - 150
13C4 PFHpA	75		50 - 150
13C4 PFOA	82		50 - 150
13C5 PFNA	70		50 - 150
13C2 PFDA	70		50 - 150
13C2 PFUnA	68		50 - 150
13C2 PFDoA	77		50 - 150
13C2 PFTeDA	83		50 - 150
13C3 PFBS	88		50 - 150
1802 PFHxS	82		50 - 150
13C4 PFOS	79		50 - 150
d3-NMeFOSAA	67		50 - 150
d5-NEtFOSAA	69		50 - 150
13C3 HFPO-DA	70		50 <sub>-</sub> 150

Lab Sample ID: LCSD 320-539611/3-A

**Matrix: Water** 

**Analysis Batch: 540478** 

**Client Sample ID: Lab Control Sample Dup** 

**Prep Type: Total/NA** Pron Batch: 539611

Prep Batch: 539611								
%Rec.		RPD						
Limits	RPD	Limit						
72 - 129	5	30						
72 - 130	3	30						

	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluorohexanoic acid (PFHxA)	40.0	38.3		ng/L		96	72 - 129	5	30
Perfluoroheptanoic acid (PFHpA)	40.0	38.7		ng/L		97	72 - 130	3	30
Perfluorooctanoic acid (PFOA)	40.0	35.0		ng/L		88	71 - 133	0	30
Perfluorononanoic acid (PFNA)	40.0	41.6		ng/L		104	69 - 130	6	30
Perfluorodecanoic acid (PFDA)	40.0	37.3		ng/L		93	71 - 129	12	30

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## **QC Sample Results**

Client: Shannon & Wilson, Inc Job ID: 320-81055-1 Project/Site: SC water(MWs)

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

**Client Sample ID: Lab Control Sample Dup** 

**Matrix: Water** 

**Analysis Batch: 540478** 

Lab Sample ID: LCSD 320-539611/3-A

**Prep Type: Total/NA Prep Batch: 539611** 

	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluoroundecanoic acid	40.0	40.7		ng/L		102	69 - 133	2	30
(PFUnA)									
Perfluorododecanoic acid	40.0	39.6		ng/L		99	72 - 134	4	30
(PFDoA)									
Perfluorotridecanoic acid	40.0	40.4		ng/L		101	65 - 144	8	30
(PFTriA)									
Perfluorotetradecanoic acid	40.0	40.2		ng/L		101	71 - 132	5	30
(PFTeA)									
Perfluorobutanesulfonic acid	35.4	29.0		ng/L		82	72 - 130	13	30
(PFBS)									
Perfluorohexanesulfonic acid	36.4	33.4		ng/L		92	68 - 131	3	30
(PFHxS)									
Perfluorooctanesulfonic acid	37.1	33.3		ng/L		90	65 - 140	6	30
(PFOS)									
N-methylperfluorooctanesulfona	40.0	34.7		ng/L		87	65 - 136	12	30
midoacetic acid (NMeFOSAA)									
N-ethylperfluorooctanesulfonami	40.0	39.0		ng/L		97	61 - 135	2	30
doacetic acid (NEtFOSAA)									
9-Chlorohexadecafluoro-3-oxan	37.3	34.4		ng/L		92	77 - 137	5	30
onane-1-sulfonic acid									
Hexafluoropropylene Oxide	40.0	40.5		ng/L		101	72 - 132	15	30
Dimer Acid (HFPO-DA)									
11-Chloroeicosafluoro-3-oxaund	37.7	35.0		ng/L		93	76 - 136	7	30
ecane-1-sulfonic acid									
4,8-Dioxa-3H-perfluorononanoic	37.7	34.2		ng/L		91	81 - 141	0	30
acid (ADONA)									

LCSD LCSD

	2002	_002	
Isotope Dilution	%Recovery	Qualifier	Limits
13C2 PFHxA	104		50 - 150
13C4 PFHpA	103		50 - 150
13C4 PFOA	116		50 - 150
13C5 PFNA	98		50 - 150
13C2 PFDA	108		50 - 150
13C2 PFUnA	104		50 - 150
13C2 PFDoA	105		50 - 150
13C2 PFTeDA	104		50 - 150
13C3 PFBS	118		50 - 150
1802 PFHxS	117		50 - 150
13C4 PFOS	116		50 <sub>-</sub> 150
d3-NMeFOSAA	106		50 - 150
d5-NEtFOSAA	102		50 - 150
13C3 HFPO-DA	99		50 <sub>-</sub> 150

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## **QC Association Summary**

Client: Shannon & Wilson, Inc Job ID: 320-81055-1 Project/Site: SC water(MWs)

## LCMS

Duan	Datahi	ESOCOO
Preb	Datch:	539600

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81055-11	PW-016	Total/NA	Water	3535	
MB 320-539600/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-539600/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-539600/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

#### **Prep Batch: 539611**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81055-1	MW-23-20	Total/NA	Water	3535	
320-81055-2	MW-23-50	Total/NA	Water	3535	
320-81055-3	MW-123-50	Total/NA	Water	3535	
320-81055-4	MW-9-10	Total/NA	Water	3535	
320-81055-5	MW-17-20	Total/NA	Water	3535	
320-81055-6	MW-17-40	Total/NA	Water	3535	
320-81055-7	MW-117-40	Total/NA	Water	3535	
320-81055-8	21GST-TWP-13	Total/NA	Water	3535	
320-81055-9	21GST-TWP-14	Total/NA	Water	3535	
320-81055-10	21GST-TWP-114	Total/NA	Water	3535	
MB 320-539611/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-539611/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-539611/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

#### Analysis Batch: 539954

<b>Lab Sample ID</b> 320-81055-11	Client Sample ID PW-016	Prep Type Total/NA	Matrix Water	Method EPA 537(Mod)	Prep Batch 539600
MB 320-539600/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	539600
LCS 320-539600/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	539600
LCSD 320-539600/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	539600

#### **Analysis Batch: 540030**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81055-1	MW-23-20	Total/NA	Water	EPA 537(Mod)	539611
320-81055-2	MW-23-50	Total/NA	Water	EPA 537(Mod)	539611
320-81055-3	MW-123-50	Total/NA	Water	EPA 537(Mod)	539611
320-81055-4	MW-9-10	Total/NA	Water	EPA 537(Mod)	539611
320-81055-5	MW-17-20	Total/NA	Water	EPA 537(Mod)	539611
320-81055-6	MW-17-40	Total/NA	Water	EPA 537(Mod)	539611
320-81055-7	MW-117-40	Total/NA	Water	EPA 537(Mod)	539611
320-81055-8	21GST-TWP-13	Total/NA	Water	EPA 537(Mod)	539611
320-81055-9	21GST-TWP-14	Total/NA	Water	EPA 537(Mod)	539611
320-81055-10	21GST-TWP-114	Total/NA	Water	EPA 537(Mod)	539611
MB 320-539611/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	539611
LCS 320-539611/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	539611

#### **Analysis Batch: 540478**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
I CSD 320-539611/3-A	Lab Control Sample Dun	Total/NA	Water	FPA 537(Mod)	539611

2

Job ID: 320-81055-1

Client: Shannon & Wilson, Inc Project/Site: SC water(MWs)

Client Sample ID: MW-23-20

Date Collected: 10/24/21 16:50 Date Received: 10/29/21 15:04 Lab Sample ID: 320-81055-1

**Matrix: Water** 

**Matrix: Water** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			266.3 mL	10.0 mL	539611	11/03/21 12:12	KJW	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			540030	11/04/21 16:37	S1M	TAL SAC

Client Sample ID: MW-23-50 Lab Sample ID: 320-81055-2

Date Collected: 10/25/21 14:39 Matrix: Water

Date Received: 10/29/21 15:04

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			263 mL	10.0 mL	539611	11/03/21 12:12	KJW	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			540030	11/04/21 16:48	S1M	TAL SAC

Client Sample ID: MW-123-50 Lab Sample ID: 320-81055-3

Date Collected: 10/25/21 14:29

Date Received: 10/29/21 15:04

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			257.8 mL	10.0 mL	539611	11/03/21 12:12	KJW	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			540030	11/04/21 16:58	S1M	TAL SAC

Client Sample ID: MW-9-10

Date Collected: 10/25/21 18:01

Lab Sample ID: 320-81055-4

Matrix: Water

Date Received: 10/29/21 15:04

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			253.6 mL	10.0 mL	539611	11/03/21 12:12	KJW	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			540030	11/04/21 17:08	S1M	TAL SAC

Client Sample ID: MW-17-20

Date Collected: 10/26/21 12:58

Lab Sample ID: 320-81055-5

Matrix: Water

Date Received: 10/29/21 15:04

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			253.2 mL	10.0 mL	539611	11/03/21 12:12	KJW	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			540030	11/04/21 17:19	S1M	TAL SAC

Client Sample ID: MW-17-40

Date Collected: 10/26/21 14:54

Lab Sample ID: 320-81055-6

Matrix: Water

Date Received: 10/29/21 15:04

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analvst	Lab
Total/NA	Prep	3535	_	- 1 40101	259.1 mL	10.0 mL	539611	11/03/21 12:12		TAL SAC
Total/NA	Δnalveis	FPA 537(Mod)		1			540030	11/04/21 17:29	S1M	TAL SAC

Eurofins TestAmerica, Sacramento

Client: Shannon & Wilson, Inc Project/Site: SC water(MWs)

Client Sample ID: MW-117-40

Date Collected: 10/26/21 14:44

Lab Sample ID: 320-81055-7

**Matrix: Water** 

**Matrix: Water** 

**Matrix: Water** 

Date Received: 10/29/21 15:04

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			268 mL	10.0 mL	539611	11/03/21 12:12	KJW	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			540030	11/04/21 17:40	S1M	TAL SAC

Client Sample ID: 21GST-TWP-13

Date Collected: 10/24/21 15:15

Lab Sample ID: 320-81055-8

Matrix: Water

Date Collected: 10/24/21 15:15 Date Received: 10/29/21 15:04

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			262.9 mL	10.0 mL	539611	11/03/21 12:12	KJW	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			540030	11/04/21 18:11	S1M	TAL SAC

Client Sample ID: 21GST-TWP-14 Lab Sample ID: 320-81055-9

Date Collected: 10/24/21 16:42 Date Received: 10/29/21 15:04

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			250.6 mL	10.0 mL	539611	11/03/21 12:12	KJW	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			540030	11/04/21 18:21	S1M	TAL SAC

Client Sample ID: 21GST-TWP-114 Lab Sample ID: 320-81055-10

Date Collected: 10/24/21 16:32 Date Received: 10/29/21 15:04

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			252.5 mL	10.0 mL	539611	11/03/21 12:12	KJW	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			540030	11/04/21 18:31	S1M	TAL SAC

Client Sample ID: PW-016

Date Collected: 10/26/21 08:38

Lab Sample ID: 320-81055-11

Matrix: Water

Date Received: 10/29/21 15:04

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			258.4 mL	10.0 mL	539600	11/03/21 12:06	KJW	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			539954	11/04/21 13:30	MNV	TAL SAC

#### **Laboratory References:**

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

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## **Accreditation/Certification Summary**

Client: Shannon & Wilson, Inc Job ID: 320-81055-1

## Project/Site: SC water(MWs)

## **Laboratory: Eurofins TestAmerica, Sacramento**

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24

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## **Method Summary**

Client: Shannon & Wilson, Inc Project/Site: SC water(MWs)

Job ID: 320-81055-1

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.3, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

#### **Protocol References:**

EPA = US Environmental Protection Agency

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

#### Laboratory References:

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

## **Sample Summary**

Client: Shannon & Wilson, Inc Project/Site: SC water(MWs)

320-81055-10 320-81055-11 21GST-TWP-114

PW-016

Lab Sample ID Client Sample ID Matrix Collected Received 320-81055-1 MW-23-20 Water 10/24/21 16:50 10/29/21 15:04 Water 320-81055-2 MW-23-50 10/25/21 14:39 10/29/21 15:04 320-81055-3 MW-123-50 Water 10/25/21 14:29 10/29/21 15:04 320-81055-4 MW-9-10 Water 10/25/21 18:01 10/29/21 15:04 320-81055-5 MW-17-20 Water 10/26/21 12:58 10/29/21 15:04 320-81055-6 MW-17-40 Water 10/26/21 14:54 10/29/21 15:04 320-81055-7 MW-117-40 Water 10/26/21 14:44 10/29/21 15:04 320-81055-8 21GST-TWP-13 Water 10/24/21 15:15 10/29/21 15:04 21GST-TWP-14 Water 10/24/21 16:42 10/29/21 15:04 320-81055-9

Water

Water

10/24/21 16:32 10/29/21 15:04

10/26/21 08:38 10/29/21 15:04

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Job ID: 320-81055-1

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11/12/2021

No.

Client: Shannon & Wilson, Inc

Job Number: 320-81055-1

Login Number: 81055

List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Cahill, Nicholas P

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

	320-81054-1
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Laboratory Report Date:

7.	Other Data Fla	ıgs/Qualifi	<u>ers (ACOE, </u>	AFCEE, L	ab Specific, a	etc.)

a. Defined an	d appropriate?
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Yes $\square$ No $\square$ N/A $\boxtimes$ Co
---

No additional data flags/qualifiers were required.

## **Laboratory Data Review Checklist**

Completed By:			
Justin Risley			
Title:			
Engineering Staff			
Date:			
November 15, 2021			
Consultant Firm:			
Shannon & Wilson, Inc.			
Laboratory Name:			
Eurofins / TestAmerica Laboratories, Inc. (TestAmerica)			
Laboratory Report Number:			
320-81055-1			
Laboratory Report Date:			
11/12/2021			
CS Site Name:			
DOT&PF Gustavus Airport Statewide PFAS			
ADEC File Number:			
1507.38.017			
Hazard Identification Number:			
26904			

	320-81055-1
Lal	boratory Report Date:
	Note: Any N/A or No box checked must have an explanation in the comments box.
1.	<u>Laboratory</u>
	a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?
	Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:
	TestAmerica/Eurofins Laboratories West Sacramento, CA is CS certified for the analysis of perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) by method 537. The laboratory is also certified under the Department of Defense Environmental Laboratory Accreditation Program (DoD ELAP) for the requested analyses.
	b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?
	$Yes \square No \square N/A \boxtimes Comments:$
	The samples were not transferred to a network laboratory or subcontracted out.
2.	Chain of Custody (CoC)
	a. CoC information completed, signed, and dated (including released/received by)?
	Yes⊠ No□ N/A□ Comments:
	b. Correct analyses requested?
	$Yes \boxtimes No \square N/A \square$ Comments:
3.	Laboratory Sample Receipt Documentation
	a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?
	Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:
	b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?
	$Yes \boxtimes No \square N/A \square$ Comments:
	c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?
	$Yes \boxtimes No \square N/A \square$ Comments:
	The sample receipt form notes that the samples arrived in good condition.

y Report Date:	
y Report Date.	
• •	ies, were they documented? For example, incorrect sample ple temperature outside of acceptable range, insufficient or missing
Yes□ No□ N/A⊠	Comments:
ere were no discrepancies not	red in the sample receipt documentation.
Data quality or usability affe	cted?
	Comments:
data quality/usability is not	affected.
I I	containers/preservation, samsamples, etc.?  Yes□ No□ N/A⊠  re were no discrepancies not  Data quality or usability affe

#### Case Narrative

a. Present and understandable?

 $Yes \boxtimes No \square N/A \square$ Comments:

Method EPA 537(Mod): The "I" qualifier means the transition mass ratio for the indicated analyte was above the established ratio limits. The qualitative identification of the analyte has some degree of uncertainty, and the reported value may have some high bias. However, analyst judgment was used to positively identify the analyte.

Method EPA 537(Mod): The recoveries of one or more isotope dilution analytes (IDAs) associated with the samples MW-23-50, MW-123-50, MW-17-40 and 21GST-TWP-114 were below the method recommended limit. Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in these samples.

Method EPA 537(Mod): The IDA recovery associated with the sample PW-016 is below the method recommended limit. Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in this sample.

Method 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-539600.

Method 3535: The sample PW-016 was preserved with trizma. Thus, the associated MB, LCS and LCSD also contain trizma.

Page 3 May 2020

Labora	atory Report Date:
	b. Discrepancies, errors, or QC failures identified by the lab?
	Yes⊠ No□ N/A□ Comments:
	Method 3535: The sample <i>PW-016</i> exhibited a yellow hue prior to extraction.
	Method 3535: Insufficient sample volume was available to perform a MS/MSD associated with preparation batch 320-539611.
	Method 3535: The sample 21GST-TWP-13 exhibited a yellow hue prior to extraction.
	Method 3535: The following samples contained a thin layer of sediment at the bottom of the bottle prior to extraction: <i>MW-23-20</i> , <i>MW-9-10</i> , <i>MW-17-20</i> , <i>21GST-TWP-14</i> and <i>21GST-TWP-114</i> .
	Method 3535: The following samples exhibited a yellow hue and contained a thin layer of sediment at the bottom of the bottle prior to extraction: <i>MW-23-50</i> , <i>MW-123-50</i> , <i>MW-17-40</i> , and <i>MW-117-40</i> .
	Method 3535: During the solid phase extraction process, the following samples contained non-settleable particulates which clogged the solid phase extraction column: <i>MW-23-20</i> , <i>MW-23-50</i> , and <i>MW-123-50</i> .
	Method 3535: The extract for samples <i>MW-17-40</i> and <i>MW-117-40</i> exhibited a yellow hue after final voluming.
	c. Were all corrective actions documented?
	Yes $\square$ No $\square$ N/A $\boxtimes$ Comments:
	No corrective actions were detailed in the case narrative.
	d. What is the effect on data quality/usability according to the case narrative?
	Comments:
	The laboratory assigned the "I" qualifier to results affected by transition mass ratio failures and notes that they may have some high bias.
5. <u>Sa</u>	mples Results
	a. Correct analyses performed/reported as requested on COC?
	Yes⊠ No□ N/A□ Comments:
	b. All applicable holding times met?
	Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:

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	32	0-81055-1
La	bora	atory Report Date:
		c. All soils reported on a dry weight basis?
		$Yes \square No \square N/A \boxtimes Comments:$
		Soil samples were not submitted with this work order.
		d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?
		$Yes \boxtimes No \square N/A \square$ Comments:
		The reporting limits (RLs) are less than the applicable DEC regulatory limits for the requested analytes.
		e. Data quality or usability affected?
		The data quality/usability is not affected.
6.	<u>Q(</u>	<u>C Samples</u>
		a. Method Blank
		i. One method blank reported per matrix, analysis and 20 samples?
		Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:
		ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?
		Yes⊠ No□ N/A□ Comments:
		iii. If above LOQ or project specified objectives, what samples are affected?  Comments:
		None; target PFAS were not detected in the method blank samples.
		iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
		$Yes \square No \square N/A \boxtimes Comments:$
		The results were not affected by laboratory contamination; see above.
		v. Data quality or usability affected?  Comments:
		The data quality/usability is not affected.

320-81055-1	
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## Laboratory Report Date:

b. Laboratory Control Sample/Duplicate (LCS/LCSD)		
<ul> <li>Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)</li> </ul>		
Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:		
ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?		
$Yes \square No \square N/A \boxtimes Comments:$		
Metals/Inorganics analyses were not requested for this work order.		
iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)		
Yes⊠ No□ N/A□ Comments:		
iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from LCS/LCSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)		
Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:		
v. If %R or RPD is outside of acceptable limits, what samples are affected?  Comments:		
None; method accuracy and precision were demonstrated to be within acceptable limits.		
vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?		
Yes $\square$ No $\square$ N/A $\boxtimes$ Comments:		
Qualification was not required; see above.		
vii. Data quality or usability affected? (Use comment box to explain.)		
Comments:		
The data quality/usability is not affected.		

320-81055-1
aboratory Report Date:
<ul> <li>c. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Note: Leave blank if not required for project <ol> <li>Organics – One MS/MSD reported per matrix, analysis and 20 samples?</li> <li>Yes No N/A Comments:</li> </ol> </li> <li>A MS/MSD was not analyzed with this work order; however, the laboratory analyzed LCS and LCSD samples to assess laboratory accuracy and precision.</li> <li>Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?</li> </ul>
Yes $\square$ No $\square$ N/A $\boxtimes$ Comments:
Metals/Inorganics analyses were not requested for this work order.
iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?
$Yes \square No \square N/A \boxtimes Comments:$
MS and MSD samples were not analyzed for this work order.
iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from MS/MSD, and or sample/sample duplicate.
$Yes \square No \square N/A \boxtimes Comments:$
MS and MSD samples were not analyzed for this work order.
v. If %R or RPD is outside of acceptable limits, what samples are affected?  Comments:
N/A; MS and MSD samples were not analyzed for this work order.
vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes No N/A Comments:
MS and MSD samples were not analyzed for this work order.
vii. Data quality or usability affected? (Use comment box to explain.)  Comments:
The data quality/usability is not affected.
d. Surrogates – Organics Only or Isotope Dilution Analytes (IDA) – Isotope Dilution Methods Only
<ul> <li>i. Are surrogate/IDA recoveries reported for organic analyses – field, QC and laboratory samples?</li> </ul>
Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:

320-81055-1
Laboratory Report Date:
ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods 50-150 %R for field samples and 60-120 %R for QC samples; all other analyses see the laboratory report pages)
Yes $\square$ No $\boxtimes$ N/A $\square$ Comments:  The recoveries for all IDAs except 13C4 PFOA were below the laboratory's lower control limits in the project sample $MW$ -23-50.
The recoveries for all IDAs were below the laboratory's lower control limits in the project sample <i>MW-123-50</i> .
The recoveries for the IDAs 13C2 PFHxA, 13C4 PFHpA, 13C5 PFNA, d3-NMeFOSAA, and 13C3 HFPO-DA were below the laboratory's lower control limits in project sample <i>MW-17-40</i> .
The recoveries for the IDAs 13C5 PFNA and 13C3 HFPO-DA were below the laboratory's lower control limits in the project sample 21GST-TWP-114.
The recoveries for the IDAs d3-NMeFOSAA and d5-NEtFOSAA were below the laboratory's lower control limits in the project sample <i>PW-016</i> .
iii. Do the sample results with failed surrogate/IDA recoveries have data flags? If so, are the data flags clearly defined?
Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:
All target PFAS results except PFOA are affected by low IDA recovery in sample <i>MW-23-50</i> . These non-detect results are considered estimated with no direction of bias and have been flagged 'UJ' to denote the uncertainty.
All target PFAS results for sample <i>MW-123-50</i> are affected by low IDA recovery. These non-detect results are considered estimated with no direction of bias and have been flagged 'UJ' to denote the uncertainty.
The non-detect PFHxA, PFHpA, PFNA, NMeFOSAA, and HFPO-DA results of sample <i>MW-17-40</i> are affected by low IDA recovery. These results are considered estimated with no direction of bias and have been flagged 'UJ' to denote uncertainty.
The non-detect PFNA and HFPO-DA results of sample 21GST-TWP-114 are affected by low IDA

recovery. These results are considered estimated with no direction of bias and have been flagged 'UJ' to denote uncertainty.

The non-detect NMeFOSAA and NEtFOSAA results of sample *PW-016* are affected by low IDA recovery. These results are considered estimated with no direction of bias and have been flagged 'UJ' to denote uncertainty.

iv. Data quality or usability affected?

Comments:

The data quality is affected; see above for applied qualifiers.

320-8	31055-1
Laborator	ry Report Date:
e.	Trip Blanks
	<ul> <li>i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples?</li> <li>(If not, enter explanation below.)</li> </ul>
	Yes $\square$ No $\square$ N/A $\boxtimes$ Comments:
PI	FAS are not volatile compounds. A trip blank is not required for the requested analysis.
	ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)
	Yes $\square$ No $\square$ N/A $\boxtimes$ Comments:
A	trip blank is not required for the requested analysis.
<u> </u>	iii. All results less than LOQ and project specified objectives?
	Yes $\square$ No $\square$ N/A $\boxtimes$ Comments:
A	trip blank is not required for the requested analysis.
	iv. If above LOQ or project specified objectives, what samples are affected?  Comments:
N	/A; a trip blank is not required for the requested analysis.
	v. Data quality or usability affected?  Comments:
Ti	he data quality and/or usability was not affected; see above.

- f. Field Duplicate
  - i. One field duplicate submitted per matrix, analysis and 10 project samples?

 $Yes \boxtimes No \square N/A \square$ Comments:

ii. Submitted blind to lab?

 $Yes \boxtimes No \square N/A \square$ Comments:

The field duplicate pairs MW-23-50 / MW-123-50, MW-17-40 / MW-117-40, and 21GST-TWP-14 / 21GST-TWP-114 were submitted with this work order.

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320-81055-1
Laboratory Report Date:
iii. Precision – All relative percent differences (RPD) less than specified project objectives? (Recommended: 30% water, 50% soil)
Yes $\square$ No $\boxtimes$ N/A $\square$ Comments:  Target PFAS were not detected in the field duplicate pairs $MW$ -23-50 / $MW$ -123-50 and $MW$ -17-40 / $MW$ -117-40 so the relative precision could not be assessed.
The relative precision demonstrated between the detected results of the field duplicate samples 21GST-TWP-14 and 21GST-TWP-114 was within the recommended DQO of 30%, where calculable, for all analytes.
iv. Data quality or usability affected? (Use the comment box to explain why or why not.)  Comments:
The data quality/usability is not affected.
g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below)?
$Yes \square No \square N/A \boxtimes Comments:$
Reusable equipment was not used in the sampling procedure; therefore, an equipment blank is unnecessary.
i. All results less than LOQ and project specified objectives?
$Yes \square No \square N/A \boxtimes Comments:$
An equipment blank was not required.
ii. If above LOQ or project specified objectives, what samples are affected?  Comments:

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iii. Data quality or usability affected?

The data quality/usability is not affected.

Comments:

N/A; see above.

Ī	320-81055-1
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Laboratory Report Date:

- 7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)
  - a. Defined and appropriate?

$Yes \boxtimes No \square N/A \square$ Comm
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Yes  $\boxtimes$  No  $\sqcup$  N/A  $\sqcup$  Comments:
The PFHpA result of sample *PW-016* was affected by a transition mass ratio failure and was subsequently quantified manually. We consider this result an estimate and have applied the 'J' qualifier.

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# **Environment Testing America**

## **ANALYTICAL REPORT**

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

Laboratory Job ID: 320-81254-1 Client Project/Site: SC Soils#3

For:

Shannon & Wilson, Inc 2355 Hill Rd. Fairbanks, Alaska 99709-5244

Attn: Kristen Freiburger

Vani altimo

Authorized for release by: 11/17/2021 10:36:13 AM

David Alltucker, Project Manager I (916)374-4383

David.Alltucker@Eurofinset.com

·····LINKS ······

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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Client: Shannon & Wilson, Inc Project/Site: SC Soils#3 Laboratory Job ID: 320-81254-1

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## **Definitions/Glossary**

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

## **Qualifiers**

		N A	C
_	U	IV	J

POS

PQL

QC

RER

**RPD** 

TEF

TEQ

TNTC

RL

**PRES** 

Positive / Present

Presumptive

**Quality Control** 

**Practical Quantitation Limit** 

Relative Error Ratio (Radiochemistry)

Toxicity Equivalent Factor (Dioxin) Toxicity Equivalent Quotient (Dioxin)

Too Numerous To Count

Reporting Limit or Requested Limit (Radiochemistry)

Relative Percent Difference, a measure of the relative difference between two points

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary	
Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent

#### **Case Narrative**

Client: Shannon & Wilson, Inc Job ID: 320-81254-1
Project/Site: SC Soils#3

Job ID: 320-81254-1

Laboratory: Eurofins TestAmerica, Sacramento

**Narrative** 

Job Narrative 320-81254-1

#### Receipt

The samples were received on 11/3/2021 2:01 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 6.7° C and 8.0° C.

#### **Receipt Exceptions**

Cooler was received out of acceptable temperature range.

#### **LCMS**

Method EPA 537(Mod): The "I" qualifier means the transition mass ratio for the indicated analytes were below the established ratio limits. The qualitative identification of the analytes have some degree of uncertainty. However, analyst judgment was used to positively identify the analytes.

Method EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommended limit: (CCB 320-542058/1). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the samples.

Method EPA 537(Mod): Results for samples 21GST-SS-022 (320-81254-9), 21GST-SS-021 (320-81254-10), 21GST-SS-020 (320-81254-11), 21GST-SS-008 (320-81254-18) and 21GST-SS-106 (320-81254-20) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits

Method EPA 537(Mod): Results for samples 21GST-SS-009 (320-81254-78), 21GST-SB011-01 (320-81254-95) and 21GST-SB011-02 (320-81254-97) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits.

Method EPA 537(Mod): Results for sample 21GST-SB011-12 (320-81254-96) was reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits.

Method EPA 537(Mod): The matrix spike duplicate (MSD) recovery for Perfluoro (2-propoxypropanoic) acid of preparation batch 320-541157 and analytical batch 320-542528 was outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

#### **General Chemistry**

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

#### Organic Prep

Method SHAKE: The following samples were yellow after extraction/final volume: 21GST-SS-022 (320-81254-9), 21GST-SS-021 (320-81254-10), 21GST-SS-020 (320-81254-11), 21GST-SS-018 (320-81254-13), 21GST-SS-006 (320-81254-19) and 21GST-SS-106 (320-81254-20)

preparation batch 320-540825

Method SHAKE: The following samples were yellow after extraction/final volume: 21GST-SB011-01 (320-81254-95), 21GST-SS-004 (320-81254-105), 21GST-SS-003 (320-81254-106), 21GST-SS-103 (320-81254-107), 21GST-SS-002 (320-81254-108), 21GST-SS-001 (320-81254-109) and 21GST-MW16-01 (320-81254-110) preparation batch 320-541730

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#### **Case Narrative**

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Job ID: 320-81254-1 (Continued)

Laboratory: Eurofins TestAmerica, Sacramento (Continued)

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

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Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-S	S-023					Lab Sar	mple ID: 32	0-81254-
_ Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac D	Method	Prep Type
Perfluorononanoic acid (PFNA)	0.033	J	0.21	0.023	ug/Kg		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.091	JI	0.21	0.046	ug/Kg	1 ‡	EPA 537(Mod)	Total/NA
Client Sample ID: 21GST-S	S-029					Lab Sar	mple ID: 32	0-81254-
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac D	Method	Prep Type
Perfluorononanoic acid (PFNA)	0.063	J	0.21	0.023	ug/Kg	1 🌣	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.78	I	0.21	0.044	ug/Kg	1 ಘ	EPA 537(Mod)	Total/NA
Client Sample ID: 21GST-S	S-028					Lab Sar	mple ID: 32	0-81254-
No Detections.								
Client Sample ID: 21GST-S	S-027					Lab Sar	mple ID: 32	0-81254-
_ Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.11	JI	0.20	0.043	ug/Kg	<u> </u>	EPA 537(Mod)	Total/NA
Client Sample ID: 21GST-S	S-026					Lab Sar	mple ID: 32	0-81254-
_ Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac D	Method	Prep Type
Perfluorotridecanoic acid (PFTriA)	0.085	JI	0.26	0.027	ug/Kg	1 🌣	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.13	JI	0.26	0.056	ug/Kg	1 ‡	EPA 537(Mod)	Total/NA
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	0.086	J	0.26	0.062	ug/Kg	1 ☆	EPA 537(Mod)	Total/NA
Client Sample ID: 21GST-S	S-126					Lab Sar	mple ID: 32	0-81254-0
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac D	Method	Prep Type
Perfluorononanoic acid (PFNA)	0.033	J	0.25	0.027	ug/Kg		EPA 537(Mod)	Total/NA
Perfluorotridecanoic acid (PFTriA)	0.26	1	0.25	0.026	ug/Kg	1 ☆	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.23	JI	0.25	0.053	ug/Kg	1 ‡	EPA 537(Mod)	Total/NA
Client Sample ID: 21GST-S	S-025					Lab Sar	mple ID: 32	0-81254-
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.087		0.20	0.040	ug/Kg		EPA 537(Mod)	Total/NA

Cheft Sample ID: 21651-	-55-024

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorododecanoic acid (PFDoA)	0.050	J	0.22	0.033	ug/Kg	1	✡	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.12	JI	0.22	0.048	ug/Kg	1	₩	EPA 537(Mod)	Total/NA

## Client Sample ID: 21GST-SS-022

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	2.1		0.22	0.034	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.64		0.22	0.042	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	1.8		0.22	0.058	ug/Kg	1	₽	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.38		0.22	0.024	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	2.1		0.22	0.053	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluoroundecanoic acid (PFUnA)	7.6		0.22	0.046	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorododecanoic acid (PFDoA)	2.0		0.22	0.033	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorotridecanoic acid (PFTriA)	0.53		0.22	0.023	ug/Kg	1	₩	EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

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Lab Sample ID: 320-81254-8

Lab Sample ID: 320-81254-9

11/17/2021

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

## Client Sample ID: 21GST-SS-022 (Continued)

## Lab Sample ID: 320-81254-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorotetradecanoic acid (PFTeA)	0.74		0.22	0.041	ug/Kg		₩	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	4.0		0.22	0.042	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	0.37		0.22	0.025	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS) - DL	20	J	22	3.2	ug/Kg	100	₩	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	310		22	4.7	ug/Kg	100	₩	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SS-021

## Lab Sample ID: 320-81254-10

Analyte	Result C	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.65		0.22	0.034	ug/Kg		✡	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.32		0.22	0.041	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	0.75		0.22	0.057	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.45		0.22	0.024	ug/Kg	1	. ∵	EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	2.6		0.22	0.052	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluoroundecanoic acid (PFUnA)	15		0.22	0.046	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorododecanoic acid (PFDoA)	2.3		0.22	0.033	ug/Kg	1		EPA 537(Mod)	Total/NA
Perfluorotridecanoic acid (PFTriA)	0.30		0.22	0.023	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.41		0.22	0.040	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.35		0.22	0.041	ug/Kg	1	₩.	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.6		0.22	0.031	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	0.77		0.22	0.025	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	32		2.2	0.47	ug/Kg	10	₩	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SS-020

## Lab Sample ID: 320-81254-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.25		0.21	0.032	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.079	J	0.21	0.039	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	0.28		0.21	0.055	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.10	J	0.21	0.023	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	0.37		0.21	0.049	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluoroundecanoic acid (PFUnA)	1.0		0.21	0.043	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.37		0.21	0.031	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorotridecanoic acid (PFTriA)	0.052	J	0.21	0.022	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.092	J	0.21	0.038	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.36		0.21	0.039	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.4		0.21	0.030	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	27		2.1	0.44	ug/Kg	10	₩	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SS-019

## Lab Sample ID: 320-81254-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.10	J	0.21	0.033	ug/Kg		₩	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	0.14	J	0.21	0.056	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.047	J	0.21	0.023	ug/Kg	1	₽	EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	0.17	J	0.21	0.050	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.96		0.21	0.044	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.18	J	0.21	0.032	ug/Kg	1	₩	EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

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Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SS-019 (Continued)

Lab Sample ID: 320-81254-12

Analyte Perfluorotridecanoic acid (PFTriA)	Result 0.046	Qualifier	RL 0.21	MDL 0.022	Unit ug/Kg		_	Method EPA 537(Mod)	Prep Type Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.044		0.21		ug/Kg			EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.84		0.21	0.030	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	13		0.21	0.045	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	0.034	J	0.21	0.024	ug/Kg	1	₩	EPA 537(Mod)	Total/NA

#### Client Sample ID: 21GST-SS-018

Lab Sample ID: 320-81254-13

No Detections.

#### Client Sample ID: 21GST-SS-014

Lab	S	Samp	le l	D	: 3	32	8-0	31	254	<b>l-1</b>	4

Analyte	Result Qualifier	RL	MDL Unit	Dil Fac D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.23 JI	0.27	0.057 ug/Kg	1 🌣	EPA 537(Mod)	Total/NA

#### Client Sample ID: 21GST-SS-017

## Lab Sample ID: 320-81254-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.036	J	0.21	0.031	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.24	1	0.21	0.045	ug/Kg	1	₩	EPA 537(Mod)	Total/NA

## Client Sample ID: 21GST-SS-016

#### Lab Sample ID: 320-81254-16

Analyte	Result Qualifier	RL	MDL Unit	Dil Fac [	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.14 JI	0.22	0.046 ug/Kg		EPA 537(Mod)	Total/NA

#### Client Sample ID: 21GST-SS-015

#### Lab Sample ID: 320-81254-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	: D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.27	I	0.20	0.044	ug/Kg		₿	EPA 537(Mod)	Total/NA

#### Client Sample ID: 21GST-SS-008

#### Lab Sample ID: 320-81254-18

Analyte	Result Qualifier	RL	MDL (	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.59	0.23	0.034 L	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)DL	33	2.3	0.50 ι	ug/Kg	10	₩	EPA 537(Mod)	Total/NA

#### Client Sample ID: 21GST-SS-006

#### Lab Sample ID: 320-81254-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.37		0.27	0.042	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.12	J	0.27	0.052	ug/Kg	1	₽	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	0.21	J	0.27	0.072	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.087	J	0.27	0.030	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	0.22	J	0.27	0.065	ug/Kg	1	₽	EPA 537(Mod)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.27		0.27	0.057	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.40		0.27	0.041	ug/Kg	1	⊅	EPA 537(Mod)	Total/NA
Perfluorotridecanoic acid (PFTriA)	0.25	J	0.27	0.028	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.34		0.27	0.050	ug/Kg	1	₽	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.24	J	0.27	0.052	ug/Kg	1	⊅	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.6		0.27	0.039	ug/Kg	1	₽	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	17		0.27	0.058	ug/Kg	1	₩	EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

11/17/2021

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Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

N-methylperfluorooctanesulfonamidoa

Client Sample ID: 21GS	1-88-006 (Continued)			Lab Sample ID: 3	320-81254-19
Analyte	Result Qualifier	RL	MDL Unit	Dil Fac D Method	Prep Type

0.27

0.031 ug/Kg

0.11 J

cetic acid (NMeFOSAA)

Client Sample ID: 21GST-SS-106	Lab Sample ID: 320-81254-20
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Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.92		0.26	0.040	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.36		0.26	0.048	ug/Kg	1	₽	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	0.45		0.26	0.068	ug/Kg	1	₽	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.13	J	0.26	0.028	ug/Kg	1	⊅	EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	0.34		0.26	0.061	ug/Kg	1	₽	EPA 537(Mod)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.35		0.26	0.054	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.60		0.26	0.038	ug/Kg	1	⊅	EPA 537(Mod)	Total/NA
Perfluorotridecanoic acid (PFTriA)	0.47		0.26	0.027	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.63		0.26	0.047	ug/Kg	1	₽	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.45		0.26	0.048	ug/Kg	1	⊅	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.9		0.26	0.037	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	0.38		0.26	0.029	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	33		2.6	0.55	ug/Kg	10	₩	EPA 537(Mod)	Total/NA

### Client Sample ID: 21GST-SS-005

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type	
Perfluorohexanoic acid (PFHxA)	0.083	J	0.20	0.031	ug/Kg	1	₩	EPA 537(Mod)	Total/NA	
Perfluorohexanesulfonic acid (PFHxS)	0.74		0.20	0.029	ug/Kg	1	₩	EPA 537(Mod)	Total/NA	
Perfluorooctanesulfonic acid (PEOS)	6.5		0.20	0.044	ua/Ka	1	344	EPA 537(Mod)	Total/NA	

#### Client Sample ID: 21GST-SS-007

Analyte	Result C	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.17 J	J I	0.29	0.042	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	5.8		0.29	0.063	ug/Kg	1	₩	EPA 537(Mod)	Total/NA

## Client Sample ID: 21GST-MW14-01

No Detections.

Client Sample ID: 21GST-MW14-10

No Detections.

Client Sample ID: 21GST-MW14-02

No Detections.

Client Sample ID: 21GST-MW14-03

No Detections.

Client Sample ID: 21GST-MW14-04

No Detections.

Client Sample ID: 21GST-MW14-05

No Detections.

This Detection Summary does not include radiochemical test results.

Total/NA

1 ≅ EPA 537(Mod)

Lab Sample ID: 320-81254-21

Lab Sample ID: 320-81254-22

Lab Sample ID: 320-81254-23

Lab Sample ID: 320-81254-24

Lab Sample ID: 320-81254-25

Lab Sample ID: 320-81254-26

Lab Sample ID: 320-81254-27

Lab Sample ID: 320-81254-28

Eurofins TestAmerica, Sacramento

Client: Shannon & Wilson, Inc Job ID: 320-81254-1 Project/Site: SC Soils#3 Client Sample ID: 21GST-MW14-06 Lab Sample ID: 320-81254-29 No Detections. Lab Sample ID: 320-81254-30 Client Sample ID: 21GST-MW18-01 Dil Fac D Method Analyte Result Qualifier RL **MDL** Unit **Prep Type** Perfluorooctanesulfonic acid (PFOS) 0.13 J 0.20 0.044 ug/Kg 1 EPA 537(Mod) Total/NA Client Sample ID: 21GST-MW18-02 Lab Sample ID: 320-81254-31 No Detections. Client Sample ID: 21GST-MW18-12 Lab Sample ID: 320-81254-32 No Detections. Client Sample ID: 21GST-MW18-03 Lab Sample ID: 320-81254-33 No Detections. Lab Sample ID: 320-81254-34 Client Sample ID: 21GST-MW18-04 No Detections. Lab Sample ID: 320-81254-35 Client Sample ID: 21GST-MW18-05 No Detections. Client Sample ID: 21GST-MW18-06 Lab Sample ID: 320-81254-36 No Detections. Client Sample ID: 21GST-MW15-01 Lab Sample ID: 320-81254-37 Analyte Result Qualifier RL **MDL** Unit Dil Fac D Method **Prep Type** 0.031 ug/Kg Perfluorohexanesulfonic acid (PFHxS) 0.047 J 0.21 1 🌣 EPA 537(Mod) Total/NA Perfluorooctanesulfonic acid (PFOS) 0.39 0.21 0.046 ug/Kg 1 # EPA 537(Mod) Total/NA Client Sample ID: 21GST-MW15-02 Lab Sample ID: 320-81254-38 Result Qualifier Analyte RL **MDL** Unit Dil Fac D Method **Prep Type** Perfluorohexanesulfonic acid (PFHxS) Total/NA 0.038 J 0.23 0.033 ug/Kg 1 : EPA 537(Mod) Perfluorooctanesulfonic acid (PFOS) 0.18 J 1 🌣 EPA 537(Mod) Total/NA 0.23 0.049 ug/Kg Client Sample ID: 21GST-MW15-03 Lab Sample ID: 320-81254-39 No Detections. Client Sample ID: 21GST-MW15-04 Lab Sample ID: 320-81254-40 Analyte Result Qualifier RL **MDL** Unit Dil Fac D Method **Prep Type** 

Client Sample ID: 21GST-MW15-14

Perfluorooctanesulfonic acid (PFOS)

Lab Sample ID: 320-81254-41

Dil Fac D Method Prep Type

1 EPA 537(Mod)

Analyte Result Qualifier RL MDL Unit Dil Fac D Method Prep Type
Perfluorooctanesulfonic acid (PFOS) 0.26 0.23 0.049 ug/Kg 1 0 EPA 537(Mod) Total/NA

0.24

ug/Kg

0.051

Client Sample ID: 21GST-MW15-05 Lab Sample ID: 320-81254-42

No Detections.

This Detection Summary does not include radiochemical test results.

0.60

Eurofins TestAmerica, Sacramento

Total/NA

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3 Lab Sample ID: 320-81254-43 Client Sample ID: 21GST-MW15-06 No Detections. Client Sample ID: 21GST-SB002-01 Lab Sample ID: 320-81254-44 Analyte Dil Fac D Method Result Qualifier RL MDL Unit **Prep Type** Perfluorooctanesulfonic acid (PFOS) 1 EPA 537(Mod) 0.40 0.20 0.044 ug/Kg Total/NA Client Sample ID: 21GST-SB002-02 Lab Sample ID: 320-81254-45 Analyte Result Qualifier RL **MDL** Unit Dil Fac D Method **Prep Type** 1 EPA 537(Mod) Perfluorooctanesulfonic acid (PFOS) 0.20 J 0.22 0.048 ug/Kg Total/NA Client Sample ID: 21GST-SB002-03 Lab Sample ID: 320-81254-46 No Detections. Client Sample ID: 21GST-SB002-04 Lab Sample ID: 320-81254-47 Analyte Result Qualifier RL **MDL** Unit Dil Fac D Method **Prep Type** Perfluorooctanesulfonic acid (PFOS) 0.079 J 0.24 0.052 ug/Kg 1 EPA 537(Mod) Total/NA Client Sample ID: 21GST-SB001-01 Lab Sample ID: 320-81254-48 Analyte Result Qualifier RL **MDL** Unit Dil Fac D Method **Prep Type** Perfluorooctanesulfonic acid (PFOS) 0.21 0.20 0.043 ug/Kg 1 EPA 537(Mod) Total/NA Client Sample ID: 21GST-SB001-02 Lab Sample ID: 320-81254-49

Client Sample ID: 21GST-SB001-03

Lab Sample ID: 320-81254-50

RL

0.22

**MDL** Unit

0.048 ug/Kg

Dil Fac D Method

1 EPA 537(Mod)

**Prep Type** 

Total/NA

Result Qualifier

0.075 J

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.31		0.23	0.050	ug/Kg	1	₽	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SB001-04 Lab Sample ID: 320-81254-51

Analyte	Result Qua	lifier RL	MDL	Unit	Dil Fac	D	Method	Prep Type	
Perfluorooctanesulfonic acid (PFOS)	0.15 J	0.23	0.049	ug/Kg	1	₩	EPA 537(Mod)	Total/NA	

Client Sample ID: 21GST-SB009-01 Lab Sample ID: 320-81254-52

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.17	J	0.20	0.044	ug/Kg		₩	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SB009-10 Lab Sample ID: 320-81254-53

Analyte	Result	Qualifier	RL	MDL	Unit	Dil F	ac	D	Method	Prep Type	
Perfluorooctanesulfonic acid (PFOS)	0.068	J	0.20	0.043	ug/Kg		1	₩	EPA 537(Mod)	Total/NA	-

Client Sample ID: 21GST-SB009-02 Lab Sample ID: 320-81254-54

No Detections.

Analyte

Perfluorooctanesulfonic acid (PFOS)

Client Sample ID: 21GST-SB009-03 Lab Sample ID: 320-81254-55

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

**Detection Summary** Client: Shannon & Wilson, Inc Job ID: 320-81254-1 Project/Site: SC Soils#3 Client Sample ID: 21GST-SB009-04 Lab Sample ID: 320-81254-56 No Detections. Lab Sample ID: 320-81254-57 Client Sample ID: 21GST-SB010-01 Dil Fac D Method Analyte Result Qualifier RL **MDL** Unit **Prep Type** Perfluorooctanesulfonic acid (PFOS) 1 EPA 537(Mod) 0.15 J 0.22 0.046 ug/Kg Total/NA Client Sample ID: 21GST-SB010-10 Lab Sample ID: 320-81254-58 Result Qualifier RL **MDL** Unit Dil Fac D Method **Prep Type** Perfluorooctanesulfonic acid (PFOS) 1 EPA 537(Mod) 0.14 J 0.21 0.044 ug/Kg Total/NA Client Sample ID: 21GST-SB010-02 Lab Sample ID: 320-81254-59 Result Qualifier RL **MDL** Unit Dil Fac D Method **Prep Type** Perfluorooctanesulfonic acid (PFOS) 0.051 J 0.22 0.047 ug/Kg 1 🌣 EPA 537(Mod) Total/NA Client Sample ID: 21GST-SB010-03 Lab Sample ID: 320-81254-60 Result Qualifier RL **MDL** Unit Dil Fac D Method Analyte **Prep Type** 1 🌣 EPA 537(Mod) 0.12 J 0.21 Perfluorooctanesulfonic acid (PFOS) 0.046 ug/Kg Total/NA Client Sample ID: 21GST-SB012-01 Lab Sample ID: 320-81254-61 Result Qualifier **MDL** Unit Analyte RL Dil Fac D Method **Prep Type** 0.22 1 🌣 EPA 537(Mod) Perfluorotetradecanoic acid (PFTeA) 0.051 J 0.040 ug/Kg Total/NA Perfluorooctanesulfonic acid (PFOS) 0.14 J 0.22 0.047 ug/Kg 1 # EPA 537(Mod) Total/NA Client Sample ID: 21GST-SB012-02 Lab Sample ID: 320-81254-62 No Detections. Client Sample ID: 21GST-SB012-03 Lab Sample ID: 320-81254-63 No Detections.

Client Sample ID: 21GST-SB013-01

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluoroheptanoic acid (PFHpA)	0.046	J	0.22	0.042	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.028	J	0.22	0.024	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	0.082	J	0.22	0.053	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorotridecanoic acid (PFTriA)	0.034	J	0.22	0.023	ug/Kg	1	₽	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.14	J	0.22	0.047	ug/Kg	1	₩	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SB013-02	Lab Sample ID: 320-81254-65

Analyte		Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluoro	octanesulfonic acid (PFOS)	0.090	J	0.23	0.049	ug/Kg	1	₩	EPA 537(Mod)	Total/NA

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No Detections.

Analyte	Result Qualifier	RL	MDL Unit	Dil Fac D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	1.4	0.20	0.043 ug/Kg	<u> </u>	EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

11/17/2021

Lab Sample ID: 320-81254-64

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

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Client Sample ID: 21GST-SB005-02	Lab Sample ID: 320-81254-6
Ciletti Sattible ID. 21631-30003-02	Lab Sallible ID. 320-0 1234-0

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.038	J	0.22	0.033	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.60		0.22	0.048	ug/Kg	1	₩	EPA 537(Mod)	Total/NA

### Client Sample ID: 21GST-SB005-03 Lab Sample ID: 320-81254-69

-	Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
F	Perfluorohexanesulfonic acid (PFHxS)	0.30		0.23	0.034	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
LF	Perfluorooctanesulfonic acid (PFOS)	0.66		0.23	0.050	ug/Kg	1	₩	EPA 537(Mod)	Total/NA

#### Client Sample ID: 21GST-SB007-01

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.059	J	0.21	0.032	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.11	J	0.21	0.039	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.038	JI	0.21	0.030	ug/Kg	1	₽	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.10	JI	0.21	0.044	ug/Kg	1	₩	EPA 537(Mod)	Total/NA

#### Client Sample ID: 21GST-SB007-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.051	J	0.21	0.032	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.056	J	0.21	0.040	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	0.11	J	0.21	0.055	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.038	JI	0.21	0.030	ug/Kg	1	₽	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.27	1	0.21	0.045	ug/Kg	1	₩	EPA 537(Mod)	Total/NA

#### Client Sample ID: 21GST-SB007-02

No Detections.

#### Client Sample ID: 21GST-SB007-03

No Detections.

#### Client Sample ID: 21GST-SS-030

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.083	J	0.29	0.045	ug/Kg		₽	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.20	J	0.29	0.056	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.18	J	0.29	0.032	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.27	JI	0.29	0.063	ug/Kg	1	₩	EPA 537(Mod)	Total/NA

#### Client Sample ID: 21GST-SS-010

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.034	JI	0.21	0.031	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.69		0.21	0.046	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

#### Client Sample ID: 21GST-SS-031

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.051	J	0.22	0.035	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.093	J	0.22	0.042	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	0.088	J	0.22	0.059	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.12	J	0.22	0.025	ug/Kg	1	₩	EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

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Lab Sample ID: 320-81254-70

Lab Sample ID: 320-81254-71

Lab Sample ID: 320-81254-72

Lab Sample ID: 320-81254-73

Lab Sample ID: 320-81254-74

Lab Sample ID: 320-81254-75

Lab Sample ID: 320-81254-76

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Client: Shannon & Wilson, Inc Job ID: 320-81254-1 Project/Site: SC Soils#3

•		ontinued)							-81254-
Analyte	Result	Qualifier	RL_	MDL			_	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.56	I	0.22	0.048	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Client Sample ID: 21GST-SS	S-131					Lab Sa	an	ple ID: 320	-81254-
- Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluoroheptanoic acid (PFHpA)	0.066	J	0.25	0.047	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	0.070	J	0.25	0.065	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.11		0.25		ug/Kg			EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.60	I	0.25	0.053	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Client Sample ID: 21GST-SS	6-009					Lab Sa	an	nple ID: 320	-81254-
- Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.74		0.22	0.034	ug/Kg		<del> </del>	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.25		0.22		ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	0.69		0.22		ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.048	J	0.22	0.033	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.3		0.22	0.041	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	8.4		0.22	0.032	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	0.038	JI	0.22	0.025	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	64		2.2	0.47	ug/Kg	10	₩	EPA 537(Mod)	Total/NA
Client Sample ID: 21GST-SS	S-012					Lab Sa	an	ple ID: 320	-81254-
- Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.23		0.19	0.042	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Client Sample ID: 21GST-SS	S-011					Lab Sample ID: 320-8125			
- Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.15	J	0.21	0.046	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Client Sample ID: 21GST-SS	S-013					Lab Sa	an	nple ID: 320	-81254-
- Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	1.2		0.21	0.046	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Client Sample ID: 21GST-SE	3003-01					Lab Sa	an	ple ID: 320	-81254-
- Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.26	J –	0.28	0.043	ug/Kg		₩	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.21	J	0.28	0.053	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.061	JI	0.28	0.031	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.27	JI	0.28	0.040	ug/Kg	1	. ∵	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	10		0.28	0.060	ug/Kg	1	₽	EPA 537(Mod)	Total/NA
Client Sample ID: 21GST-SE	3003-02					Lab Sa	an	nple ID: 320	-81254-

This Detection Summary does not include radiochemical test results.

0.072 J

2.6

Perfluorohexanesulfonic acid (PFHxS)

Perfluorooctanesulfonic acid (PFOS)

Eurofins TestAmerica, Sacramento

Total/NA

Total/NA

11/17/2021

1 🛱 EPA 537(Mod)

1 # EPA 537(Mod)

0.21

0.21

0.031 ug/Kg

0.046 ug/Kg

Job ID: 320-81254-1

Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

Client Sample ID: 21GST-SE	3003-03					Lab Sa	ample ID: 32	0-81254-84
							•	
Analyte Perfluorohexanesulfonic acid (PFHxS)	0.033	Qualifier	RL 0.22	MDL 0.032	ug/Kg		D Method EPA 537(Mod)	Prep Type Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.033	J	0.22		ug/Kg			
 Client Sample ID: 21GST-SE	2004 01				J J		ample ID: 32	
Chefft Sample ID. 21651-56	5004-0 I					Lab Sa	illipie ID. 32	0-61254-65
Analyte		Qualifier	RL	MDL			D Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.055	J	0.22		ug/Kg		☼ EPA 537(Mod)	
Perfluorooctanesulfonic acid (PFOS)	1.0		0.22	0.048	ug/Kg	1	☼ EPA 537(Mod)	Total/NA
Client Sample ID: 21GST-SE	3004-02					Lab Sa	ample ID: 32	0-81254-86
– Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.24		0.23	0.049	ug/Kg	1	— EPA 537(Mod)	
Client Sample ID: 21GST-SE	3004-03					Lab Sa	ample ID: 32	0-81254-87
_		Ouglifie:	DI DI	A4D/	I I m i 4		•	
Analyte Perfluorooctanesulfonic acid (PFOS)	0.25	Qualifier			Unit ug/Kg		D Method □ EPA 537(Mod)	Prep Type Total/NA
			0.27	0.002				
Client Sample ID: 21GST-SE	3006-01					Lab Sa	ample ID: 32	0-81254-88
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.15	JI	0.20	0.042	ug/Kg	1		Total/NA
Client Sample ID: 21GST-SE	3006-10					Lab Sa	ample ID: 32	0-81254-89
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.76	<del></del>	0.22	0.047	ug/Kg	1	= EPA 537(Mod)	
Client Sample ID: 21GST-SE	3006-02					Lab Sa	ample ID: 32	20-81254-90
Analyte		Qualifier	RL	MDL	Unit		D Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.078		0.21		ug/Kg		EPA 537(Mod)	
Client Sample ID: 21GST-SE					-9.19		ample ID: 32	
Chefft Sample ID. 21631-36	5006-03					Lau Sa	טו אוווףופ וט. 32	.0-01254-31
Analyte		Qualifier	RL		Unit		D Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.31		0.22	0.047	ug/Kg	1	≅ EPA 537(Mod)	Total/NA
Client Sample ID: 21GST-SE	3008-01					Lab Sa	ample ID: 32	0-81254-92
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.074	J	0.23		ug/Kg	1	= EPA 537(Mod)	
Perfluorohexanesulfonic acid (PFHxS)	0.047	J	0.23	0.033	ug/Kg	1	□ EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.36	1	0.23	0.049	ug/Kg	1	⇔ EPA 537(Mod)	Total/NA
Client Sample ID: 21GST-SE	3008-02					Lab Sa	ample ID: 32	0-81254-93
No Detections.								
Client Sample ID: 21GST-SE	3008-03					Lab Sa	ample ID: 32	0-81254-94
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.69		0.22		ug/Kg		⇒ EPA 537(Mod)	
					5 5	•	()	•

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

Job ID: 320-81254-1

Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

### Client Sample ID: 21GST-SB011-01

### Lab Sample ID: 320-81254-95

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.68		0.21	0.033	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.21		0.21	0.040	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	0.63		0.21	0.056	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.16	J	0.21	0.023	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	1.0		0.21	0.050	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluoroundecanoic acid (PFUnA)	1.3		0.21	0.044	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.63		0.21	0.032	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorotridecanoic acid (PFTriA)	0.10	J	0.21	0.022	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.16	J	0.21	0.039	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.2		0.21	0.040	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	7.3		0.21	0.030	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	0.046	J	0.21	0.024	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS) -	79		2.1	0.45	ug/Kg	10	₽	EPA 537(Mod)	Total/NA

#### Client Sample ID: 21GST-SB011-12

#### Lab Sample ID: 320-81254-96

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.24		0.20	0.031	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.26		0.20	0.038	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	4.9		0.20	0.054	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.67		0.20	0.043	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS) - DL	20		1.0	0.15	ug/Kg	5	₩	EPA 537(Mod)	Total/NA

### Client Sample ID: 21GST-SB011-02

### Lab Sample ID: 320-81254-97

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.36		0.21	0.033	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.18	J	0.21	0.041	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	4.0		0.21	0.057	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	15		0.21	0.031	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	25		1.1	0.23	ug/Kg	5	₩	EPA 537(Mod)	Total/NA

### Client Sample ID: 21GST-SB011-03

### Lab Sample ID: 320-81254-98

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.085	J	0.23	0.035	ug/Kg		₩	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	0.10	J	0.23	0.061	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.40		0.23	0.033	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.4		0.23	0.049	ug/Kg	1	₩	EPA 537(Mod)	Total/NA

#### Client Sample ID: 21GST-SB014-01

#### Lab Sample ID: 320-81254-99

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.038	J	0.21	0.032	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.058	J	0.21	0.039	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	0.12	J	0.21	0.055	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.29		0.21	0.023	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	0.14	J	0.21	0.049	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.095	J	0.21	0.043	ug/Kg	1	₽	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.071	J	0.21	0.030	ug/Kg	1	₽	EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

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Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 210	ST-SB014-01	(Continued)
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Lab Sample ID: 320-81254-99

Analyte	Result Qualifier	RL	MDL Unit	Dil Fac D Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	1.2	0.21	0.044 ug/Kg	1 EPA 537(Mod)	Total/NA

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Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.12	J	0.21	0.033	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.053	J	0.21	0.046	ug/Kg	1	₩	EPA 537(Mod)	Total/NA

#### Client Sample ID: 21GST-SB014-03

Lab Sample ID: 320-81254-101
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Analyte	Result Qualifier	RL	MDL Unit	Dil Fac I	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.13 J	0.23	0.048 ug/Kg	1 3	EPA 537(Mod)	Total/NA

### Client Sample ID: 21GST-SS-032 Lab Sample ID: 320-81254-102

	Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
	Perfluorohexanesulfonic acid (PFHxS)	0.040	J	0.21	0.030	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Į	Perfluorooctanesulfonic acid (PFOS)	0.64		0.21	0.045	ug/Kg	1	₩	EPA 537(Mod)	Total/NA

#### Client Sample ID: 21GST-SS-033

### Lab Sample ID: 320-81254-103

	Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
	Perfluorohexanesulfonic acid (PFHxS)	0.049	J	0.20	0.029	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Į	Perfluorooctanesulfonic acid (PFOS)	0.71		0.20	0.042	ug/Kg	1	₩	EPA 537(Mod)	Total/NA

#### Client Sample ID: 21GST-SS-034

#### Lab Sample ID: 320-81254-104

Analyte	Result Qualifier	RL	MDL Unit	Dil Fac D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.063 J	0.20	0.042 ug/Kg	1 🌣	EPA 537(Mod)	Total/NA

### Client Sample ID: 21GST-SS-004

## Lab Sample ID: 320-81254-105

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	0.16	J	0.21	0.056	ug/Kg		₩	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.026	J	0.21	0.023	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	0.066	J	0.21	0.051	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.065	J	0.21	0.045	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.17	J	0.21	0.040	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.3		0.21	0.031	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	11		0.21	0.046	ug/Kg	1	₩	EPA 537(Mod)	Total/NA

#### Client Sample ID: 21GST-SS-003

### Lab Sample ID: 320-81254-106

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.094	J	0.22	0.034	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	0.076	J	0.22	0.058	ug/Kg	1	₽	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.027	J	0.22	0.024	ug/Kg	1	₽	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.099	J	0.22	0.041	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.97		0.22	0.032	ug/Kg	1	₽	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	9.8		0.22	0.047	ug/Kg	1	₩	EPA 537(Mod)	Total/NA

#### Client Sample ID: 21GST-SS-103

#### Lab Sample ID: 320-81254-107

Analyte	Result Qualifier	RL	MDL Unit	Dil Fac D Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.094 J	0.21	0.032 ug/Kg	1 🌣 EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

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Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-SS-103	3 (Continued)
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Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluoroheptanoic acid (PFHpA)	0.056	J	0.21	0.040	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	0.12	J	0.21	0.055	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.13	J	0.21	0.040	ug/Kg	1	⊅	EPA 537(Mod)	Total/NA

0.21

0.21

0.030 ug/Kg

0.045 ug/Kg

#### Client Sample ID: 21GST-SS-002

Perfluorohexanesulfonic acid (PFHxS)

Perfluorooctanesulfonic acid (PFOS)

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	0.086	J	0.22	0.058	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.039	J	0.22	0.024	ug/Kg	1	₽	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.050	J	0.22	0.041	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.64		0.22	0.032	ug/Kg	1	₽	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	6.4		0.22	0.047	ug/Kg	1	₽	EPA 537(Mod)	Total/NA

### Client Sample ID: 21GST-SS-001

Analyte	Result Qualifi	ier RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.20	0.19	0.028	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.4	0.19	0.042	ug/Kg	1	₩	EPA 537(Mod)	Total/NA

### Client Sample ID: 21GST-MW16-01

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.27		0.21	0.033	ug/Kg		₩	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.094	J	0.21	0.040	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	0.094	J	0.21	0.056	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.042	J	0.21	0.023	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	0.24		0.21	0.051	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.20	J	0.21	0.045	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.28		0.21	0.032	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorotridecanoic acid (PFTriA)	0.044	J	0.21	0.022	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.091	J	0.21	0.039	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.33		0.21	0.031	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.7		0.21	0.046	ug/Kg	1	₩	EPA 537(Mod)	Total/NA

### Client Sample ID: 21GST-MW16-02

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorononanoic acid (PFNA)	0.22		0.21	0.024	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	0.16	J	0.21	0.052	ug/Kg	1	₽	EPA 537(Mod)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.20	J	0.21	0.045	ug/Kg	1	₽	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.033	J	0.21	0.031	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.39		0.21	0.046	ug/Kg	1	₽	EPA 537(Mod)	Total/NA

## Client Sample ID: 21GST-MW16-03

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Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type	
Perfluorohexanoic acid (PFHxA)	0.053	J	0.25	0.038	ug/Kg	1	₩	EPA 537(Mod)	Total/NA	•
Perfluorohexanesulfonic acid (PFHxS)	0.066	J	0.25	0.036	ug/Kg	1	₩	EPA 537(Mod)	Total/NA	
Perfluorooctanesulfonic acid (PFOS)	1.8		0.25	0.053	ua/Ka	1	₩	EPA 537(Mod)	Total/NA	

This Detection Summary does not include radiochemical test results.

11/17/2021

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Lab Sample ID: 320-81254-107

1 🌣 EPA 537(Mod)

Lab Sample ID: 320-81254-108

Lab Sample ID: 320-81254-109

Lab Sample ID: 320-81254-110

Lab Sample ID: 320-81254-111

Lab Sample ID: 320-81254-112

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Total/NA

Total/NA

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### **Detection Summary**

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-MW16-04	Lab Sample ID: 320-81254-113

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.054	J	0.25	0.036	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.5		0.25	0.054	ug/Kg	1	₩	EPA 537(Mod)	Total/NA

#### Client Sample ID: 21GST-MW19-01 Lab Sample ID: 320-81254-114

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.039	J	0.26	0.037	ug/Kg	1	₩	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.24	J	0.26	0.055	ug/Kg	1	₩	EPA 537(Mod)	Total/NA

#### Client Sample ID: 21GST-MW19-02 Lab Sample ID: 320-81254-115

No Detections.

Lab Sample ID: 320-81254-116 Client Sample ID: 21GST-MW20-01

No Detections.

Client Sample ID: 21GST-MW20-10 Lab Sample ID: 320-81254-117

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
N-methylperfluorooctanesulfonamidoa	0.035	J	0.21	0.024	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
cetic acid (NMeFOSAA)									

#### Lab Sample ID: 320-81254-118 Client Sample ID: 21GST-MW20-02

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Shannon & Wilson, Inc Job ID: 320-81254-1 Project/Site: SC Soils#3

Client Sample ID: 21GST-SS-023

Lab Sample ID: 320-81254-1 Date Collected: 10/29/21 10:21 **Matrix: Solid** 

Date Received: 11/03/21 14:01 Percent Solids: 90.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.21	0.033	ug/Kg	<del></del>	11/07/21 18:20	11/08/21 23:15	
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.041	ug/Kg	₽	11/07/21 18:20	11/08/21 23:15	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.057	ug/Kg	₽	11/07/21 18:20	11/08/21 23:15	1
Perfluorononanoic acid (PFNA)	0.033	J	0.21	0.023	ug/Kg	₩	11/07/21 18:20	11/08/21 23:15	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.051	ug/Kg	₽	11/07/21 18:20	11/08/21 23:15	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.045	ug/Kg	₩	11/07/21 18:20	11/08/21 23:15	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.032	ug/Kg	₩	11/07/21 18:20	11/08/21 23:15	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.022	ug/Kg	₩	11/07/21 18:20	11/08/21 23:15	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.039	ug/Kg	₩	11/07/21 18:20	11/08/21 23:15	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.041	ug/Kg		11/07/21 18:20	11/08/21 23:15	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21	0.031	ug/Kg	₩	11/07/21 18:20	11/08/21 23:15	1
Perfluorooctanesulfonic acid (PFOS)	0.091	JI	0.21	0.046	ug/Kg	₩	11/07/21 18:20	11/08/21 23:15	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.21	0.025	ug/Kg	₩	11/07/21 18:20	11/08/21 23:15	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.21	0.051	ug/Kg	₩	11/07/21 18:20	11/08/21 23:15	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.21	0.037	ug/Kg	₩	11/07/21 18:20	11/08/21 23:15	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.044	ug/Kg	₩	11/07/21 18:20	11/08/21 23:15	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.21		ug/Kg	₩	11/07/21 18:20	11/08/21 23:15	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.042	ug/Kg	₩	11/07/21 18:20	11/08/21 23:15	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	82		50 - 150				11/07/21 18:20	11/08/21 23:15	1
13C4 PFHpA	83		50 - 150				11/07/21 18:20	11/08/21 23:15	1
13C4 PFOA	91		50 - 150				11/07/21 18:20	11/08/21 23:15	1
13C5 PFNA	89		50 - 150				11/07/21 18:20	11/08/21 23:15	1
13C2 PFDA	88		50 - 150				11/07/21 18:20	11/08/21 23:15	1
13C2 PFUnA	90		50 - 150				11/07/21 18:20	11/08/21 23:15	1
13C2 PFDoA	94		50 <sub>-</sub> 150				11/07/21 18:20	11/08/21 23:15	1
13C2 PFTeDA	92		50 <sub>-</sub> 150				11/07/21 18:20	11/08/21 23:15	1
13C3 PFBS	94		50 <sub>-</sub> 150				11/07/21 18:20	11/08/21 23:15	1
1802 PFHxS	76		50 <sub>-</sub> 150				11/07/21 18:20	11/08/21 23:15	1
13C4 PFOS	78		50 - 150				11/07/21 18:20	11/08/21 23:15	1
d3-NMeFOSAA	77		50 - 150				11/07/21 18:20	11/08/21 23:15	1
d5-NEtFOSAA	76		50 - 150				11/07/21 18:20	11/08/21 23:15	1
13C3 HFPO-DA	80		50 - 150					11/08/21 23:15	1
General Chemistry							_		
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	9.5		0.1	0.1	%			11/05/21 11:58	1

General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	9.5		0.1	0.1	%			11/05/21 11:58	1
Percent Solids	90.5		0.1	0.1	%			11/05/21 11:58	1

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Client: Shannon & Wilson, Inc Job ID: 320-81254-1 Project/Site: SC Soils#3

Client Sample ID: 21GST-SS-029

**Percent Solids** 

Lab Sample ID: 320-81254-2 Date Collected: 10/29/21 10:47 **Matrix: Solid** 

Date Received: 11/03/21 14:01 Percent Solids: 91.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.21	0.032	ug/Kg	<u></u>	11/07/21 18:20	11/08/21 23:46	
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.039	ug/Kg	₽	11/07/21 18:20	11/08/21 23:46	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.055	ug/Kg	₽	11/07/21 18:20	11/08/21 23:46	1
Perfluorononanoic acid (PFNA)	0.063	J	0.21	0.023	ug/Kg	₩	11/07/21 18:20	11/08/21 23:46	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.050	ug/Kg	₩	11/07/21 18:20	11/08/21 23:46	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.043	ug/Kg	₩	11/07/21 18:20	11/08/21 23:46	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.031	ug/Kg	₩	11/07/21 18:20	11/08/21 23:46	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.022	ug/Kg	₩	11/07/21 18:20	11/08/21 23:46	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.038	ug/Kg	₩	11/07/21 18:20	11/08/21 23:46	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.039	ug/Kg	₩	11/07/21 18:20	11/08/21 23:46	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21	0.030	ug/Kg	₽	11/07/21 18:20	11/08/21 23:46	1
Perfluorooctanesulfonic acid (PFOS)	0.78	I	0.21		ug/Kg	₩	11/07/21 18:20	11/08/21 23:46	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	₿	11/07/21 18:20	11/08/21 23:46	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.21		ug/Kg	₩	11/07/21 18:20	11/08/21 23:46	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.21	0.036	ug/Kg		11/07/21 18:20	11/08/21 23:46	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21		ug/Kg			11/08/21 23:46	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.21		ug/Kg	₩	11/07/21 18:20		1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.040	ug/Kg	≎	11/07/21 18:20	11/08/21 23:46	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	77		50 - 150				11/07/21 18:20	11/08/21 23:46	1
13C4 PFHpA	81		50 - 150				11/07/21 18:20	11/08/21 23:46	1
13C4 PFOA	90		50 - 150				11/07/21 18:20	11/08/21 23:46	1
13C5 PFNA	86		50 - 150				11/07/21 18:20	11/08/21 23:46	1
13C2 PFDA	81		50 - 150				11/07/21 18:20	11/08/21 23:46	1
13C2 PFUnA	84		50 - 150				11/07/21 18:20	11/08/21 23:46	1
13C2 PFDoA	93		50 - 150				11/07/21 18:20	11/08/21 23:46	1
13C2 PFTeDA	84		50 - 150				11/07/21 18:20	11/08/21 23:46	1
13C3 PFBS	79		50 - 150				11/07/21 18:20	11/08/21 23:46	1
1802 PFHxS	76		50 - 150				11/07/21 18:20	11/08/21 23:46	1
13C4 PFOS	77		50 - 150				11/07/21 18:20	11/08/21 23:46	1
d3-NMeFOSAA	75		50 - 150				11/07/21 18:20	11/08/21 23:46	1
d5-NEtFOSAA	71		50 - 150					11/08/21 23:46	1
13C3 HFPO-DA	81		50 - 150				11/07/21 18:20	11/08/21 23:46	1
General Chemistry	_					_	_		
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	8.4		0.1	0.1	%			11/05/21 11:58	1

11/17/2021

11/05/21 11:58

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0.1

91.6

0.1 %

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-SS-028

Lab Sample ID: 320-81254-3 Date Collected: 10/29/21 10:53 Date Received: 11/03/21 14:01

**Matrix: Solid** Percent Solids: 95.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Perfluorohexanoic acid (PFHxA)	ND		0.21	0.032	ug/Kg	— <u></u>	11/07/21 18:20	11/08/21 23:56	
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.039	ug/Kg	₩	11/07/21 18:20	11/08/21 23:56	
Perfluorooctanoic acid (PFOA)	ND		0.21	0.055	ug/Kg	₩	11/07/21 18:20	11/08/21 23:56	
Perfluorononanoic acid (PFNA)	ND		0.21	0.023	ug/Kg	₩	11/07/21 18:20	11/08/21 23:56	
Perfluorodecanoic acid (PFDA)	ND		0.21	0.049	ug/Kg	₽	11/07/21 18:20	11/08/21 23:56	
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.043	ug/Kg	₩	11/07/21 18:20	11/08/21 23:56	
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.031	ug/Kg	₩	11/07/21 18:20	11/08/21 23:56	
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.022	ug/Kg	₽	11/07/21 18:20	11/08/21 23:56	
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.038	ug/Kg	₩	11/07/21 18:20	11/08/21 23:56	
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.039	ug/Kg	₩	11/07/21 18:20	11/08/21 23:56	
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21	0.030	ug/Kg	≎	11/07/21 18:20	11/08/21 23:56	
Perfluorooctanesulfonic acid (PFOS)	ND		0.21	0.044	ug/Kg	≎	11/07/21 18:20	11/08/21 23:56	
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.21		ug/Kg	₩	11/07/21 18:20	11/08/21 23:56	
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.21		ug/Kg	₩	11/07/21 18:20	11/08/21 23:56	
9-Chlorohexadecafluoro-3-oxanonan	ND		0.21	0.036	ug/Kg	≎	11/07/21 18:20	11/08/21 23:56	
e-1-sulfonic acid Hexafluoropropylene Oxide Dimer	ND		0.21	0.042	ug/Kg		11/07/21 18:20	11/08/21 23:56	
Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.21	0.032	ug/Kg	₩	11/07/21 18:20	11/08/21 23:56	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.040	ug/Kg	₩	11/07/21 18:20	11/08/21 23:56	
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	78		50 - 150				11/07/21 18:20	11/08/21 23:56	
13C4 PFHpA	93		50 - 150				11/07/21 18:20	11/08/21 23:56	
13C4 PFOA	89		50 - 150				11/07/21 18:20	11/08/21 23:56	
13C5 PFNA	90		50 - 150				11/07/21 18:20	11/08/21 23:56	
13C2 PFDA	91		50 - 150				11/07/21 18:20	11/08/21 23:56	
13C2 PFUnA	90		50 - 150				11/07/21 18:20	11/08/21 23:56	
13C2 PFDoA	88		50 - 150				11/07/21 18:20	11/08/21 23:56	
13C2 PFTeDA	95		50 <sub>-</sub> 150				11/07/21 18:20	11/08/21 23:56	
13C3 PFBS	86		50 - 150				11/07/21 18:20	11/08/21 23:56	
1802 PFHxS	77		50 - 150				11/07/21 18:20	11/08/21 23:56	
13C4 PFOS	86		50 - 150				11/07/21 18:20	11/08/21 23:56	
d3-NMeFOSAA	77		50 - 150				11/07/21 18:20	11/08/21 23:56	
d5-NEtFOSAA	73		50 <sub>-</sub> 150				11/07/21 18:20	11/08/21 23:56	
13C3 HFPO-DA	80		50 - 150					11/08/21 23:56	
General Chemistry							_		
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fa
Percent Moisture	5.0		0.1	0.1				11/05/21 11:58	
Percent Solids	95.0		0.1	0.1	%			11/05/21 11:58	

Eurofins TestAmerica, Sacramento

Client: Shannon & Wilson, Inc Job ID: 320-81254-1 Project/Site: SC Soils#3

Client Sample ID: 21GST-SS-027

**Percent Solids** 

Lab Sample ID: 320-81254-4 Date Collected: 10/29/21 11:04 **Matrix: Solid** 

Date Received: 11/03/21 14:01 Percent Solids: 92.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.031	ug/Kg		11/07/21 18:20	11/09/21 00:06	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.038	ug/Kg	₩	11/07/21 18:20	11/09/21 00:06	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.053	ug/Kg	₩	11/07/21 18:20	11/09/21 00:06	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.022	ug/Kg	₩	11/07/21 18:20	11/09/21 00:06	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.048	ug/Kg	₩	11/07/21 18:20	11/09/21 00:06	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.042	ug/Kg	₩	11/07/21 18:20	11/09/21 00:06	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.030	ug/Kg	₩	11/07/21 18:20	11/09/21 00:06	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.021	ug/Kg	₩	11/07/21 18:20	11/09/21 00:06	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.037	ug/Kg	₩	11/07/21 18:20	11/09/21 00:06	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.038	ug/Kg		11/07/21 18:20	11/09/21 00:06	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.029	ug/Kg	₩	11/07/21 18:20	11/09/21 00:06	1
Perfluorooctanesulfonic acid (PFOS)	0.11	JI	0.20	0.043	ug/Kg	₩	11/07/21 18:20	11/09/21 00:06	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg		11/07/21 18:20	11/09/21 00:06	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.20	0.048	ug/Kg	₩	11/07/21 18:20	11/09/21 00:06	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.20	0.035	ug/Kg	₩	11/07/21 18:20	11/09/21 00:06	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.20	0.041	ug/Kg	₩	11/07/21 18:20	11/09/21 00:06	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.20	0.031	ug/Kg	₩	11/07/21 18:20	11/09/21 00:06	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.039	ug/Kg	₩	11/07/21 18:20	11/09/21 00:06	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	98		50 - 150				11/07/21 18:20	11/09/21 00:06	1
13C4 PFHpA	97		50 - 150				11/07/21 18:20	11/09/21 00:06	1
13C4 PFOA	104		50 - 150				11/07/21 18:20	11/09/21 00:06	1
13C5 PFNA	93		50 - 150				11/07/21 18:20	11/09/21 00:06	1
13C2 PFDA	97		50 - 150				11/07/21 18:20	11/09/21 00:06	1
13C2 PFUnA	103		50 - 150				11/07/21 18:20	11/09/21 00:06	1
13C2 PFDoA	100		50 - 150				11/07/21 18:20	11/09/21 00:06	1
13C2 PFTeDA	108		50 - 150				11/07/21 18:20	11/09/21 00:06	1
13C3 PFBS	102		50 - 150				11/07/21 18:20	11/09/21 00:06	1
1802 PFHxS	87		50 - 150				11/07/21 18:20	11/09/21 00:06	1
13C4 PFOS	84		50 - 150				11/07/21 18:20	11/09/21 00:06	1
d3-NMeFOSAA	87		50 - 150				11/07/21 18:20	11/09/21 00:06	1
d5-NEtFOSAA	86		50 - 150				11/07/21 18:20	11/09/21 00:06	1
13C3 HFPO-DA	94		50 - 150				11/07/21 18:20	11/09/21 00:06	1
General Chemistry						_			<b></b> -
Analyte		Qualifier	RL _		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	8.0		0.1	0.1	%			11/05/21 11:58	1

11/05/21 11:58

0.1

0.1 %

92.0

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

**Percent Solids** 

Client Sample ID: 21GST-SS-026 Lab Sample ID: 320-81254-5

Date Collected: 10/29/21 11:10 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 76.2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Perfluorohexanoic acid (PFHxA)	ND		0.26	0.040	ug/Kg	— <u></u>	11/07/21 18:20	11/09/21 00:16	
Perfluoroheptanoic acid (PFHpA)	ND		0.26	0.049	ug/Kg	⇔	11/07/21 18:20	11/09/21 00:16	
Perfluorooctanoic acid (PFOA)	ND		0.26	0.068	ug/Kg	≎	11/07/21 18:20	11/09/21 00:16	
Perfluorononanoic acid (PFNA)	ND		0.26	0.028	ug/Kg	≎	11/07/21 18:20	11/09/21 00:16	
Perfluorodecanoic acid (PFDA)	ND		0.26	0.062	ug/Kg	≎	11/07/21 18:20	11/09/21 00:16	
Perfluoroundecanoic acid (PFUnA)	ND		0.26	0.054	ug/Kg	≎	11/07/21 18:20	11/09/21 00:16	
Perfluorododecanoic acid (PFDoA)	ND		0.26	0.039	ug/Kg	≎	11/07/21 18:20	11/09/21 00:16	
Perfluorotridecanoic acid (PFTriA)	0.085	JI	0.26	0.027	ug/Kg	₽	11/07/21 18:20	11/09/21 00:16	
Perfluorotetradecanoic acid (PFTeA)	ND		0.26	0.048	ug/Kg	≎	11/07/21 18:20	11/09/21 00:16	
Perfluorobutanesulfonic acid (PFBS)	ND		0.26	0.049	ug/Kg	≎	11/07/21 18:20	11/09/21 00:16	
Perfluorohexanesulfonic acid (PFHxS)	ND		0.26	0.037	ug/Kg	⇔	11/07/21 18:20	11/09/21 00:16	
Perfluorooctanesulfonic acid	0.13	JI	0.26	0.056	ug/Kg	₽	11/07/21 18:20	11/09/21 00:16	
(PFOS)									
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.26	0.030	ug/Kg	₩	11/07/21 18:20	11/09/21 00:16	
N-ethylperfluorooctanesulfonami doacetic acid (NEtFOSAA)	0.086	J	0.26	0.062	ug/Kg	₩	11/07/21 18:20	11/09/21 00:16	•
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.26	0.045	ug/Kg	₩	11/07/21 18:20	11/09/21 00:16	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.26	0.053	ug/Kg	₩	11/07/21 18:20	11/09/21 00:16	
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.26	0.040	ug/Kg	₩	11/07/21 18:20	11/09/21 00:16	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.26	0.050	ug/Kg	₩	11/07/21 18:20	11/09/21 00:16	
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	89		50 - 150						
13C4 PFHpA	90		50 - 150				11/07/21 18:20	11/09/21 00:16	
13C4 PFOA	97		50 - 150				11/07/21 18:20	11/09/21 00:16	
13C5 PFNA	90		50 - 150				11/07/21 18:20	11/09/21 00:16	
13C2 PFDA	93		50 <sub>-</sub> 150				11/07/21 18:20	11/09/21 00:16	
13C2 PFUnA	99		50 - 150				11/07/21 18:20	11/09/21 00:16	
13C2 PFDoA	106		50 - 150				11/07/21 18:20	11/09/21 00:16	
13C2 PFTeDA	108		50 <sub>-</sub> 150				11/07/21 18:20	11/09/21 00:16	
13C3 PFBS	97		50 <sub>-</sub> 150				11/07/21 18:20	11/09/21 00:16	
1802 PFHxS	88		50 - 150					11/09/21 00:16	
13C4 PFOS	91		50 - 150				11/07/21 18:20	11/09/21 00:16	
d3-NMeFOSAA	83		50 <sub>-</sub> 150				11/07/21 18:20	11/09/21 00:16	
d5-NEtFOSAA	88		50 - 150					11/09/21 00:16	
13C3 HFPO-DA	94		50 - 150					11/09/21 00:16	
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Percent Moisture	23.8		0.1	0.1				11/05/21 11:58	

11/05/21 11:58

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0.1

76.2

0.1 %

Client: Shannon & Wilson, Inc Job ID: 320-81254-1 Project/Site: SC Soils#3

Client Sample ID: 21GST-SS-126

**Percent Solids** 

Lab Sample ID: 320-81254-6 Date Collected: 10/29/21 11:00 **Matrix: Solid** 

Date Received: 11/03/21 14:01 Percent Solids: 78.7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Perfluorohexanoic acid (PFHxA)	ND		0.25	0.039	ug/Kg	<del></del>	11/07/21 18:20	11/09/21 00:26	
Perfluoroheptanoic acid (PFHpA)	ND		0.25	0.047	ug/Kg	₽	11/07/21 18:20	11/09/21 00:26	•
Perfluorooctanoic acid (PFOA)	ND		0.25	0.066	ug/Kg	₩	11/07/21 18:20	11/09/21 00:26	
Perfluorononanoic acid (PFNA)	0.033	J	0.25	0.027	ug/Kg	₩	11/07/21 18:20	11/09/21 00:26	
Perfluorodecanoic acid (PFDA)	ND		0.25	0.060	ug/Kg	₩	11/07/21 18:20	11/09/21 00:26	
Perfluoroundecanoic acid (PFUnA)	ND		0.25	0.052	ug/Kg	₩	11/07/21 18:20	11/09/21 00:26	
Perfluorododecanoic acid (PFDoA)	ND		0.25	0.037	ug/Kg	₩	11/07/21 18:20	11/09/21 00:26	
Perfluorotridecanoic acid (PFTriA)	0.26	1	0.25	0.026	ug/Kg	₩	11/07/21 18:20	11/09/21 00:26	
Perfluorotetradecanoic acid (PFTeA)	ND		0.25	0.046	ug/Kg	₩	11/07/21 18:20	11/09/21 00:26	
Perfluorobutanesulfonic acid (PFBS)	ND		0.25	0.047	ug/Kg		11/07/21 18:20	11/09/21 00:26	
Perfluorohexanesulfonic acid (PFHxS)	ND		0.25	0.036	ug/Kg	₽	11/07/21 18:20	11/09/21 00:26	
Perfluorooctanesulfonic acid (PFOS)	0.23	JI	0.25	0.053	ug/Kg	₩	11/07/21 18:20	11/09/21 00:26	•
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.25	0.029	ug/Kg	₿	11/07/21 18:20	11/09/21 00:26	
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.25	0.060	ug/Kg	₩	11/07/21 18:20	11/09/21 00:26	•
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.25	0.044	ug/Kg	₩	11/07/21 18:20	11/09/21 00:26	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25		ug/Kg	₩	11/07/21 18:20	11/09/21 00:26	•
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.25		ug/Kg	₩		11/09/21 00:26	•
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.25	0.048	ug/Kg	₩	11/07/21 18:20	11/09/21 00:26	•
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	76		50 - 150				11/07/21 18:20	11/09/21 00:26	
13C4 PFHpA	90		50 - 150				11/07/21 18:20	11/09/21 00:26	
13C4 PFOA	97		50 - 150				11/07/21 18:20	11/09/21 00:26	
13C5 PFNA	86		50 - 150				11/07/21 18:20	11/09/21 00:26	
13C2 PFDA	87		50 - 150				11/07/21 18:20	11/09/21 00:26	
13C2 PFUnA	83		50 - 150				11/07/21 18:20	11/09/21 00:26	
13C2 PFDoA	86		50 - 150				11/07/21 18:20	11/09/21 00:26	
13C2 PFTeDA	93		50 - 150				11/07/21 18:20	11/09/21 00:26	
13C3 PFBS	92		50 - 150				11/07/21 18:20	11/09/21 00:26	
1802 PFHxS	81		50 - 150				11/07/21 18:20	11/09/21 00:26	
13C4 PFOS	86		50 - 150				11/07/21 18:20	11/09/21 00:26	
d3-NMeFOSAA	77		50 - 150				11/07/21 18:20	11/09/21 00:26	
d5-NEtFOSAA	77		50 - 150				11/07/21 18:20	11/09/21 00:26	
13C3 HFPO-DA	86		50 - 150				11/07/21 18:20	11/09/21 00:26	
General Chemistry							_		
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fa
Percent Moisture	21.3		0.1	0.1	%			11/05/21 11:58	•

0.1

78.7

0.1 %

11/05/21 11:58

Client: Shannon & Wilson, Inc Job ID: 320-81254-1 Project/Site: SC Soils#3

Client Sample ID: 21GST-SS-025

**Percent Solids** 

Lab Sample ID: 320-81254-7 Date Collected: 10/29/21 11:35 **Matrix: Solid** Date Received: 11/03/21 14:01

**Percent Solids: 94.1** 

Analyte	Result Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND	0.20	0.031	ug/Kg	<u></u>	11/07/21 18:20	11/09/21 00:56	1
Perfluoroheptanoic acid (PFHpA)	ND	0.20	0.038	ug/Kg	☼	11/07/21 18:20	11/09/21 00:56	1
Perfluorooctanoic acid (PFOA)	ND	0.20	0.054	ug/Kg	☼	11/07/21 18:20	11/09/21 00:56	1
Perfluorononanoic acid (PFNA)	ND	0.20	0.022	ug/Kg	₩	11/07/21 18:20	11/09/21 00:56	1
Perfluorodecanoic acid (PFDA)	ND	0.20	0.048	ug/Kg	₩	11/07/21 18:20	11/09/21 00:56	1
Perfluoroundecanoic acid (PFUnA)	ND	0.20	0.042	ug/Kg	₩	11/07/21 18:20	11/09/21 00:56	1
Perfluorododecanoic acid (PFDoA)	ND	0.20	0.030	ug/Kg	₽	11/07/21 18:20	11/09/21 00:56	1
Perfluorotridecanoic acid (PFTriA)	ND	0.20	0.021	ug/Kg	₩	11/07/21 18:20	11/09/21 00:56	1
Perfluorotetradecanoic acid (PFTeA)	ND	0.20	0.037	ug/Kg	₩	11/07/21 18:20	11/09/21 00:56	1
Perfluorobutanesulfonic acid (PFBS)	ND	0.20	0.038	ug/Kg	₩	11/07/21 18:20	11/09/21 00:56	1
Perfluorohexanesulfonic acid (PFHxS)	ND	0.20	0.029	ug/Kg	₩	11/07/21 18:20	11/09/21 00:56	1
Perfluorooctanesulfonic acid (PFOS)	0.087 J	0.20	0.043	ug/Kg	☼	11/07/21 18:20	11/09/21 00:56	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND	0.20	0.023	ug/Kg	₩	11/07/21 18:20	11/09/21 00:56	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND	0.20	0.048	ug/Kg	₩	11/07/21 18:20	11/09/21 00:56	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND	0.20	0.035	ug/Kg	₩	11/07/21 18:20	11/09/21 00:56	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	0.20	0.041	ug/Kg	₩	11/07/21 18:20	11/09/21 00:56	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND	0.20		ug/Kg	☼	11/07/21 18:20	11/09/21 00:56	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.20	0.039	ug/Kg	₩	11/07/21 18:20	11/09/21 00:56	1
Isotope Dilution	%Recovery Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	85	50 - 150				11/07/21 18:20	11/09/21 00:56	1
13C4 PFHpA	90	50 - 150				11/07/21 18:20	11/09/21 00:56	1
13C4 PFOA	99	50 - 150				11/07/21 18:20	11/09/21 00:56	1
13C5 PFNA	90	50 - 150				11/07/21 18:20	11/09/21 00:56	1
13C2 PFDA	99	50 - 150				11/07/21 18:20	11/09/21 00:56	1
13C2 PFUnA	92	50 - 150				11/07/21 18:20	11/09/21 00:56	1
13C2 PFDoA	99	50 - 150				11/07/21 18:20	11/09/21 00:56	1
13C2 PFTeDA	103	50 - 150				11/07/21 18:20	11/09/21 00:56	1
13C3 PFBS	92	50 - 150				11/07/21 18:20	11/09/21 00:56	1
18O2 PFHxS	88	50 - 150				11/07/21 18:20	11/09/21 00:56	1
13C4 PFOS	89	50 - 150				11/07/21 18:20	11/09/21 00:56	1
d3-NMeFOSAA	85	50 <sub>-</sub> 150				11/07/21 18:20	11/09/21 00:56	1
d5-NEtFOSAA	88	50 - 150					11/09/21 00:56	1
13C3 HFPO-DA	85	50 - 150					11/09/21 00:56	1
General Chemistry								
Analyte	Result Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	5.9	0.1	0.1	%			11/05/21 11:58	1

11/17/2021

11/05/21 11:58

0.1

94.1

0.1 %

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-SS-024 Lab Sample ID: 320-81254-8

Date Collected: 10/29/21 11:44

Matrix: Solid
Date Received: 11/03/21 14:01

Percent Solids: 85.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.22	0.034	ug/Kg	☆	11/07/21 18:20	11/09/21 01:07	1
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.042	ug/Kg	☼	11/07/21 18:20	11/09/21 01:07	1
Perfluorooctanoic acid (PFOA)	ND		0.22	0.059	ug/Kg	₩	11/07/21 18:20	11/09/21 01:07	1
Perfluorononanoic acid (PFNA)	ND		0.22	0.024	ug/Kg	₩	11/07/21 18:20	11/09/21 01:07	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.053	ug/Kg	≎	11/07/21 18:20	11/09/21 01:07	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.046	ug/Kg	☆	11/07/21 18:20	11/09/21 01:07	1
Perfluorododecanoic acid (PFDoA)	0.050	J	0.22	0.033	ug/Kg	₽	11/07/21 18:20	11/09/21 01:07	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.023	ug/Kg	☼	11/07/21 18:20	11/09/21 01:07	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.041	ug/Kg	☼	11/07/21 18:20	11/09/21 01:07	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.042	ug/Kg	₩	11/07/21 18:20	11/09/21 01:07	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.22	0.032	ug/Kg	☼	11/07/21 18:20	11/09/21 01:07	1
Perfluorooctanesulfonic acid (PFOS)	0.12	JI	0.22		ug/Kg	₩	11/07/21 18:20	11/09/21 01:07	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.22	0.025	ug/Kg		11/07/21 18:20	11/09/21 01:07	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.22	0.053	ug/Kg	₩	11/07/21 18:20	11/09/21 01:07	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.22	0.039	ug/Kg	₩	11/07/21 18:20	11/09/21 01:07	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22	0.045	ug/Kg		11/07/21 18:20	11/09/21 01:07	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.22	0.034	ug/Kg	₩	11/07/21 18:20	11/09/21 01:07	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.043	ug/Kg	₩	11/07/21 18:20	11/09/21 01:07	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	82		50 - 150				11/07/21 18:20	11/09/21 01:07	1
13C4 PFHpA	93		50 - 150				11/07/21 18:20	11/09/21 01:07	1
13C4 PFOA	90		50 - 150				11/07/21 18:20	11/09/21 01:07	1
13C5 PFNA	91		50 - 150				11/07/21 18:20	11/09/21 01:07	1
13C2 PFDA	92		50 <sub>-</sub> 150				11/07/21 18:20	11/09/21 01:07	1
13C2 PFUnA	90		50 <sub>-</sub> 150				11/07/21 18:20	11/09/21 01:07	1
13C2 PFDoA	95		50 - 150				11/07/21 18:20	11/09/21 01:07	1
13C2 PFTeDA	101		50 <sub>-</sub> 150				11/07/21 18:20	11/09/21 01:07	1
13C3 PFBS	95		50 <sub>-</sub> 150					11/09/21 01:07	1
1802 PFHxS	82		50 <sub>-</sub> 150					11/09/21 01:07	1
13C4 PFOS	89		50 <sub>-</sub> 150					11/09/21 01:07	. 1
d3-NMeFOSAA	80		50 - 150					11/09/21 01:07	1
d5-NEtFOSAA	78		50 - 150					11/09/21 01:07	
13C3 HFPO-DA	89		50 - 150					11/09/21 01:07	1
General Chemistry									
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	14.5		0.1	0.1	%			11/05/21 11:58	1
Percent Solids	85.5		0.1	0.1	%			11/05/21 11:58	1

Eurofins TestAmerica, Sacramento

Client: Shannon & Wilson, Inc Job ID: 320-81254-1 Project/Site: SC Soils#3

Client Sample ID: 21GST-SS-022

Lab Sample ID: 320-81254-9 Date Collected: 10/29/21 12:04 **Matrix: Solid** 

Percent Solids: 81.7 Date Received: 11/03/21 14:01

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	2.1	0.22	0.034	ug/Kg	₩	11/07/21 18:20	11/09/21 01:17	
Perfluoroheptanoic acid (PFHpA)	0.64	0.22	0.042	ug/Kg	₩	11/07/21 18:20	11/09/21 01:17	•
Perfluorooctanoic acid (PFOA)	1.8	0.22	0.058	ug/Kg	₩	11/07/21 18:20	11/09/21 01:17	•
Perfluorononanoic acid (PFNA)	0.38	0.22	0.024	ug/Kg	≎	11/07/21 18:20	11/09/21 01:17	
Perfluorodecanoic acid (PFDA)	2.1	0.22	0.053	ug/Kg	₩	11/07/21 18:20	11/09/21 01:17	•
Perfluoroundecanoic acid (PFUnA)	7.6	0.22	0.046	ug/Kg	₩	11/07/21 18:20	11/09/21 01:17	
Perfluorododecanoic acid (PFDoA)	2.0	0.22		ug/Kg	₩	11/07/21 18:20	11/09/21 01:17	,
Perfluorotridecanoic acid (PFTriA)	0.53	0.22	0.023	ug/Kg	≎	11/07/21 18:20	11/09/21 01:17	•
Perfluorotetradecanoic acid (PFTeA)	0.74	0.22	0.041	ug/Kg	₩	11/07/21 18:20	11/09/21 01:17	
Perfluorobutanesulfonic acid (PFBS)	4.0	0.22	0.042	ug/Kg	₩	11/07/21 18:20	11/09/21 01:17	,
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	0.37	0.22	0.025	ug/Kg	₩	11/07/21 18:20	11/09/21 01:17	,
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND	0.22		ug/Kg		11/07/21 18:20	11/09/21 01:17	
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND	0.22	0.039	ug/Kg	₩	11/07/21 18:20	11/09/21 01:17	•
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	0.22	0.045	ug/Kg	₩	11/07/21 18:20	11/09/21 01:17	•
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND	0.22	0.034	ug/Kg	₩	11/07/21 18:20	11/09/21 01:17	,
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.22	0.043	ug/Kg	₩	11/07/21 18:20	11/09/21 01:17	,
Isotope Dilution	%Recovery Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	90	50 - 150				11/07/21 18:20	11/09/21 01:17	
13C4 PFHpA	90	50 - 150				11/07/21 18:20	11/09/21 01:17	
13C4 PFOA	99	50 - 150				11/07/21 18:20	11/09/21 01:17	
13C5 PFNA	87	50 - 150				11/07/21 18:20	11/09/21 01:17	
13C2 PFDA	99	50 - 150				11/07/21 18:20	11/09/21 01:17	
13C2 PFUnA	105	50 - 150				11/07/21 18:20	11/09/21 01:17	
13C2 PFDoA	91	50 - 150				11/07/21 18:20	11/09/21 01:17	
13C2 PFTeDA	90	50 - 150				11/07/21 18:20	11/09/21 01:17	
13C3 PFBS	128	50 - 150				11/07/21 18:20	11/09/21 01:17	
1802 PFHxS	92	50 - 150				11/07/21 18:20	11/09/21 01:17	
13C4 PFOS	92	50 - 150				11/07/21 18:20	11/09/21 01:17	
d3-NMeFOSAA	94	50 - 150				11/07/21 18:20	11/09/21 01:17	-
d5-NEtFOSAA	91	50 - 150				11/07/21 18:20	11/09/21 01:17	
13C3 HFPO-DA	90	50 - 150				11/07/21 10:20	11/09/21 01:17	

Method: EPA 537(Mod) - PFA		•				_	_		
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanesulfonic acid (PFHxS)	20	J	22	3.2	ug/Kg	<u> </u>	11/07/21 18:20	11/12/21 20:11	100
Perfluorooctanesulfonic acid (PFOS)	310		22	4.7	ug/Kg	₽	11/07/21 18:20	11/12/21 20:11	100
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1802 PFHxS	113		50 - 150				11/07/21 18:20	11/12/21 20:11	100
13C4 PFOS	82		50 - 150				11/07/21 18:20	11/12/21 20:11	100

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Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-SS-022 Lab Sample ID: 320-81254-9

Date Collected: 10/29/21 12:04 Matrix: Solid

Date Received: 11/03/21 14:01 Percent Solids: 81.7

General Chemistry Analyte	Result Quali	fier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	18.3	0.1	0.1	%			11/05/21 11:58	1
Percent Solids	81.7	0.1	0.1	%			11/05/21 11:58	1

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14

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-SS-021 Lab Sample ID: 320-81254-10

Date Collected: 10/29/21 12:14

Matrix: Solid
Date Received: 11/03/21 14:01

Matrix: Solid
Percent Solids: 85.2

Perfluorohexanoic acid (PFHxA) Perfluoroheptanoic acid (PFHpA) Perfluorooctanoic acid (PFOA) Perfluorononanoic acid (PFNA)	0.65 0.32		0.22	0.034	ug/Kg	₩	11/07/21 18:20	11/09/21 01:27	1
Perfluorooctanoic acid (PFOA) Perfluorononanoic acid (PFNA)									
Perfluorononanoic acid (PFNA)			0.22	0.041	ug/Kg	☼	11/07/21 18:20	11/09/21 01:27	1
	0.75		0.22	0.057	ug/Kg	☼	11/07/21 18:20	11/09/21 01:27	1
Double or december and (DEDA)	0.45		0.22	0.024	ug/Kg	₩	11/07/21 18:20	11/09/21 01:27	1
Perfluorodecanoic acid (PFDA)	2.6		0.22	0.052	ug/Kg	☼	11/07/21 18:20	11/09/21 01:27	1
Perfluoroundecanoic acid	15		0.22	0.046	ug/Kg	₽	11/07/21 18:20	11/09/21 01:27	1
(PFUnA)									
Perfluorododecanoic acid (PFDoA)	2.3		0.22	0.033		₩	11/07/21 18:20	11/09/21 01:27	1
Perfluorotridecanoic acid (PFTriA)	0.30		0.22	0.023	0 0		11/07/21 18:20		1
Perfluorotetradecanoic acid (PFTeA)	0.41		0.22	0.040	ug/Kg	☼	11/07/21 18:20	11/09/21 01:27	1
Perfluorobutanesulfonic acid (PFBS)	0.35		0.22	0.041	ug/Kg	≎	11/07/21 18:20	11/09/21 01:27	1
Perfluorohexanesulfonic acid (PFHxS)	2.6		0.22	0.031	ug/Kg	≎	11/07/21 18:20	11/09/21 01:27	1
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	0.77		0.22	0.025	ug/Kg	☼	11/07/21 18:20	11/09/21 01:27	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.22	0.052	ug/Kg	₽	11/07/21 18:20	11/09/21 01:27	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.22	0.038	ug/Kg	☼	11/07/21 18:20	11/09/21 01:27	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22	0.044	ug/Kg	☼	11/07/21 18:20	11/09/21 01:27	1
11-Chloroeicosafluoro-3-oxaundecan	ND		0.22	0.034	ug/Kg	₩	11/07/21 18:20	11/09/21 01:27	1
e-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.042	ug/Kg	☼	11/07/21 18:20	11/09/21 01:27	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	75	·——	50 - 150				11/07/21 18:20	11/09/21 01:27	1
13C4 PFHpA	89		50 - 150				11/07/21 18:20	11/09/21 01:27	1
13C4 PFOA	97		50 <sub>-</sub> 150				11/07/21 18:20	11/09/21 01:27	1
13C5 PFNA	91		50 - 150				11/07/21 18:20	11/09/21 01:27	1
13C2 PFDA	94		50 <sub>-</sub> 150				11/07/21 18:20	11/09/21 01:27	1
13C2 PFUnA	94		50 <sub>-</sub> 150				11/07/21 18:20	11/09/21 01:27	1
13C2 PFDoA	84		50 - 150					11/09/21 01:27	1
13C2 PFTeDA	91		50 <sub>-</sub> 150					11/09/21 01:27	1
13C3 PFBS	103		50 - 150					11/09/21 01:27	1
1802 PFHxS	78		50 - 150					11/09/21 01:27	
13C4 PFOS	87		50 - 150 50 - 150					11/09/21 01:27	1
			50 - 150 50 - 150					11/09/21 01:27	
d3-NMeFOSAA d5 NEfEOSAA	80 82							11/09/21 01:27	
d5-NEtFOSAA			50 <sub>-</sub> 150						
13C3 HFPO-DA	83		50 - 150				11/01/21 18:20	11/09/21 01:27	1
Method: EPA 537(Mod) - PFAS Analyte		.3, Table B Qualifier	-15 - DL RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid	32	<u> </u>	2.2		ug/Kg			11/12/21 19:30	10
	<b>52</b>			0.17	a,a	T	,, _ 1 10.20	,,_ 1 10.00	.0
(PFOS) Isotope Dilution	%Recovery		Limits				Prepared	Analyzed	Dil Fac

Eurofins TestAmerica, Sacramento

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12

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

**Percent Solids** 

Client Sample ID: 21GST-SS-021 Lab Sample ID: 320-81254-10

Date Collected: 10/29/21 12:14

Date Received: 11/03/21 14:01

Matrix: Solid
Percent Solids: 85.2

General Chemistry								
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	14.8	0.1	0.1	%			11/05/21 11:58	1

0.1

85.2

0.1 %

3

5

11/05/21 11:58

7

9

44

14

14

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-SS-020 Lab Sample ID: 320-81254-11

Date Collected: 10/29/21 12:19

Matrix: Solid
Date Received: 11/03/21 14:01

Matrix: Solid
Percent Solids: 90.3

Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	0.25		0.21	0.032	ug/Kg	₩	11/07/21 18:20	11/09/21 01:37	1
Perfluoroheptanoic acid (PFHpA)	0.079	J	0.21	0.039	ug/Kg	☼	11/07/21 18:20	11/09/21 01:37	1
Perfluorooctanoic acid (PFOA)	0.28		0.21	0.055	ug/Kg	☼	11/07/21 18:20	11/09/21 01:37	1
Perfluorononanoic acid (PFNA)	0.10	J	0.21	0.023	ug/Kg	₩	11/07/21 18:20	11/09/21 01:37	1
Perfluorodecanoic acid (PFDA)	0.37		0.21	0.049	ug/Kg	☼	11/07/21 18:20	11/09/21 01:37	1
Perfluoroundecanoic acid	1.0		0.21	0.043	ug/Kg	₩	11/07/21 18:20	11/09/21 01:37	1
(PFUnA)									
Perfluorododecanoic acid (PFDoA)	0.37		0.21	0.031	ug/Kg	₽	11/07/21 18:20	11/09/21 01:37	1
Perfluorotridecanoic acid (PFTriA)	0.052	J	0.21	0.022	ug/Kg	☼	11/07/21 18:20	11/09/21 01:37	1
Perfluorotetradecanoic acid (PFTeA)	0.092	J	0.21	0.038	ug/Kg	₽	11/07/21 18:20	11/09/21 01:37	1
Perfluorobutanesulfonic acid (PFBS)	0.36		0.21	0.039	ug/Kg	₩	11/07/21 18:20	11/09/21 01:37	1
Perfluorohexanesulfonic acid (PFHxS)	2.4		0.21	0.030	ug/Kg	₩	11/07/21 18:20	11/09/21 01:37	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	₩	11/07/21 18:20	11/09/21 01:37	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.21	0.049	ug/Kg	₽	11/07/21 18:20	11/09/21 01:37	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.21	0.036	ug/Kg	☼	11/07/21 18:20	11/09/21 01:37	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.042	ug/Kg	₩	11/07/21 18:20	11/09/21 01:37	1
11-Chloroeicosafluoro-3-oxaundecan	ND		0.21	0.032	ug/Kg	₽	11/07/21 18:20	11/09/21 01:37	1
e-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.040	ug/Kg	₩	11/07/21 18:20	11/09/21 01:37	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	88		50 - 150				11/07/21 18:20	11/09/21 01:37	1
13C4 PFHpA	91		50 - 150				11/07/21 18:20	11/09/21 01:37	1
13C4 PFOA	108		50 <sub>-</sub> 150				11/07/21 18:20	11/09/21 01:37	1
13C5 PFNA	103		50 - 150				11/07/21 18:20	11/09/21 01:37	1
13C2 PFDA	102		50 <sub>-</sub> 150				11/07/21 18:20	11/09/21 01:37	1
13C2 PFUnA	103		50 <sub>-</sub> 150				11/07/21 18:20	11/09/21 01:37	1
13C2 PFDoA	107		50 <sub>-</sub> 150				11/07/21 18:20	11/09/21 01:37	
13C2 PFTeDA	101		50 <sub>-</sub> 150					11/09/21 01:37	1
13C3 PFBS	107		50 - 150					11/09/21 01:37	. 1
1802 PFHxS	92		50 - 150					11/09/21 01:37	
13C4 PFOS	96		50 <sub>-</sub> 150					11/09/21 01:37	1
d3-NMeFOSAA	99		50 - 150 50 - 150					11/09/21 01:37	1
d5-NEtFOSAA	99		50 - 150 50 - 150					11/09/21 01:37	1 1
13C3 HFPO-DA	97		50 - 150 50 - 150					11/09/21 01:37	1
							11/01/21 10.20	11/09/21 01.37	,
Method: EPA 537(Mod) - PFAS Analyte		.3, Table B Qualifier	8-15 - DL RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid	27	***	2.1		ug/Kg			11/12/21 19:40	10
(PFOS)	21			0.11	ישייש	7		,	.0
Isotope Dilution 13C4 PFOS	%Recovery	Qualifier	Limits 50 - 150				Prepared 11/07/21 18:20	Analyzed 11/12/21 19:40	Dil Fac

Eurofins TestAmerica, Sacramento

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a, odoramento

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-SS-020 Lab Sample ID: 320-81254-11

Date Collected: 10/29/21 12:19

Matrix: Solid
Date Received: 11/03/21 14:01

Matrix: Solid
Percent Solids: 90.3

General Chemistry								
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	9.7	0.1	0.1	%			11/05/21 11:58	1
Parcent Solids	90.3	0.1	0.1	%			11/05/21 11:58	1

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Client: Shannon & Wilson, Inc Job ID: 320-81254-1 Project/Site: SC Soils#3

Client Sample ID: 21GST-SS-019

**Percent Solids** 

Lab Sample ID: 320-81254-12 Date Collected: 10/29/21 12:31 **Matrix: Solid** 

Date Received: 11/03/21 14:01 Percent Solids: 87.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Perfluorohexanoic acid (PFHxA)	0.10	J	0.21	0.033	ug/Kg	<u></u>	11/07/21 18:20	11/09/21 01:47	
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.040	ug/Kg	₩	11/07/21 18:20	11/09/21 01:47	
Perfluorooctanoic acid (PFOA)	0.14	J	0.21	0.056	ug/Kg	₩	11/07/21 18:20	11/09/21 01:47	
Perfluorononanoic acid (PFNA)	0.047	J	0.21	0.023	ug/Kg	₩	11/07/21 18:20	11/09/21 01:47	
Perfluorodecanoic acid (PFDA)	0.17	J	0.21	0.050	ug/Kg	₩	11/07/21 18:20	11/09/21 01:47	
Perfluoroundecanoic acid	0.96		0.21	0.044	ug/Kg	₩	11/07/21 18:20	11/09/21 01:47	
(PFUnA) Perfluorododecanoic acid	0.18	J	0.21	0.032	ug/Kg		11/07/21 18:20	11/09/21 01:47	
(PFDoA)									
Perfluorotridecanoic acid (PFTriA)	0.046	J	0.21		ug/Kg	☆	11/07/21 18:20		
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.039	ug/Kg		11/07/21 18:20		
Perfluorobutanesulfonic acid (PFBS)	0.044	J	0.21	0.040	ug/Kg	☼	11/07/21 18:20	11/09/21 01:47	
Perfluorohexanesulfonic acid (PFHxS)	0.84		0.21	0.030	ug/Kg	₽	11/07/21 18:20	11/09/21 01:47	
Perfluorooctanesulfonic acid	13		0.21	0.045	ug/Kg	₩	11/07/21 18:20	11/09/21 01:47	
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	0.034	J	0.21	0.024	ug/Kg		11/07/21 18:20	11/09/21 01:47	
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.21	0.050	ug/Kg	₩	11/07/21 18:20	11/09/21 01:47	
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.21	0.037	ug/Kg	₩	11/07/21 18:20	11/09/21 01:47	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.043	ug/Kg	₩	11/07/21 18:20	11/09/21 01:47	
11-Chloroeicosafluoro-3-oxaundecan	ND		0.21	0.033	ug/Kg	₩	11/07/21 18:20	11/09/21 01:47	
4,8-Dioxa-3H-perfluorononanoic acid ADONA)	ND		0.21	0.041	ug/Kg	₩	11/07/21 18:20	11/09/21 01:47	
sotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
3C2 PFHxA	92		50 - 150				11/07/21 18:20	11/09/21 01:47	
13C4 PFHpA	95		50 <sub>-</sub> 150				11/07/21 18:20	11/09/21 01:47	
13C4 PFOA	114		50 <sub>-</sub> 150				11/07/21 18:20	11/09/21 01:47	
13C5 PFNA	114		50 - 150				11/07/21 18:20	11/09/21 01:47	
13C2 PFDA	117		50 <sub>-</sub> 150				11/07/21 18:20	11/09/21 01:47	
13C2 PFUnA	121		50 - 150				11/07/21 18:20	11/09/21 01:47	
13C2 PFDoA	110		50 - 150				11/07/21 18:20	11/09/21 01:47	
13C2 PFTeDA	112		50 - 150				11/07/21 18:20	11/09/21 01:47	
13C3 PFBS	113		50 <sub>-</sub> 150					11/09/21 01:47	
1802 PFHxS	98		50 <sub>-</sub> 150					11/09/21 01:47	
13C4 PFOS	103		50 - 150					11/09/21 01:47	
d3-NMeFOSAA	96		50 <sub>-</sub> 150					11/09/21 01:47	
d5-NEtFOSAA	102		50 - 150					11/09/21 01:47	
13C3 HFPO-DA	100		50 - 150					11/09/21 01:47	
General Chemistry									
Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fa
Percent Moisture	12.9	_	0.1	0.1	%	_	_	11/05/21 11:58	

Eurofins TestAmerica, Sacramento

11/05/21 11:58

0.1

0.1 %

87.1

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-SS-018

Lab Sample ID: 320-81254-13 Date Collected: 10/29/21 12:42 Matrix: Solid Date Received: 11/03/21 14:01

Percent Solids: 93.1 Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 Analyte Result Qualifier **MDL** Unit Dil Fac RL Prepared Analyzed Perfluorohexanoic acid (PFHxA) ND 0.20 0.031 ug/Kg 11/07/21 18:20 11/09/21 01:57 Perfluoroheptanoic acid (PFHpA) ND 0.20 0.038 ug/Kg 11/07/21 18:20 11/09/21 01:57 Perfluorooctanoic acid (PFOA) ND 0.20 0.053 ug/Kg 11/07/21 18:20 11/09/21 01:57 Perfluorononanoic acid (PFNA) ND 0.022 ug/Kg 11/07/21 18:20 11/09/21 01:57 0.20 Perfluorodecanoic acid (PFDA) ND 0.20 0.048 ug/Kg 11/07/21 18:20 11/09/21 01:57 Perfluoroundecanoic acid (PFUnA) ND 0.20 0.042 ug/Kg 11/07/21 18:20 11/09/21 01:57 Perfluorododecanoic acid (PFDoA) ND 0.20 0.030 ug/Kg 11/07/21 18:20 11/09/21 01:57 Perfluorotridecanoic acid (PFTriA) ND 0.20 0.021 ug/Kg 11/07/21 18:20 11/09/21 01:57 Perfluorotetradecanoic acid (PFTeA) ND 0.20 0.037 ug/Kg 11/07/21 18:20 11/09/21 01:57 Perfluorobutanesulfonic acid (PFBS) ND 0.20 0.038 ug/Kg 11/07/21 18:20 11/09/21 01:57 Perfluorohexanesulfonic acid (PFHxS) ND 0.20 0.029 ug/Kg 11/07/21 18:20 11/09/21 01:57 Perfluorooctanesulfonic acid (PFOS) ND 0.20 0.043 ug/Kg 11/07/21 18:20 11/09/21 01:57 N-methylperfluorooctanesulfonamidoa ND 0.20 0.023 ug/Kg 11/07/21 18:20 11/09/21 01:57 cetic acid (NMeFOSAA) 11/07/21 18:20 11/09/21 01:57 ND N-ethylperfluorooctanesulfonamidoac 0.20 0.048 ug/Kg etic acid (NEtFOSAA) 9-Chlorohexadecafluoro-3-oxanonan ND 0.20 0.035 ug/Kg 11/07/21 18:20 11/09/21 01:57 e-1-sulfonic acid ND 0.20 0.041 ug/Kg 11/07/21 18:20 11/09/21 01:57 Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaundecan ND 0.20 0.031 ug/Kg 11/07/21 18:20 11/09/21 01:57 e-1-sulfonic acid 0.20 4,8-Dioxa-3H-perfluorononanoic acid ND 0.039 ug/Kg 11/07/21 18:20 11/09/21 01:57

(ADONA)					
Isotope Dilution	%Recovery Q	ualifier Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	99	50 - 150	11/07/21 18:20	11/09/21 01:57	1
13C4 PFHpA	117	50 - 150	11/07/21 18:20	11/09/21 01:57	1
13C4 PFOA	116	50 - 150	11/07/21 18:20	11/09/21 01:57	1
13C5 PFNA	110	50 - 150	11/07/21 18:20	11/09/21 01:57	1
13C2 PFDA	116	50 - 150	11/07/21 18:20	11/09/21 01:57	1
13C2 PFUnA	114	50 - 150	11/07/21 18:20	11/09/21 01:57	1
13C2 PFDoA	119	50 - 150	11/07/21 18:20	11/09/21 01:57	1
13C2 PFTeDA	127	50 - 150	11/07/21 18:20	11/09/21 01:57	1
13C3 PFBS	112	50 - 150	11/07/21 18:20	11/09/21 01:57	1
18O2 PFHxS	96	50 - 150	11/07/21 18:20	11/09/21 01:57	1
13C4 PFOS	106	50 - 150	11/07/21 18:20	11/09/21 01:57	1
d3-NMeFOSAA	98	50 - 150	11/07/21 18:20	11/09/21 01:57	1
d5-NEtFOSAA	100	50 - 150	11/07/21 18:20	11/09/21 01:57	1
13C3 HFPO-DA	102	50 - 150	11/07/21 18:20	11/09/21 01:57	1

General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	6.9		0.1	0.1	%			11/05/21 11:58	1
Percent Solids	93.1		0.1	0.1	%			11/05/21 11:58	1

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Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

**Percent Solids** 

Client Sample ID: 21GST-SS-014

Lab Sample ID: 320-81254-14 Date Collected: 10/29/21 12:56 **Matrix: Solid** 

Date Received: 11/03/21 14:01 Percent Solids: 73.4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Perfluorohexanoic acid (PFHxA)	ND		0.27	0.041	ug/Kg	<del></del>	11/07/21 18:20	11/09/21 02:07	
Perfluoroheptanoic acid (PFHpA)	ND		0.27	0.051	ug/Kg	₩	11/07/21 18:20	11/09/21 02:07	
Perfluorooctanoic acid (PFOA)	ND		0.27	0.071	ug/Kg	₩	11/07/21 18:20	11/09/21 02:07	
Perfluorononanoic acid (PFNA)	ND		0.27	0.029	ug/Kg	₩	11/07/21 18:20	11/09/21 02:07	
Perfluorodecanoic acid (PFDA)	ND		0.27	0.064	ug/Kg	₩	11/07/21 18:20	11/09/21 02:07	
Perfluoroundecanoic acid (PFUnA)	ND		0.27	0.056	ug/Kg	₩	11/07/21 18:20	11/09/21 02:07	
Perfluorododecanoic acid (PFDoA)	ND		0.27	0.040	ug/Kg	₩	11/07/21 18:20	11/09/21 02:07	
Perfluorotridecanoic acid (PFTriA)	ND		0.27	0.028	ug/Kg	₩	11/07/21 18:20	11/09/21 02:07	
Perfluorotetradecanoic acid (PFTeA)	ND		0.27	0.049	ug/Kg	₩	11/07/21 18:20	11/09/21 02:07	
Perfluorobutanesulfonic acid (PFBS)	ND		0.27	0.051	ug/Kg	₩	11/07/21 18:20	11/09/21 02:07	
Perfluorohexanesulfonic acid (PFHxS)	ND		0.27	0.039	ug/Kg	≎	11/07/21 18:20	11/09/21 02:07	
Perfluorooctanesulfonic acid (PFOS)	0.23	JI	0.27	0.057	ug/Kg	₩	11/07/21 18:20	11/09/21 02:07	
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.27	0.031	ug/Kg	☼	11/07/21 18:20	11/09/21 02:07	
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.27	0.064	ug/Kg	₩	11/07/21 18:20	11/09/21 02:07	
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.27		ug/Kg	₩	11/07/21 18:20	11/09/21 02:07	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.27	0.055	ug/Kg	₩	11/07/21 18:20	11/09/21 02:07	
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.27		ug/Kg	₩	11/07/21 18:20	11/09/21 02:07	,
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.27	0.052	ug/Kg	₩	11/07/21 18:20	11/09/21 02:07	•
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	82		50 - 150				11/07/21 18:20	11/09/21 02:07	
13C4 PFHpA	87		50 - 150				11/07/21 18:20	11/09/21 02:07	
13C4 PFOA	97		50 - 150				11/07/21 18:20	11/09/21 02:07	
13C5 PFNA	93		50 - 150				11/07/21 18:20	11/09/21 02:07	
13C2 PFDA	94		50 - 150				11/07/21 18:20	11/09/21 02:07	
13C2 PFUnA	94		50 - 150				11/07/21 18:20	11/09/21 02:07	
13C2 PFDoA	91		50 - 150				11/07/21 18:20	11/09/21 02:07	
13C2 PFTeDA	86		50 - 150				11/07/21 18:20	11/09/21 02:07	
13C3 PFBS	102		50 - 150				11/07/21 18:20	11/09/21 02:07	
1802 PFHxS	86		50 - 150				11/07/21 18:20	11/09/21 02:07	
13C4 PFOS	87		50 - 150				11/07/21 18:20	11/09/21 02:07	
d3-NMeFOSAA	79		50 - 150				11/07/21 18:20	11/09/21 02:07	
d5-NEtFOSAA	84		50 - 150				11/07/21 18:20	11/09/21 02:07	
13C3 HFPO-DA	81		50 - 150				11/07/21 18:20	11/09/21 02:07	
General Chemistry						_			<b>-</b>
Analyte		Qualifier	RL _		Unit	D	Prepared	Analyzed	Dil Fa
Percent Moisture	26.6		0.1	0.1	%			11/05/21 11:58	•

0.1

0.1 %

73.4

11/05/21 11:58

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-SS-017

Lab Sample ID: 320-81254-15 Date Collected: 10/29/21 13:07 **Matrix: Solid** 

Date Received: 11/03/21 14:01 Percent Solids: 90.8 Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.21	0.033	ug/Kg	<u></u>	11/07/21 18:20	11/09/21 02:17	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.040	ug/Kg	₩	11/07/21 18:20	11/09/21 02:17	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.056	ug/Kg	₩	11/07/21 18:20	11/09/21 02:17	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.023	ug/Kg	₩	11/07/21 18:20	11/09/21 02:17	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.051	ug/Kg	₩	11/07/21 18:20	11/09/21 02:17	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.044	ug/Kg	₩	11/07/21 18:20	11/09/21 02:17	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.032	ug/Kg	₩	11/07/21 18:20	11/09/21 02:17	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.022	ug/Kg	☼	11/07/21 18:20	11/09/21 02:17	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.039	ug/Kg	₩	11/07/21 18:20	11/09/21 02:17	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.040	ug/Kg	₩	11/07/21 18:20	11/09/21 02:17	1
Perfluorohexanesulfonic acid (PFHxS)	0.036	J	0.21	0.031	ug/Kg	₩	11/07/21 18:20	11/09/21 02:17	1
Perfluorooctanesulfonic acid (PFOS)	0.24	I	0.21	0.045	ug/Kg	₩	11/07/21 18:20	11/09/21 02:17	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	₩	11/07/21 18:20	11/09/21 02:17	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.21	0.051	ug/Kg	₩	11/07/21 18:20	11/09/21 02:17	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.21	0.037	ug/Kg	₩	11/07/21 18:20	11/09/21 02:17	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.043	ug/Kg	.⇔	11/07/21 18:20	11/09/21 02:17	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.21	0.033	ug/Kg	₩	11/07/21 18:20	11/09/21 02:17	1
4,8-Dioxa-3H-perfluorononanoic acid	ND		0.21	0.041	ug/Kg	☼	11/07/21 18:20	11/09/21 02:17	1

%Recovery Qualifi	er Limits	Prepared	Analyzed	Dil Fac
88	50 - 150	11/07/21 18:20	11/09/21 02:17	1
100	50 - 150	11/07/21 18:20	11/09/21 02:17	1
107	50 - 150	11/07/21 18:20	11/09/21 02:17	1
107	50 - 150	11/07/21 18:20	11/09/21 02:17	1
104	50 - 150	11/07/21 18:20	11/09/21 02:17	1
97	50 - 150	11/07/21 18:20	11/09/21 02:17	1
106	50 - 150	11/07/21 18:20	11/09/21 02:17	1
114	50 - 150	11/07/21 18:20	11/09/21 02:17	1
100	50 - 150	11/07/21 18:20	11/09/21 02:17	1
89	50 - 150	11/07/21 18:20	11/09/21 02:17	1
97	50 - 150	11/07/21 18:20	11/09/21 02:17	1
93	50 - 150	11/07/21 18:20	11/09/21 02:17	1
99	50 - 150	11/07/21 18:20	11/09/21 02:17	1
91	50 - 150	11/07/21 18:20	11/09/21 02:17	1
	88 100 107 107 104 97 106 114 100 89 97 93	88 50 - 150 100 50 - 150 107 50 - 150 107 50 - 150 104 50 - 150 97 50 - 150 106 50 - 150 114 50 - 150 100 50 - 150 89 50 - 150 97 50 - 150 97 50 - 150 99 50 - 150	88       50 - 150       11/07/21 18:20         100       50 - 150       11/07/21 18:20         107       50 - 150       11/07/21 18:20         107       50 - 150       11/07/21 18:20         104       50 - 150       11/07/21 18:20         97       50 - 150       11/07/21 18:20         106       50 - 150       11/07/21 18:20         114       50 - 150       11/07/21 18:20         100       50 - 150       11/07/21 18:20         89       50 - 150       11/07/21 18:20         97       50 - 150       11/07/21 18:20         93       50 - 150       11/07/21 18:20         99       50 - 150       11/07/21 18:20	88       50 - 150       11/07/21 18:20       11/09/21 02:17         100       50 - 150       11/07/21 18:20       11/09/21 02:17         107       50 - 150       11/07/21 18:20       11/09/21 02:17         107       50 - 150       11/07/21 18:20       11/09/21 02:17         104       50 - 150       11/07/21 18:20       11/09/21 02:17         97       50 - 150       11/07/21 18:20       11/09/21 02:17         106       50 - 150       11/07/21 18:20       11/09/21 02:17         100       50 - 150       11/07/21 18:20       11/09/21 02:17         89       50 - 150       11/07/21 18:20       11/09/21 02:17         97       50 - 150       11/07/21 18:20       11/09/21 02:17         97       50 - 150       11/07/21 18:20       11/09/21 02:17         93       50 - 150       11/07/21 18:20       11/09/21 02:17         99       50 - 150       11/07/21 18:20       11/09/21 02:17

General Chemis Analyte	· ·	Qualifier I	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	9.2		0.1	0.1	%			11/05/21 11:58	1
Percent Solids	90.8	(	0.1	0.1	%			11/05/21 11:58	1

Client: Shannon & Wilson, Inc Job ID: 320-81254-1 Project/Site: SC Soils#3

Client Sample ID: 21GST-SS-016

Lab Sample ID: 320-81254-16 Date Collected: 10/29/21 13:16 **Matrix: Solid** 

Date Received: 11/03/21 14:01 Percent Solids: 89.7

Analyte	Result Qu	ualifier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND	0.22	0.033	ug/Kg	— <u></u>	11/07/21 18:20	11/09/21 02:28	
Perfluoroheptanoic acid (PFHpA)	ND	0.22	0.041	ug/Kg	₩	11/07/21 18:20	11/09/21 02:28	
Perfluorooctanoic acid (PFOA)	ND	0.22	0.057	ug/Kg	₩	11/07/21 18:20	11/09/21 02:28	•
Perfluorononanoic acid (PFNA)	ND	0.22	0.024	ug/Kg	₩	11/07/21 18:20	11/09/21 02:28	
Perfluorodecanoic acid (PFDA)	ND	0.22	0.052	ug/Kg	₩	11/07/21 18:20	11/09/21 02:28	
Perfluoroundecanoic acid (PFUnA)	ND	0.22	0.045	ug/Kg	☼	11/07/21 18:20	11/09/21 02:28	
Perfluorododecanoic acid (PFDoA)	ND	0.22	0.032	ug/Kg		11/07/21 18:20	11/09/21 02:28	,
Perfluorotridecanoic acid (PFTriA)	ND	0.22	0.023	ug/Kg	₩	11/07/21 18:20	11/09/21 02:28	
Perfluorotetradecanoic acid (PFTeA)	ND	0.22	0.040	ug/Kg	≎	11/07/21 18:20	11/09/21 02:28	
Perfluorobutanesulfonic acid (PFBS)	ND	0.22	0.041	ug/Kg	≎	11/07/21 18:20	11/09/21 02:28	
Perfluorohexanesulfonic acid (PFHxS)	ND	0.22	0.031	ug/Kg	₽	11/07/21 18:20	11/09/21 02:28	
Perfluorooctanesulfonic acid (PFOS)	0.14 J	0.22	0.046	ug/Kg	₩	11/07/21 18:20	11/09/21 02:28	•
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND	0.22	0.025	ug/Kg	₩	11/07/21 18:20	11/09/21 02:28	,
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND	0.22	0.052	ug/Kg	₩	11/07/21 18:20	11/09/21 02:28	,
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND	0.22	0.038	ug/Kg	₩	11/07/21 18:20	11/09/21 02:28	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	0.22		ug/Kg	₩	11/07/21 18:20	11/09/21 02:28	
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND	0.22		ug/Kg	₩	11/07/21 18:20	11/09/21 02:28	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.22	0.042	ug/Kg	₩	11/07/21 18:20	11/09/21 02:28	•
lsotope Dilution	%Recovery Qu	ualifier Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	87	50 - 150				11/07/21 18:20	11/09/21 02:28	
13C4 PFHpA	92	50 - 150				11/07/21 18:20	11/09/21 02:28	1
13C4 PFOA	102	50 - 150				11/07/21 18:20	11/09/21 02:28	1
13C5 PFNA	94	50 - 150				11/07/21 18:20	11/09/21 02:28	
13C2 PFDA	98	50 - 150				11/07/21 18:20	11/09/21 02:28	
13C2 PFUnA	94	50 - 150				11/07/21 18:20	11/09/21 02:28	
13C2 PFDoA	100	50 - 150				11/07/21 18:20	11/09/21 02:28	
13C2 PFTeDA	110	50 - 150				11/07/21 18:20	11/09/21 02:28	
13C3 PFBS	101	50 - 150				11/07/21 18:20	11/09/21 02:28	
1802 PFHxS	90	50 - 150				11/07/21 18:20	11/09/21 02:28	
13C4 PFOS	93	50 - 150				11/07/21 18:20	11/09/21 02:28	
d3-NMeFOSAA	90	50 - 150				11/07/21 18:20	11/09/21 02:28	
d5-NEtFOSAA	89	50 - 150				11/07/21 18:20	11/09/21 02:28	
13C3 HFPO-DA	87	50 - 150				11/07/21 18:20	11/09/21 02:28	
General Chemistry								
Analyte	Result Q			Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	10.3	0.1	0.1	%			11/05/21 11:58	•

Eurofins TestAmerica, Sacramento

11/05/21 11:58

0.1

0.1 %

89.7

**Percent Solids** 

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

**Percent Solids** 

Client Sample ID: 21GST-SS-015

Lab Sample ID: 320-81254-17 Date Collected: 10/29/21 13:19 **Matrix: Solid** Date Received: 11/03/21 14:01

Percent Solids: 93.3

Perfluoroheptanoic acid (PFHpA)	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)   ND   0.20   0.054   ug/Kg   2   11/07/21 18:20	11/09/21 02:58	1
Perfluorononanoic acid (PFNA)   ND   0.20   0.022   ug/Kg   11/07/21 18:20	11/09/21 02:58	1
Perfluorodecanoic acid (PFDA)   ND   0.20   0.049   ug/Kg   11/07/21 18:20	11/09/21 02:58	1
Perfluoroundecanoic acid (PFUhA)   ND   0.20   0.043   ug/Kg   0   11/07/21 18:20	11/09/21 02:58	1
Perfluorododecanoic acid (PFDoA)   ND   0.20   0.030   ug/Kg   0 11/07/21 18:20	11/09/21 02:58	1
Perfluorotridecanoic acid (PFTriA)   ND   0.20   0.021   ug/Kg   11/07/21 18:20	11/09/21 02:58	1
Perfluorotetradecanoic acid (PFTeA)   ND   0.20   0.037   ug/Kg   11/07/21 18:20	11/09/21 02:58	1
Perfluorobutanesulfonic acid (PFBS)   ND   0.20   0.038   ug/kg   0.11/07/21 18:20	11/09/21 02:58	1
Perfluoronexanesulfonic acid (PFHxS)	11/09/21 02:58	1
Perfluorooctanesulfonic acid (PFOS)	11/09/21 02:58	1
Perfluorooctanesulfonic acid (PFOS)   0.020   0.044   ug/Kg   11/07/21 18:20	11/09/21 02:58	1
cetic acid (NMeFOSAA)         N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)         ND         0.20         0.049         ug/Kg         ** 11/07/21 18:20           9-Chlorohexadecafluoro-3-oxanonan etic acid (NEtFOSAA)         ND         0.20         0.035         ug/Kg         ** 11/07/21 18:20           e-1-sulfonic acid Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)         ND         0.20         0.042         ug/Kg         ** 11/07/21 18:20           11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (AB-Dioxa-3H-perfluorononanoic acid (AB-Dioxa-3H-perfluorononanoic acid (ADONA)         ND         0.20         0.031         ug/Kg         ** 11/07/21 18:20           13c2 PFHxA         79         50 - 150         11/07/21 18:20         11/07/21 18:20           13c2 PFHyA         86         50 - 150         11/07/21 18:20           13c4 PFOA         97         50 - 150         11/07/21 18:20           13c4 PFOA         87         50 - 150         11/07/21 18:20           13c2 PFDAA         87         50 - 150         11/07/21 18:20           13c2 PFDA         91         50 - 150         11/07/21 18:20           13c2 PFDAA         96         50 - 150         11/07/21 18:20           13c2 PFDAA         96         50 - 150         11/07/21 18:20           13c2 PFDA	11/09/21 02:58	1
etic acid (NEtFOSAA) 9-Chlorohexadecafluoro-3-oxanonan 9-Chlorohexadecafluoro-3-oxanonan 1-sulfonic acid Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaundecan 11-Chloroeicosafluoro-3-oxaundecan 11-c	11/09/21 02:58	1
e-1-sulfonic acid Hexafluoropropylene Oxide Dimer ND 0.20 0.042 ug/Kg 11/07/21 18:20 Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaundecan ND 0.20 0.031 ug/Kg 11/07/21 18:20 e-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid ND 0.20 0.039 ug/Kg 11/07/21 18:20 (ADONA)  Botope Dilution %Recovery Qualifier Limits Prepared 13C2 PFHxA 79 50-150 11/07/21 18:20 13C4 PFHpA 86 50-150 11/07/21 18:20 13C4 PFHpA 86 50-150 11/07/21 18:20 13C4 PFOA 97 50-150 11/07/21 18:20 13C5 PFNA 87 50-150 11/07/21 18:20 13C2 PFDA 91 50-150 11/07/21 18:20 13C2 PFDA 96 50-150 11/07/21 18:20 13C2 PFDA 96 50-150 11/07/21 18:20 13C2 PFDA 97 50-150 11/07/21 18:20 13C2 PFDA 91 50-150 11/07/21 18:20 13C2 PFDA 92 50-150 11/07/21 18:20 13C2 PFDA 91 50-150 11/07/21 18:20 13C3 PFBOA 92 50-150 11/07/21 18:20 13C3 PFBOA 91 50-150 11/07/21 18:20 13C3 PFBS 88 50-150 11/07/21 18:20 13C3 PFBS 88 50-150 11/07/21 18:20 13C4 PFOSA 81 50-150 11/07/21 18:20 13C5 PFOSA 81 50-150 11/07/21 18:20 13C6 PFOSA 81 50-150 11/07/21 18:20 13C7 PFOSA 81 50-150 11/07/21 18:20 13C7 PFOSA 84 50-150 11/07/21 18:20 13C7 PFOSA 84 50-150 11/07/21 18:20 13C7 PFOSA 84 50-150 11/07/21 18:20	11/09/21 02:58	1
Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaundecan ND 0.20 0.031 ug/Kg 11/07/21 18:20 e-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid ND 0.20 0.039 ug/Kg 11/07/21 18:20 (ADONA)  Isotope Dilution %Recovery Qualifier Limits Prepared  13C2 PFHXA 79 50-150 11/07/21 18:20 13C4 PFHpA 86 50-150 11/07/21 18:20 13C4 PFOA 97 50-150 11/07/21 18:20 13C5 PFNA 87 50-150 11/07/21 18:20 13C2 PFDA 91 50-150 11/07/21 18:20 13C2 PFDA 91 50-150 11/07/21 18:20 13C2 PFDA 91 50-150 11/07/21 18:20 13C2 PFDA 92 50-150 11/07/21 18:20 13C2 PFDA 91 50-150 11/07/21 18:20 13C2 PFDA 91 50-150 11/07/21 18:20 13C2 PFDA 91 50-150 11/07/21 18:20 13C2 PFDA 91 50-150 11/07/21 18:20 13C2 PFDA 91 50-150 11/07/21 18:20 13C2 PFDA 91 50-150 11/07/21 18:20 13C2 PFDA 91 50-150 11/07/21 18:20 13C2 PFDA 91 50-150 11/07/21 18:20 13C2 PFDA 91 50-150 11/07/21 18:20 13C2 PFHXS 75 50-150 11/07/21 18:20 13C2 PFHXS 75 50-150 11/07/21 18:20 13C4 PFOS 81 50-150 11/07/21 18:20 13C4 PFOS 81 50-150 11/07/21 18:20 13C4 PFOS 81 50-150 11/07/21 18:20 13C4 PFOS 81 50-150 11/07/21 18:20 13C4 PFOS 81 50-150 11/07/21 18:20 13C4 PFOS 81 50-150 11/07/21 18:20 13C4 PFOS 81 50-150 11/07/21 18:20 13C4 PFOS 81 50-150 11/07/21 18:20 13C4 PFOS 81 50-150 11/07/21 18:20 13C4 PFOS 81 50-150 11/07/21 18:20 13C4 PFOS 81 50-150 11/07/21 18:20 13C4 PFOS 81 50-150 11/07/21 18:20 13C4 PFOS 81 50-150 11/07/21 18:20 13C4 PFOS 84 50-150		
e-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid (ADONA)  Isotope Dilution    Secovery   Qualifier   Limits   Prepared	11/09/21 02:58	1
Sotope Dilution   %Recovery   Qualifier   Limits   Prepared		1
13C2 PFHXA       79       50 - 150       11/07/21 18:20         13C4 PFHpA       86       50 - 150       11/07/21 18:20         13C4 PFOA       97       50 - 150       11/07/21 18:20         13C5 PFNA       87       50 - 150       11/07/21 18:20         13C2 PFDA       91       50 - 150       11/07/21 18:20         13C2 PFUnA       96       50 - 150       11/07/21 18:20         13C2 PFDOA       92       50 - 150       11/07/21 18:20         13C3 PFEDA       91       50 - 150       11/07/21 18:20         13C3 PFBS       88       50 - 150       11/07/21 18:20         18O2 PFHXS       75       50 - 150       11/07/21 18:20         13C4 PFOS       81       50 - 150       11/07/21 18:20         d3-NMeFOSAA       81       50 - 150       11/07/21 18:20         d5-NEtFOSAA       84       50 - 150       11/07/21 18:20         General Chemistry	11/09/21 02:58	1
13C4 PFHpA       86       50 - 150       11/07/21 18:20         13C4 PFOA       97       50 - 150       11/07/21 18:20         13C5 PFNA       87       50 - 150       11/07/21 18:20         13C2 PFDA       91       50 - 150       11/07/21 18:20         13C2 PFUnA       96       50 - 150       11/07/21 18:20         13C2 PFDOA       92       50 - 150       11/07/21 18:20         13C2 PFTEDA       91       50 - 150       11/07/21 18:20         13C3 PFBS       88       50 - 150       11/07/21 18:20         18O2 PFHxS       75       50 - 150       11/07/21 18:20         13C4 PFOS       81       50 - 150       11/07/21 18:20         d3-NMeFOSAA       81       50 - 150       11/07/21 18:20         d5-NEtFOSAA       84       50 - 150       11/07/21 18:20         G6-neral Chemistry	Analyzed	Dil Fac
13C4 PFOA       97       50 - 150       11/07/21 18:20         13C5 PFNA       87       50 - 150       11/07/21 18:20         13C2 PFDA       91       50 - 150       11/07/21 18:20         13C2 PFUnA       96       50 - 150       11/07/21 18:20         13C2 PFDOA       92       50 - 150       11/07/21 18:20         13C3 PFBS       88       50 - 150       11/07/21 18:20         13C3 PFBS       88       50 - 150       11/07/21 18:20         18O2 PFHxS       75       50 - 150       11/07/21 18:20         13C4 PFOS       81       50 - 150       11/07/21 18:20         d3-NMeFOSAA       81       50 - 150       11/07/21 18:20         d5-NEtFOSAA       84       50 - 150       11/07/21 18:20         13C3 HFPO-DA       89       50 - 150       11/07/21 18:20	11/09/21 02:58	1
13C5 PFNA       87       50 - 150       11/07/21 18:20         13C2 PFDA       91       50 - 150       11/07/21 18:20         13C2 PFUnA       96       50 - 150       11/07/21 18:20         13C2 PFDOA       92       50 - 150       11/07/21 18:20         13C3 PFBDA       91       50 - 150       11/07/21 18:20         13C3 PFBS       88       50 - 150       11/07/21 18:20         18O2 PFHxS       75       50 - 150       11/07/21 18:20         13C4 PFOS       81       50 - 150       11/07/21 18:20         d3-NMeFOSAA       81       50 - 150       11/07/21 18:20         d5-NEtFOSAA       84       50 - 150       11/07/21 18:20         13C3 HFPO-DA       89       50 - 150       11/07/21 18:20	11/09/21 02:58	1
13C2 PFDA       91       50 - 150       11/07/21 18:20         13C2 PFUnA       96       50 - 150       11/07/21 18:20         13C2 PFDOA       92       50 - 150       11/07/21 18:20         13C2 PFTeDA       91       50 - 150       11/07/21 18:20         13C3 PFBS       88       50 - 150       11/07/21 18:20         18O2 PFHxS       75       50 - 150       11/07/21 18:20         13C4 PFOS       81       50 - 150       11/07/21 18:20         d3-NMeFOSAA       81       50 - 150       11/07/21 18:20         d5-NEtFOSAA       84       50 - 150       11/07/21 18:20         13C3 HFPO-DA       89       50 - 150       11/07/21 18:20	11/09/21 02:58	1
13C2 PFUnA       96       50 - 150       11/07/21 18:20         13C2 PFDoA       92       50 - 150       11/07/21 18:20         13C2 PFTeDA       91       50 - 150       11/07/21 18:20         13C3 PFBS       88       50 - 150       11/07/21 18:20         18O2 PFHxS       75       50 - 150       11/07/21 18:20         13C4 PFOS       81       50 - 150       11/07/21 18:20         d3-NMeFOSAA       81       50 - 150       11/07/21 18:20         d5-NEtFOSAA       84       50 - 150       11/07/21 18:20         13C3 HFPO-DA       89       50 - 150       11/07/21 18:20	11/09/21 02:58	1
13C2 PFDoA       92       50 - 150       11/07/21 18:20         13C2 PFTeDA       91       50 - 150       11/07/21 18:20         13C3 PFBS       88       50 - 150       11/07/21 18:20         18O2 PFHxS       75       50 - 150       11/07/21 18:20         13C4 PFOS       81       50 - 150       11/07/21 18:20         d3-NMeFOSAA       81       50 - 150       11/07/21 18:20         d5-NEtFOSAA       84       50 - 150       11/07/21 18:20         13C3 HFPO-DA       89       50 - 150       11/07/21 18:20	11/09/21 02:58	1
13C2 PFTeDA       91       50 - 150       11/07/21 18:20         13C3 PFBS       88       50 - 150       11/07/21 18:20         18O2 PFHxS       75       50 - 150       11/07/21 18:20         13C4 PFOS       81       50 - 150       11/07/21 18:20         d3-NMeFOSAA       81       50 - 150       11/07/21 18:20         d5-NEtFOSAA       84       50 - 150       11/07/21 18:20         13C3 HFPO-DA       89       50 - 150       11/07/21 18:20	11/09/21 02:58	1
13C3 PFBS       88       50 - 150       11/07/21 18:20         18O2 PFHxS       75       50 - 150       11/07/21 18:20         13C4 PFOS       81       50 - 150       11/07/21 18:20         d3-NMeFOSAA       81       50 - 150       11/07/21 18:20         d5-NEtFOSAA       84       50 - 150       11/07/21 18:20         13C3 HFPO-DA       89       50 - 150       11/07/21 18:20	11/09/21 02:58	1
1802 PFHxS       75       50 - 150       11/07/21 18:20         13C4 PFOS       81       50 - 150       11/07/21 18:20         d3-NMeFOSAA       81       50 - 150       11/07/21 18:20         d5-NEtFOSAA       84       50 - 150       11/07/21 18:20         13C3 HFPO-DA       89       50 - 150       11/07/21 18:20     General Chemistry	11/09/21 02:58	1
13C4 PFOS       81       50 - 150       11/07/21 18:20         d3-NMeFOSAA       81       50 - 150       11/07/21 18:20         d5-NEtFOSAA       84       50 - 150       11/07/21 18:20         13C3 HFPO-DA       89       50 - 150       11/07/21 18:20         General Chemistry	11/09/21 02:58	1
d3-NMeFOSAA       81       50 - 150       11/07/21 18:20         d5-NEtFOSAA       84       50 - 150       11/07/21 18:20         13C3 HFPO-DA       89       50 - 150       11/07/21 18:20         General Chemistry	11/09/21 02:58	1
d5-NEtFOSAA 84 50 - 150 11/07/21 18:20 13C3 HFPO-DA 89 50 - 150 11/07/21 18:20 General Chemistry	11/09/21 02:58	1
d5-NEtFOSAA 84 50 - 150 11/07/21 18:20 13C3 HFPO-DA 89 50 - 150 11/07/21 18:20 General Chemistry	11/09/21 02:58	1
General Chemistry		1
	11/09/21 02:58	1
Analyte Result Qualifier RL MDL Unit D Prepared		
<del>`</del>	Analyzed 11/05/21 11:58	Dil Fac

0.1

93.3

0.1 %

11/05/21 11:58

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-SS-008 Lab Sample ID: 320-81254-18

Date Collected: 10/29/21 13:28

Matrix: Solid
Date Received: 11/03/21 14:01

Percent Solids: 79.1

Method: EPA 537(Mod) - PFAS					11-24	_	Date	A	p
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
Perfluorohexanoic acid (PFHxA)	ND		0.23		ug/Kg		11/07/21 18:20		
Perfluoroheptanoic acid (PFHpA)	ND		0.23		ug/Kg	☼	11/07/21 18:20		
Perfluorooctanoic acid (PFOA)	ND		0.23		ug/Kg		11/07/21 18:20		
Perfluorononanoic acid (PFNA)	ND		0.23		ug/Kg	☼	11/07/21 18:20		
Perfluorodecanoic acid (PFDA)	ND		0.23	0.056	ug/Kg	☼	11/07/21 18:20	11/09/21 03:08	
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.049	ug/Kg	₽	11/07/21 18:20	11/09/21 03:08	
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.035	ug/Kg	☼	11/07/21 18:20	11/09/21 03:08	
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.024	ug/Kg	☼	11/07/21 18:20	11/09/21 03:08	
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.043	ug/Kg	₩	11/07/21 18:20	11/09/21 03:08	
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.044	ug/Kg	₩	11/07/21 18:20	11/09/21 03:08	
Perfluorohexanesulfonic acid (PFHxS)	0.59		0.23	0.034	ug/Kg	☼	11/07/21 18:20	11/09/21 03:08	
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.23		ug/Kg		11/07/21 18:20		
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.23		ug/Kg		11/07/21 18:20		
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.23		ug/Kg		11/07/21 18:20		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaundecan	ND ND		0.23		ug/Kg ug/Kg		11/07/21 18:20 11/07/21 18:20		
e-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid	ND		0.23		ug/Kg		11/07/21 18:20		
(ADONA)				0.043	ug/itg	ų.			
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	76		50 - 150					11/09/21 03:08	
13C4 PFHpA	84		50 - 150					11/09/21 03:08	
13C4 PFOA	96		50 - 150					11/09/21 03:08	
13C5 PFNA	85		50 - 150				11/07/21 18:20	11/09/21 03:08	
13C2 PFDA	90		50 - 150					11/09/21 03:08	
13C2 PFUnA	90		50 - 150				11/07/21 18:20	11/09/21 03:08	
13C2 PFDoA	91		50 - 150				11/07/21 18:20	11/09/21 03:08	
13C2 PFTeDA	87		50 - 150				11/07/21 18:20	11/09/21 03:08	
13C3 PFBS	90		50 - 150				11/07/21 18:20	11/09/21 03:08	
1802 PFHxS	76		50 - 150				11/07/21 18:20	11/09/21 03:08	
13C4 PFOS	81		50 - 150				11/07/21 18:20	11/09/21 03:08	
d3-NMeFOSAA	76		50 - 150				11/07/21 18:20	11/09/21 03:08	
d5-NEtFOSAA	79		50 - 150					11/09/21 03:08	
13C3 HFPO-DA	78		50 - 150					11/09/21 03:08	
Method: EPA 537(Mod) - PFAS				BAID!	Unit	Б	Dronovad	Anglerad	חייר
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
Perfluorooctanesulfonic acid (PFOS)	33		2.3	0.50	ug/Kg	₩	11/07/21 18:20		
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C4 PFOS	110		50 - 150				11/07/21 18:20	11/12/21 19:51	
General Chemistry Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Percent Moisture	20.9		0.1	0.1		— <u>-</u>		11/05/21 11:58	
i ercent moisture	20.5		0.1	0.1	, 0			11/00/21 11:00	

Eurofins TestAmerica, Sacramento

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Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-SS-006 Lab Sample ID: 320-81254-19

Date Collected: 10/29/21 13:36

Matrix: Solid
Date Received: 11/03/21 14:01

Percent Solids: 70.6

Analyte	Result	Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
Perfluorohexanoic acid (PFHxA)	0.37		0.27	0.042	ug/Kg	☼	11/07/21 18:20	11/09/21 03:18	
Perfluoroheptanoic acid (PFHpA)	0.12	J	0.27	0.052	ug/Kg	₽	11/07/21 18:20	11/09/21 03:18	
Perfluorooctanoic acid (PFOA)	0.21	J	0.27	0.072	ug/Kg	₩	11/07/21 18:20	11/09/21 03:18	
Perfluorononanoic acid (PFNA)	0.087	J	0.27	0.030	ug/Kg	₩	11/07/21 18:20	11/09/21 03:18	
Perfluorodecanoic acid (PFDA)	0.22	J	0.27	0.065	ug/Kg	☼	11/07/21 18:20	11/09/21 03:18	
Perfluoroundecanoic acid (PFUnA)	0.27		0.27	0.057	ug/Kg	₩	11/07/21 18:20	11/09/21 03:18	
Perfluorododecanoic acid (PFDoA)	0.40		0.27	0.041	ug/Kg	₩	11/07/21 18:20	11/09/21 03:18	
Perfluorotridecanoic acid (PFTriA)	0.25	J	0.27	0.028	ug/Kg	₩	11/07/21 18:20	11/09/21 03:18	
Perfluorotetradecanoic acid (PFTeA)	0.34		0.27	0.050	ug/Kg	₩	11/07/21 18:20	11/09/21 03:18	
Perfluorobutanesulfonic acid (PFBS)	0.24	J	0.27	0.052	ug/Kg	₩	11/07/21 18:20	11/09/21 03:18	
Perfluorohexanesulfonic acid (PFHxS)	1.6		0.27	0.039	ug/Kg	₩	11/07/21 18:20	11/09/21 03:18	
Perfluorooctanesulfonic acid (PFOS)	17		0.27	0.058	ug/Kg	<b>#</b>	11/07/21 18:20	11/09/21 03:18	
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	0.11	J	0.27		ug/Kg		11/07/21 18:20		
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.27		ug/Kg	₩	11/07/21 18:20		
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.27		ug/Kg	<b>.</b>	11/07/21 18:20		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.27		ug/Kg		11/07/21 18:20		
11-Chloroeicosafluoro-3-oxaundecan	ND		0.27		ug/Kg	<b>‡</b>	11/07/21 18:20		
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.27	0.053	ug/Kg	₩	11/07/21 18:20	11/09/21 03:16	
sotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil F
13C2 PFHxA	77		50 - 150				11/07/21 18:20	11/09/21 03:18	
13C4 PFHpA	75		50 - 150				11/07/21 18:20	11/09/21 03:18	
13C4 PFOA	92		50 - 150				11/07/21 18:20	11/09/21 03:18	
13C5 PFNA	92		50 - 150				11/07/21 18:20	11/09/21 03:18	
13C2 PFDA	95		50 - 150				11/07/21 18:20	11/09/21 03:18	
13C2 PFUnA	83		50 - 150				11/07/21 18:20	11/09/21 03:18	
13C2 PFDoA	75		50 - 150				11/07/21 18:20	11/09/21 03:18	
13C2 PFTeDA	61		50 - 150				11/07/21 18:20	11/09/21 03:18	
13C3 PFBS	96		50 <sub>-</sub> 150					11/09/21 03:18	
1802 PFHxS	82		50 <sub>-</sub> 150					11/09/21 03:18	
13C4 PFOS	89		50 <sub>-</sub> 150					11/09/21 03:18	
d3-NMeFOSAA	67		50 - 150					11/09/21 03:18	
d5-NEtFOSAA	71		50 - 150					11/09/21 03:18	
13C3 HFPO-DA	82		50 - 150					11/09/21 03:18	
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F
Percent Moisture	29.4		0.1	0.1	%			11/05/21 11:58	
Percent Solids	70.6		0.1	0.1	%			11/05/21 11:58	

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Client: Shannon & Wilson, Inc Job ID: 320-81254-1 Project/Site: SC Soils#3

Isotope Dilution

13C4 PFOS

Client Sample ID: 21GST-SS-106 Lab Sample ID: 320-81254-20

**Matrix: Solid** 

Date Collected: 10/29/21 13:26 Date Received: 11/03/21 14:01 Percent Solids: 72.7

Perfluorohexanoic acid (PFHxA) Perfluoroheptanoic acid (PFHpA) Perfluorooctanoic acid (PFOA) Perfluorononanoic acid (PFNA) Perfluorodecanoic acid (PFDA) Perfluoroundecanoic acid (PFUnA) Perfluorododecanoic acid (PFDoA) Perfluorotridecanoic acid (PFTriA) Perfluorotetradecanoic acid	0.92 0.36 0.45 0.13 J 0.34 0.35 0.60 0.47 0.63	0.26 0.26 0.26 0.26 0.26 0.26		ug/Kg ug/Kg ug/Kg	* *	11/07/21 18:20 11/07/21 18:20	11/09/21 03:28	1 1 1 1
Perfluorooctanoic acid (PFOA) Perfluorononanoic acid (PFNA) Perfluorodecanoic acid (PFDA) Perfluoroundecanoic acid (PFUnA) Perfluorododecanoic acid (PFDoA) Perfluorotridecanoic acid (PFTriA) Perfluorotetradecanoic acid	0.45 0.13 J 0.34 0.35 0.60	0.26 0.26 0.26 0.26 0.26	0.068 0.028 0.061 0.054	ug/Kg ug/Kg ug/Kg	\$ \$	11/07/21 18:20 11/07/21 18:20 11/07/21 18:20	11/09/21 03:28 11/09/21 03:28 11/09/21 03:28	1 1
Perfluorononanoic acid (PFNA) Perfluorodecanoic acid (PFDA) Perfluoroundecanoic acid (PFUnA) Perfluorododecanoic acid (PFDoA) Perfluorotridecanoic acid (PFTriA) Perfluorotetradecanoic acid	0.13 J 0.34 0.35 0.60	0.26 0.26 0.26 0.26	0.028 0.061 0.054	ug/Kg ug/Kg	<b>☆</b>	11/07/21 18:20 11/07/21 18:20	11/09/21 03:28 11/09/21 03:28	1
Perfluorodecanoic acid (PFDA) Perfluoroundecanoic acid (PFUnA) Perfluorododecanoic acid (PFDoA) Perfluorotridecanoic acid (PFTriA) Perfluorotetradecanoic acid	0.34 0.35 0.60 0.47	0.26 0.26	0.061 0.054	ug/Kg	₽	11/07/21 18:20	11/09/21 03:28	
Perfluoroundecanoic acid (PFUnA) Perfluorododecanoic acid (PFDoA) Perfluorotridecanoic acid (PFTriA) Perfluorotetradecanoic acid	0.35 0.60 0.47	0.26	0.054					1
(PFUnA) Perfluorododecanoic acid (PFDoA) Perfluorotridecanoic acid (PFTriA) Perfluorotetradecanoic acid	0.60 0.47	0.26		ug/Kg	₽	11/07/21 18:20	44/00/04 00 00	
Perfluorododecanoic acid (PFDoA) Perfluorotridecanoic acid (PFTriA) Perfluorotetradecanoic acid	0.47		0.038			11/01/21 10.20	11/09/21 03:28	1
(PFDoA) Perfluorotridecanoic acid (PFTriA) Perfluorotetradecanoic acid	0.47		0.038					
Perfluorotridecanoic acid (PFTriA) Perfluorotetradecanoic acid				ug/Kg	₩	11/07/21 18:20	11/09/21 03:28	1
	0.63	0.26	0.027	ug/Kg	₩	11/07/21 18:20	11/09/21 03:28	1
(PFTeA)		0.26	0.047	ug/Kg	₩	11/07/21 18:20	11/09/21 03:28	1
Perfluorobutanesulfonic acid (PFBS)	0.45	0.26	0.048	ug/Kg		11/07/21 18:20	11/09/21 03:28	1
Perfluorohexanesulfonic acid (PFHxS)	2.9	0.26	0.037	ug/Kg	₩	11/07/21 18:20	11/09/21 03:28	1
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	0.38	0.26	0.029	ug/Kg	₩	11/07/21 18:20	11/09/21 03:28	1
N-ethylperfluorooctanesulfonamidoac	ND	0.26	0.061	ug/Kg	₩	11/07/21 18:20	11/09/21 03:28	1
etic acid (NEtFOSAA)								
9-Chlorohexadecafluoro-3-oxanonan	ND	0.26	0.045	ug/Kg	☼	11/07/21 18:20	11/09/21 03:28	1
e-1-sulfonic acid								
Hexafluoropropylene Oxide Dimer	ND	0.26	0.052	ug/Kg	☼	11/07/21 18:20	11/09/21 03:28	1
Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaundecan	ND	0.26	0.040	ua/Ka		11/07/21 18:20	11/00/21 03:28	1
e-1-sulfonic acid	ND	0.20	0.040	ug/itg	**	11/07/21 10.20	11/09/21 03.20	'
4,8-Dioxa-3H-perfluorononanoic acid	ND	0.26	0.050	ug/Kg	☼	11/07/21 18:20	11/09/21 03:28	1
(ADONA)				0 0				
Isotope Dilution	%Recovery Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	77	50 - 150				11/07/21 18:20	11/09/21 03:28	
13C4 PFHpA	83	50 - 150				11/07/21 18:20	11/09/21 03:28	1
13C4 PFOA	89	50 <sub>-</sub> 150				11/07/21 18:20	11/09/21 03:28	1
13C5 PFNA	91	50 - 150				11/07/21 18:20	11/09/21 03:28	1
13C2 PFDA	99	50 <sub>-</sub> 150				11/07/21 18:20	11/09/21 03:28	1
13C2 PFUnA	88	50 <sub>-</sub> 150				11/07/21 18:20	11/09/21 03:28	1
13C2 PFDoA	71	50 - 150				11/07/21 18:20	11/09/21 03:28	1
13C2 PFTeDA	57	50 <sub>-</sub> 150					11/09/21 03:28	1
13C3 PFBS	98	50 - 150					11/09/21 03:28	1
1802 PFHxS	82	50 <sub>-</sub> 150					11/09/21 03:28	
13C4 PFOS	90	50 - 150					11/09/21 03:28	
d3-NMeFOSAA	65	50 - 150					11/09/21 03:28	1
d5-NEtFOSAA	68	50 - 150 50 - 150					11/09/21 03:28	
13C3 HFPO-DA	87	50 - 150 50 - 150					11/09/21 03:28	1
								,
Method: EPA 537(Mod) - PFAS f Analyte	Result Qualifier	5-15 - DL RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid	33	2.6		ug/Kg		11/07/21 18:20	11/12/21 20:01	10

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11/07/21 18:20 11/12/21 20:01

Analyzed

Prepared

Limits

50 - 150

%Recovery Qualifier

90

Dil Fac

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-SS-106 Lab Sample ID: 320-81254-20

Date Collected: 10/29/21 13:26

Matrix: Solid
Date Received: 11/03/21 14:01

Matrix: Solid
Percent Solids: 72.7

General Chemistry								
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	27.3	0.1	0.1	%			11/05/21 11:58	1
Percent Solids	72.7	0.1	0.1	%			11/05/21 11:58	1

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Client: Shannon & Wilson, Inc Job ID: 320-81254-1 Project/Site: SC Soils#3

Client Sample ID: 21GST-SS-005 Lab Sample ID: 320-81254-21 Date Collected: 10/29/21 13:50 **Matrix: Solid** 

Date Received: 11/03/21 14:01 Percent Solids: 92.1

Method: EPA 537(Mod) - PFAS Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	0.083		0.20		ug/Kg	— <u>-</u>	11/09/21 04:35	11/12/21 14:17	1
Perfluoroheptanoic acid (PFHpA)	ND.		0.20		ug/Kg	₩		11/12/21 14:17	1
Perfluorooctanoic acid (PFOA)	ND		0.20		ug/Kg	÷		11/12/21 14:17	1
Perfluorononanoic acid (PFNA)	ND		0.20		ug/Kg			11/12/21 14:17	1
Perfluorodecanoic acid (PFDA)	ND		0.20		ug/Kg	÷		11/12/21 14:17	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20		ug/Kg	÷		11/12/21 14:17	1
Perfluorododecanoic acid (PFDoA)	ND		0.20		ug/Kg			11/12/21 14:17	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20		ug/Kg	÷		11/12/21 14:17	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20		ug/Kg	÷		11/12/21 14:17	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20		ug/Kg			11/12/21 14:17	
Perfluorohexanesulfonic acid	0.74		0.20		ug/Kg	₩		11/12/21 14:17	1
(PFHxS)	0.74		0.20	0.020	ug/itg	~	11/00/21 04:00	11/12/21 17.17	
Perfluorooctanesulfonic acid	6.5		0.20	0.044	ug/Kg	₩	11/09/21 04:35	11/12/21 14:17	1
(PFOS)									
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg	☼	11/09/21 04:35	11/12/21 14:17	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.20	0.049	ug/Kg	₽	11/09/21 04:35	11/12/21 14:17	1
9-Chlorohexadecafluoro-3-oxanonan	ND		0.20	0.036	ug/Kg	₩	11/09/21 04:35	11/12/21 14:17	1
e-1-sulfonic acid									
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.20	0.042	ug/Kg	₩	11/09/21 04:35	11/12/21 14:17	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.20	0.031	ug/Kg	₽	11/09/21 04:35	11/12/21 14:17	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.040	ug/Kg	≎	11/09/21 04:35	11/12/21 14:17	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	100	-	50 - 150				11/09/21 04:35	11/12/21 14:17	1
13C4 PFHpA	93		50 - 150				11/09/21 04:35	11/12/21 14:17	1
13C4 PFOA	99		50 - 150				11/09/21 04:35	11/12/21 14:17	1
13C5 PFNA	98		50 - 150				11/09/21 04:35	11/12/21 14:17	1
13C2 PFDA	104		50 - 150				11/09/21 04:35	11/12/21 14:17	1
13C2 PFUnA	102		50 - 150				11/09/21 04:35	11/12/21 14:17	1
13C2 PFDoA	96		50 - 150				11/09/21 04:35	11/12/21 14:17	1
13C2 PFTeDA	89		50 <sub>-</sub> 150				11/09/21 04:35	11/12/21 14:17	1
13C3 PFBS	104		50 <sub>-</sub> 150				11/09/21 04:35	11/12/21 14:17	1
1802 PFHxS	94		50 - 150				11/09/21 04:35	11/12/21 14:17	1
13C4 PFOS	100		50 <sub>-</sub> 150				11/09/21 04:35	11/12/21 14:17	1
d3-NMeFOSAA	93		50 - 150					11/12/21 14:17	1
d5-NEtFOSAA	102		50 <sub>-</sub> 150					11/12/21 14:17	
13C3 HFPO-DA	96		50 - 150				11/09/21 04:35	11/12/21 14:17	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	7.9		0.1	0.1	%			11/05/21 11:58	1
					%				

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-SS-007

Lab Sample ID: 320-81254-22 Date Collected: 10/29/21 13:54 **Matrix: Solid** Date Received: 11/03/21 14:01

Percent Solids: 68.7

Method: EPA 537(Mod) - PFAS Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.29	0.045	ug/Kg	— <u> </u>	<u> </u>	11/12/21 14:28	
Perfluoroheptanoic acid (PFHpA)	ND		0.29		ug/Kg	₩	11/09/21 04:35	11/12/21 14:28	
Perfluorooctanoic acid (PFOA)	ND		0.29		ug/Kg	₩	11/09/21 04:35	11/12/21 14:28	
Perfluorononanoic acid (PFNA)	ND		0.29		ug/Kg		11/09/21 04:35	11/12/21 14:28	
Perfluorodecanoic acid (PFDA)	ND		0.29		ug/Kg	₩	11/09/21 04:35	11/12/21 14:28	
Perfluoroundecanoic acid (PFUnA)	ND		0.29		ug/Kg	₩	11/09/21 04:35	11/12/21 14:28	
Perfluorododecanoic acid (PFDoA)	ND		0.29		ug/Kg	₩	11/09/21 04:35	11/12/21 14:28	
Perfluorotridecanoic acid (PFTriA)	ND		0.29	0.031	ug/Kg	₩	11/09/21 04:35	11/12/21 14:28	
Perfluorotetradecanoic acid (PFTeA)	ND		0.29		ug/Kg	₩	11/09/21 04:35	11/12/21 14:28	
Perfluorobutanesulfonic acid (PFBS)	ND		0.29	0.055	ug/Kg		11/09/21 04:35	11/12/21 14:28	
Perfluorohexanesulfonic acid	0.17	JI	0.29		ug/Kg	☼	11/09/21 04:35	11/12/21 14:28	
(PFHxS)					0 0				
Perfluorooctanesulfonic acid	5.8		0.29	0.063	ug/Kg	☼	11/09/21 04:35	11/12/21 14:28	
(PFOS)									
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.29	0.033	ug/Kg	₽	11/09/21 04:35	11/12/21 14:28	
N-ethylperfluorooctanesulfonamidoac	ND		0.29	0.070	ug/Kg	₩	11/09/21 04:35	11/12/21 14:28	
etic acid (NEtFOSAA) 9-Chlorohexadecafluoro-3-oxanonan	ND		0.29	0.051	ug/Kg	: <b>*</b> *	11/09/21 04:35	11/12/21 14:28	
e-1-sulfonic acid	ND		0.29	0.001	ug/itg	**	11/09/21 04.55	11/12/21 14.20	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.29	0.060	ug/Kg	*	11/09/21 04:35	11/12/21 14:28	
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.29	0.045	ug/Kg	₽	11/09/21 04:35	11/12/21 14:28	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.29	0.057	ug/Kg	₩	11/09/21 04:35	11/12/21 14:28	
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	85		50 - 150				11/09/21 04:35	11/12/21 14:28	
13C4 PFHpA	86		50 - 150				11/09/21 04:35	11/12/21 14:28	
13C4 PFOA	94		50 - 150				11/09/21 04:35	11/12/21 14:28	
13C5 PFNA	94		50 - 150				11/09/21 04:35	11/12/21 14:28	
13C2 PFDA	103		50 <sub>-</sub> 150				11/09/21 04:35	11/12/21 14:28	
13C2 PFUnA	88		50 <sub>-</sub> 150				11/09/21 04:35	11/12/21 14:28	
13C2 PFDoA	85		50 - 150				11/09/21 04:35	11/12/21 14:28	
13C2 PFTeDA	80		50 <sub>-</sub> 150				11/09/21 04:35	11/12/21 14:28	
13C3 PFBS	104		50 <sub>-</sub> 150				11/09/21 04:35	11/12/21 14:28	
1802 PFHxS	93		50 - 150					11/12/21 14:28	
13C4 PFOS	91		50 <sub>-</sub> 150					11/12/21 14:28	
d3-NMeFOSAA	80		50 - 150					11/12/21 14:28	
d5-NEtFOSAA	94		50 - 150					11/12/21 14:28	
13C3 HFPO-DA	81		50 <sub>-</sub> 150					11/12/21 14:28	
Company Champiatus									
General Chemistry									
General Chemistry Analyte	Result	Qualifier	RL	MDI	Unit	D	Prepared	Analyzed	Dil Fac
Analyte  Percent Moisture	Result 31.3	Qualifier	RL 0.1	MDL 0.1	Unit %	D	Prepared	Analyzed 11/05/21 11:58	Dil Fa

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-MW14-01 Lab Sample ID: 320-81254-23

Date Collected: 10/27/21 14:00 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 93.9

Method: EPA 537(Mod) - PFAS Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.032	ug/Kg	<del></del>	11/09/21 04:35	11/12/21 14:38	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.039	ug/Kg	₽	11/09/21 04:35	11/12/21 14:38	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.054	ug/Kg	₽	11/09/21 04:35	11/12/21 14:38	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.022	ug/Kg	₽	11/09/21 04:35	11/12/21 14:38	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.049	ug/Kg	₽	11/09/21 04:35	11/12/21 14:38	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.043	ug/Kg	₩	11/09/21 04:35	11/12/21 14:38	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.031	ug/Kg	₩	11/09/21 04:35	11/12/21 14:38	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.021	ug/Kg	₩	11/09/21 04:35	11/12/21 14:38	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.038	ug/Kg	₩	11/09/21 04:35	11/12/21 14:38	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.039	ug/Kg		11/09/21 04:35	11/12/21 14:38	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.030	ug/Kg	₩	11/09/21 04:35	11/12/21 14:38	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.20	0.044	ug/Kg	₩	11/09/21 04:35	11/12/21 14:38	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg	₿	11/09/21 04:35	11/12/21 14:38	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.20	0.049	ug/Kg	₩	11/09/21 04:35	11/12/21 14:38	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.20	0.036	ug/Kg	₩	11/09/21 04:35	11/12/21 14:38	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.20	0.042	ug/Kg	₩	11/09/21 04:35	11/12/21 14:38	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.20	0.032	ug/Kg	₩	11/09/21 04:35	11/12/21 14:38	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.040	ug/Kg	₩	11/09/21 04:35	11/12/21 14:38	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	100		50 - 150				11/09/21 04:35	11/12/21 14:38	1
13C4 PFHpA	98		50 - 150				11/09/21 04:35	11/12/21 14:38	1
13C4 PFOA	92		50 - 150				11/09/21 04:35	11/12/21 14:38	1
13C5 PFNA	90		50 - 150				11/09/21 04:35	11/12/21 14:38	1
13C2 PFDA	93		50 - 150				11/09/21 04:35	11/12/21 14:38	1
13C2 PFUnA	100		50 - 150				11/09/21 04:35	11/12/21 14:38	1
13C2 PFDoA	85		50 - 150				11/09/21 04:35	11/12/21 14:38	1
13C2 PFTeDA	86		50 - 150				11/09/21 04:35	11/12/21 14:38	1
13C3 PFBS	100		50 - 150				11/09/21 04:35	11/12/21 14:38	1
1802 PFHxS	79		50 - 150				11/09/21 04:35	11/12/21 14:38	1
13C4 PFOS	84		50 - 150				11/09/21 04:35	11/12/21 14:38	1
d3-NMeFOSAA	79		50 - 150				11/09/21 04:35	11/12/21 14:38	1
d5-NEtFOSAA	94		50 - 150				11/09/21 04:35	11/12/21 14:38	1
13C3 HFPO-DA	85		50 - 150				11/09/21 04:35	11/12/21 14:38	1
General Chemistry		<b>.</b>				_			<b></b> -
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	6.1		0.1	0.1				11/05/21 11:58 11/05/21 11:58	1
Percent Solids	93.9		0.1						1

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

**Percent Solids** 

Client Sample ID: 21GST-MW14-10 Lab Sample ID: 320-81254-24

Date Collected: 10/27/21 13:50 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 94.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.031	ug/Kg	<u></u>	11/09/21 04:35	11/12/21 14:48	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.038	ug/Kg	₩	11/09/21 04:35	11/12/21 14:48	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.053	ug/Kg	₩	11/09/21 04:35	11/12/21 14:48	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.022	ug/Kg	₩	11/09/21 04:35	11/12/21 14:48	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.048	ug/Kg	₩	11/09/21 04:35	11/12/21 14:48	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.042	ug/Kg	₩	11/09/21 04:35	11/12/21 14:48	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.030	ug/Kg	₩	11/09/21 04:35	11/12/21 14:48	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.021	ug/Kg	₩	11/09/21 04:35	11/12/21 14:48	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.037	ug/Kg	₩	11/09/21 04:35	11/12/21 14:48	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.038	ug/Kg	₩	11/09/21 04:35	11/12/21 14:48	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.029	ug/Kg	₩	11/09/21 04:35	11/12/21 14:48	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.20	0.043	ug/Kg	₩	11/09/21 04:35	11/12/21 14:48	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg	☼	11/09/21 04:35	11/12/21 14:48	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.20	0.048	ug/Kg	₩	11/09/21 04:35	11/12/21 14:48	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.20	0.035	ug/Kg	<b>‡</b>	11/09/21 04:35	11/12/21 14:48	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.20	0.041	ug/Kg	₩	11/09/21 04:35	11/12/21 14:48	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.20		ug/Kg	₩	11/09/21 04:35	11/12/21 14:48	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.039	ug/Kg	₩	11/09/21 04:35	11/12/21 14:48	1
lsotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	106		50 - 150				11/09/21 04:35	11/12/21 14:48	1
13C4 PFHpA	97		50 - 150				11/09/21 04:35	11/12/21 14:48	1
13C4 PFOA	101		50 - 150				11/09/21 04:35	11/12/21 14:48	1
13C5 PFNA	89		50 - 150				11/09/21 04:35	11/12/21 14:48	1
13C2 PFDA	94		50 - 150				11/09/21 04:35	11/12/21 14:48	1
13C2 PFUnA	93		50 - 150				11/09/21 04:35	11/12/21 14:48	1
13C2 PFDoA	86		50 - 150				11/09/21 04:35	11/12/21 14:48	1
13C2 PFTeDA	85		50 - 150				11/09/21 04:35	11/12/21 14:48	1
13C3 PFBS	105		50 - 150				11/09/21 04:35	11/12/21 14:48	1
1802 PFHxS	93		50 - 150				11/09/21 04:35	11/12/21 14:48	1
13C4 PFOS	91		50 - 150				11/09/21 04:35	11/12/21 14:48	1
d3-NMeFOSAA	86		50 - 150				11/09/21 04:35	11/12/21 14:48	1
d5-NEtFOSAA	93		50 - 150				11/09/21 04:35	11/12/21 14:48	
13C3 HFPO-DA	102		50 - 150				11/09/21 04:35	11/12/21 14:48	1
General Chemistry		0			1124	_	<b>.</b>	A 1	D.: -
Analyte		Qualifier	RL _		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	5.5		0.1	0.1				11/05/21 11:58	1
District And Control of the Control	A 4 =		0.4	0.4	0/			44 /OE/O4 44.E0	

11/05/21 11:58

0.1

0.1 %

94.5

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Date Collected: 10/27/21 14:10

Date Received: 11/03/21 14:01

d5-NEtFOSAA

Analyte

13C3 HFPO-DA

**General Chemistry** 

**Percent Moisture** 

**Percent Solids** 

Client Sample ID: 21GST-MW14-02

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15

Lab Sample ID: 320-81254-25

**Matrix: Solid** 

Percent Solids: 79.3

Analyte	Result	Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.25	0.039	ug/Kg	— <u></u>	11/09/21 04:35	11/12/21 14:59	1
Perfluoroheptanoic acid (PFHpA)	ND		0.25	0.048	ug/Kg	₩	11/09/21 04:35	11/12/21 14:59	1
Perfluorooctanoic acid (PFOA)	ND		0.25	0.067	ug/Kg	₽	11/09/21 04:35	11/12/21 14:59	1
Perfluorononanoic acid (PFNA)	ND		0.25	0.028	ug/Kg	₽	11/09/21 04:35	11/12/21 14:59	1
Perfluorodecanoic acid (PFDA)	ND		0.25	0.060	ug/Kg	₽	11/09/21 04:35	11/12/21 14:59	1
Perfluoroundecanoic acid (PFUnA)	ND		0.25	0.053	ug/Kg	₩	11/09/21 04:35	11/12/21 14:59	1
Perfluorododecanoic acid (PFDoA)	ND		0.25	0.038	ug/Kg	₽	11/09/21 04:35	11/12/21 14:59	1
Perfluorotridecanoic acid (PFTriA)	ND		0.25	0.026	ug/Kg	₽	11/09/21 04:35	11/12/21 14:59	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.25	0.047	ug/Kg	₩	11/09/21 04:35	11/12/21 14:59	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.25	0.048	ug/Kg	₩	11/09/21 04:35	11/12/21 14:59	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.25	0.036	ug/Kg	₩	11/09/21 04:35	11/12/21 14:59	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.25	0.054	ug/Kg	₩	11/09/21 04:35	11/12/21 14:59	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.25	0.029	ug/Kg	₽	11/09/21 04:35	11/12/21 14:59	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.25	0.060	ug/Kg	₩	11/09/21 04:35	11/12/21 14:59	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.25		ug/Kg	₩	11/09/21 04:35	11/12/21 14:59	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.052	ug/Kg	₩	11/09/21 04:35	11/12/21 14:59	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.25	0.039		₩	11/09/21 04:35	11/12/21 14:59	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.25	0.049	ug/Kg	₩	11/09/21 04:35	11/12/21 14:59	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	113		50 - 150				11/09/21 04:35	11/12/21 14:59	1
13C4 PFHpA	111		50 - 150				11/09/21 04:35	11/12/21 14:59	1
13C4 PFOA	100		50 - 150				11/09/21 04:35	11/12/21 14:59	1
13C5 PFNA	106		50 - 150				11/09/21 04:35	11/12/21 14:59	1
13C2 PFDA	105		50 - 150				11/09/21 04:35	11/12/21 14:59	1
13C2 PFUnA	108		50 - 150				11/09/21 04:35	11/12/21 14:59	1
13C2 PFDoA	94		50 - 150				11/09/21 04:35	11/12/21 14:59	1
13C2 PFTeDA	93		50 - 150				11/09/21 04:35	11/12/21 14:59	1
13C3 PFBS	122		50 - 150				11/09/21 04:35	11/12/21 14:59	1
1802 PFHxS	108		50 - 150				11/09/21 04:35	11/12/21 14:59	1
13C4 PFOS	108		50 - 150				11/09/21 04:35	11/12/21 14:59	1

11/09/21 04:35 11/12/21 14:59

11/09/21 04:35 11/12/21 14:59

Analyzed

11/05/21 11:58

11/05/21 11:58

50 - 150

50 - 150

RL

0.1

0.1

**MDL** Unit

0.1 %

0.1 %

D

Prepared

108

103

20.7

79.3

Result Qualifier

Dil Fac

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-MW14-03 Lab Sample ID: 320-81254-26

Date Collected: 10/27/21 14:25 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 79.4

Method: EPA 537(Mod) - PFAS Analyte	for QSM 5.3 Result C		·15 RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND Result	zuaiiilei	0.24		ug/Kg		11/09/21 04:35		DII Fac
Perfluoroheptanoic acid (PFHpA)	ND ND		0.24		ug/Kg ug/Kg	<b>☆</b>	11/09/21 04:35		,
Perfluorooctanoic acid (PFOA)	ND ND		0.24		ug/Kg ug/Kg	<b>☆</b>	11/09/21 04:35		1
Perfluorononanoic acid (PFNA)	ND		0.24		ug/Kg ug/Kg		11/09/21 04:35		
Perfluorodecanoic acid (PFDA)	ND ND		0.24		ug/Kg ug/Kg	<b>☆</b>	11/09/21 04:35		1
Perfluoroundecanoic acid (PFUnA)	ND		0.24		ug/Kg ug/Kg		11/09/21 04:35		1
Perfluorododecanoic acid (PFDoA)	ND		0.24			· · · · · · · · · · · · · · · · · · ·		11/12/21 15:09	
Perfluorotridecanoic acid (PFTriA)	ND ND		0.24		ug/Kg ug/Kg	*	11/09/21 04:35		1
,						<b>*</b>			1
Perfluerabutaneoulfenia paid (PFRS)	ND		0.24		ug/Kg		11/09/21 04:35		
Perfluorobutanesulfonic acid (PFBS)	ND		0.24		ug/Kg	<b>*</b>	11/09/21 04:35		1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.24		ug/Kg	<b>‡</b>	11/09/21 04:35		1
Perfluorooctanesulfonic acid (PFOS)	ND		0.24		ug/Kg		11/09/21 04:35		
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.24		ug/Kg		11/09/21 04:35		1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.24		ug/Kg	₽	11/09/21 04:35	11/12/21 15:09	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.24	0.041	ug/Kg	₽	11/09/21 04:35	11/12/21 15:09	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.24	0.048	ug/Kg	₽	11/09/21 04:35	11/12/21 15:09	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.24	0.037	ug/Kg	₽	11/09/21 04:35	11/12/21 15:09	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.24	0.046	ug/Kg	₩	11/09/21 04:35	11/12/21 15:09	1
Isotope Dilution	%Recovery G	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	123		50 - 150				11/09/21 04:35	11/12/21 15:09	1
13C4 PFHpA	113		50 - 150				11/09/21 04:35	11/12/21 15:09	1
13C4 PFOA	104		50 - 150				11/09/21 04:35	11/12/21 15:09	1
13C5 PFNA	104		50 - 150				11/09/21 04:35	11/12/21 15:09	1
13C2 PFDA	106		50 - 150				11/09/21 04:35	11/12/21 15:09	1
13C2 PFUnA	101		50 - 150				11/09/21 04:35	11/12/21 15:09	1
13C2 PFDoA	91		50 - 150				11/09/21 04:35	11/12/21 15:09	1
13C2 PFTeDA	98		50 <sub>-</sub> 150				11/09/21 04:35	11/12/21 15:09	1
13C3 PFBS	121		50 <sub>-</sub> 150				11/09/21 04:35	11/12/21 15:09	1
1802 PFHxS	97		50 - 150				11/09/21 04:35	11/12/21 15:09	1
13C4 PFOS	107		50 - 150				11/09/21 04:35	11/12/21 15:09	1
d3-NMeFOSAA	93		50 - 150				11/09/21 04:35	11/12/21 15:09	1
d5-NEtFOSAA	106		50 <sub>-</sub> 150				11/09/21 04:35	11/12/21 15:09	1
13C3 HFPO-DA	110		50 - 150					11/12/21 15:09	1
General Chemistry									
Analyte	Result C	Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Percent Moisture	20.6		0.1	0.1				11/05/21 11:58	1
Percent Solids	79.4		0.1	0.1	%			11/05/21 11:58	1

Eurofins TestAmerica, Sacramento

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-MW14-04 Lab Sample ID: 320-81254-27

Date Collected: 10/27/21 14:30 **Matrix: Solid** Date Received: 11/03/21 14:01 **Percent Solids: 71.8** 

Method: EPA 537(Mod) - PFAS				MDI	Unit	Б	Dropored	Anglyzod	Dil Ec
Analyte Perfluorohexanoic acid (PFHxA)	Result ND	Quaiiiler	——————————————————————————————————————	MDL	ug/Kg	— <u>D</u>	Prepared 11/09/21 04:35	Analyzed	Dil Fac
,									
Perfluere estancia acid (PFHpA)	ND		0.27		ug/Kg	ψ.	11/09/21 04:35		1
Perfluorooctanoic acid (PFOA)	ND		0.27		ug/Kg		11/09/21 04:35		1
Perfluorononanoic acid (PFNA)	ND		0.27		ug/Kg	<b>*</b>	11/09/21 04:35		1
Perfluorodecanoic acid (PFDA)	ND		0.27		ug/Kg	₩.		11/12/21 15:20	1
Perfluoroundecanoic acid (PFUnA)	ND		0.27		ug/Kg	<del>.</del>	11/09/21 04:35		1
Perfluorododecanoic acid (PFDoA)	ND		0.27		ug/Kg	₩	11/09/21 04:35		1
Perfluorotridecanoic acid (PFTriA)	ND		0.27		ug/Kg	₩		11/12/21 15:20	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.27		ug/Kg		11/09/21 04:35		1
Perfluorobutanesulfonic acid (PFBS)	ND		0.27		ug/Kg	₩	11/09/21 04:35	11/12/21 15:20	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.27		ug/Kg	☼	11/09/21 04:35	11/12/21 15:20	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.27		ug/Kg		11/09/21 04:35	11/12/21 15:20	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.27	0.031	ug/Kg	₽	11/09/21 04:35	11/12/21 15:20	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.27		ug/Kg	₽	11/09/21 04:35	11/12/21 15:20	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.27	0.047	ug/Kg	≎	11/09/21 04:35	11/12/21 15:20	,
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.27	0.055	ug/Kg	₽	11/09/21 04:35	11/12/21 15:20	
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.27	0.042	ug/Kg	≎	11/09/21 04:35	11/12/21 15:20	•
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.27	0.052	ug/Kg	₩	11/09/21 04:35	11/12/21 15:20	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	115		50 - 150				11/09/21 04:35	11/12/21 15:20	
13C4 PFHpA	102		50 - 150				11/09/21 04:35	11/12/21 15:20	
13C4 PFOA	101		50 - 150				11/09/21 04:35	11/12/21 15:20	
13C5 PFNA	102		50 - 150				11/09/21 04:35	11/12/21 15:20	1
13C2 PFDA	105		50 - 150				11/09/21 04:35	11/12/21 15:20	1
13C2 PFUnA	105		50 <sub>-</sub> 150				11/09/21 04:35	11/12/21 15:20	1
13C2 PFDoA	89		50 - 150				11/09/21 04:35	11/12/21 15:20	
13C2 PFTeDA	85		50 <sub>-</sub> 150					11/12/21 15:20	-
13C3 PFBS	112		50 <sub>-</sub> 150					11/12/21 15:20	-
1802 PFHxS	99		50 - 150					11/12/21 15:20	
13C4 PFOS	103		50 <sub>-</sub> 150					11/12/21 15:20	1
d3-NMeFOSAA	93		50 - 150					11/12/21 15:20	1
d5-NEtFOSAA	96		50 - 150					11/12/21 15:20	
13C3 HFPO-DA	96		50 - 150					11/12/21 15:20	
General Chemistry									
Analyte	Result	Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Percent Moisture	28.2		0.1	0.1	%			11/05/21 11:58	1
Percent Solids	71.8		0.1	0.1	%			11/05/21 11:58	1

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-MW14-05 Lab Sample ID: 320-81254-28

Date Collected: 10/27/21 15:00 **Matrix: Solid** Percent Solids: 77.7 Date Received: 11/03/21 14:01

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.24	0.038	ug/Kg	<del>-</del>	11/09/21 04:35	11/12/21 15:30	1
Perfluoroheptanoic acid (PFHpA)	ND		0.24	0.046	ug/Kg	₩	11/09/21 04:35	11/12/21 15:30	1
Perfluorooctanoic acid (PFOA)	ND		0.24	0.064	ug/Kg	₩	11/09/21 04:35	11/12/21 15:30	1
Perfluorononanoic acid (PFNA)	ND		0.24	0.027	ug/Kg	₽	11/09/21 04:35	11/12/21 15:30	1
Perfluorodecanoic acid (PFDA)	ND		0.24	0.058	ug/Kg	₩	11/09/21 04:35	11/12/21 15:30	1
Perfluoroundecanoic acid (PFUnA)	ND		0.24	0.051	ug/Kg	₩	11/09/21 04:35	11/12/21 15:30	1
Perfluorododecanoic acid (PFDoA)	ND		0.24	0.036	ug/Kg	☼	11/09/21 04:35	11/12/21 15:30	1
Perfluorotridecanoic acid (PFTriA)	ND		0.24	0.025	ug/Kg	₩	11/09/21 04:35	11/12/21 15:30	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.24	0.045	ug/Kg	₩	11/09/21 04:35	11/12/21 15:30	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.24	0.046	ug/Kg	☼	11/09/21 04:35	11/12/21 15:30	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.24	0.035	ug/Kg	₩	11/09/21 04:35	11/12/21 15:30	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.24	0.052	ug/Kg	₩	11/09/21 04:35	11/12/21 15:30	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.24	0.028	ug/Kg	₽	11/09/21 04:35	11/12/21 15:30	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.24	0.058	ug/Kg	₽	11/09/21 04:35	11/12/21 15:30	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.24		ug/Kg		11/09/21 04:35		1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.24		ug/Kg	₩	11/09/21 04:35	11/12/21 15:30	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.24	0.038	ug/Kg	₩	11/09/21 04:35	11/12/21 15:30	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.24	0.047	ug/Kg	₩	11/09/21 04:35	11/12/21 15:30	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	100		50 - 150				11/09/21 04:35	11/12/21 15:30	1
13C4 PFHpA	99		50 - 150				11/09/21 04:35	11/12/21 15:30	1
13C4 PFOA	90		50 - 150				11/09/21 04:35	11/12/21 15:30	1
13C5 PFNA	92		50 - 150				11/09/21 04:35	11/12/21 15:30	1
13C2 PFDA	91		50 - 150				11/09/21 04:35	11/12/21 15:30	1
13C2 PFUnA	89		50 - 150				11/09/21 04:35	11/12/21 15:30	1
13C2 PFDoA	76		50 - 150				11/09/21 04:35	11/12/21 15:30	1
13C2 PFTeDA	80		50 - 150				11/09/21 04:35	11/12/21 15:30	1
13C3 PFBS	103		50 - 150				11/09/21 04:35	11/12/21 15:30	1
1802 PFHxS	88		50 - 150				11/09/21 04:35	11/12/21 15:30	1
13C4 PFOS	89		50 - 150				11/09/21 04:35	11/12/21 15:30	1
d3-NMeFOSAA	84		50 - 150				11/09/21 04:35	11/12/21 15:30	1
d5-NEtFOSAA	89		50 - 150				11/09/21 04:35	11/12/21 15:30	1
13C3 HFPO-DA	80		50 - 150				11/09/21 04:35	11/12/21 15:30	1
General Chemistry	B	Overlight	Б.	, and	1114	_	Duama e e e e	Amak	DU = -
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	22.3		0.1	0.1				11/05/21 11:58	1
Percent Solids	77.7		0.1	0.1	%			11/05/21 11:58	1

Eurofins TestAmerica, Sacramento

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-MW14-06 Lab Sample ID: 320-81254-29

Date Collected: 10/27/21 16:00 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 78.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.25	0.038	ug/Kg	<u></u>	11/09/21 04:35	11/12/21 16:01	1
Perfluoroheptanoic acid (PFHpA)	ND		0.25	0.047	ug/Kg	≎	11/09/21 04:35	11/12/21 16:01	1
Perfluorooctanoic acid (PFOA)	ND		0.25	0.066	ug/Kg	≎	11/09/21 04:35	11/12/21 16:01	1
Perfluorononanoic acid (PFNA)	ND		0.25	0.027	ug/Kg	₽	11/09/21 04:35	11/12/21 16:01	1
Perfluorodecanoic acid (PFDA)	ND		0.25	0.060	ug/Kg	≎	11/09/21 04:35	11/12/21 16:01	1
Perfluoroundecanoic acid (PFUnA)	ND		0.25	0.052	ug/Kg	₽	11/09/21 04:35	11/12/21 16:01	1
Perfluorododecanoic acid (PFDoA)	ND		0.25	0.037	ug/Kg	₽	11/09/21 04:35	11/12/21 16:01	1
Perfluorotridecanoic acid (PFTriA)	ND		0.25	0.026	ug/Kg	₽	11/09/21 04:35	11/12/21 16:01	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.25	0.046	ug/Kg	₩	11/09/21 04:35	11/12/21 16:01	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.25	0.047	ug/Kg	₽	11/09/21 04:35	11/12/21 16:01	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.25	0.036	ug/Kg	₩	11/09/21 04:35	11/12/21 16:01	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.25	0.053	ug/Kg	₩	11/09/21 04:35	11/12/21 16:01	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.25	0.029	ug/Kg	₿	11/09/21 04:35	11/12/21 16:01	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.25	0.060	ug/Kg	₩	11/09/21 04:35	11/12/21 16:01	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.25	0.043	ug/Kg	₩	11/09/21 04:35	11/12/21 16:01	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.051	ug/Kg	₩	11/09/21 04:35	11/12/21 16:01	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.25	0.038	ug/Kg	☼	11/09/21 04:35	11/12/21 16:01	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.25	0.048	ug/Kg	₩	11/09/21 04:35	11/12/21 16:01	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	104		50 - 150				11/09/21 04:35	11/12/21 16:01	1
13C4 PFHpA	97		50 - 150				11/09/21 04:35	11/12/21 16:01	1
13C4 PFOA	94		50 - 150				11/09/21 04:35	11/12/21 16:01	1
13C5 PFNA	95		50 - 150				11/09/21 04:35	11/12/21 16:01	1
13C2 PFDA	91		50 - 150				11/09/21 04:35	11/12/21 16:01	1
13C2 PFUnA	94		50 - 150				11/09/21 04:35	11/12/21 16:01	1
13C2 PFDoA	86		50 - 150				11/09/21 04:35	11/12/21 16:01	1
13C2 PFTeDA	82		50 <sub>-</sub> 150				11/09/21 04:35	11/12/21 16:01	1
13C3 PFBS	108		50 <sub>-</sub> 150				11/09/21 04:35	11/12/21 16:01	1
1802 PFHxS	97		50 - 150				11/09/21 04:35	11/12/21 16:01	1
13C4 PFOS	99		50 <sub>-</sub> 150				11/09/21 04:35	11/12/21 16:01	1
d3-NMeFOSAA	90		50 <sub>-</sub> 150				11/09/21 04:35	11/12/21 16:01	1
d5-NEtFOSAA	96		50 - 150					11/12/21 16:01	1
13C3 HFPO-DA	102		50 - 150				11/09/21 04:35	11/12/21 16:01	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	22.0		0.1	0.1	%			11/05/21 11:58	1
Percent Solids	78.0		0.1	0.1	%			11/05/21 11:58	1

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

**Percent Solids** 

Client Sample ID: 21GST-MW18-01 Lab Sample ID: 320-81254-30

Date Collected: 10/28/21 09:55 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 92.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.031	ug/Kg	— <u></u>	11/09/21 04:35	11/12/21 16:12	-
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.039	ug/Kg	₩	11/09/21 04:35	11/12/21 16:12	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.054	ug/Kg	₩	11/09/21 04:35	11/12/21 16:12	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.022	ug/Kg	☼	11/09/21 04:35	11/12/21 16:12	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.049	ug/Kg	₩	11/09/21 04:35	11/12/21 16:12	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.043	ug/Kg	₩	11/09/21 04:35	11/12/21 16:12	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.030	ug/Kg	₩	11/09/21 04:35	11/12/21 16:12	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.021	ug/Kg	₩	11/09/21 04:35	11/12/21 16:12	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.038	ug/Kg	₩	11/09/21 04:35	11/12/21 16:12	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.039	ug/Kg	₩	11/09/21 04:35	11/12/21 16:12	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.029	ug/Kg	☼	11/09/21 04:35	11/12/21 16:12	1
Perfluorooctanesulfonic acid (PFOS)	0.13	J	0.20	0.044	ug/Kg	₩	11/09/21 04:35	11/12/21 16:12	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg		11/09/21 04:35	11/12/21 16:12	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.20	0.049	ug/Kg	₩	11/09/21 04:35	11/12/21 16:12	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.20	0.035	ug/Kg	₩	11/09/21 04:35	11/12/21 16:12	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.20	0.042	ug/Kg	₩	11/09/21 04:35	11/12/21 16:12	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.20	0.031	ug/Kg	₩	11/09/21 04:35	11/12/21 16:12	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.040	ug/Kg	☼	11/09/21 04:35	11/12/21 16:12	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	114		50 - 150				11/09/21 04:35	11/12/21 16:12	
13C4 PFHpA	106		50 - 150				11/09/21 04:35	11/12/21 16:12	1
13C4 PFOA	102		50 - 150				11/09/21 04:35	11/12/21 16:12	1
13C5 PFNA	103		50 - 150				11/09/21 04:35	11/12/21 16:12	
13C2 PFDA	110		50 - 150				11/09/21 04:35	11/12/21 16:12	1
13C2 PFUnA	103		50 - 150				11/09/21 04:35	11/12/21 16:12	1
13C2 PFDoA	93		50 - 150				11/09/21 04:35	11/12/21 16:12	
13C2 PFTeDA	92		50 - 150				11/09/21 04:35	11/12/21 16:12	
13C3 PFBS	112		50 - 150				11/09/21 04:35	11/12/21 16:12	1
1802 PFHxS	89		50 - 150				11/09/21 04:35	11/12/21 16:12	1
13C4 PFOS	104		50 - 150				11/09/21 04:35	11/12/21 16:12	7
d3-NMeFOSAA	98		50 - 150				11/09/21 04:35	11/12/21 16:12	1
d5-NEtFOSAA	95		50 - 150				11/09/21 04:35	11/12/21 16:12	1
13C3 HFPO-DA	100		50 - 150				11/09/21 04:35	11/12/21 16:12	•
General Chemistry							_		
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	7.7		0.1	0.1	%			11/05/21 11:58	1

Eurofins TestAmerica, Sacramento

0.1

92.3

0.1 %

11/05/21 11:58

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-MW18-02 Lab Sample ID: 320-81254-31

Date Collected: 10/28/21 10:10 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 80.3

Method: EPA 537(Mod) - PFAS	for QSM 5.3 Result		-15 RL	MDL	Unit	D	Dronarod	Analyzod	Dil Fac
Analyte Perfluorohexanoic acid (PFHxA)	ND Result	<u>uaiiiler</u>			ug/Kg	— <u>D</u>	Prepared 11/09/21 04:35	Analyzed	DII Fac
, ,	ND ND		0.23					11/12/21 16:22	1
Perfluoroheptanoic acid (PFHpA) Perfluorooctanoic acid (PFOA)	ND ND		0.23		ug/Kg	*	11/09/21 04:35		1
					ug/Kg				
Perfluorononanoic acid (PFNA)	ND ND		0.23		ug/Kg		11/09/21 04:35		1
Perfluorodecanoic acid (PFDA)			0.23		ug/Kg			11/12/21 16:22	-
Perfluered deservice acid (PFDA)	ND		0.23		ug/Kg		11/09/21 04:35		
Perfluorododecanoic acid (PFDoA) Perfluorotridecanoic acid (PFTriA)	ND		0.23		ug/Kg	ψ.		11/12/21 16:22	1
,	ND		0.23		ug/Kg			11/12/21 16:22	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23		ug/Kg	<del></del>	11/09/21 04:35		
Perfluorobutanesulfonic acid (PFBS)	ND		0.23		ug/Kg	₩.	11/09/21 04:35		1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.23		ug/Kg	₩		11/12/21 16:22	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.23		ug/Kg		11/09/21 04:35		1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.23		ug/Kg		11/09/21 04:35		1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.23		ug/Kg	₽	11/09/21 04:35	11/12/21 16:22	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.23	0.040	ug/Kg	₽	11/09/21 04:35	11/12/21 16:22	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23	0.047	ug/Kg	₽	11/09/21 04:35	11/12/21 16:22	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.23	0.036	ug/Kg	₽	11/09/21 04:35	11/12/21 16:22	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.045	ug/Kg	₩	11/09/21 04:35	11/12/21 16:22	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	113		50 - 150				11/09/21 04:35	11/12/21 16:22	1
13C4 PFHpA	105		50 - 150				11/09/21 04:35	11/12/21 16:22	1
13C4 PFOA	104		50 - 150				11/09/21 04:35	11/12/21 16:22	1
13C5 PFNA	98		50 - 150				11/09/21 04:35	11/12/21 16:22	1
13C2 PFDA	93		50 - 150				11/09/21 04:35	11/12/21 16:22	1
13C2 PFUnA	101		50 - 150				11/09/21 04:35	11/12/21 16:22	1
13C2 PFDoA	90		50 - 150				11/09/21 04:35	11/12/21 16:22	1
13C2 PFTeDA	85		50 - 150				11/09/21 04:35	11/12/21 16:22	1
13C3 PFBS	109		50 - 150				11/09/21 04:35	11/12/21 16:22	1
18O2 PFHxS	102		50 - 150				11/09/21 04:35	11/12/21 16:22	1
13C4 PFOS	98		50 - 150				11/09/21 04:35	11/12/21 16:22	1
d3-NMeFOSAA	94		50 - 150				11/09/21 04:35	11/12/21 16:22	1
d5-NEtFOSAA	95		50 - 150				11/09/21 04:35	11/12/21 16:22	1
13C3 HFPO-DA	106		50 - 150				11/09/21 04:35	11/12/21 16:22	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Percent Moisture	19.7		0.1	0.1				11/05/21 11:58	1
Percent Solids	80.3		0.1	0.1	%			11/05/21 11:58	1

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-MW18-12 Lab Sample ID: 320-81254-32

Date Collected: 10/28/21 10:00 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 80.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.23	0.036	ug/Kg	₩	11/09/21 04:35	11/12/21 16:33	
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.044	ug/Kg	≎	11/09/21 04:35	11/12/21 16:33	1
Perfluorooctanoic acid (PFOA)	ND		0.23	0.061	ug/Kg	≎	11/09/21 04:35	11/12/21 16:33	1
Perfluorononanoic acid (PFNA)	ND		0.23	0.025	ug/Kg	₽	11/09/21 04:35	11/12/21 16:33	1
Perfluorodecanoic acid (PFDA)	ND		0.23	0.056	ug/Kg	₩	11/09/21 04:35	11/12/21 16:33	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.049	ug/Kg	₩	11/09/21 04:35	11/12/21 16:33	1
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.035	ug/Kg	₩	11/09/21 04:35	11/12/21 16:33	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.024	ug/Kg	₩	11/09/21 04:35	11/12/21 16:33	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.043	ug/Kg	₩	11/09/21 04:35	11/12/21 16:33	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.044	ug/Kg	≎	11/09/21 04:35	11/12/21 16:33	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.23	0.034	ug/Kg	≎	11/09/21 04:35	11/12/21 16:33	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.23	0.050	ug/Kg	≎	11/09/21 04:35	11/12/21 16:33	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.23		ug/Kg		11/09/21 04:35	11/12/21 16:33	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.23	0.056	ug/Kg	₩	11/09/21 04:35	11/12/21 16:33	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.23	0.041	ug/Kg	₩	11/09/21 04:35	11/12/21 16:33	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23	0.048	ug/Kg		11/09/21 04:35	11/12/21 16:33	1
11-Chloroeicosafluoro-3-oxaundecan	ND		0.23	0.036	ug/Kg	₩	11/09/21 04:35	11/12/21 16:33	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.045	ug/Kg	₩	11/09/21 04:35	11/12/21 16:33	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	122		50 - 150				11/09/21 04:35	11/12/21 16:33	1
13C4 PFHpA	113		50 - 150				11/09/21 04:35	11/12/21 16:33	1
13C4 PFOA	106		50 - 150				11/09/21 04:35	11/12/21 16:33	1
13C5 PFNA	104		50 - 150				11/09/21 04:35	11/12/21 16:33	1
13C2 PFDA	99		50 - 150				11/09/21 04:35	11/12/21 16:33	1
13C2 PFUnA	96		50 <sub>-</sub> 150				11/09/21 04:35	11/12/21 16:33	1
13C2 PFDoA	90		50 - 150				11/09/21 04:35	11/12/21 16:33	1
13C2 PFTeDA	86		50 <sub>-</sub> 150				11/09/21 04:35	11/12/21 16:33	1
13C3 PFBS	121		50 <sub>-</sub> 150				11/09/21 04:35	11/12/21 16:33	1
1802 PFHxS	104		50 - 150				11/09/21 04:35	11/12/21 16:33	1
13C4 PFOS	106		50 <sub>-</sub> 150				11/09/21 04:35	11/12/21 16:33	1
d3-NMeFOSAA	96		50 <sub>-</sub> 150				11/09/21 04:35	11/12/21 16:33	1
d5-NEtFOSAA	100		50 - 150					11/12/21 16:33	
13C3 HFPO-DA	97		50 - 150					11/12/21 16:33	1
General Chemistry									
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	19.4		0.1	0.1				11/05/21 11:58	1
Percent Solids	80.6		0.1	0.1				11/05/21 11:58	1

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

**Percent Solids** 

Client Sample ID: 21GST-MW18-03 Lab Sample ID: 320-81254-33

Date Collected: 10/28/21 10:20 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 76.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.26	0.040	ug/Kg	— <del>=</del>	11/09/21 04:35	11/12/21 16:43	1
Perfluoroheptanoic acid (PFHpA)	ND		0.26	0.049	ug/Kg	☼	11/09/21 04:35	11/12/21 16:43	1
Perfluorooctanoic acid (PFOA)	ND		0.26	0.068	ug/Kg	☼	11/09/21 04:35	11/12/21 16:43	1
Perfluorononanoic acid (PFNA)	ND		0.26	0.028	ug/Kg	₩	11/09/21 04:35	11/12/21 16:43	1
Perfluorodecanoic acid (PFDA)	ND		0.26	0.061	ug/Kg	₩	11/09/21 04:35	11/12/21 16:43	1
Perfluoroundecanoic acid (PFUnA)	ND		0.26	0.054	ug/Kg	₩	11/09/21 04:35	11/12/21 16:43	1
Perfluorododecanoic acid (PFDoA)	ND		0.26	0.038	ug/Kg	₩	11/09/21 04:35	11/12/21 16:43	1
Perfluorotridecanoic acid (PFTriA)	ND		0.26	0.027	ug/Kg	₩	11/09/21 04:35	11/12/21 16:43	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.26	0.047	ug/Kg	₩	11/09/21 04:35	11/12/21 16:43	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.26	0.049	ug/Kg	₽	11/09/21 04:35	11/12/21 16:43	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.26	0.037	ug/Kg	₩	11/09/21 04:35	11/12/21 16:43	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.26	0.055	ug/Kg	₩	11/09/21 04:35	11/12/21 16:43	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.26	0.029	ug/Kg	₩	11/09/21 04:35	11/12/21 16:43	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.26	0.061	ug/Kg	₩	11/09/21 04:35	11/12/21 16:43	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.26	0.045	ug/Kg	<b>‡</b>	11/09/21 04:35	11/12/21 16:43	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.26	0.052	ug/Kg	₩	11/09/21 04:35	11/12/21 16:43	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.26	0.040	ug/Kg	☼	11/09/21 04:35	11/12/21 16:43	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.26	0.050	ug/Kg	₩	11/09/21 04:35	11/12/21 16:43	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	123		50 - 150				11/09/21 04:35	11/12/21 16:43	1
13C4 PFHpA	122		50 - 150				11/09/21 04:35	11/12/21 16:43	1
13C4 PFOA	108		50 - 150				11/09/21 04:35	11/12/21 16:43	1
13C5 PFNA	107		50 - 150				11/09/21 04:35	11/12/21 16:43	1
13C2 PFDA	111		50 - 150				11/09/21 04:35	11/12/21 16:43	1
13C2 PFUnA	106		50 - 150				11/09/21 04:35	11/12/21 16:43	1
13C2 PFDoA	100		50 - 150				11/09/21 04:35	11/12/21 16:43	1
13C2 PFTeDA	99		50 - 150				11/09/21 04:35	11/12/21 16:43	1
13C3 PFBS	117		50 - 150				11/09/21 04:35	11/12/21 16:43	1
1802 PFHxS	105		50 - 150				11/09/21 04:35	11/12/21 16:43	1
13C4 PFOS	114		50 - 150				11/09/21 04:35	11/12/21 16:43	1
d3-NMeFOSAA	104		50 - 150				11/09/21 04:35	11/12/21 16:43	1
d5-NEtFOSAA	110		50 - 150				11/09/21 04:35	11/12/21 16:43	1
13C3 HFPO-DA	103		50 - 150				11/09/21 04:35	11/12/21 16:43	1
General Chemistry						_	_		
Analyte		Qualifier	RL _		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	24.0		0.1	0.1				11/05/21 11:58	1
Daniel and Carlotte			^ 4	0.4	0/			44 /OE/O4 44.E0	4

0.1

0.1 %

76.0

Eurofins TestAmerica, Sacramento

11/05/21 11:58

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-MW18-04 Lab Sample ID: 320-81254-34

Date Collected: 10/28/21 11:10 **Matrix: Solid** Date Received: 11/03/21 14:01 **Percent Solids: 81.8** 

Method: EPA 537(Mod) - PFAS Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.24	0.037	ug/Kg		11/09/21 04:35	11/12/21 16:53	1
Perfluoroheptanoic acid (PFHpA)	ND		0.24	0.046	ug/Kg	₩	11/09/21 04:35	11/12/21 16:53	1
Perfluorooctanoic acid (PFOA)	ND		0.24	0.064	ug/Kg	₩	11/09/21 04:35	11/12/21 16:53	1
Perfluorononanoic acid (PFNA)	ND		0.24	0.026	ug/Kg	₩	11/09/21 04:35	11/12/21 16:53	1
Perfluorodecanoic acid (PFDA)	ND		0.24	0.058	ug/Kg	₩	11/09/21 04:35	11/12/21 16:53	1
Perfluoroundecanoic acid (PFUnA)	ND		0.24	0.050	ug/Kg	₩	11/09/21 04:35	11/12/21 16:53	1
Perfluorododecanoic acid (PFDoA)	ND		0.24	0.036	ug/Kg	₩	11/09/21 04:35	11/12/21 16:53	1
Perfluorotridecanoic acid (PFTriA)	ND		0.24	0.025	ug/Kg	₩	11/09/21 04:35	11/12/21 16:53	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.24	0.044	ug/Kg	₩	11/09/21 04:35	11/12/21 16:53	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.24	0.046	ug/Kg	₩	11/09/21 04:35	11/12/21 16:53	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.24	0.035	ug/Kg	₩	11/09/21 04:35	11/12/21 16:53	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.24	0.052	ug/Kg	₩	11/09/21 04:35	11/12/21 16:53	1
N-methylperfluorooctanesulfonamidoa	ND		0.24	0.028	ug/Kg	₽	11/09/21 04:35	11/12/21 16:53	1
cetic acid (NMeFOSAA) N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.24	0.058	ug/Kg	₩	11/09/21 04:35	11/12/21 16:53	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.24		ug/Kg	₩	11/09/21 04:35	11/12/21 16:53	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.24	0.049	ug/Kg	₩	11/09/21 04:35	11/12/21 16:53	,
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.24		ug/Kg	₩	11/09/21 04:35	11/12/21 16:53	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.24	0.047	ug/Kg	₩	11/09/21 04:35	11/12/21 16:53	1
lsotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	111		50 - 150				11/09/21 04:35	11/12/21 16:53	1
13C4 PFHpA	106		50 - 150				11/09/21 04:35	11/12/21 16:53	
13C4 PFOA	104		50 - 150				11/09/21 04:35	11/12/21 16:53	1
13C5 PFNA	102		50 - 150				11/09/21 04:35	11/12/21 16:53	1
13C2 PFDA	106		50 - 150				11/09/21 04:35	11/12/21 16:53	1
13C2 PFUnA	101		50 - 150				11/09/21 04:35	11/12/21 16:53	1
13C2 PFDoA	91		50 - 150				11/09/21 04:35	11/12/21 16:53	1
13C2 PFTeDA	90		50 - 150				11/09/21 04:35	11/12/21 16:53	1
13C3 PFBS	115		50 - 150				11/09/21 04:35	11/12/21 16:53	1
1802 PFHxS	96		50 - 150				11/09/21 04:35	11/12/21 16:53	1
13C4 PFOS	105		50 - 150				11/09/21 04:35	11/12/21 16:53	1
d3-NMeFOSAA	92		50 - 150				11/09/21 04:35	11/12/21 16:53	1
d5-NEtFOSAA	103		50 - 150				11/09/21 04:35	11/12/21 16:53	1
13C3 HFPO-DA	110		50 - 150				11/09/21 04:35	11/12/21 16:53	1
General Chemistry									
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Percent Moisture	18.2		0.1	0.1	%	_		11/05/21 11:58	1

Client: Shannon & Wilson, Inc Job ID: 320-81254-1 Project/Site: SC Soils#3

Client Sample ID: 21GST-MW18-05

Lab Sample ID: 320-81254-35 Date Collected: 10/28/21 11:25 **Matrix: Solid** 

Date Received: 11/03/21 14:01 Percent Solids: 74.2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.25	0.039	ug/Kg	<u></u>	11/09/21 04:35	11/12/21 17:04	1
Perfluoroheptanoic acid (PFHpA)	ND		0.25	0.048	ug/Kg	₩	11/09/21 04:35	11/12/21 17:04	1
Perfluorooctanoic acid (PFOA)	ND		0.25	0.067	ug/Kg	₩	11/09/21 04:35	11/12/21 17:04	1
Perfluorononanoic acid (PFNA)	ND		0.25	0.028	ug/Kg	₩	11/09/21 04:35	11/12/21 17:04	1
Perfluorodecanoic acid (PFDA)	ND		0.25	0.061	ug/Kg	₩	11/09/21 04:35	11/12/21 17:04	1
Perfluoroundecanoic acid (PFUnA)	ND		0.25	0.053	ug/Kg	₩	11/09/21 04:35	11/12/21 17:04	1
Perfluorododecanoic acid (PFDoA)	ND		0.25	0.038	ug/Kg	₩	11/09/21 04:35	11/12/21 17:04	1
Perfluorotridecanoic acid (PFTriA)	ND		0.25	0.027	ug/Kg	₩	11/09/21 04:35	11/12/21 17:04	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.25	0.047	ug/Kg	₩	11/09/21 04:35	11/12/21 17:04	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.25	0.048	ug/Kg		11/09/21 04:35	11/12/21 17:04	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.25	0.037	ug/Kg	₩	11/09/21 04:35	11/12/21 17:04	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.25	0.054	ug/Kg	₽	11/09/21 04:35	11/12/21 17:04	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.25	0.029	ug/Kg	₩	11/09/21 04:35	11/12/21 17:04	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.25	0.061	ug/Kg	₩	11/09/21 04:35	11/12/21 17:04	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.25	0.044	ug/Kg	₩	11/09/21 04:35	11/12/21 17:04	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.052	ug/Kg	₩	11/09/21 04:35	11/12/21 17:04	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.25	0.039	ug/Kg	₩	11/09/21 04:35	11/12/21 17:04	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.25	0.049	ug/Kg	₩	11/09/21 04:35	11/12/21 17:04	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	108		50 - 150				11/09/21 04:35	11/12/21 17:04	1
13C4 PFHpA	101		50 - 150				11/09/21 04:35	11/12/21 17:04	1
13C4 PFOA	93		50 - 150				11/09/21 04:35	11/12/21 17:04	1
13C5 PFNA	93		50 - 150				11/09/21 04:35	11/12/21 17:04	1
13C2 PFDA	95		50 - 150				11/09/21 04:35	11/12/21 17:04	1
13C2 PFUnA	93		50 - 150				11/09/21 04:35	11/12/21 17:04	1
13C2 PFDoA	85		50 - 150				11/09/21 04:35	11/12/21 17:04	1
13C2 PFTeDA	78		50 - 150				11/09/21 04:35	11/12/21 17:04	1
13C3 PFBS	115		50 - 150				11/09/21 04:35	11/12/21 17:04	1
1802 PFHxS	94		50 <sub>-</sub> 150				11/09/21 04:35	11/12/21 17:04	1
13C4 PFOS	97		50 - 150				11/09/21 04:35	11/12/21 17:04	1
d3-NMeFOSAA	86		50 - 150				11/09/21 04:35	11/12/21 17:04	1
d5-NEtFOSAA	93		50 - 150				11/09/21 04:35	11/12/21 17:04	1
13C3 HFPO-DA	89		50 - 150					11/12/21 17:04	1
General Chemistry						_			<b></b> -
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Percent Moisture	25.8		0.1	0.1	%			11/05/21 11:58	1
Percent Solids	74.2		0.1	0.1				11/05/21 11:58	1

11/17/2021

Client: Shannon & Wilson, Inc Job ID: 320-81254-1 Project/Site: SC Soils#3

Client Sample ID: 21GST-MW18-06

Lab Sample ID: 320-81254-36 Date Collected: 10/28/21 12:10 **Matrix: Solid** 

Date Received: 11/03/21 14:01 Percent Solids: 79.7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.23	0.035	ug/Kg	<del></del>	11/09/21 04:35	11/12/21 17:14	
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.043	ug/Kg	₩	11/09/21 04:35	11/12/21 17:14	1
Perfluorooctanoic acid (PFOA)	ND		0.23	0.061	ug/Kg	☼	11/09/21 04:35	11/12/21 17:14	1
Perfluorononanoic acid (PFNA)	ND		0.23	0.025	ug/Kg	₽	11/09/21 04:35	11/12/21 17:14	1
Perfluorodecanoic acid (PFDA)	ND		0.23	0.055	ug/Kg	₩	11/09/21 04:35	11/12/21 17:14	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.048	ug/Kg	₩	11/09/21 04:35	11/12/21 17:14	1
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.034	ug/Kg	₩	11/09/21 04:35	11/12/21 17:14	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.024	ug/Kg	₩	11/09/21 04:35	11/12/21 17:14	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.042	ug/Kg	₩	11/09/21 04:35	11/12/21 17:14	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.043	ug/Kg		11/09/21 04:35	11/12/21 17:14	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.23	0.033	ug/Kg	₽	11/09/21 04:35	11/12/21 17:14	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.23	0.049	ug/Kg	₽	11/09/21 04:35	11/12/21 17:14	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.23	0.026	ug/Kg	₩	11/09/21 04:35	11/12/21 17:14	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.23	0.055	ug/Kg	₩	11/09/21 04:35	11/12/21 17:14	1
9-Chlorohexadecafluoro-3-oxanonan	ND		0.23	0.040	ug/Kg	☼	11/09/21 04:35	11/12/21 17:14	•
e-1-sulfonic acid									
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23		ug/Kg		11/09/21 04:35		1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.23		ug/Kg	₽	11/09/21 04:35		1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.045	ug/Kg	☼	11/09/21 04:35	11/12/21 17:14	1
lsotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	114		50 - 150				11/09/21 04:35	11/12/21 17:14	1
13C4 PFHpA	106		50 - 150				11/09/21 04:35	11/12/21 17:14	1
13C4 PFOA	99		50 - 150				11/09/21 04:35	11/12/21 17:14	1
13C5 PFNA	101		50 - 150				11/09/21 04:35	11/12/21 17:14	1
13C2 PFDA	99		50 - 150				11/09/21 04:35	11/12/21 17:14	
13C2 PFUnA	100		50 - 150				11/09/21 04:35	11/12/21 17:14	
13C2 PFDoA	90		50 - 150				11/09/21 04:35	11/12/21 17:14	1
13C2 PFTeDA	89		50 - 150				11/09/21 04:35	11/12/21 17:14	1
13C3 PFBS	119		50 - 150				11/09/21 04:35	11/12/21 17:14	
1802 PFHxS	100		50 - 150				11/09/21 04:35	11/12/21 17:14	1
13C4 PFOS	98		50 - 150				11/09/21 04:35	11/12/21 17:14	1
d3-NMeFOSAA	95		50 - 150				11/09/21 04:35	11/12/21 17:14	1
d5-NEtFOSAA	94		50 - 150				11/09/21 04:35	11/12/21 17:14	1
13C3 HFPO-DA	93		50 - 150				11/09/21 04:35	11/12/21 17:14	1
General Chemistry									
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Percent Moisture	20.3		0.1	0.1				11/05/21 11:58	1
Percent Solids	79.7		0.1	0.1	0/2			11/05/21 11:58	1

11/17/2021

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

**Percent Solids** 

Client Sample ID: 21GST-MW15-01 Lab Sample ID: 320-81254-37

Date Collected: 10/29/21 13:00 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 93.2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.21	0.033	ug/Kg	<u></u>	11/09/21 04:35	11/12/21 17:25	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.041	ug/Kg	≎	11/09/21 04:35	11/12/21 17:25	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.057	ug/Kg	≎	11/09/21 04:35	11/12/21 17:25	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.024	ug/Kg	₽	11/09/21 04:35	11/12/21 17:25	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.051	ug/Kg	₽	11/09/21 04:35	11/12/21 17:25	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.045	ug/Kg	₩	11/09/21 04:35	11/12/21 17:25	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.032	ug/Kg	₽	11/09/21 04:35	11/12/21 17:25	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.022	ug/Kg	₩	11/09/21 04:35	11/12/21 17:25	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.040	ug/Kg	≎	11/09/21 04:35	11/12/21 17:25	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.041	ug/Kg	≎	11/09/21 04:35	11/12/21 17:25	1
Perfluorohexanesulfonic acid (PFHxS)	0.047	J	0.21	0.031	ug/Kg	₩	11/09/21 04:35	11/12/21 17:25	1
Perfluorooctanesulfonic acid (PFOS)	0.39		0.21	0.046	ug/Kg	₩	11/09/21 04:35	11/12/21 17:25	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.21	0.025	ug/Kg	₩	11/09/21 04:35	11/12/21 17:25	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.21	0.051	ug/Kg	₩	11/09/21 04:35	11/12/21 17:25	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.21	0.037	ug/Kg	<b>#</b>	11/09/21 04:35	11/12/21 17:25	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21		ug/Kg	₩	11/09/21 04:35	11/12/21 17:25	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.21		ug/Kg	₽	11/09/21 04:35	11/12/21 17:25	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.042	ug/Kg	₩	11/09/21 04:35	11/12/21 17:25	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	114		50 - 150				11/09/21 04:35	11/12/21 17:25	1
13C4 PFHpA	106		50 - 150				11/09/21 04:35	11/12/21 17:25	1
13C4 PFOA	102		50 - 150				11/09/21 04:35	11/12/21 17:25	1
13C5 PFNA	112		50 - 150				11/09/21 04:35	11/12/21 17:25	1
13C2 PFDA	118		50 <sub>-</sub> 150				11/09/21 04:35	11/12/21 17:25	1
13C2 PFUnA	120		50 <sub>-</sub> 150				11/09/21 04:35	11/12/21 17:25	1
13C2 PFDoA	105		50 - 150				11/09/21 04:35	11/12/21 17:25	1
13C2 PFTeDA	93		50 <sub>-</sub> 150				11/09/21 04:35	11/12/21 17:25	1
13C3 PFBS	119		50 <sub>-</sub> 150					11/12/21 17:25	1
1802 PFHxS	101		50 <sub>-</sub> 150					11/12/21 17:25	1
13C4 PFOS	111		50 <sub>-</sub> 150					11/12/21 17:25	1
d3-NMeFOSAA	118		50 - 150					11/12/21 17:25	1
d5-NEtFOSAA	127		50 - 150					11/12/21 17:25	
13C3 HFPO-DA	93		50 - 150					11/12/21 17:25	1
General Chemistry	_						_		
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Percent Moisture	6.8		0.1	0.1	%			11/05/21 11:58	1

0.1

0.1 %

93.2

11/05/21 11:58

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-MW15-02 Lab Sample ID: 320-81254-38

Date Collected: 10/29/21 13:05 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 85.7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Perfluorohexanoic acid (PFHxA)	ND		0.23	0.035	ug/Kg	☆	11/09/21 04:35	11/12/21 17:35	
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.043	ug/Kg	☼	11/09/21 04:35	11/12/21 17:35	1
Perfluorooctanoic acid (PFOA)	ND		0.23	0.060	ug/Kg	₩	11/09/21 04:35	11/12/21 17:35	1
Perfluorononanoic acid (PFNA)	ND		0.23	0.025	ug/Kg	₩	11/09/21 04:35	11/12/21 17:35	1
Perfluorodecanoic acid (PFDA)	ND		0.23	0.054	ug/Kg	≎	11/09/21 04:35	11/12/21 17:35	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.047	ug/Kg	₽	11/09/21 04:35	11/12/21 17:35	1
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.034	ug/Kg	₽	11/09/21 04:35	11/12/21 17:35	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.024	ug/Kg	₽	11/09/21 04:35	11/12/21 17:35	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.042	ug/Kg	₩	11/09/21 04:35	11/12/21 17:35	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.043	ug/Kg	☼	11/09/21 04:35	11/12/21 17:35	1
Perfluorohexanesulfonic acid (PFHxS)	0.038	J	0.23	0.033	ug/Kg	₩	11/09/21 04:35	11/12/21 17:35	1
Perfluorooctanesulfonic acid (PFOS)	0.18	J	0.23	0.049	ug/Kg	₩	11/09/21 04:35	11/12/21 17:35	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.23	0.026	ug/Kg	₩	11/09/21 04:35	11/12/21 17:35	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.23	0.054	ug/Kg	₩	11/09/21 04:35	11/12/21 17:35	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.23		ug/Kg			11/12/21 17:35	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23		ug/Kg	☼		11/12/21 17:35	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.23		ug/Kg	☼		11/12/21 17:35	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.044	ug/Kg	☼	11/09/21 04:35	11/12/21 17:35	1
lsotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	109		50 - 150				11/09/21 04:35	11/12/21 17:35	1
13C4 PFHpA	108		50 - 150				11/09/21 04:35	11/12/21 17:35	1
13C4 PFOA	107		50 - 150				11/09/21 04:35	11/12/21 17:35	1
13C5 PFNA	99		50 - 150				11/09/21 04:35	11/12/21 17:35	1
13C2 PFDA	102		50 - 150				11/09/21 04:35	11/12/21 17:35	1
13C2 PFUnA	106		50 - 150				11/09/21 04:35	11/12/21 17:35	1
13C2 PFDoA	95		50 - 150				11/09/21 04:35	11/12/21 17:35	1
13C2 PFTeDA	95		50 <sub>-</sub> 150				11/09/21 04:35	11/12/21 17:35	1
13C3 PFBS	112		50 - 150				11/09/21 04:35	11/12/21 17:35	1
1802 PFHxS	103		50 <sub>-</sub> 150				11/09/21 04:35	11/12/21 17:35	1
13C4 PFOS	102		50 <sub>-</sub> 150				11/09/21 04:35	11/12/21 17:35	1
d3-NMeFOSAA	96		50 - 150					11/12/21 17:35	1
d5-NEtFOSAA	96		50 <sub>-</sub> 150				11/09/21 04:35	11/12/21 17:35	1
13C3 HFPO-DA	91		50 - 150					11/12/21 17:35	1
General Chemistry		<b>.</b>				_			<b></b> -
Analyte		Qualifier	RL _		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	14.3		0.1	0.1				11/05/21 11:58	1
Percent Solids	85.7		0.1	0.1	0/2			11/05/21 11:58	1

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-MW15-03 Lab Sample ID: 320-81254-39

Date Collected: 10/29/21 13:55

Matrix: Solid
Date Received: 11/03/21 14:01

Percent Solids: 86.5

Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ND		0.22	0.033	ug/Kg	— <u>∓</u>	11/09/21 04:35	11/14/21 03:26	
ND		0.22	0.041	ug/Kg	₩	11/09/21 04:35	11/14/21 03:26	1
ND		0.22	0.057	ug/Kg	₩	11/09/21 04:35	11/14/21 03:26	1
ND		0.22	0.024	ug/Kg	≎	11/09/21 04:35	11/14/21 03:26	1
ND		0.22	0.052	ug/Kg	≎	11/09/21 04:35	11/14/21 03:26	1
ND		0.22	0.045	ug/Kg	₽	11/09/21 04:35	11/14/21 03:26	1
ND		0.22	0.032	ug/Kg	≎	11/09/21 04:35	11/14/21 03:26	1
ND		0.22	0.023	ug/Kg	≎	11/09/21 04:35	11/14/21 03:26	1
ND		0.22	0.040	ug/Kg	₽	11/09/21 04:35	11/14/21 03:26	1
ND		0.22	0.041	ug/Kg	₽	11/09/21 04:35	11/14/21 03:26	1
ND		0.22	0.031	ug/Kg	₩	11/09/21 04:35	11/14/21 03:26	1
ND		0.22	0.046	ug/Kg	₩	11/09/21 04:35	11/14/21 03:26	1
ND		0.22	0.025	ug/Kg	₩	11/09/21 04:35	11/14/21 03:26	1
ND		0.22	0.052	ug/Kg	₩	11/09/21 04:35	11/14/21 03:26	1
ND		0.22	0.038	ug/Kg	₩	11/09/21 04:35	11/14/21 03:26	1
ND		0.22	0.044	ug/Kg	₩	11/09/21 04:35	11/14/21 03:26	1
ND		0.22	0.033	ug/Kg	₩	11/09/21 04:35	11/14/21 03:26	1
ND		0.22	0.042	ug/Kg	₩	11/09/21 04:35	11/14/21 03:26	1
%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
110	-	50 - 150				11/09/21 04:35	11/14/21 03:26	1
106		50 - 150				11/09/21 04:35	11/14/21 03:26	1
104		50 - 150				11/09/21 04:35	11/14/21 03:26	1
94		50 - 150				11/09/21 04:35	11/14/21 03:26	1
104		50 - 150				11/09/21 04:35	11/14/21 03:26	1
95		50 - 150				11/09/21 04:35	11/14/21 03:26	1
83		50 - 150				11/09/21 04:35	11/14/21 03:26	1
80		50 - 150				11/09/21 04:35	11/14/21 03:26	1
116		50 - 150				11/09/21 04:35	11/14/21 03:26	1
96		50 - 150				11/09/21 04:35	11/14/21 03:26	1
98		50 - 150				11/09/21 04:35	11/14/21 03:26	1
100		50 - 150				11/09/21 04:35	11/14/21 03:26	1
107		50 - 150				11/09/21 04:35	11/14/21 03:26	1
95		50 - 150				11/09/21 04:35	11/14/21 03:26	1
					_	_		
	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Result 13.5 86.5	Qualifier	RL 0.1	MDL 0.1 0.1	%	<u>D</u>	Prepared	Analyzed 11/05/21 11:58 11/05/21 11:58	Dil Fac
	Result	ND ND ND ND ND ND ND ND ND ND ND ND ND N	Result         Qualifier         RL           ND         0.22           ND         0.25           ND         0.25	Result ND         Qualifier         RL         MDL           ND         0.22         0.033           ND         0.22         0.041           ND         0.22         0.057           ND         0.22         0.052           ND         0.22         0.045           ND         0.22         0.032           ND         0.22         0.032           ND         0.22         0.040           ND         0.22         0.041           ND         0.22         0.041           ND         0.22         0.044           ND         0.22         0.052           ND         0.22         0.038           ND         0.22         0.038           ND         0.22         0.038           ND         0.22         0.038           ND         0.22         0.033           ND         0.22         0.038           ND         0.22         0.038           ND         0.22         0.044           ND         0.22         0.042           **Recovery Qualifier         **Limits           104         50 - 150	Result         Qualifier         RL         MDL         Unit           ND         0.22         0.033         ug/Kg           ND         0.22         0.041         ug/Kg           ND         0.22         0.057         ug/Kg           ND         0.22         0.052         ug/Kg           ND         0.22         0.052         ug/Kg           ND         0.22         0.045         ug/Kg           ND         0.22         0.032         ug/Kg           ND         0.22         0.032         ug/Kg           ND         0.22         0.040         ug/Kg           ND         0.22         0.041         ug/Kg           ND         0.22         0.041         ug/Kg           ND         0.22         0.041         ug/Kg           ND         0.22         0.052         ug/Kg           ND         0.22         0.052         ug/Kg           ND         0.22         0.033         ug/Kg           ND         0.22         0.033         ug/Kg           ND         0.22         0.042         ug/Kg           ND         0.22         0.042         ug/Kg<	Result ND         Qualifier         RL         MDL Unit         D           ND         0.22         0.033         ug/Kg         ☆           ND         0.22         0.041         ug/Kg         ☆           ND         0.22         0.057         ug/Kg         ☆           ND         0.22         0.052         ug/Kg         ☆           ND         0.22         0.052         ug/Kg         ☆           ND         0.22         0.045         ug/Kg         ☆           ND         0.22         0.032         ug/Kg         ☆           ND         0.22         0.040         ug/Kg         ☆           ND         0.22         0.041         ug/Kg         ☆           ND         0.22         0.041         ug/Kg         ☆           ND         0.22         0.041         ug/Kg         ☆           ND         0.22         0.046         ug/Kg         ☆           ND         0.22         0.052         ug/Kg         ☆           ND         0.22         0.038         ug/Kg         ☆           ND         0.22         0.044         ug/Kg         ☆	Result   Qualifier   RL   MDL   Unit   D   Prepared	Result   Qualifier   RL   MDL   Unit   D   Prepared   Analyzed

11/17/2021

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

**Percent Solids** 

Client Sample ID: 21GST-MW15-04 Lab Sample ID: 320-81254-40

Date Collected: 10/29/21 14:10 **Matrix: Solid** Date Received: 11/03/21 14:01

**Percent Solids: 81.3** 

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND	0.24	0.037	ug/Kg	<u></u>	11/09/21 04:35	11/14/21 03:37	1
Perfluoroheptanoic acid (PFHpA)	ND	0.24	0.045	ug/Kg	₽	11/09/21 04:35	11/14/21 03:37	1
Perfluorooctanoic acid (PFOA)	ND	0.24	0.063	ug/Kg	₽	11/09/21 04:35	11/14/21 03:37	1
Perfluorononanoic acid (PFNA)	ND	0.24	0.026	ug/Kg	☼	11/09/21 04:35	11/14/21 03:37	1
Perfluorodecanoic acid (PFDA)	ND	0.24	0.057	ug/Kg	☼	11/09/21 04:35	11/14/21 03:37	1
Perfluoroundecanoic acid (PFUnA)	ND	0.24	0.050	ug/Kg	☼	11/09/21 04:35	11/14/21 03:37	1
Perfluorododecanoic acid (PFDoA)	ND	0.24	0.036	ug/Kg	☼	11/09/21 04:35	11/14/21 03:37	1
Perfluorotridecanoic acid (PFTriA)	ND	0.24	0.025	ug/Kg	☼	11/09/21 04:35	11/14/21 03:37	1
Perfluorotetradecanoic acid (PFTeA)	ND	0.24	0.044	ug/Kg	☼	11/09/21 04:35	11/14/21 03:37	1
Perfluorobutanesulfonic acid (PFBS)	ND	0.24	0.045	ug/Kg	₩	11/09/21 04:35	11/14/21 03:37	1
Perfluorohexanesulfonic acid (PFHxS)	ND	0.24	0.035	ug/Kg	☼	11/09/21 04:35	11/14/21 03:37	1
Perfluorooctanesulfonic acid (PFOS)	0.60	0.24	0.051	ug/Kg	₩	11/09/21 04:35	11/14/21 03:37	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND	0.24	0.027	ug/Kg	₩	11/09/21 04:35	11/14/21 03:37	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND	0.24	0.057	ug/Kg	₩	11/09/21 04:35	11/14/21 03:37	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND	0.24	0.042	ug/Kg	₩	11/09/21 04:35	11/14/21 03:37	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND F1	0.24	0.049	ug/Kg	₩	11/09/21 04:35	11/14/21 03:37	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND	0.24		ug/Kg	₩	11/09/21 04:35	11/14/21 03:37	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.24	0.047	ug/Kg	₩	11/09/21 04:35	11/14/21 03:37	1
Isotope Dilution	%Recovery Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	111	50 - 150				11/09/21 04:35	11/14/21 03:37	1
13C4 PFHpA	109	50 - 150				11/09/21 04:35	11/14/21 03:37	1
13C4 PFOA	101	50 - 150				11/09/21 04:35	11/14/21 03:37	1
13C5 PFNA	104	50 - 150				11/09/21 04:35	11/14/21 03:37	1
13C2 PFDA	105	50 - 150				11/09/21 04:35	11/14/21 03:37	1
13C2 PFUnA	105	50 - 150				11/09/21 04:35	11/14/21 03:37	1
13C2 PFDoA	93	50 - 150				11/09/21 04:35	11/14/21 03:37	1
13C2 PFTeDA	90	50 - 150				11/09/21 04:35	11/14/21 03:37	1
13C3 PFBS	115	50 <sub>-</sub> 150				11/09/21 04:35	11/14/21 03:37	1
1802 PFHxS	105	50 <sub>-</sub> 150				11/09/21 04:35	11/14/21 03:37	1
13C4 PFOS	106	50 - 150				11/09/21 04:35	11/14/21 03:37	1
d3-NMeFOSAA	108	50 <sub>-</sub> 150				11/09/21 04:35	11/14/21 03:37	1
d5-NEtFOSAA	114	50 - 150				11/09/21 04:35	11/14/21 03:37	1
13C3 HFPO-DA	93	50 - 150				11/09/21 04:35	11/14/21 03:37	1
General Chemistry						_		
Analyte	Result Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	18.7	0.1	0.1	%			11/05/21 11:58	1

11/17/2021

11/05/21 11:58

0.1

81.3

0.1 %

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

13C2 PFDoA

13C2 PFTeDA

13C3 PFBS

1802 PFHxS

13C4 PFOS

d3-NMeFOSAA d5-NEtFOSAA

13C3 HFPO-DA

Client Sample ID: 21GST-MW15-14

89

87

101

91

94

104

108

76

Lab Sample ID: 320-81254-41 Date Collected: 10/29/21 14:00 Matrix: Solid Date Received: 11/03/21 14:01 Percent Solids: 81.9

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 Analyte Result Qualifier RL **MDL** Unit D Prepared Analyzed Dil Fac Perfluorohexanoic acid (PFHxA) ND 0.23 0.035 ug/Kg 11/09/21 18:26 11/13/21 09:23 ND Perfluoroheptanoic acid (PFHpA) 0.23 0.043 ug/Kg 11/09/21 18:26 11/13/21 09:23 Perfluorooctanoic acid (PFOA) ND 0.23 0.060 ug/Kg 11/09/21 18:26 11/13/21 09:23 Perfluorononanoic acid (PFNA) 11/09/21 18:26 11/13/21 09:23 ND 0.23 0.025 ug/Kg Perfluorodecanoic acid (PFDA) 0.23 0.054 ug/Kg 11/09/21 18:26 11/13/21 09:23 ND Perfluoroundecanoic acid (PFUnA) ND 0.23 0.048 ug/Kg 11/09/21 18:26 11/13/21 09:23 Perfluorododecanoic acid (PFDoA) ND 0.23 0.034 ug/Kg 11/09/21 18:26 11/13/21 09:23 Perfluorotridecanoic acid (PFTriA) ND 0.23 0.024 ug/Kg 11/09/21 18:26 11/13/21 09:23 Perfluorotetradecanoic acid (PFTeA) ND 0.23 0.042 ug/Kg 11/09/21 18:26 11/13/21 09:23 Perfluorobutanesulfonic acid (PFBS) ND 0.23 0.043 ug/Kg 11/09/21 18:26 11/13/21 09:23 Perfluorohexanesulfonic acid (PFHxS) ND 0.23 0.033 ug/Kg 11/09/21 18:26 11/13/21 09:23 Perfluorooctanesulfonic acid 0.23 0.049 ug/Kg 11/09/21 18:26 11/13/21 09:23 0.26 (PFOS) 11/09/21 18:26 11/13/21 09:23 N-methylperfluorooctanesulfonamidoa ND 0.23 0.026 ug/Kg cetic acid (NMeFOSAA) N-ethylperfluorooctanesulfonamidoac ND 0.23 0.054 ug/Kg 11/09/21 18:26 11/13/21 09:23 etic acid (NEtFOSAA) 0.23 11/09/21 18:26 11/13/21 09:23 9-Chlorohexadecafluoro-3-oxanonan ND 0.040 ug/Kg e-1-sulfonic acid Hexafluoropropylene Oxide Dimer ND 0.23 0.047 ug/Kg 11/09/21 18:26 11/13/21 09:23 Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaundecan ND 0.23 0.035 ug/Kg 11/09/21 18:26 11/13/21 09:23 e-1-sulfonic acid 11/09/21 18:26 11/13/21 09:23 4,8-Dioxa-3H-perfluorononanoic acid ND 0.23 0.044 ug/Kg (ADONA) %Recovery Isotope Dilution Qualifier Limits Prepared Analyzed Dil Fac 13C2 PFHxA 97 50 - 150 11/09/21 18:26 11/13/21 09:23 13C4 PFHpA 94 50 - 150 11/09/21 18:26 11/13/21 09:23 13C4 PFOA 87 50 - 150 11/09/21 18:26 11/13/21 09:23 13C5 PFNA 94 50 - 150 11/09/21 18:26 11/13/21 09:23 13C2 PFDA 89 50 - 150 11/09/21 18:26 11/13/21 09:23 13C2 PFUnA 94 50 - 150 11/09/21 18:26 11/13/21 09:23

General Chemistry Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	18.1		0.1	0.1	%			11/05/21 12:52	1
Percent Solids	81.9		0.1	0.1	%			11/05/21 12:52	1

50 - 150

50 - 150

50 - 150

50 - 150

50 - 150

50 - 150

50 - 150

50 - 150

11/09/21 18:26 11/13/21 09:23

11/09/21 18:26 11/13/21 09:23

11/09/21 18:26 11/13/21 09:23 11/09/21 18:26 11/13/21 09:23

11/09/21 18:26 11/13/21 09:23

11/09/21 18:26 11/13/21 09:23

11/09/21 18:26 11/13/21 09:23

11/09/21 18:26 11/13/21 09:23

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Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-MW15-05 Lab Sample ID: 320-81254-42

Date Collected: 10/29/21 14:35 **Matrix: Solid** Percent Solids: 80.8 Date Received: 11/03/21 14:01

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.23	0.036	ug/Kg	<u></u>	11/09/21 18:26	11/13/21 09:33	1
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.044	ug/Kg	₽	11/09/21 18:26	11/13/21 09:33	1
Perfluorooctanoic acid (PFOA)	ND		0.23	0.061	ug/Kg	₽	11/09/21 18:26	11/13/21 09:33	1
Perfluorononanoic acid (PFNA)	ND		0.23	0.025	ug/Kg	₩	11/09/21 18:26	11/13/21 09:33	1
Perfluorodecanoic acid (PFDA)	ND		0.23	0.055	ug/Kg	₽	11/09/21 18:26	11/13/21 09:33	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.048	ug/Kg	₩	11/09/21 18:26	11/13/21 09:33	1
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.034	ug/Kg	₩	11/09/21 18:26	11/13/21 09:33	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.024	ug/Kg	₩	11/09/21 18:26	11/13/21 09:33	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.042	ug/Kg	₽	11/09/21 18:26	11/13/21 09:33	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.044	ug/Kg		11/09/21 18:26	11/13/21 09:33	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.23	0.033	ug/Kg	₩	11/09/21 18:26	11/13/21 09:33	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.23		ug/Kg	₽	11/09/21 18:26	11/13/21 09:33	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.23		ug/Kg	₩	11/09/21 18:26	11/13/21 09:33	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.23	0.055	ug/Kg	₩	11/09/21 18:26	11/13/21 09:33	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.23	0.040	ug/Kg	₽	11/09/21 18:26	11/13/21 09:33	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23	0.047	ug/Kg	₽	11/09/21 18:26	11/13/21 09:33	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.23	0.036	ug/Kg	₽	11/09/21 18:26	11/13/21 09:33	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.045	ug/Kg	₩	11/09/21 18:26	11/13/21 09:33	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	90		50 - 150				11/09/21 18:26	11/13/21 09:33	1
13C4 PFHpA	87		50 - 150				11/09/21 18:26	11/13/21 09:33	1
13C4 PFOA	82		50 - 150				11/09/21 18:26	11/13/21 09:33	1
13C5 PFNA	87		50 - 150				11/09/21 18:26	11/13/21 09:33	1
13C2 PFDA	86		50 - 150				11/09/21 18:26	11/13/21 09:33	1
13C2 PFUnA	88		50 <sub>-</sub> 150				11/09/21 18:26	11/13/21 09:33	1
13C2 PFDoA	79		50 - 150				11/09/21 18:26	11/13/21 09:33	1
13C2 PFTeDA	83		50 <sub>-</sub> 150				11/09/21 18:26	11/13/21 09:33	1
13C3 PFBS	97		50 <sub>-</sub> 150				11/09/21 18:26	11/13/21 09:33	1
1802 PFHxS	82		50 <sub>-</sub> 150				11/09/21 18:26	11/13/21 09:33	1
13C4 PFOS	83		50 <sub>-</sub> 150					11/13/21 09:33	1
d3-NMeFOSAA	98		50 <sub>-</sub> 150					11/13/21 09:33	1
d5-NEtFOSAA	97		50 <sub>-</sub> 150					11/13/21 09:33	
13C3 HFPO-DA	80		50 <sub>-</sub> 150				11/09/21 18:26		. 1

General Chemistry								
Analyte	Result Qu	ualifier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	19.2	0.1	0.1	%			11/05/21 12:52	1
Percent Solids	80.8	0.1	0.1	%			11/05/21 12:52	1

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Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-MW15-06 Lab Sample ID: 320-81254-43

Date Collected: 10/29/21 15:30 **Matrix: Solid** Date Received: 11/03/21 14:01 **Percent Solids: 81.3** 

Method: EPA 537(Mod) - PFAS Analyte		o, Table b Qualifier	-15 RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.24	0.037	ug/Kg	— <u></u>	11/09/21 18:26	11/13/21 09:43	1
Perfluoroheptanoic acid (PFHpA)	ND		0.24		ug/Kg	₽	11/09/21 18:26	11/13/21 09:43	1
Perfluorooctanoic acid (PFOA)	ND		0.24		ug/Kg	₽	11/09/21 18:26	11/13/21 09:43	1
Perfluorononanoic acid (PFNA)	ND		0.24	0.026	ug/Kg	₽	11/09/21 18:26	11/13/21 09:43	1
Perfluorodecanoic acid (PFDA)	ND		0.24		ug/Kg	₽	11/09/21 18:26	11/13/21 09:43	1
Perfluoroundecanoic acid (PFUnA)	ND		0.24	0.050	ug/Kg	₽	11/09/21 18:26	11/13/21 09:43	1
Perfluorododecanoic acid (PFDoA)	ND		0.24	0.035	ug/Kg		11/09/21 18:26	11/13/21 09:43	1
Perfluorotridecanoic acid (PFTriA)	ND		0.24	0.025	ug/Kg	₩	11/09/21 18:26	11/13/21 09:43	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.24	0.044	ug/Kg	₩	11/09/21 18:26	11/13/21 09:43	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.24	0.045	ug/Kg		11/09/21 18:26	11/13/21 09:43	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.24	0.034	ug/Kg	₽	11/09/21 18:26	11/13/21 09:43	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.24	0.051	ug/Kg	≎	11/09/21 18:26	11/13/21 09:43	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.24	0.027	ug/Kg	₽	11/09/21 18:26	11/13/21 09:43	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.24	0.057	ug/Kg	₩	11/09/21 18:26	11/13/21 09:43	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.24	0.041	ug/Kg	₽	11/09/21 18:26	11/13/21 09:43	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.24	0.048	ug/Kg	₽	11/09/21 18:26	11/13/21 09:43	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.24	0.037	ug/Kg	☼	11/09/21 18:26	11/13/21 09:43	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.24	0.046	ug/Kg	₩	11/09/21 18:26	11/13/21 09:43	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	93		50 - 150				11/09/21 18:26	11/13/21 09:43	1
13C4 PFHpA	88		50 - 150				11/09/21 18:26	11/13/21 09:43	1
13C4 PFOA	86		50 - 150				11/09/21 18:26	11/13/21 09:43	1
13C5 PFNA	90		50 - 150				11/09/21 18:26	11/13/21 09:43	1
13C2 PFDA	94		50 - 150				11/09/21 18:26	11/13/21 09:43	1
13C2 PFUnA	87		50 - 150				11/09/21 18:26	11/13/21 09:43	1
13C2 PFDoA	87		50 - 150				11/09/21 18:26	11/13/21 09:43	1
13C2 PFTeDA	83		50 - 150				11/09/21 18:26	11/13/21 09:43	1
13C3 PFBS	96		50 - 150				11/09/21 18:26	11/13/21 09:43	1
1802 PFHxS	83		50 - 150				11/09/21 18:26	11/13/21 09:43	1
13C4 PFOS	89		50 - 150				11/09/21 18:26	11/13/21 09:43	1
d3-NMeFOSAA	100		50 - 150				11/09/21 18:26	11/13/21 09:43	1
d5-NEtFOSAA	99		50 - 150				11/09/21 18:26	11/13/21 09:43	1
13C3 HFPO-DA	83		50 - 150				11/09/21 18:26	11/13/21 09:43	1
General Chemistry		0			1114	_	<b>.</b>	A	D:: =
Analyte		Qualifier	RL _		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	18.7		0.1	0.1				11/05/21 12:52	1
Percent Solids	81.3		0.1	0.1	%			11/05/21 12:52	1

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-SB002-01

Lab Sample ID: 320-81254-44 Date Collected: 10/30/21 09:35 **Matrix: Solid** 

Date Received: 11/03/21 14:01 Percent Solids: 91.2

Analyte	Result Q	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.032	ug/Kg	<u></u>	11/09/21 18:26	11/13/21 09:54	
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.039	ug/Kg	₽	11/09/21 18:26	11/13/21 09:54	•
Perfluorooctanoic acid (PFOA)	ND		0.20	0.054	ug/Kg	₽	11/09/21 18:26	11/13/21 09:54	•
Perfluorononanoic acid (PFNA)	ND		0.20	0.022	ug/Kg	₽	11/09/21 18:26	11/13/21 09:54	
Perfluorodecanoic acid (PFDA)	ND		0.20	0.049	ug/Kg	₽	11/09/21 18:26	11/13/21 09:54	•
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.043	ug/Kg	₩	11/09/21 18:26	11/13/21 09:54	
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.031	ug/Kg	₽	11/09/21 18:26	11/13/21 09:54	
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.021	ug/Kg	₩	11/09/21 18:26	11/13/21 09:54	
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.038	ug/Kg	₩	11/09/21 18:26	11/13/21 09:54	
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.039	ug/Kg	₩	11/09/21 18:26	11/13/21 09:54	
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.030	ug/Kg	₩	11/09/21 18:26	11/13/21 09:54	
Perfluorooctanesulfonic acid (PFOS)	0.40		0.20	0.044	ug/Kg	₩	11/09/21 18:26	11/13/21 09:54	
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg	₩	11/09/21 18:26	11/13/21 09:54	
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.20		ug/Kg	₩	11/09/21 18:26	11/13/21 09:54	•
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.20		ug/Kg		11/09/21 18:26	11/13/21 09:54	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.20		ug/Kg	₩	11/09/21 18:26	11/13/21 09:54	
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.20		ug/Kg	₩		11/13/21 09:54	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.040	ug/Kg	₩	11/09/21 18:26	11/13/21 09:54	•
Isotope Dilution	%Recovery Q	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	89		50 - 150				11/09/21 18:26	11/13/21 09:54	
13C4 PFHpA	91		50 - 150				11/09/21 18:26	11/13/21 09:54	
13C4 PFOA	87		50 - 150				11/09/21 18:26	11/13/21 09:54	
13C5 PFNA	82		50 - 150				11/09/21 18:26	11/13/21 09:54	
13C2 PFDA	91		50 - 150				11/09/21 18:26	11/13/21 09:54	
13C2 PFUnA	93		50 - 150				11/09/21 18:26	11/13/21 09:54	
13C2 PFDoA	87		50 - 150				11/09/21 18:26	11/13/21 09:54	
13C2 PFTeDA	84		50 - 150				11/09/21 18:26	11/13/21 09:54	
13C3 PFBS	89		50 - 150				11/09/21 18:26	11/13/21 09:54	
1802 PFHxS	77		50 - 150				11/09/21 18:26	11/13/21 09:54	
13C4 PFOS	86		50 - 150				11/09/21 18:26	11/13/21 09:54	
d3-NMeFOSAA	96		50 - 150				11/09/21 18:26	11/13/21 09:54	
d5-NEtFOSAA	97		50 - 150				11/09/21 18:26	11/13/21 09:54	
13C3 HFPO-DA	84		50 - 150				11/09/21 18:26	11/13/21 09:54	
General Chemistry									
Analyte	Result Q	Qualifier	RL _		Unit	D	Prepared	Analyzed	Dil Fa
Percent Moisture	8.8		0.1	0.1	%			11/05/21 12:52	•

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	8.8		0.1	0.1	%			11/05/21 12:52	1
Percent Solids	91.2		0.1	0.1	%			11/05/21 12:52	1

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

**Percent Solids** 

Client Sample ID: 21GST-SB002-02 Lab Sample ID: 320-81254-45

Date Collected: 10/30/21 09:50 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 82.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.22	0.034	ug/Kg	— <u></u>	11/09/21 18:26	11/13/21 10:04	
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.042	ug/Kg	₩	11/09/21 18:26	11/13/21 10:04	
Perfluorooctanoic acid (PFOA)	ND		0.22	0.059	ug/Kg	₩	11/09/21 18:26	11/13/21 10:04	
Perfluorononanoic acid (PFNA)	ND		0.22	0.024	ug/Kg	≎	11/09/21 18:26	11/13/21 10:04	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.053	ug/Kg	₩	11/09/21 18:26	11/13/21 10:04	
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.047	ug/Kg	≎	11/09/21 18:26	11/13/21 10:04	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.033	ug/Kg		11/09/21 18:26	11/13/21 10:04	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.023	ug/Kg	₽	11/09/21 18:26	11/13/21 10:04	
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.041	ug/Kg	≎	11/09/21 18:26	11/13/21 10:04	
Perfluorobutanesulfonic acid (PFBS)	ND		0.22		ug/Kg	₩	11/09/21 18:26	11/13/21 10:04	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.22	0.032	ug/Kg	₽	11/09/21 18:26	11/13/21 10:04	
Perfluorooctanesulfonic acid	0.20	J	0.22		ug/Kg	☼	11/09/21 18:26	11/13/21 10:04	1
(PFOS)									
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.22		ug/Kg	₩	11/09/21 18:26	11/13/21 10:04	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.22	0.053	ug/Kg	₩	11/09/21 18:26	11/13/21 10:04	•
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.22	0.039	ug/Kg	₩	11/09/21 18:26	11/13/21 10:04	•
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22	0.046	ug/Kg	₽	11/09/21 18:26	11/13/21 10:04	,
I1-Chloroeicosafluoro-3-oxaundecan	ND		0.22	0.034	ug/Kg	₩	11/09/21 18:26	11/13/21 10:04	,
1,8-Dioxa-3H-perfluorononanoic acid ADONA)	ND		0.22	0.043	ug/Kg	₩	11/09/21 18:26	11/13/21 10:04	•
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	99		50 - 150					11/13/21 10:04	
13C4 PFHpA	97		50 <sub>-</sub> 150					11/13/21 10:04	
13C4 PFOA	92		50 <sub>-</sub> 150				11/09/21 18:26	11/13/21 10:04	
13C5 PFNA	95		50 - 150				11/09/21 18:26	11/13/21 10:04	
13C2 PFDA	93		50 <sub>-</sub> 150				11/09/21 18:26	11/13/21 10:04	
13C2 PFUnA	96		50 - 150				11/09/21 18:26	11/13/21 10:04	
13C2 PFDoA	90		50 - 150				11/09/21 18:26	11/13/21 10:04	
13C2 PFTeDA	93		50 <sub>-</sub> 150				11/09/21 18:26	11/13/21 10:04	
13C3 PFBS	101		50 <sub>-</sub> 150				11/09/21 18:26	11/13/21 10:04	
1802 PFHxS	95		50 - 150				11/09/21 18:26	11/13/21 10:04	
13C4 PFOS	97		50 - 150					11/13/21 10:04	
d3-NMeFOSAA	111		50 - 150					11/13/21 10:04	
d5-NEtFOSAA	107		50 - 150					11/13/21 10:04	
13C3 HFPO-DA	75		50 - 150					11/13/21 10:04	
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	17.7		0.1	0.1	%			11/05/21 12:52	1

Eurofins TestAmerica, Sacramento

0.1

0.1 %

82.3

11/05/21 12:52

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-SB002-03 Lab Sample ID: 320-81254-46

Date Collected: 10/30/21 10:00 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 84.7

Method: EPA 537(Mod) - PFAS			DI	MDI	l lmi4	_	Dramarad	A malumad	Dil Foo
Analyte	Result Q	uaimer	RL	MDL		— <u> </u>	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.23		ug/Kg			11/13/21 10:15	1
Perfluoroheptanoic acid (PFHpA)	ND		0.23		ug/Kg	₩.		11/13/21 10:15	1
Perfluorooctanoic acid (PFOA)	ND		0.23		ug/Kg			11/13/21 10:15	
Perfluorononanoic acid (PFNA)	ND		0.23		ug/Kg		11/09/21 18:26		1
Perfluorodecanoic acid (PFDA)	ND		0.23		ug/Kg			11/13/21 10:15	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23		ug/Kg		11/09/21 18:26		
Perfluorododecanoic acid (PFDoA)	ND		0.23		ug/Kg	₩.		11/13/21 10:15	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23		ug/Kg	₩		11/13/21 10:15	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23		ug/Kg			11/13/21 10:15	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23		ug/Kg	☼		11/13/21 10:15	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.23		ug/Kg	₩		11/13/21 10:15	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.23		ug/Kg		11/09/21 18:26	11/13/21 10:15	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.23		ug/Kg	₽	11/09/21 18:26	11/13/21 10:15	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.23		ug/Kg	≎	11/09/21 18:26	11/13/21 10:15	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.23	0.041	ug/Kg	₽	11/09/21 18:26	11/13/21 10:15	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23	0.048	ug/Kg	₽	11/09/21 18:26	11/13/21 10:15	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.23	0.036	ug/Kg	₽	11/09/21 18:26	11/13/21 10:15	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.045	ug/Kg	₽	11/09/21 18:26	11/13/21 10:15	1
Isotope Dilution	%Recovery Q	ualifier L	imits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	94		0 - 150				11/09/21 18:26	11/13/21 10:15	1
13C4 PFHpA	90	5	0 - 150				11/09/21 18:26	11/13/21 10:15	1
13C4 PFOA	89	5	0 - 150				11/09/21 18:26	11/13/21 10:15	1
13C5 PFNA	91	5	0 - 150				11/09/21 18:26	11/13/21 10:15	1
13C2 PFDA	92	5	0 - 150				11/09/21 18:26	11/13/21 10:15	1
13C2 PFUnA	96	5	0 - 150				11/09/21 18:26	11/13/21 10:15	1
13C2 PFDoA	91	5	0 - 150				11/09/21 18:26	11/13/21 10:15	1
13C2 PFTeDA	91	5	0 - 150				11/09/21 18:26	11/13/21 10:15	1
13C3 PFBS	94	5	0 - 150				11/09/21 18:26	11/13/21 10:15	1
1802 PFHxS	78	5	0 - 150				11/09/21 18:26	11/13/21 10:15	1
13C4 PFOS	93	5	0 - 150				11/09/21 18:26	11/13/21 10:15	1
d3-NMeFOSAA	101	5	0 - 150				11/09/21 18:26	11/13/21 10:15	1
d5-NEtFOSAA	106	5	0 - 150				11/09/21 18:26	11/13/21 10:15	1
13C3 HFPO-DA	84		0 - 150					11/13/21 10:15	1
General Chemistry									
Analyte	Result C	ualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Percent Moisture	15.3		0.1	0.1				11/05/21 12:52	1
Percent Solids	84.7		0.1	0.1	%			11/05/21 12:52	1

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

**Percent Solids** 

Client Sample ID: 21GST-SB002-04 Lab Sample ID: 320-81254-47

Date Collected: 10/30/21 10:10

Matrix: Solid

Date Received: 11/03/21 14:01

Matrix: Solid

Percent Solids: 76.8

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.24	0.038	ug/Kg	— <u></u>	11/09/21 18:26	11/13/21 10:25	1
Perfluoroheptanoic acid (PFHpA)	ND		0.24	0.046	ug/Kg	₩	11/09/21 18:26	11/13/21 10:25	1
Perfluorooctanoic acid (PFOA)	ND		0.24	0.065	ug/Kg	₩	11/09/21 18:26	11/13/21 10:25	1
Perfluorononanoic acid (PFNA)	ND		0.24	0.027	ug/Kg	₽	11/09/21 18:26	11/13/21 10:25	1
Perfluorodecanoic acid (PFDA)	ND		0.24	0.059	ug/Kg	₽	11/09/21 18:26	11/13/21 10:25	1
Perfluoroundecanoic acid (PFUnA)	ND		0.24	0.051	ug/Kg	₩	11/09/21 18:26	11/13/21 10:25	1
Perfluorododecanoic acid (PFDoA)	ND		0.24	0.037	ug/Kg	₽	11/09/21 18:26	11/13/21 10:25	1
Perfluorotridecanoic acid (PFTriA)	ND		0.24	0.026	ug/Kg	₽	11/09/21 18:26	11/13/21 10:25	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.24	0.045	ug/Kg	₩	11/09/21 18:26	11/13/21 10:25	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.24	0.046	ug/Kg	₩	11/09/21 18:26	11/13/21 10:25	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.24	0.035	ug/Kg	₩	11/09/21 18:26	11/13/21 10:25	1
Perfluorooctanesulfonic acid (PFOS)	0.079	J	0.24	0.052	ug/Kg	₽	11/09/21 18:26	11/13/21 10:25	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.24	0.028	ug/Kg	₩	11/09/21 18:26	11/13/21 10:25	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.24	0.059	ug/Kg	₩	11/09/21 18:26	11/13/21 10:25	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.24	0.043	ug/Kg	₩	11/09/21 18:26	11/13/21 10:25	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.24	0.050	ug/Kg	₩	11/09/21 18:26	11/13/21 10:25	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.24		ug/Kg	₽	11/09/21 18:26	11/13/21 10:25	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.24	0.048	ug/Kg	₽	11/09/21 18:26	11/13/21 10:25	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	101		50 - 150				11/09/21 18:26	11/13/21 10:25	1
13C4 PFHpA	94		50 - 150				11/09/21 18:26	11/13/21 10:25	1
13C4 PFOA	88		50 - 150				11/09/21 18:26	11/13/21 10:25	1
13C5 PFNA	87		50 - 150				11/09/21 18:26	11/13/21 10:25	1
13C2 PFDA	89		50 - 150				11/09/21 18:26	11/13/21 10:25	1
13C2 PFUnA	95		50 - 150				11/09/21 18:26	11/13/21 10:25	1
13C2 PFDoA	87		50 - 150				11/09/21 18:26	11/13/21 10:25	1
13C2 PFTeDA	86		50 - 150				11/09/21 18:26	11/13/21 10:25	1
13C3 PFBS	104		50 - 150				11/09/21 18:26	11/13/21 10:25	1
18O2 PFHxS	91		50 - 150				11/09/21 18:26	11/13/21 10:25	1
13C4 PFOS	94		50 - 150				11/09/21 18:26	11/13/21 10:25	1
d3-NMeFOSAA	101		50 - 150				11/09/21 18:26	11/13/21 10:25	1
d5-NEtFOSAA	102		50 - 150				11/09/21 18:26	11/13/21 10:25	1
13C3 HFPO-DA	92		50 - 150				11/09/21 18:26	11/13/21 10:25	1
General Chemistry						_			<b></b> -
Analyte		Qualifier	RL _		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	23.2		0.1	0.1	%			11/05/21 12:52	1

Eurofins TestAmerica, Sacramento

11/17/2021

11/05/21 12:52

0.1

76.8

0.1 %

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

13C2 PFTeDA

13C3 PFBS

1802 PFHxS

13C4 PFOS

d3-NMeFOSAA

d5-NEtFOSAA

13C3 HFPO-DA

Client Sample ID: 21GST-SB001-01 Lab Sample ID: 320-81254-48

Date Collected: 10/30/21 10:30 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 94.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.031	ug/Kg	<u></u>	11/09/21 18:26	11/13/21 10:35	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.038	ug/Kg	₩	11/09/21 18:26	11/13/21 10:35	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.053	ug/Kg	₩	11/09/21 18:26	11/13/21 10:35	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.022	ug/Kg	₩	11/09/21 18:26	11/13/21 10:35	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.048	ug/Kg	₩	11/09/21 18:26	11/13/21 10:35	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.042	ug/Kg	≎	11/09/21 18:26	11/13/21 10:35	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.030	ug/Kg	₩	11/09/21 18:26	11/13/21 10:35	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.021	ug/Kg	≎	11/09/21 18:26	11/13/21 10:35	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.037	ug/Kg	₩	11/09/21 18:26	11/13/21 10:35	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.038	ug/Kg	₩	11/09/21 18:26	11/13/21 10:35	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.029	ug/Kg	₩	11/09/21 18:26	11/13/21 10:35	1
Perfluorooctanesulfonic acid (PFOS)	0.21		0.20	0.043	ug/Kg	₽	11/09/21 18:26	11/13/21 10:35	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg	₽	11/09/21 18:26	11/13/21 10:35	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.20	0.048	ug/Kg	₩	11/09/21 18:26	11/13/21 10:35	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.20	0.035	ug/Kg	₩	11/09/21 18:26	11/13/21 10:35	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.20	0.041	ug/Kg	₩	11/09/21 18:26	11/13/21 10:35	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.20	0.031	ug/Kg	₩	11/09/21 18:26	11/13/21 10:35	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.039	ug/Kg	₩	11/09/21 18:26	11/13/21 10:35	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	97		50 - 150				11/09/21 18:26	11/13/21 10:35	1
13C4 PFHpA	90		50 - 150				11/09/21 18:26	11/13/21 10:35	1
13C4 PFOA	87		50 - 150				11/09/21 18:26	11/13/21 10:35	1
13C5 PFNA	85		50 - 150				11/09/21 18:26	11/13/21 10:35	1
13C2 PFDA	87		50 <sub>-</sub> 150				11/09/21 18:26	11/13/21 10:35	1
13C2 PFUnA	90		50 - 150				11/09/21 18:26	11/13/21 10:35	1
13C2 PFDoA	82		50 - 150				11/00/01 10:06	11/13/21 10:35	1

General Chemistry Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	5.7	0.1	0.1	%			11/05/21 12:52	1
Percent Solids	94.3	0.1	0.1	%			11/05/21 12:52	1

50 - 150

50 - 150

50 - 150

50 - 150

50 - 150

50 - 150

50 - 150

81

93

81

84

92

100

77

11/09/21 18:26 11/13/21 10:35

11/09/21 18:26 11/13/21 10:35

11/09/21 18:26 11/13/21 10:35

11/09/21 18:26 11/13/21 10:35

11/09/21 18:26 11/13/21 10:35

11/09/21 18:26 11/13/21 10:35

11/09/21 18:26 11/13/21 10:35

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

**Percent Solids** 

Client Sample ID: 21GST-SB001-02 Lab Sample ID: 320-81254-49

Date Collected: 10/30/21 10:40 **Matrix: Solid** Date Received: 11/03/21 14:01

Percent Solids: 85.8

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.22	0.034	ug/Kg	<u></u>	11/09/21 18:26	11/13/21 11:07	1
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.042	ug/Kg	₩	11/09/21 18:26	11/13/21 11:07	1
Perfluorooctanoic acid (PFOA)	ND		0.22	0.059	ug/Kg	₩	11/09/21 18:26	11/13/21 11:07	1
Perfluorononanoic acid (PFNA)	ND		0.22	0.024	ug/Kg	≎	11/09/21 18:26	11/13/21 11:07	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.053	ug/Kg	≎	11/09/21 18:26	11/13/21 11:07	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.047	ug/Kg	≎	11/09/21 18:26	11/13/21 11:07	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.033	ug/Kg	₩	11/09/21 18:26	11/13/21 11:07	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.023	ug/Kg	₩	11/09/21 18:26	11/13/21 11:07	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.041	ug/Kg	≎	11/09/21 18:26	11/13/21 11:07	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.042	ug/Kg	≎	11/09/21 18:26	11/13/21 11:07	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.22	0.032	ug/Kg	₽	11/09/21 18:26	11/13/21 11:07	1
Perfluorooctanesulfonic acid (PFOS)	0.075	J	0.22	0.048	ug/Kg	₩	11/09/21 18:26	11/13/21 11:07	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.22	0.026	ug/Kg		11/09/21 18:26	11/13/21 11:07	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.22	0.053	ug/Kg	₩	11/09/21 18:26	11/13/21 11:07	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.22	0.039	ug/Kg	₩	11/09/21 18:26	11/13/21 11:07	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22	0.045	ug/Kg	₩	11/09/21 18:26	11/13/21 11:07	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.22	0.034	ug/Kg	☼	11/09/21 18:26	11/13/21 11:07	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.043	ug/Kg	₩	11/09/21 18:26	11/13/21 11:07	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	91		50 - 150				11/09/21 18:26	11/13/21 11:07	1
13C4 PFHpA	89		50 - 150				11/09/21 18:26	11/13/21 11:07	1
13C4 PFOA	85		50 - 150				11/09/21 18:26	11/13/21 11:07	1
13C5 PFNA	86		50 - 150				11/09/21 18:26	11/13/21 11:07	1
13C2 PFDA	84		50 - 150				11/09/21 18:26	11/13/21 11:07	1
13C2 PFUnA	84		50 - 150				11/09/21 18:26	11/13/21 11:07	1
13C2 PFDoA	78		50 - 150				11/09/21 18:26	11/13/21 11:07	1
13C2 PFTeDA	64		50 - 150				11/09/21 18:26	11/13/21 11:07	1
13C3 PFBS	94		50 - 150				11/09/21 18:26	11/13/21 11:07	1
1802 PFHxS	80		50 - 150				11/09/21 18:26	11/13/21 11:07	1
13C4 PFOS	84		50 - 150				11/09/21 18:26	11/13/21 11:07	1
d3-NMeFOSAA	92		50 - 150				11/09/21 18:26	11/13/21 11:07	1
d5-NEtFOSAA	97		50 - 150				11/09/21 18:26	11/13/21 11:07	1
13C3 HFPO-DA	77		50 - 150				11/09/21 18:26	11/13/21 11:07	1
General Chemistry									
Analyte		Qualifier	RL _		Unit	<u>D</u>	Prepared	Analyzed	Dil Fac
Percent Moisture	14.2		0.1	0.1	%			11/05/21 12:52	1

0.1

85.8

0.1 %

11/05/21 12:52

Client: Shannon & Wilson, Inc Job ID: 320-81254-1 Project/Site: SC Soils#3

Client Sample ID: 21GST-SB001-03

Lab Sample ID: 320-81254-50 Date Collected: 10/30/21 10:50 **Matrix: Solid** 

Date Received: 11/03/21 14:01 Percent Solids: 82.8

Analyte	Result Qualifie	r RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND	0.23	0.036	ug/Kg	<u></u>	11/09/21 18:26	11/13/21 11:17	•
Perfluoroheptanoic acid (PFHpA)	ND	0.23	0.044	ug/Kg	≎	11/09/21 18:26	11/13/21 11:17	1
Perfluorooctanoic acid (PFOA)	ND	0.23	0.061	ug/Kg	≎	11/09/21 18:26	11/13/21 11:17	1
Perfluorononanoic acid (PFNA)	ND	0.23	0.025	ug/Kg	₽	11/09/21 18:26	11/13/21 11:17	1
Perfluorodecanoic acid (PFDA)	ND	0.23	0.055	ug/Kg	₽	11/09/21 18:26	11/13/21 11:17	1
Perfluoroundecanoic acid (PFUnA)	ND	0.23	0.048	ug/Kg	₩	11/09/21 18:26	11/13/21 11:17	1
Perfluorododecanoic acid (PFDoA)	ND	0.23	0.035	ug/Kg	₩	11/09/21 18:26	11/13/21 11:17	1
Perfluorotridecanoic acid (PFTriA)	ND	0.23	0.024	ug/Kg	₩	11/09/21 18:26	11/13/21 11:17	1
Perfluorotetradecanoic acid (PFTeA)	ND	0.23	0.043	ug/Kg	₩	11/09/21 18:26	11/13/21 11:17	1
Perfluorobutanesulfonic acid (PFBS)	ND	0.23	0.044	ug/Kg	₽	11/09/21 18:26	11/13/21 11:17	1
Perfluorohexanesulfonic acid (PFHxS)	ND	0.23	0.033	ug/Kg	₩	11/09/21 18:26	11/13/21 11:17	1
Perfluorooctanesulfonic acid (PFOS)	0.31	0.23	0.050	ug/Kg	₩	11/09/21 18:26	11/13/21 11:17	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND	0.23	0.027	ug/Kg	₽	11/09/21 18:26	11/13/21 11:17	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND	0.23		ug/Kg	₩	11/09/21 18:26	11/13/21 11:17	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND	0.23	0.040	ug/Kg				
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	0.23		ug/Kg	☼	11/09/21 18:26		1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND	0.23		ug/Kg	≎	11/09/21 18:26		1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.23	0.045	ug/Kg	₩	11/09/21 18:26	11/13/21 11:17	1
Isotope Dilution	%Recovery Qualifie	r Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	87	50 - 150				11/09/21 18:26	11/13/21 11:17	1
13C4 PFHpA	90	50 - 150				11/09/21 18:26	11/13/21 11:17	1
13C4 PFOA	83	50 - 150				11/09/21 18:26	11/13/21 11:17	1
13C5 PFNA	82	50 - 150				11/09/21 18:26	11/13/21 11:17	1
13C2 PFDA	86	50 - 150				11/09/21 18:26	11/13/21 11:17	1
13C2 PFUnA	84	50 - 150				11/09/21 18:26	11/13/21 11:17	1
13C2 PFDoA	78	50 - 150				11/09/21 18:26	11/13/21 11:17	1
13C2 PFTeDA	71	50 - 150				11/09/21 18:26	11/13/21 11:17	1
13C3 PFBS	94	50 - 150				11/09/21 18:26	11/13/21 11:17	1
1802 PFHxS	77	50 - 150				11/09/21 18:26	11/13/21 11:17	1
13C4 PFOS	86	50 - 150				11/09/21 18:26	11/13/21 11:17	1
d3-NMeFOSAA	88	50 - 150				11/09/21 18:26	11/13/21 11:17	1
d5-NEtFOSAA	92	50 - 150				11/09/21 18:26	11/13/21 11:17	1
13C3 HFPO-DA	77	50 - 150				11/09/21 18:26	11/13/21 11:17	1
General Chemistry	D	<b>5</b> .	,	1114	_	<b>D</b>	A	D.: -
Analyte	Result Qualifie			Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	17.2	0.1	0.1	%			11/05/21 12:52	1

Eurofins TestAmerica, Sacramento

11/05/21 12:52

0.1

0.1 %

82.8

**Percent Solids** 

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

**Percent Solids** 

Client Sample ID: 21GST-SB001-04 Lab Sample ID: 320-81254-51

Date Collected: 10/30/21 11:00 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 82.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.23	0.035	ug/Kg		11/09/21 18:26	11/13/21 11:28	
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.043	ug/Kg	₩	11/09/21 18:26	11/13/21 11:28	1
Perfluorooctanoic acid (PFOA)	ND		0.23	0.060	ug/Kg	₩	11/09/21 18:26	11/13/21 11:28	1
Perfluorononanoic acid (PFNA)	ND		0.23	0.025	ug/Kg	₩	11/09/21 18:26	11/13/21 11:28	1
Perfluorodecanoic acid (PFDA)	ND		0.23	0.054	ug/Kg	₩	11/09/21 18:26	11/13/21 11:28	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.048	ug/Kg	₩	11/09/21 18:26	11/13/21 11:28	1
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.034	ug/Kg	₩	11/09/21 18:26	11/13/21 11:28	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.024	ug/Kg	₩	11/09/21 18:26	11/13/21 11:28	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.042	ug/Kg	₩	11/09/21 18:26	11/13/21 11:28	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.043	ug/Kg		11/09/21 18:26	11/13/21 11:28	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.23	0.033	ug/Kg	₩	11/09/21 18:26	11/13/21 11:28	1
Perfluorooctanesulfonic acid (PFOS)	0.15	J	0.23	0.049	ug/Kg	₩	11/09/21 18:26	11/13/21 11:28	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.23	0.026	ug/Kg	☼	11/09/21 18:26	11/13/21 11:28	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.23	0.054	ug/Kg	₩	11/09/21 18:26	11/13/21 11:28	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.23	0.040	ug/Kg	₩	11/09/21 18:26	11/13/21 11:28	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23	0.046	ug/Kg	₩	11/09/21 18:26	11/13/21 11:28	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.23	0.035	ug/Kg	₩	11/09/21 18:26	11/13/21 11:28	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.044	ug/Kg	₩	11/09/21 18:26	11/13/21 11:28	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	104		50 - 150				11/09/21 18:26	11/13/21 11:28	
13C4 PFHpA	101		50 - 150				11/09/21 18:26	11/13/21 11:28	1
13C4 PFOA	94		50 - 150				11/09/21 18:26	11/13/21 11:28	1
13C5 PFNA	93		50 - 150				11/09/21 18:26	11/13/21 11:28	1
13C2 PFDA	95		50 - 150				11/09/21 18:26	11/13/21 11:28	1
13C2 PFUnA	91		50 - 150				11/09/21 18:26	11/13/21 11:28	1
13C2 PFDoA	89		50 - 150				11/09/21 18:26	11/13/21 11:28	1
13C2 PFTeDA	80		50 - 150				11/09/21 18:26	11/13/21 11:28	1
13C3 PFBS	101		50 - 150				11/09/21 18:26	11/13/21 11:28	1
1802 PFHxS	91		50 - 150				11/09/21 18:26	11/13/21 11:28	1
13C4 PFOS	94		50 - 150				11/09/21 18:26	11/13/21 11:28	7
d3-NMeFOSAA	102		50 - 150				11/09/21 18:26	11/13/21 11:28	1
d5-NEtFOSAA	107		50 - 150				11/09/21 18:26	11/13/21 11:28	1
13C3 HFPO-DA	91		50 - 150				11/09/21 18:26	11/13/21 11:28	1
General Chemistry	_					_			
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	17.7		0.1	0.1	%			11/05/21 12:52	

Eurofins TestAmerica, Sacramento

0.1

82.3

0.1 %

11/05/21 12:52

Client: Shannon & Wilson, Inc Job ID: 320-81254-1 Project/Site: SC Soils#3

Client Sample ID: 21GST-SB009-01

**Percent Solids** 

Lab Sample ID: 320-81254-52 Date Collected: 10/30/21 11:35 **Matrix: Solid** 

Date Received: 11/03/21 14:01 **Percent Solids: 94.1** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.032	ug/Kg	— <u></u>	11/09/21 18:26	11/13/21 11:38	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.039	ug/Kg	☼	11/09/21 18:26	11/13/21 11:38	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.054	ug/Kg	₩	11/09/21 18:26	11/13/21 11:38	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.022	ug/Kg	₩	11/09/21 18:26	11/13/21 11:38	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.049	ug/Kg	≎	11/09/21 18:26	11/13/21 11:38	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.043	ug/Kg	₽	11/09/21 18:26	11/13/21 11:38	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.031	ug/Kg	₽	11/09/21 18:26	11/13/21 11:38	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.021	ug/Kg	≎	11/09/21 18:26	11/13/21 11:38	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.038	ug/Kg	₩	11/09/21 18:26	11/13/21 11:38	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.039	ug/Kg	₽	11/09/21 18:26	11/13/21 11:38	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.030	ug/Kg	₩	11/09/21 18:26	11/13/21 11:38	1
Perfluorooctanesulfonic acid (PFOS)	0.17	J	0.20	0.044	ug/Kg	₩	11/09/21 18:26	11/13/21 11:38	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg	₩	11/09/21 18:26	11/13/21 11:38	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.20	0.049	ug/Kg	₩	11/09/21 18:26	11/13/21 11:38	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.20		ug/Kg	₩	11/09/21 18:26	11/13/21 11:38	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.20		ug/Kg	₩	11/09/21 18:26	11/13/21 11:38	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.20		ug/Kg	₩	11/09/21 18:26	11/13/21 11:38	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.040	ug/Kg	₩	11/09/21 18:26	11/13/21 11:38	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	96		50 - 150				11/09/21 18:26	11/13/21 11:38	1
13C4 PFHpA	93		50 - 150				11/09/21 18:26	11/13/21 11:38	1
13C4 PFOA	85		50 - 150				11/09/21 18:26	11/13/21 11:38	1
13C5 PFNA	88		50 - 150				11/09/21 18:26	11/13/21 11:38	1
13C2 PFDA	94		50 - 150				11/09/21 18:26	11/13/21 11:38	1
13C2 PFUnA	96		50 - 150				11/09/21 18:26	11/13/21 11:38	1
13C2 PFDoA	88		50 - 150				11/09/21 18:26	11/13/21 11:38	1
13C2 PFTeDA	85		50 - 150				11/09/21 18:26	11/13/21 11:38	1
13C3 PFBS	100		50 <sub>-</sub> 150				11/09/21 18:26	11/13/21 11:38	1
1802 PFHxS	79		50 - 150				11/09/21 18:26	11/13/21 11:38	1
13C4 PFOS	89		50 - 150				11/09/21 18:26	11/13/21 11:38	1
d3-NMeFOSAA	101		50 - 150				11/09/21 18:26	11/13/21 11:38	1
d5-NEtFOSAA	107		50 - 150					11/13/21 11:38	1
13C3 HFPO-DA	87		50 - 150				11/09/21 18:26	11/13/21 11:38	1
General Chemistry									
Analyte		Qualifier	RL _	MDL		D	Prepared	Analyzed	Dil Fac
Percent Moisture	5.9		0.1	0.1	%			11/05/21 12:52	1

Eurofins TestAmerica, Sacramento

11/05/21 12:52

0.1

94.1

0.1 %

11/17/2021

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

**Percent Solids** 

Client Sample ID: 21GST-SB009-10 Lab Sample ID: 320-81254-53

Date Collected: 10/30/21 11:25 **Matrix: Solid** 

Date Received: 11/03/21 14:01 Percent Solids: 93.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.031	ug/Kg	<u></u>	11/09/21 18:26	11/13/21 11:48	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.038	ug/Kg	₽	11/09/21 18:26	11/13/21 11:48	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.054	ug/Kg	₽	11/09/21 18:26	11/13/21 11:48	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.022	ug/Kg	₽	11/09/21 18:26	11/13/21 11:48	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.049	ug/Kg	₩	11/09/21 18:26	11/13/21 11:48	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.042	ug/Kg	₩	11/09/21 18:26	11/13/21 11:48	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.030	ug/Kg	₽	11/09/21 18:26	11/13/21 11:48	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.021	ug/Kg	₩	11/09/21 18:26	11/13/21 11:48	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.037	ug/Kg	₩	11/09/21 18:26	11/13/21 11:48	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.038	ug/Kg	≎	11/09/21 18:26	11/13/21 11:48	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.029	ug/Kg	≎	11/09/21 18:26	11/13/21 11:48	1
Perfluorooctanesulfonic acid (PFOS)	0.068	J	0.20	0.043	ug/Kg	₩	11/09/21 18:26	11/13/21 11:48	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg	₩	11/09/21 18:26	11/13/21 11:48	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.20	0.049	ug/Kg	₩	11/09/21 18:26	11/13/21 11:48	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.20	0.035	ug/Kg	₩	11/09/21 18:26	11/13/21 11:48	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.20		ug/Kg	₩	11/09/21 18:26	11/13/21 11:48	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.20		ug/Kg	\$	11/09/21 18:26	11/13/21 11:48	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.039	ug/Kg	☼	11/09/21 18:26	11/13/21 11:48	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	90		50 - 150				11/09/21 18:26	11/13/21 11:48	1
13C4 PFHpA	87		50 - 150				11/09/21 18:26	11/13/21 11:48	1
13C4 PFOA	86		50 - 150				11/09/21 18:26	11/13/21 11:48	1
13C5 PFNA	83		50 - 150				11/09/21 18:26	11/13/21 11:48	1
13C2 PFDA	88		50 - 150				11/09/21 18:26	11/13/21 11:48	1
13C2 PFUnA	92		50 - 150				11/09/21 18:26	11/13/21 11:48	1
13C2 PFDoA	87		50 - 150				11/09/21 18:26	11/13/21 11:48	1
13C2 PFTeDA	78		50 - 150				11/09/21 18:26	11/13/21 11:48	1
13C3 PFBS	90		50 - 150				11/09/21 18:26	11/13/21 11:48	1
1802 PFHxS	77		50 - 150				11/09/21 18:26	11/13/21 11:48	1
13C4 PFOS	84		50 - 150				11/09/21 18:26	11/13/21 11:48	1
d3-NMeFOSAA	96		50 - 150				11/09/21 18:26	11/13/21 11:48	1
d5-NEtFOSAA	100		50 - 150				11/09/21 18:26	11/13/21 11:48	1
13C3 HFPO-DA	80		50 - 150				11/09/21 18:26	11/13/21 11:48	1
General Chemistry									
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	6.5		0.1	0.1	%			11/05/21 12:52	1

Eurofins TestAmerica, Sacramento

11/17/2021

11/05/21 12:52

0.1

93.5

0.1 %

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-SB009-02 Lab Sample ID: 320-81254-54

Date Collected: 10/30/21 11:50 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 92.5

Method: EPA 537(Mod) - PFAS				MDI	11:4	_	Dunnanad	Amalomad	Dil Faa
Analyte	Result	Qualifier	RL	MDL		— <u> </u>	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.21		ug/Kg		11/09/21 18:26	11/13/21 11:59	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21		ug/Kg		11/09/21 18:26	11/13/21 11:59	1
Perfluorooctanoic acid (PFOA)	ND		0.21		ug/Kg	<del></del>	11/09/21 18:26	11/13/21 11:59	1
Perfluorononanoic acid (PFNA)	ND		0.21		ug/Kg			11/13/21 11:59	1
Perfluorodecanoic acid (PFDA)	ND		0.21		ug/Kg	₩.		11/13/21 11:59	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21		ug/Kg	<del>.</del> .	11/09/21 18:26		1
Perfluorododecanoic acid (PFDoA)	ND		0.21		ug/Kg	₩		11/13/21 11:59	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21		ug/Kg	₩		11/13/21 11:59	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21		ug/Kg		11/09/21 18:26		1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21		ug/Kg	₩	11/09/21 18:26	11/13/21 11:59	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21		ug/Kg	≎	11/09/21 18:26	11/13/21 11:59	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.21		ug/Kg		11/09/21 18:26	11/13/21 11:59	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	₩	11/09/21 18:26	11/13/21 11:59	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.21	0.050	ug/Kg	₩	11/09/21 18:26	11/13/21 11:59	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.21	0.036	ug/Kg	≎	11/09/21 18:26	11/13/21 11:59	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.043	ug/Kg	₽	11/09/21 18:26	11/13/21 11:59	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.21	0.032	ug/Kg	₽	11/09/21 18:26	11/13/21 11:59	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.040	ug/Kg	₽	11/09/21 18:26	11/13/21 11:59	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	95		50 - 150				11/09/21 18:26	11/13/21 11:59	1
13C4 PFHpA	88		50 - 150				11/09/21 18:26	11/13/21 11:59	1
13C4 PFOA	87		50 - 150				11/09/21 18:26	11/13/21 11:59	1
13C5 PFNA	96		50 - 150				11/09/21 18:26	11/13/21 11:59	1
13C2 PFDA	89		50 - 150				11/09/21 18:26	11/13/21 11:59	1
13C2 PFUnA	88		50 - 150				11/09/21 18:26	11/13/21 11:59	1
13C2 PFDoA	83		50 - 150				11/09/21 18:26	11/13/21 11:59	1
13C2 PFTeDA	75		50 <sub>-</sub> 150				11/09/21 18:26	11/13/21 11:59	1
13C3 PFBS	98		50 - 150				11/09/21 18:26	11/13/21 11:59	1
1802 PFHxS	80		50 <sub>-</sub> 150				11/09/21 18:26	11/13/21 11:59	1
13C4 PFOS	90		50 - 150				11/09/21 18:26	11/13/21 11:59	1
d3-NMeFOSAA	95		50 - 150				11/09/21 18:26	11/13/21 11:59	1
d5-NEtFOSAA	98		50 <sub>-</sub> 150				11/09/21 18:26	11/13/21 11:59	1
13C3 HFPO-DA	84		50 - 150					11/13/21 11:59	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Percent Moisture	7.5		0.1	0.1				11/05/21 12:52	1
Percent Solids	92.5		0.1	0.1	%			11/05/21 12:52	1

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-SB009-03 Lab Sample ID: 320-81254-55

Date Collected: 10/30/21 12:00 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 83.4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.23	0.036	ug/Kg	<u></u>	11/09/21 18:26	11/13/21 12:09	1
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.044	ug/Kg	₩	11/09/21 18:26	11/13/21 12:09	1
Perfluorooctanoic acid (PFOA)	ND		0.23	0.061	ug/Kg	₩	11/09/21 18:26	11/13/21 12:09	1
Perfluorononanoic acid (PFNA)	ND		0.23	0.025	ug/Kg	₽	11/09/21 18:26	11/13/21 12:09	1
Perfluorodecanoic acid (PFDA)	ND		0.23	0.055	ug/Kg	₩	11/09/21 18:26	11/13/21 12:09	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.049	ug/Kg	₩	11/09/21 18:26	11/13/21 12:09	1
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.035	ug/Kg	₽	11/09/21 18:26	11/13/21 12:09	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.024	ug/Kg	₩	11/09/21 18:26	11/13/21 12:09	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.043	ug/Kg	₩	11/09/21 18:26	11/13/21 12:09	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.044	ug/Kg	₽	11/09/21 18:26	11/13/21 12:09	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.23	0.034	ug/Kg	₩	11/09/21 18:26	11/13/21 12:09	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.23	0.050	ug/Kg	₩	11/09/21 18:26	11/13/21 12:09	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.23	0.027	ug/Kg	₽	11/09/21 18:26	11/13/21 12:09	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.23	0.055	ug/Kg	₩	11/09/21 18:26	11/13/21 12:09	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.23	0.040	ug/Kg	₩	11/09/21 18:26	11/13/21 12:09	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23	0.047	ug/Kg	₽	11/09/21 18:26	11/13/21 12:09	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.23	0.036	ug/Kg	₩	11/09/21 18:26	11/13/21 12:09	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.045	ug/Kg	₩	11/09/21 18:26	11/13/21 12:09	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	95		50 - 150				11/09/21 18:26	11/13/21 12:09	1
13C4 PFHpA	99		50 - 150				11/09/21 18:26	11/13/21 12:09	1
13C4 PFOA	85		50 - 150				11/09/21 18:26	11/13/21 12:09	1
13C5 PFNA	91		50 - 150				11/09/21 18:26	11/13/21 12:09	1
13C2 PFDA	95		50 - 150				11/09/21 18:26	11/13/21 12:09	1
13C2 PFUnA	93		50 - 150				11/09/21 18:26	11/13/21 12:09	1
13C2 PFDoA	87		50 - 150				11/09/21 18:26	11/13/21 12:09	1
13C2 PFTeDA	86		50 - 150				11/09/21 18:26	11/13/21 12:09	1
13C3 PFBS	96		50 - 150				11/09/21 18:26	11/13/21 12:09	1
18O2 PFHxS	79		50 - 150				11/09/21 18:26	11/13/21 12:09	1
13C4 PFOS	90		50 - 150				11/09/21 18:26	11/13/21 12:09	1
d3-NMeFOSAA	98		50 - 150				11/09/21 18:26	11/13/21 12:09	1
d5-NEtFOSAA	98		50 - 150				11/09/21 18:26	11/13/21 12:09	1
13C3 HFPO-DA	81		50 - 150				11/09/21 18:26	11/13/21 12:09	1
General Chemistry						_			B.: -
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	16.6		0.1	0.1				11/05/21 12:52	1
Percent Solids	83.4		0.1	0.1	%			11/05/21 12:52	1

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Percent Solids

Client Sample ID: 21GST-SB009-04 Lab Sample ID: 320-81254-56

Date Collected: 10/30/21 12:05 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 79.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.23	0.036	ug/Kg	<u></u>	11/09/21 18:26	11/13/21 12:20	1
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.044	ug/Kg	☼	11/09/21 18:26	11/13/21 12:20	1
Perfluorooctanoic acid (PFOA)	ND		0.23	0.062	ug/Kg	₩	11/09/21 18:26	11/13/21 12:20	1
Perfluorononanoic acid (PFNA)	ND		0.23	0.026	ug/Kg	₩	11/09/21 18:26	11/13/21 12:20	1
Perfluorodecanoic acid (PFDA)	ND		0.23	0.056	ug/Kg	☼	11/09/21 18:26	11/13/21 12:20	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.049	ug/Kg	≎	11/09/21 18:26	11/13/21 12:20	1
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.035	ug/Kg	₩	11/09/21 18:26	11/13/21 12:20	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.025	ug/Kg	≎	11/09/21 18:26	11/13/21 12:20	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.043	ug/Kg	₽	11/09/21 18:26	11/13/21 12:20	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.044	ug/Kg	₽	11/09/21 18:26	11/13/21 12:20	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.23	0.034	ug/Kg	₩	11/09/21 18:26	11/13/21 12:20	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.23	0.050	ug/Kg	₩	11/09/21 18:26	11/13/21 12:20	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.23	0.027	ug/Kg	₿	11/09/21 18:26	11/13/21 12:20	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.23	0.056	ug/Kg	₩	11/09/21 18:26	11/13/21 12:20	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.23	0.041	ug/Kg	₩	11/09/21 18:26	11/13/21 12:20	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23	0.048	ug/Kg	₩	11/09/21 18:26	11/13/21 12:20	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.23	0.036	ug/Kg	₩	11/09/21 18:26	11/13/21 12:20	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.046	ug/Kg	₩	11/09/21 18:26	11/13/21 12:20	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	98		50 - 150				11/09/21 18:26	11/13/21 12:20	1
13C4 PFHpA	88		50 - 150				11/09/21 18:26	11/13/21 12:20	1
13C4 PFOA	85		50 - 150				11/09/21 18:26	11/13/21 12:20	1
13C5 PFNA	87		50 - 150				11/09/21 18:26	11/13/21 12:20	1
13C2 PFDA	91		50 - 150				11/09/21 18:26	11/13/21 12:20	1
13C2 PFUnA	89		50 - 150				11/09/21 18:26	11/13/21 12:20	1
13C2 PFDoA	78		50 - 150				11/09/21 18:26	11/13/21 12:20	1
13C2 PFTeDA	77		50 <sub>-</sub> 150				11/09/21 18:26	11/13/21 12:20	1
13C3 PFBS	104		50 <sub>-</sub> 150				11/09/21 18:26	11/13/21 12:20	1
1802 PFHxS	79		50 - 150				11/09/21 18:26	11/13/21 12:20	1
13C4 PFOS	89		50 <sub>-</sub> 150				11/09/21 18:26	11/13/21 12:20	1
d3-NMeFOSAA	91		50 <sub>-</sub> 150				11/09/21 18:26	11/13/21 12:20	1
d5-NEtFOSAA	103		50 - 150				11/09/21 18:26	11/13/21 12:20	1
13C3 HFPO-DA	79		50 - 150					11/13/21 12:20	1
General Chemistry									
Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	20.5		0.1	0.1				11/05/21 12:52	1
			0.4	0.4	0/			44/05/04 40 50	

11/05/21 12:52

0.1

0.1 %

**79.5** 

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-SB010-01 Lab Sample ID: 320-81254-57

Date Collected: 10/30/21 12:35 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 92.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.22	0.033	ug/Kg	<del></del>	11/09/21 18:26	11/13/21 12:30	
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.041	ug/Kg	₩	11/09/21 18:26	11/13/21 12:30	1
Perfluorooctanoic acid (PFOA)	ND		0.22	0.057	ug/Kg	₩	11/09/21 18:26	11/13/21 12:30	1
Perfluorononanoic acid (PFNA)	ND		0.22	0.024	ug/Kg	₩	11/09/21 18:26	11/13/21 12:30	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.052	ug/Kg	₩	11/09/21 18:26	11/13/21 12:30	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.045	ug/Kg	₩	11/09/21 18:26	11/13/21 12:30	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.032	ug/Kg	≎	11/09/21 18:26	11/13/21 12:30	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.023	ug/Kg	₩	11/09/21 18:26	11/13/21 12:30	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.040	ug/Kg	₩	11/09/21 18:26	11/13/21 12:30	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.041	ug/Kg	₩	11/09/21 18:26	11/13/21 12:30	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.22	0.031	ug/Kg	≎	11/09/21 18:26	11/13/21 12:30	1
Perfluorooctanesulfonic acid	0.15	J	0.22		ug/Kg	₩	11/09/21 18:26	11/13/21 12:30	1
(PFOS)									
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.22	0.025	ug/Kg	₩	11/09/21 18:26	11/13/21 12:30	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.22	0.052	ug/Kg	₩	11/09/21 18:26	11/13/21 12:30	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.22	0.038	ug/Kg	₩	11/09/21 18:26	11/13/21 12:30	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22	0.044	ug/Kg	₩	11/09/21 18:26	11/13/21 12:30	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.22	0.033	ug/Kg	₩	11/09/21 18:26	11/13/21 12:30	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.042	ug/Kg	₩	11/09/21 18:26	11/13/21 12:30	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	93		50 - 150				11/09/21 18:26	11/13/21 12:30	
13C4 PFHpA	87		50 - 150				11/09/21 18:26	11/13/21 12:30	1
13C4 PFOA	84		50 - 150				11/09/21 18:26	11/13/21 12:30	1
13C5 PFNA	90		50 - 150				11/09/21 18:26	11/13/21 12:30	1
13C2 PFDA	89		50 - 150				11/09/21 18:26	11/13/21 12:30	1
13C2 PFUnA	97		50 - 150				11/09/21 18:26	11/13/21 12:30	1
13C2 PFDoA	86		50 <sub>-</sub> 150				11/09/21 18:26	11/13/21 12:30	1
13C2 PFTeDA	76		50 <sub>-</sub> 150				11/09/21 18:26	11/13/21 12:30	1
13C3 PFBS	97		50 <sub>-</sub> 150				11/09/21 18:26	11/13/21 12:30	1
1802 PFHxS	84		50 <sub>-</sub> 150				11/09/21 18:26	11/13/21 12:30	1
13C4 PFOS	90		50 - 150				11/09/21 18:26	11/13/21 12:30	1
d3-NMeFOSAA	96		50 - 150				11/09/21 18:26	11/13/21 12:30	1
d5-NEtFOSAA	97		50 - 150				11/09/21 18:26	11/13/21 12:30	1
13C3 HFPO-DA	90		50 - 150					11/13/21 12:30	1
General Chemistry									
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	7.7		0.1	0.1	%			11/05/21 12:52	1

General Chemistry								
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	7.7	0.1	0.1	%			11/05/21 12:52	1
Percent Solids	92.3	0.1	0.1	%			11/05/21 12:52	1

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Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-SB010-10 Lab Sample ID: 320-81254-58

Date Collected: 10/30/21 12:25 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 92.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.21	0.032	ug/Kg	<del></del>	11/09/21 18:26	11/13/21 12:40	
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.039	ug/Kg	☼	11/09/21 18:26	11/13/21 12:40	•
Perfluorooctanoic acid (PFOA)	ND		0.21	0.054	ug/Kg	☼	11/09/21 18:26	11/13/21 12:40	•
Perfluorononanoic acid (PFNA)	ND		0.21	0.023	ug/Kg	₩	11/09/21 18:26	11/13/21 12:40	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.049	ug/Kg	☼	11/09/21 18:26	11/13/21 12:40	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.043	ug/Kg	☼	11/09/21 18:26	11/13/21 12:40	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.031	ug/Kg	☼	11/09/21 18:26	11/13/21 12:40	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.022	ug/Kg	☼	11/09/21 18:26	11/13/21 12:40	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.038	ug/Kg	☼	11/09/21 18:26	11/13/21 12:40	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.039	ug/Kg	₩	11/09/21 18:26	11/13/21 12:40	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21	0.030	ug/Kg	≎	11/09/21 18:26	11/13/21 12:40	1
Perfluorooctanesulfonic acid	0.14	J	0.21		ug/Kg	₩	11/09/21 18:26	11/13/21 12:40	1
(PFOS)									
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.21		ug/Kg	₩	11/09/21 18:26	11/13/21 12:40	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.21	0.049	ug/Kg	₩	11/09/21 18:26	11/13/21 12:40	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.21	0.036	ug/Kg	₩	11/09/21 18:26	11/13/21 12:40	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.042	ug/Kg	₽	11/09/21 18:26	11/13/21 12:40	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.21	0.032	ug/Kg	₩	11/09/21 18:26	11/13/21 12:40	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.040	ug/Kg	₩	11/09/21 18:26	11/13/21 12:40	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	91		50 - 150				11/09/21 18:26	11/13/21 12:40	
13C4 PFHpA	85		50 - 150				11/09/21 18:26	11/13/21 12:40	1
13C4 PFOA	80		50 - 150				11/09/21 18:26	11/13/21 12:40	1
13C5 PFNA	79		50 - 150				11/09/21 18:26	11/13/21 12:40	1
13C2 PFDA	85		50 <sub>-</sub> 150				11/09/21 18:26	11/13/21 12:40	1
13C2 PFUnA	84		50 - 150				11/09/21 18:26	11/13/21 12:40	1
13C2 PFDoA	81		50 <sub>-</sub> 150				11/09/21 18:26	11/13/21 12:40	
13C2 PFTeDA	78		50 <sub>-</sub> 150				11/09/21 18:26	11/13/21 12:40	1
13C3 PFBS	84		50 <sub>-</sub> 150				11/09/21 18:26	11/13/21 12:40	1
1802 PFHxS	75		50 <sub>-</sub> 150				11/09/21 18:26	11/13/21 12:40	
13C4 PFOS	82		50 - 150				11/09/21 18:26	11/13/21 12:40	1
d3-NMeFOSAA	83		50 <sub>-</sub> 150				11/09/21 18:26	11/13/21 12:40	1
d5-NEtFOSAA	88		50 - 150				11/09/21 18:26	11/13/21 12:40	
13C3 HFPO-DA	84		50 - 150					11/13/21 12:40	1
General Chemistry									
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	7.9		0.1	0.1	%			11/05/21 12:52	1

General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	7.9		0.1	0.1	%			11/05/21 12:52	1
Percent Solids	92.1		0.1	0.1	%			11/05/21 12:52	1

Eurofins TestAmerica, Sacramento

11/17/2021

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

**Percent Solids** 

Date Collected: 10/30/21 12:40

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 91.2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.22	0.034	ug/Kg	— <u></u>	11/09/21 18:26	11/13/21 13:12	1
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.042	ug/Kg	₩	11/09/21 18:26	11/13/21 13:12	1
Perfluorooctanoic acid (PFOA)	ND		0.22	0.058	ug/Kg	₩	11/09/21 18:26	11/13/21 13:12	1
Perfluorononanoic acid (PFNA)	ND		0.22	0.024	ug/Kg	☼	11/09/21 18:26	11/13/21 13:12	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.053	ug/Kg	₩	11/09/21 18:26	11/13/21 13:12	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.046	ug/Kg	₩	11/09/21 18:26	11/13/21 13:12	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.033	ug/Kg	₩	11/09/21 18:26	11/13/21 13:12	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.023	ug/Kg	₽	11/09/21 18:26	11/13/21 13:12	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.041	ug/Kg	₩	11/09/21 18:26	11/13/21 13:12	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.042	ug/Kg	₩	11/09/21 18:26	11/13/21 13:12	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.22	0.032	ug/Kg	☼	11/09/21 18:26	11/13/21 13:12	1
Perfluorooctanesulfonic acid (PFOS)	0.051	J	0.22	0.047	ug/Kg	₩	11/09/21 18:26	11/13/21 13:12	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.22	0.025	ug/Kg		11/09/21 18:26	11/13/21 13:12	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.22	0.053	ug/Kg	₩	11/09/21 18:26	11/13/21 13:12	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.22	0.038	ug/Kg	₩	11/09/21 18:26	11/13/21 13:12	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22	0.045	ug/Kg	₩	11/09/21 18:26	11/13/21 13:12	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.22	0.034	ug/Kg	₩	11/09/21 18:26	11/13/21 13:12	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.043	ug/Kg	☼	11/09/21 18:26	11/13/21 13:12	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	95		50 - 150				11/09/21 18:26	11/13/21 13:12	1
13C4 PFHpA	97		50 - 150				11/09/21 18:26	11/13/21 13:12	1
13C4 PFOA	91		50 - 150				11/09/21 18:26	11/13/21 13:12	1
13C5 PFNA	89		50 - 150				11/09/21 18:26	11/13/21 13:12	1
13C2 PFDA	92		50 - 150				11/09/21 18:26	11/13/21 13:12	1
13C2 PFUnA	85		50 - 150				11/09/21 18:26	11/13/21 13:12	1
13C2 PFDoA	83		50 - 150				11/09/21 18:26	11/13/21 13:12	1
13C2 PFTeDA	81		50 - 150				11/09/21 18:26	11/13/21 13:12	1
13C3 PFBS	91		50 - 150				11/09/21 18:26	11/13/21 13:12	1
18O2 PFHxS	79		50 - 150				11/09/21 18:26	11/13/21 13:12	1
13C4 PFOS	81		50 - 150				11/09/21 18:26	11/13/21 13:12	1
d3-NMeFOSAA	97		50 - 150				11/09/21 18:26	11/13/21 13:12	1
d5-NEtFOSAA	97		50 - 150				11/09/21 18:26	11/13/21 13:12	1
13C3 HFPO-DA	79		50 - 150				11/09/21 18:26	11/13/21 13:12	1
General Chemistry						_			
Analyte		Qualifier	RL _		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	8.8		0.1	0.1	%			11/05/21 12:52	1

Eurofins TestAmerica, Sacramento

11/17/2021

11/05/21 12:52

0.1

91.2

0.1 %

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-SB010-03 Lab Sample ID: 320-81254-60

Date Collected: 10/30/21 12:45 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 91.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.21	0.033	ug/Kg	— <u></u>	11/09/21 18:26	11/13/21 13:22	
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.040	ug/Kg	₩	11/09/21 18:26	11/13/21 13:22	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.056	ug/Kg	₽	11/09/21 18:26	11/13/21 13:22	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.023	ug/Kg	₩	11/09/21 18:26	11/13/21 13:22	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.051	ug/Kg	₩	11/09/21 18:26	11/13/21 13:22	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.045	ug/Kg	₩	11/09/21 18:26	11/13/21 13:22	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.032	ug/Kg	₽	11/09/21 18:26	11/13/21 13:22	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.022	ug/Kg	₽	11/09/21 18:26	11/13/21 13:22	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.039	ug/Kg	₽	11/09/21 18:26	11/13/21 13:22	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.040	ug/Kg	₽	11/09/21 18:26	11/13/21 13:22	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21	0.031	ug/Kg	₩	11/09/21 18:26	11/13/21 13:22	1
Perfluorooctanesulfonic acid (PFOS)	0.12	J	0.21	0.046	ug/Kg	₽	11/09/21 18:26	11/13/21 13:22	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	₩	11/09/21 18:26	11/13/21 13:22	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.21		ug/Kg	₽	11/09/21 18:26	11/13/21 13:22	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.21	0.037	ug/Kg		11/09/21 18:26	11/13/21 13:22	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21		ug/Kg	₽	11/09/21 18:26	11/13/21 13:22	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.21		ug/Kg	₽	11/09/21 18:26	11/13/21 13:22	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.041	ug/Kg	₽	11/09/21 18:26	11/13/21 13:22	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	97		50 - 150				11/09/21 18:26	11/13/21 13:22	1
13C4 PFHpA	91		50 - 150				11/09/21 18:26	11/13/21 13:22	1
13C4 PFOA	86		50 - 150				11/09/21 18:26	11/13/21 13:22	1
13C5 PFNA	86		50 - 150				11/09/21 18:26	11/13/21 13:22	1
13C2 PFDA	90		50 - 150				11/09/21 18:26	11/13/21 13:22	1
13C2 PFUnA	89		50 - 150				11/09/21 18:26	11/13/21 13:22	1
13C2 PFDoA	81		50 - 150				11/09/21 18:26	11/13/21 13:22	1
13C2 PFTeDA	81		50 - 150				11/09/21 18:26	11/13/21 13:22	1
13C3 PFBS	93		50 - 150				11/09/21 18:26	11/13/21 13:22	1
18O2 PFHxS	78		50 - 150				11/09/21 18:26	11/13/21 13:22	1
13C4 PFOS	79		50 - 150				11/09/21 18:26	11/13/21 13:22	1
d3-NMeFOSAA	93		50 - 150				11/09/21 18:26	11/13/21 13:22	1
d5-NEtFOSAA	101		50 - 150				11/09/21 18:26	11/13/21 13:22	1
13C3 HFPO-DA	80		50 - 150				11/09/21 18:26	11/13/21 13:22	1
General Chemistry									
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	8.4		0.1	0.1	%			11/05/21 12:52	1

General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	8.4		0.1	0.1	%			11/05/21 12:52	1
Percent Solids	91.6		0.1	0.1	%			11/05/21 12:52	1

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11/17/2021

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-SB012-01 Lab Sample ID: 320-81254-61

Date Collected: 10/30/21 13:25

Date Received: 11/03/21 14:01

Matrix: Solid
Percent Solids: 85.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.22	0.034	ug/Kg	<u></u>	11/09/21 18:26	11/16/21 15:07	1
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.041	ug/Kg	₩	11/09/21 18:26	11/16/21 15:07	1
Perfluorooctanoic acid (PFOA)	ND		0.22	0.058	ug/Kg	≎	11/09/21 18:26	11/16/21 15:07	1
Perfluorononanoic acid (PFNA)	ND		0.22	0.024	ug/Kg	₩	11/09/21 18:26	11/16/21 15:07	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.052	ug/Kg	₩	11/09/21 18:26	11/16/21 15:07	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.046	ug/Kg	☆	11/09/21 18:26	11/16/21 15:07	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.033	ug/Kg	₩	11/09/21 18:26	11/16/21 15:07	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.023	ug/Kg	₩	11/09/21 18:26	11/16/21 15:07	1
Perfluorotetradecanoic acid (PFTeA)	0.051	J	0.22	0.040	ug/Kg	₽	11/09/21 18:26	11/16/21 15:07	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.041	ug/Kg	₩	11/09/21 18:26	11/16/21 15:07	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.22	0.032	ug/Kg	☆	11/09/21 18:26	11/16/21 15:07	1
Perfluorooctanesulfonic acid (PFOS)	0.14	J	0.22	0.047	ug/Kg	₽	11/09/21 18:26	11/16/21 15:07	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.22	0.025	ug/Kg	₩	11/09/21 18:26	11/16/21 15:07	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.22	0.052	ug/Kg	₽	11/09/21 18:26	11/16/21 15:07	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.22	0.038	ug/Kg	₽	11/09/21 18:26	11/16/21 15:07	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22	0.045	ug/Kg	₽	11/09/21 18:26	11/16/21 15:07	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.22	0.034	ug/Kg	₽	11/09/21 18:26	11/16/21 15:07	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.042	ug/Kg	☼	11/09/21 18:26	11/16/21 15:07	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	99		50 - 150				11/09/21 18:26	11/16/21 15:07	1
13C4 PFHpA	89		50 - 150				11/09/21 18:26	11/16/21 15:07	1
13C4 PFOA	81		50 - 150				11/09/21 18:26	11/16/21 15:07	1
13C5 PFNA	78		50 - 150				11/09/21 18:26	11/16/21 15:07	1
13C2 PFDA	83		50 <sub>-</sub> 150				11/09/21 18:26	11/16/21 15:07	1
13C2 PFUnA	77		50 <sub>-</sub> 150				11/09/21 18:26	11/16/21 15:07	1
13C2 PFDoA	78		50 - 150				11/09/21 18:26	11/16/21 15:07	1
13C2 PFTeDA	69		50 <sub>-</sub> 150				11/09/21 18:26	11/16/21 15:07	1
13C3 PFBS	100		50 <sub>-</sub> 150				11/09/21 18:26	11/16/21 15:07	1
1802 PFHxS	74		50 <sub>-</sub> 150				11/09/21 18:26	11/16/21 15:07	1
13C4 PFOS	76		50 <sub>-</sub> 150				11/09/21 18:26	11/16/21 15:07	1
d3-NMeFOSAA	70		50 - 150				11/09/21 18:26	11/16/21 15:07	1
d5-NEtFOSAA	77		50 - 150					11/16/21 15:07	1
13C3 HFPO-DA	92		50 <sub>-</sub> 150					11/16/21 15:07	1

General Chemistry Analyte	Result Qualifier	RL	MDL Unit	D Prepared	Analyzed	Dil Fac
Percent Moisture	14.4	0.1	0.1 %		11/05/21 12:51	1
Percent Solids	85.6	0.1	0.1 %		11/05/21 12:51	1

Eurofins TestAmerica, Sacramento

11/17/2021

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-SB012-02 Lab Sample ID: 320-81254-62

Date Collected: 10/30/21 13:30 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 85.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.21	0.032	ug/Kg	<del></del>	11/09/21 18:26	11/14/21 22:00	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.039	ug/Kg	₩	11/09/21 18:26	11/14/21 22:00	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.055	ug/Kg	₩	11/09/21 18:26	11/14/21 22:00	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.023	ug/Kg	₩	11/09/21 18:26	11/14/21 22:00	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.050	ug/Kg	₩	11/09/21 18:26	11/14/21 22:00	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.043	ug/Kg	₩	11/09/21 18:26	11/14/21 22:00	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.031	ug/Kg	₽	11/09/21 18:26	11/14/21 22:00	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.022	ug/Kg	₩	11/09/21 18:26	11/14/21 22:00	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.038	ug/Kg	₩	11/09/21 18:26	11/14/21 22:00	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.039	ug/Kg	₽	11/09/21 18:26	11/14/21 22:00	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21	0.030	ug/Kg	₩	11/09/21 18:26	11/14/21 22:00	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.21	0.044	ug/Kg	₩	11/09/21 18:26	11/14/21 22:00	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	₽	11/09/21 18:26	11/14/21 22:00	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.21	0.050	ug/Kg	₩	11/09/21 18:26	11/14/21 22:00	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.21	0.036	ug/Kg	₩	11/09/21 18:26	11/14/21 22:00	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21		ug/Kg	₩	11/09/21 18:26	11/14/21 22:00	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.21		ug/Kg	₩	11/09/21 18:26	11/14/21 22:00	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.040	ug/Kg	₩	11/09/21 18:26	11/14/21 22:00	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	106		50 - 150				11/09/21 18:26	11/14/21 22:00	1
13C4 PFHpA	105		50 - 150				11/09/21 18:26	11/14/21 22:00	1
13C4 PFOA	100		50 - 150				11/09/21 18:26	11/14/21 22:00	1
13C5 PFNA	99		50 - 150				11/09/21 18:26	11/14/21 22:00	1
13C2 PFDA	100		50 - 150				11/09/21 18:26	11/14/21 22:00	1
13C2 PFUnA	102		50 - 150				11/09/21 18:26	11/14/21 22:00	1
13C2 PFDoA	102		50 - 150				11/09/21 18:26	11/14/21 22:00	1
13C2 PFTeDA	93		50 - 150				11/09/21 18:26	11/14/21 22:00	1
13C3 PFBS	111		50 - 150				11/09/21 18:26	11/14/21 22:00	1
1802 PFHxS	94		50 - 150				11/09/21 18:26	11/14/21 22:00	1
13C4 PFOS	100		50 - 150				11/09/21 18:26	11/14/21 22:00	1
d3-NMeFOSAA	104		50 - 150				11/09/21 18:26	11/14/21 22:00	1
d5-NEtFOSAA	113		50 - 150				11/09/21 18:26	11/14/21 22:00	1
13C3 HFPO-DA	92		50 - 150				11/09/21 18:26	11/14/21 22:00	1
General Chemistry						_			5
Analyte		Qualifier	RL _	MDL		D	Prepared	Analyzed	Dil Fac
Percent Moisture	14.4		0.1	0.1	%			11/05/21 12:51	1
Percent Solids	85.6		0.1	0.1	0.1			11/05/21 12:51	1

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-SB012-03 Lab Sample ID: 320-81254-63

Date Collected: 10/30/21 13:40 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 79.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.23	0.036	ug/Kg	<u></u>	11/09/21 18:26	11/14/21 22:11	
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.044	ug/Kg	≎	11/09/21 18:26	11/14/21 22:11	1
Perfluorooctanoic acid (PFOA)	ND		0.23	0.061	ug/Kg	≎	11/09/21 18:26	11/14/21 22:11	1
Perfluorononanoic acid (PFNA)	ND		0.23	0.025	ug/Kg	₩	11/09/21 18:26	11/14/21 22:11	1
Perfluorodecanoic acid (PFDA)	ND		0.23	0.055	ug/Kg	₩	11/09/21 18:26	11/14/21 22:11	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.048	ug/Kg	₩	11/09/21 18:26	11/14/21 22:11	1
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.034	ug/Kg	₩	11/09/21 18:26	11/14/21 22:11	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.024	ug/Kg	₩	11/09/21 18:26	11/14/21 22:11	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.042	ug/Kg	₩	11/09/21 18:26	11/14/21 22:11	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.044	ug/Kg	₩	11/09/21 18:26	11/14/21 22:11	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.23	0.033	ug/Kg	₽	11/09/21 18:26	11/14/21 22:11	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.23	0.049	ug/Kg	₩	11/09/21 18:26	11/14/21 22:11	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.23	0.026	ug/Kg	☼	11/09/21 18:26	11/14/21 22:11	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.23	0.055	ug/Kg	₩	11/09/21 18:26	11/14/21 22:11	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.23	0.040	ug/Kg	₩	11/09/21 18:26	11/14/21 22:11	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23	0.047	ug/Kg	☼	11/09/21 18:26	11/14/21 22:11	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.23	0.036	ug/Kg	₩	11/09/21 18:26	11/14/21 22:11	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.045	ug/Kg	₩	11/09/21 18:26	11/14/21 22:11	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	100		50 - 150				11/09/21 18:26	11/14/21 22:11	1
13C4 PFHpA	99		50 - 150				11/09/21 18:26	11/14/21 22:11	1
13C4 PFOA	93		50 - 150				11/09/21 18:26	11/14/21 22:11	1
13C5 PFNA	93		50 - 150				11/09/21 18:26	11/14/21 22:11	1
13C2 PFDA	100		50 - 150				11/09/21 18:26	11/14/21 22:11	1
13C2 PFUnA	105		50 <sub>-</sub> 150				11/09/21 18:26	11/14/21 22:11	1
13C2 PFDoA	98		50 - 150				11/09/21 18:26	11/14/21 22:11	1
13C2 PFTeDA	92		50 <sub>-</sub> 150				11/09/21 18:26	11/14/21 22:11	1
13C3 PFBS	108		50 <sub>-</sub> 150				11/09/21 18:26	11/14/21 22:11	1
1802 PFHxS	93		50 <sub>-</sub> 150				11/09/21 18:26	11/14/21 22:11	1
13C4 PFOS	99		50 - 150					11/14/21 22:11	1
d3-NMeFOSAA	96		50 - 150					11/14/21 22:11	1
d5-NEtFOSAA	106		50 - 150					11/14/21 22:11	1
13C3 HFPO-DA	94		50 - 150					11/14/21 22:11	1
General Chemistry									
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	20.4		0.1	0.1	%			11/05/21 12:51	1
Percent Solids	79.6		0.1	0.1	0/			11/05/21 12:51	1

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

**Percent Moisture** 

**Percent Solids** 

Client Sample ID: 21GST-SB013-01

Lab Sample ID: 320-81254-64 Date Collected: 10/30/21 14:30 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 86.7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.22	0.034	ug/Kg	— <u></u>	11/09/21 18:26	11/14/21 22:21	1
Perfluoroheptanoic acid (PFHpA)	0.046	J	0.22	0.042	ug/Kg	≎	11/09/21 18:26	11/14/21 22:21	1
Perfluorooctanoic acid (PFOA)	ND		0.22	0.058	ug/Kg	≎	11/09/21 18:26	11/14/21 22:21	1
Perfluorononanoic acid (PFNA)	0.028	J	0.22	0.024	ug/Kg	₽	11/09/21 18:26	11/14/21 22:21	1
Perfluorodecanoic acid (PFDA)	0.082	J	0.22	0.053	ug/Kg	≎	11/09/21 18:26	11/14/21 22:21	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.046	ug/Kg	₩	11/09/21 18:26	11/14/21 22:21	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.033	ug/Kg	₩	11/09/21 18:26	11/14/21 22:21	1
Perfluorotridecanoic acid (PFTriA)	0.034	J	0.22	0.023	ug/Kg	₩	11/09/21 18:26	11/14/21 22:21	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.041	ug/Kg	₩	11/09/21 18:26	11/14/21 22:21	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.042	ug/Kg	≎	11/09/21 18:26	11/14/21 22:21	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.22	0.032	ug/Kg	≎	11/09/21 18:26	11/14/21 22:21	1
Perfluorooctanesulfonic acid (PFOS)	0.14	J	0.22	0.047	ug/Kg	₩	11/09/21 18:26	11/14/21 22:21	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.22	0.025	ug/Kg	☼	11/09/21 18:26	11/14/21 22:21	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.22	0.053	ug/Kg	₩	11/09/21 18:26	11/14/21 22:21	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.22	0.039	ug/Kg	₩	11/09/21 18:26	11/14/21 22:21	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22	0.045	ug/Kg	₩	11/09/21 18:26	11/14/21 22:21	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.22	0.034	ug/Kg	₩	11/09/21 18:26	11/14/21 22:21	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.043	ug/Kg	₩	11/09/21 18:26	11/14/21 22:21	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	131		50 - 150				11/09/21 18:26	11/14/21 22:21	1
13C4 PFHpA	125		50 - 150				11/09/21 18:26	11/14/21 22:21	1
13C4 PFOA	113		50 - 150				11/09/21 18:26	11/14/21 22:21	1
13C5 PFNA	119		50 <sub>-</sub> 150				11/09/21 18:26	11/14/21 22:21	1
13C2 PFDA	118		50 <sub>-</sub> 150				11/09/21 18:26	11/14/21 22:21	1
13C2 PFUnA	118		50 - 150				11/09/21 18:26	11/14/21 22:21	1
13C2 PFDoA	109		50 - 150				11/09/21 18:26	11/14/21 22:21	1
13C2 PFTeDA	106		50 <sub>-</sub> 150					11/14/21 22:21	1
13C3 PFBS	126		50 <sub>-</sub> 150				11/09/21 18:26	11/14/21 22:21	1
1802 PFHxS	115		50 - 150					11/14/21 22:21	
13C4 PFOS	118		50 - 150				11/09/21 18:26	11/14/21 22:21	1
d3-NMeFOSAA	121		50 - 150					11/14/21 22:21	1
d5-NEtFOSAA	125		50 - 150					11/14/21 22:21	
13C3 HFPO-DA	110		50 - 150					11/14/21 22:21	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

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0.1

0.1

0.1 %

0.1 %

13.3

86.7

11/05/21 12:51

11/05/21 12:51

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

**Percent Solids** 

Client Sample ID: 21GST-SB013-02 Lab Sample ID: 320-81254-65

Date Collected: 10/30/21 14:35 **Matrix: Solid** Date Received: 11/03/21 14:01

Percent Solids: 84.0

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND	0.23	0.036	ug/Kg	<u></u>	11/09/21 18:26	11/14/21 22:32	1
Perfluoroheptanoic acid (PFHpA)	ND	0.23	0.044	ug/Kg	₽	11/09/21 18:26	11/14/21 22:32	1
Perfluorooctanoic acid (PFOA)	ND	0.23	0.061	ug/Kg	₽	11/09/21 18:26	11/14/21 22:32	1
Perfluorononanoic acid (PFNA)	ND	0.23	0.025	ug/Kg	₩	11/09/21 18:26	11/14/21 22:32	1
Perfluorodecanoic acid (PFDA)	ND	0.23	0.055	ug/Kg	₽	11/09/21 18:26	11/14/21 22:32	1
Perfluoroundecanoic acid (PFUnA)	ND	0.23	0.048	ug/Kg	☼	11/09/21 18:26	11/14/21 22:32	1
Perfluorododecanoic acid (PFDoA)	ND	0.23	0.034	ug/Kg	☼	11/09/21 18:26	11/14/21 22:32	1
Perfluorotridecanoic acid (PFTriA)	ND	0.23	0.024	ug/Kg	₩	11/09/21 18:26	11/14/21 22:32	1
Perfluorotetradecanoic acid (PFTeA)	ND	0.23	0.043	ug/Kg	☼	11/09/21 18:26	11/14/21 22:32	1
Perfluorobutanesulfonic acid (PFBS)	ND	0.23	0.044	ug/Kg	₩	11/09/21 18:26	11/14/21 22:32	1
Perfluorohexanesulfonic acid (PFHxS)	ND	0.23	0.033	ug/Kg	☼	11/09/21 18:26	11/14/21 22:32	1
Perfluorooctanesulfonic acid (PFOS)	0.090 J	0.23	0.049	ug/Kg	₩	11/09/21 18:26	11/14/21 22:32	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND	0.23	0.026	ug/Kg	₿	11/09/21 18:26	11/14/21 22:32	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND	0.23	0.055	ug/Kg	₩	11/09/21 18:26	11/14/21 22:32	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND	0.23	0.040	ug/Kg	₩	11/09/21 18:26	11/14/21 22:32	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	0.23	0.047	ug/Kg	₩	11/09/21 18:26	11/14/21 22:32	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND	0.23		ug/Kg	₩	11/09/21 18:26	11/14/21 22:32	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.23	0.045	ug/Kg	₩	11/09/21 18:26	11/14/21 22:32	1
Isotope Dilution	%Recovery Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	107	50 - 150				11/09/21 18:26	11/14/21 22:32	1
13C4 PFHpA	98	50 - 150				11/09/21 18:26	11/14/21 22:32	1
13C4 PFOA	96	50 - 150				11/09/21 18:26	11/14/21 22:32	1
13C5 PFNA	97	50 - 150				11/09/21 18:26	11/14/21 22:32	1
13C2 PFDA	98	50 - 150				11/09/21 18:26	11/14/21 22:32	1
13C2 PFUnA	104	50 - 150				11/09/21 18:26	11/14/21 22:32	1
13C2 PFDoA	97	50 - 150				11/09/21 18:26	11/14/21 22:32	1
13C2 PFTeDA	91	50 - 150				11/09/21 18:26	11/14/21 22:32	1
13C3 PFBS	107	50 - 150				11/09/21 18:26	11/14/21 22:32	1
1802 PFHxS	94	50 - 150				11/09/21 18:26	11/14/21 22:32	1
13C4 PFOS	99	50 - 150				11/09/21 18:26	11/14/21 22:32	1
d3-NMeFOSAA	92	50 - 150				11/09/21 18:26	11/14/21 22:32	1
d5-NEtFOSAA	109	50 - 150				11/09/21 18:26	11/14/21 22:32	1
13C3 HFPO-DA	91	50 - 150				11/09/21 18:26	11/14/21 22:32	1
General Chemistry					_	_		
Analyte	Result Qualifier	RL _		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	16.0	0.1	0.1	%			11/05/21 12:51	1

0.1

84.0

0.1 %

11/05/21 12:51

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Date Collected: 10/30/21 14:45

Date Received: 11/03/21 14:01

Matrix: Solid
Percent Solids: 79.9

Perfluorobexanoia caid (PFHA)	Perfluoroheptanoic acid (PFHpA)   ND   0.24   0.046   ug/Kg   0   11/09/21   18:26   11/14/21   Perfluorocotanoic acid (PFOA)   ND   0.24   0.054   ug/Kg   0   11/09/21   18:26   11/14/21   Perfluoronacia acid (PFDA)   ND   0.24   0.058   ug/Kg   0   11/09/21   18:26   11/14/21   Perfluorodecanoic acid (PFDA)   ND   0.24   0.058   ug/Kg   0   11/09/21   18:26   11/14/21   Perfluorodecanoic acid (PFDA)   ND   0.24   0.058   ug/Kg   0   11/09/21   18:26   11/14/21   Perfluorodecanoic acid (PFDA)   ND   0.24   0.051   ug/Kg   0   11/09/21   18:26   11/14/21   Perfluorotidecanoic acid (PFDA)   ND   0.24   0.025   ug/Kg   0   11/09/21   18:26   11/14/21   Perfluorotetaceanoic acid (PFTriA)   ND   0.24   0.025   ug/Kg   0   11/09/21   18:26   11/14/21   Perfluorotetaceanoic acid (PFDA)   ND   0.24   0.045   ug/Kg   0   11/09/21   18:26   11/14/21   Perfluorotetaceanoic acid (PFDA)   ND   0.24   0.045   ug/Kg   0   11/09/21   18:26   11/14/21   Perfluorobutanesulfonic acid (PFDS)   ND   0.24   0.055   ug/Kg   0   11/09/21   18:26   11/14/21   Perfluorocotanesulfonic acid (PFDS)   ND   0.24   0.052   ug/Kg   0   11/09/21   18:26   11/14/21   Perfluorocotanesulfonic acid (PFDA)   ND   0.24   0.058   ug/Kg   0   11/09/21   18:26   11/14/21   Perfluorocotanesulfonic acid (PFDA)   ND   0.24   0.058   ug/Kg   0   11/09/21   18:26   11/14/21   Perfluorocotanesulfonamidoac   ND   0.24   0.058   ug/Kg   0   11/09/21   18:26   11/14/21   Perfluorocotanesulfonamidoac   ND   0.24   0.058   ug/Kg   0   11/09/21   18:26   11/14/21   Perfluorocotanesulfonamidoac   ND   0.24   0.049   ug/Kg   0   11/09/21   18:26   11/14/21   Perfluorocotanesulfonamidoac   ND   0.24   0.049   ug/Kg   0   11/09/21   18:26   11/14/21   Perfluorocotanesulfonamidoac   ND   0.24   0.049   ug/Kg   0   11/09/21   18:26   11/14/21   Perfluorocotanesulfonamidoac   ND   0.24   0.058   ug/Kg   0   11/09/21   18:26   11/14/21   Perfluorocotanesulfonamidoac   ND   0.24   0.059   ug/Kg   0   11/09/21   18:26   11/14/21   Perfluorocotanesulfonamidoac   ND   0.24	ed Dil F	Analyzed	Prepared	D	Unit		RL	Quanno	Result	Analyte
Perfluorocotanoia caid (PFOA)   ND   0.24   0.084   ug/Kg   0   11/09/21 18:26   11/14/21 22:42     Perfluorononancia caid (PFDA)   ND   0.24   0.027   ug/Kg   0   11/09/21 18:26   11/14/21 22:42     Perfluoroundecanoic acid (PFDA)   ND   0.24   0.058   ug/Kg   0   11/09/21 18:26   11/14/21 22:42     Perfluoroundecanoic acid (PFDA)   ND   0.24   0.058   ug/Kg   0   11/09/21 18:26   11/14/21 22:42     Perfluoroundecanoic acid (PFDA)   ND   0.24   0.035   ug/Kg   0   11/09/21 18:26   11/14/21 22:42     Perfluorototradecanoic acid (PFTiA)   ND   0.24   0.045   ug/Kg   0   11/09/21 18:26   11/14/21 22:42     Perfluorototradecanoic acid (PFTeA)   ND   0.24   0.045   ug/Kg   0   11/09/21 18:26   11/14/21 22:42     Perfluorototradecanoic acid (PFDS)   ND   0.24   0.045   ug/Kg   0   11/09/21 18:26   11/14/21 22:42     Perfluorocotanesulfonic acid (PFDS)   ND   0.24   0.035   ug/Kg   0   11/09/21 18:26   11/14/21 22:42     Perfluorocotanesulfonic acid (PFDS)   ND   0.24   0.058   ug/Kg   0   11/09/21 18:26   11/14/21 22:42     Perfluorocotanesulfonic acid (PFDS)   ND   0.24   0.058   ug/Kg   0   11/09/21 18:26   11/14/21 22:42     Perfluorocotanesulfonic acid (PFDS)   ND   0.24   0.058   ug/Kg   0   11/09/21 18:26   11/14/21 22:42     Perfluorocotanesulfonic acid (PFDS)   ND   0.24   0.058   ug/Kg   0   11/09/21 18:26   11/14/21 22:42     Perfluorocotanesulfonic acid (PFDS)   ND   0.24   0.058   ug/Kg   0   11/09/21 18:26   11/14/21 22:42     Perfluorocotanesulfonic acid (PFDSA)   ND   0.24   0.049   ug/Kg   0   11/09/21 18:26   11/14/21 22:42     Perfluorocotanesulfonic acid (PFDSA)   ND   0.24   0.049   ug/Kg   0   11/09/21 18:26   11/14/21 22:42     Perfluorocotanesulfonic acid (PFDSA)   ND   0.24   0.049   ug/Kg   0   11/09/21 18:26   11/14/21 22:42     Perfluorocotanesulfonic acid (PFDSA)   ND   0.24   0.049   ug/Kg   0   11/09/21 18:26   11/14/21 22:42     Perfluorocotanesulfonic acid (PFDSA)   ND   0.24   0.049   ug/Kg   0   11/09/21 18:26   11/14/21 22:42     Perfluorocotanesulfonic acid (PFDSA)   ND   0.24	Perfluoroctanoic acid (PFOA)   ND   0.24   0.064   ug/Kg   w   11/09/21   18:26   11/14/21   Perfluoronnanoic acid (PFNA)   ND   0.24   0.057   ug/Kg   w   11/09/21   18:26   11/14/21   Perfluorodecanoic acid (PFNA)   ND   0.24   0.058   ug/Kg   w   11/09/21   18:26   11/14/21   Perfluorondecanoic acid (PFUA)   ND   0.24   0.051   ug/Kg   w   11/09/21   18:26   11/14/21   Perfluorotdecanoic acid (PFDA)   ND   0.24   0.051   ug/Kg   w   11/09/21   18:26   11/14/21   Perfluorotdecanoic acid (PFDA)   ND   0.24   0.052   ug/Kg   w   11/09/21   18:26   11/14/21   Perfluorotdecanoic acid (PFDA)   ND   0.24   0.045   ug/Kg   w   11/09/21   18:26   11/14/21   Perfluorotetradecanoic acid (PFTA)   ND   0.24   0.045   ug/Kg   w   11/09/21   18:26   11/14/21   Perfluorotetradecanoic acid (PFTA)   ND   0.24   0.045   ug/Kg   w   11/09/21   18:26   11/14/21   Perfluorotetradecanoic acid (PFTA)   ND   0.24   0.045   ug/Kg   w   11/09/21   18:26   11/14/21   Perfluorotetradecanoic acid (PFDA)   ND   0.24   0.052   ug/Kg   w   11/09/21   18:26   11/14/21   N-methylperfluorocatanesulfonic acid (PFOS)   ND   0.24   0.052   ug/Kg   w   11/09/21   18:26   11/14/21   N-methylperfluorocatanesulfonia acid (PFOS)   ND   0.24   0.058   ug/Kg   w   11/09/21   18:26   11/14/21   N-methylperfluorocatanesulfonia acid   ND   0.24   0.042   ug/Kg   w   11/09/21   18:26   11/14/21   N-methylperfluorocatanesulfonia acid   ND   0.24   0.049   ug/Kg   w   11/09/21   18:26   11/14/21   N-methylperfluorocatanesulfonamidoac   ND   0.24   0.049   ug/Kg   w   11/09/21   18:26   11/14/21   N-methylperfluorocatanesulfonamidoac   ND   0.24   0.049   ug/Kg   w   11/09/21   18:26   11/14/21   N-methylperfluorocatanesulfonamidoac   ND   0.24   0.049   ug/Kg   w   11/09/21   18:26   11/14/21   N-methylperfluorocatanesulfonamidoac   ND   0.24   0.049   ug/Kg   w   11/09/21   18:26   11/14/21   N-methylperfluorocatanesulfonamidoac   ND   0.24   0.049   ug/Kg   w   11/09/21   18:26   11/14/21   N-methylperfluorocatanesulfonamidoac   ND   0.24   0.049   ug/Kg	2:42	11/14/21 22:42	11/09/21 18:26	<del>-</del>	ug/Kg	0.037	0.24		ND	Perfluorohexanoic acid (PFHxA)
Perfluoronananic acid (PFNA)   ND   0.24   0.027 ug/Kg   0. 11/09/21 18.26 11/14/21 22-42	Perfluorononanoic acid (PFNA)   ND   0.24   0.027   ug/Kg   0 11/09/21 18:26   11/14/21	2:42	11/14/21 22:42	11/09/21 18:26	₩	ug/Kg	0.046	0.24		ND	Perfluoroheptanoic acid (PFHpA)
Perfluorondecanoic acid (PFDA)   ND   0.24   0.058   ug/Kg   0   11/09/21 18:26   11/14/21 22:42	Perfluorodecanoic acid (PFDA)   ND   0.24   0.058   ug/Kg   0.11/09/21 18:26   11/14/21   Perfluoroundecanoic acid (PFDA)   ND   0.24   0.051   ug/Kg   0.11/09/21 18:26   11/14/21   Perfluorododecanoic acid (PFDA)   ND   0.24   0.036   ug/Kg   0.11/09/21 18:26   11/14/21   Perfluorotdecanoic acid (PFDA)   ND   0.24   0.045   ug/Kg   0.11/09/21 18:26   11/14/21   Perfluorotetradecanoic acid (PFTA)   ND   0.24   0.045   ug/Kg   0.11/09/21 18:26   11/14/21   Perfluorobutanesulfonic acid (PFBS)   ND   0.24   0.045   ug/Kg   0.11/09/21 18:26   11/14/21   Perfluorobutanesulfonic acid (PFHX)   ND   0.24   0.045   ug/Kg   0.11/09/21 18:26   11/14/21   Perfluoroctanesulfonic acid (PFHX)   ND   0.24   0.035   ug/Kg   0.11/09/21 18:26   11/14/21   Perfluoroctanesulfonic acid (PFDS)   ND   0.24   0.052   ug/Kg   0.11/09/21 18:26   11/14/21   N-methylperfluoroctanesulfonamidoa   Color (NMeFOSAA)   0.044   ug/Kg   0.11/09/21 18:26   11/14/21   Ug/Kg   0.11/09/21 18:26   Ug/Kg   0.11/09/21 18	2:42	11/14/21 22:42	11/09/21 18:26	₩	ug/Kg	0.064	0.24		ND	Perfluorooctanoic acid (PFOA)
Perfluoroundecanoic acid (PFUnA)   ND   0.24   0.051 ug/Kg   0 11/09/21 18:26 11/14/21 22:42	Perfluoroundecanoic acid (PFUnA)   ND   0.24   0.051   ug/Kg   0 11/09/21 18:26   11/14/21	2:42	11/14/21 22:42	11/09/21 18:26	₩	ug/Kg	0.027	0.24		ND	Perfluorononanoic acid (PFNA)
Perfluorododecanoic acid (PFDA)   ND   0.24   0.036   ug/Kg   0   11/09/21 18:26   11/14/21 22:42   Perfluorotridecanoic acid (PFTriA)   ND   0.24   0.045   ug/Kg   0   11/09/21 18:26   11/14/21 22:42   Perfluorobutanesulfonic acid (PFTA)   ND   0.24   0.045   ug/Kg   0   11/09/21 18:26   11/14/21 22:42   Perfluorobutanesulfonic acid (PFBS)   ND   0.24   0.045   ug/Kg   0   11/09/21 18:26   11/14/21 22:42   Perfluorobutanesulfonic acid (PFBS)   ND   0.24   0.035   ug/Kg   0   11/09/21 18:26   11/14/21 22:42   Perfluoroctanesulfonic acid (PFBS)   ND   0.24   0.052   ug/Kg   0   11/09/21 18:26   11/14/21 22:42   Perfluoroctanesulfonic acid (PFBS)   ND   0.24   0.052   ug/Kg   0   11/09/21 18:26   11/14/21 22:42   Perfluoroctanesulfonamidoa   ND   0.24   0.052   ug/Kg   0   11/09/21 18:26   11/14/21 22:42   Perfluoroctanesulfonamidoa   ND   0.24   0.052   ug/Kg   0   11/09/21 18:26   11/14/21 22:42   Perfluoroctanesulfonamidoa   ND   0.24   0.052   ug/Kg   0   11/09/21 18:26   11/14/21 22:42   Perfluoroctanesulfonamidoa   ND   0.24   0.042   ug/Kg   0   11/09/21 18:26   11/14/21 22:42   Perfluoroctanesulfonic acid   ND   0.24   0.049   ug/Kg   0   11/09/21 18:26   11/14/21 22:42   Perfluoroctanesulfonic acid   ND   0.24   0.037   ug/Kg   0   11/09/21 18:26   11/14/21 22:42   Perfluoroctanesulfonic acid   ND   0.24   0.037   ug/Kg   0   11/09/21 18:26   11/14/21 22:42   Perfluoroctanesulfonic acid   ND   0.24   0.047   ug/Kg   0   11/09/21 18:26   11/14/21 22:42   Perfluoroctanesulfonic acid   ND   0.24   0.037   ug/Kg   0   11/09/21 18:26   11/14/21 22:42   Perfluoroctanesulfonic acid   ND   0.24   0.037   ug/Kg   0   11/09/21 18:26   11/14/21 22:42   Perfluoroctanesulfonic acid   ND   0.24   0.047   ug/Kg   0   11/09/21 18:26   11/14/21 22:42   Perfluoroctanesulfonic acid   ND   0.24   0.037   ug/Kg   0   11/09/21 18:26   11/14/21 22:42   Perfluoroctanesulfonic acid   ND   0.24   0.037   ug/Kg   0   11/09/21 18:26   11/14/21 22:42   13/22 PFDA   36   50   50   50   50   50   50   50   5	Perfluorododecanoic acid (PFDA)   ND   0.24   0.036   ug/Kg   11/09/21 18:26   11/14/21	2:42	11/14/21 22:42	11/09/21 18:26	₩	ug/Kg	0.058	0.24		ND	Perfluorodecanoic acid (PFDA)
Perfluorotridecanoic acid (PFTriA)   ND   0.24   0.025   ug/Kg   0.11/09/21 18:26   11/14/21 22:42   Perfluorotetradecanoic acid (PFTeA)   ND   0.24   0.045   ug/Kg   0.11/09/21 18:26   11/14/21 22:42   Perfluorotetradecanoic acid (PFTeA)   ND   0.24   0.046   ug/Kg   0.11/09/21 18:26   11/14/21 22:42   Perfluorotetradecanoic acid (PFHS)   ND   0.24   0.035   ug/Kg   0.11/09/21 18:26   11/14/21 22:42   Perfluorocanesulfonic acid (PFOS)   ND   0.24   0.052   ug/Kg   0.11/09/21 18:26   11/14/21 22:42   Perfluorocanesulfonic acid (PFOS)   ND   0.24   0.058   ug/Kg   0.11/09/21 18:26   11/14/21 22:42   Perfluorocanesulfonic acid (PFOS)   ND   0.24   0.058   ug/Kg   0.11/09/21 18:26   11/14/21 22:42   Perfluorocanesulfonic acid (PFOS)   ND   0.24   0.058   ug/Kg   0.11/09/21 18:26   11/14/21 22:42   Perfluorocanesulfonic acid (PFOS)   ND   0.24   0.058   ug/Kg   0.11/09/21 18:26   11/14/21 22:42   Perfluorocanesulfonic acid (PFOS)   ND   0.24   0.042   ug/Kg   0.11/09/21 18:26   11/14/21 22:42   Perfluorocanesulfonic acid   Perfluorocanesulfonic acid   Perfluorocanesulfonic acid   Perfluorocanesulfonic acid   ND   0.24   0.047   ug/Kg   0.11/09/21 18:26   11/14/21 22:42   Perfluorocanesulfonic acid   ND   0.24   0.047   ug/Kg   0.11/09/21 18:26   11/14/21 22:42   Perfluorocanesulfonic acid   ND   0.24   0.047   ug/Kg   0.11/09/21 18:26   11/14/21 22:42   Perfluorocanesulfonic acid   ND   0.24   0.047   ug/Kg   0.11/09/21 18:26   11/14/21 22:42   Perfluorocanesulfonic acid   ND   0.24   0.047   ug/Kg   0.11/09/21 18:26   11/14/21 22:42   Perfluorocanesulfonic acid   ND   0.24   0.047   ug/Kg   0.11/09/21 18:26   11/14/21 22:42   Perfluorocanesulfonic acid   ND   0.24   0.047   ug/Kg   0.11/09/21 18:26   11/14/21 22:42   Perfluorocanesulfonic acid   ND   0.24   0.047   ug/Kg   0.11/09/21 18:26   11/14/21 22:42   Perfluorocanesulfonic acid   ND   0.24   0.047   ug/Kg   0.11/09/21 18:26   11/14/21 22:42   Perfluorocanesulfonic acid   ND   0.24   0.047   ug/Kg   0.11/09/21 18:26   11/14/21 22:42   Perfluorocanesulfonic	Perfluorotridecanoic acid (PFTriA)   ND   0.24   0.025   ug/Kg   11/09/21   18:26   11/14/21   Perfluorotetradecanoic acid (PFTeA)   ND   0.24   0.045   ug/Kg   11/09/21   18:26   11/14/21   Perfluorobutanesulfonic acid (PFBS)   ND   0.24   0.046   ug/Kg   11/09/21   18:26   11/14/21   Perfluorobetanesulfonic acid (PFHxS)   ND   0.24   0.052   ug/Kg   11/09/21   18:26   11/14/21   Perfluoroctanesulfonic acid (PFDS)   ND   0.24   0.052   ug/Kg   11/09/21   18:26   11/14/21   N-methylperfluoroctanesulfonamidoa   ND   0.24   0.052   ug/Kg   11/09/21   18:26   11/14/21   N-methylperfluoroctanesulfonamidoa   ND   0.24   0.058   ug/Kg   11/09/21   18:26   11/14/21	2:42	11/14/21 22:42	11/09/21 18:26	₩	ug/Kg	0.051	0.24		ND	Perfluoroundecanoic acid (PFUnA)
Perfluorotetradecanoic acid (PFTeA)   ND   0.24   0.045   ug/Kg   0.11/09/21 18:26   11/14/21 22:42     Perfluorobutanesulfonic acid (PFBS)   ND   0.24   0.046   ug/Kg   0.11/09/21 18:26   11/14/21 22:42     Perfluoroctanesulfonic acid (PFNS)   ND   0.24   0.052   ug/Kg   0.11/09/21 18:26   11/14/21 22:42     Perfluoroctanesulfonic acid (PFNS)   ND   0.24   0.052   ug/Kg   0.11/09/21 18:26   11/14/21 22:42     Perfluoroctanesulfonic acid (PFNS)   ND   0.24   0.052   ug/Kg   0.11/09/21 18:26   11/14/21 22:42     Perfluoroctanesulfonamidoa   ND   0.24   0.058   ug/Kg   0.11/09/21 18:26   11/14/21 22:42     Perfluoroctanesulfonamidoa   ND   0.24   0.058   ug/Kg   0.11/09/21 18:26   11/14/21 22:42     Perfluoroctanesulfonamidoa   ND   0.24   0.049   ug/Kg   0.11/09/21 18:26   11/14/21 22:42     Perfluoroctanesulfonamidoa   ND   0.24   0.049   ug/Kg   0.11/09/21 18:26   11/14/21 22:42     Perfluoroctanesulfonamidoa   ND   0.24   0.049   ug/Kg   0.11/09/21 18:26   11/14/21 22:42     Perfluoroctanesulfonamidoa   ND   0.24   0.049   ug/Kg   0.11/09/21 18:26   11/14/21 22:42     Perfluoroctanesulfonamidoa   ND   0.24   0.049   ug/Kg   0.11/09/21 18:26   11/14/21 22:42     Perfluoroctanesulfonamidoa   ND   0.24   0.049   ug/Kg   0.11/09/21 18:26   11/14/21 22:42     Perfluoroctanesulfonamidoa   ND   0.24   0.049   ug/Kg   0.11/09/21 18:26   11/14/21 22:42     Perfluoroctanesulfonamidoa   ND   0.24   0.049   ug/Kg   0.11/09/21 18:26   11/14/21 22:42     Perfluoroctanesulfonamidoa   ND   0.24   0.049   ug/Kg   0.11/09/21 18:26   11/14/21 22:42     Perfluoroctanesulfonamidoa   ND   0.24   0.049   ug/Kg   0.11/09/21 18:26   11/14/21 22:42     Perfluoroctanesulfonamidoa   ND   0.24   0.049   ug/Kg   0.11/09/21 18:26   11/14/21 22:42     Perfluoroctanesulfonamidoa   ND   0.24   0.049   ug/Kg   0.11/09/21 18:26   11/14/21 22:42     Perfluoroctanesulfonamidoa   ND   0.24   0.049   ug/Kg   0.11/09/21 18:26   11/14/21 22:42     Perfluoroctanesulfonamidoa   ND   0.24   0.049   ug/Kg   0.11/09/21 18:26   11/14/21 22:42     Perfluo	Perfluorotetradecanoic acid (PFTeA)   ND   0.24   0.045   ug/Kg   width   11/09/21   18:26   11/14/21   18/1	2:42	11/14/21 22:42	11/09/21 18:26	☼	ug/Kg	0.036	0.24		ND	Perfluorododecanoic acid (PFDoA)
Perfluorobutanesulfonic acid (PFBS)   ND   0.24   0.046   ug/Kg   0   11/09/21 18:26   11/14/21 22:42   Perfluorochexanesulfonic acid (PFKS)   ND   0.24   0.035   ug/Kg   0   11/09/21 18:26   11/14/21 22:42   Perfluorochexanesulfonic acid (PFCS)   ND   0.24   0.052   ug/Kg   0   11/09/21 18:26   11/14/21 22:42   Perfluorocctanesulfonamidoa   ND   0.24   0.028   ug/Kg   0   11/09/21 18:26   11/14/21 22:42   Perfluorocctanesulfonamidoa   ND   0.24   0.058   ug/Kg   0   11/09/21 18:26   11/14/21 22:42   Perfluorocctanesulfonamidoa   ND   0.24   0.058   ug/Kg   0   11/09/21 18:26   11/14/21 22:42   Perfluorocctanesulfonamidoa   ND   0.24   0.042   ug/Kg   0   11/09/21 18:26   11/14/21 22:42   Perfluorocctanesulfonamidoa   ND   0.24   0.049   ug/Kg   0   11/09/21 18:26   11/14/21 22:42   Perfluorocctanesulfonamidoa   ND   0.24   0.049   ug/Kg   0   11/09/21 18:26   11/14/21 22:42   Perfluorocctanesulfonamidoa   ND   0.24   0.049   ug/Kg   0   11/09/21 18:26   11/14/21 22:42   Perfluorocctanesulfonamidoa   ND   0.24   0.049   ug/Kg   0   11/09/21 18:26   11/14/21 22:42   Perfluorocctanesulfonamidoa   ND   0.24   0.047   ug/Kg   0   11/09/21 18:26   11/14/21 22:42   Perfluorocctanesulfonamidoa   ND   0.24   0.047   ug/Kg   0   11/09/21 18:26   11/14/21 22:42   Perfluorocctanesulfonamidoa   ND   0.24   0.047   ug/Kg   0   11/09/21 18:26   11/14/21 22:42   Perfluorocctanesulfonamidoa   ND   0.24   0.047   ug/Kg   0   11/09/21 18:26   11/14/21 22:42   Perfluorocctanesulfonamidoa   ND   0.24   0.047   ug/Kg   0   11/09/21 18:26   11/14/21 22:42   Perfluorocctanesulfonamidoa   ND   0.24   0.047   ug/Kg   0   11/09/21 18:26   11/14/21 22:42   Perfluorocctanesulfonamidoa   ND   0.24   0.047   ug/Kg   0   11/09/21 18:26   11/14/21 22:42   Perfluorocctanesulfonamidoa   ND   0.24   0.047   ug/Kg   0   11/09/21 18:26   11/14/21 22:42   Perfluorocctanesulfonamidoa   ND   0.24   0.047   ug/Kg   0   11/09/21 18:26   11/14/21 22:42   13/24 PFIDA   96   50.150   11/09/21 18:26   11/14/21 22:42   13/24 PFIDA   96   50.150   11/09/21	Perfluorobutanesulfonic acid (PFBS)	2:42	11/14/21 22:42	11/09/21 18:26	₩	ug/Kg	0.025	0.24		ND	Perfluorotridecanoic acid (PFTriA)
Perfluorohexanesulfonic acid (PFHxS)   ND   0.24   0.035   ug/Kg   0.11/09/21 18:26   11/14/21 22:42   Perfluoroctanesulfonic acid (PFOS)   ND   0.24   0.052   ug/Kg   0.11/09/21 18:26   11/14/21 22:42   vg/Kg   0.11/09/21 18:26   11/14/21 22:42   vg/Kg   0.028   ug/Kg   0.11/09/21 18:26   11/14/21 22:42   vg/Kg   0.047   ug/Kg   0.11/09/21 18:26   11/14/21 22:42   vg/Kg   0.11/09/21 18:26   11/14/21 22:42   vg/Kg   0.047   ug/Kg   0.047   ug/Kg   0.11/09/21 18:26   11/14/21 22:42   vg/Kg   0.047   ug/Kg   0.047   ug/Kg   0.11/09/21 18:26   11/14/21 22:42   vg/Kg   0.047   ug/Kg   0.047   ug/Kg   0.11/09/21 18:26   11/14/21 22:42   vg/Kg   0.047   ug/Kg   0.047   ug/Kg   0.11/09/21 18:26   11/14/21 22:42   vg/Kg   0.047   ug/Kg   0.04	Perfluorohexanesulfonic acid (PFHxS)	2:42	11/14/21 22:42	11/09/21 18:26	₩	ug/Kg	0.045	0.24		ND	Perfluorotetradecanoic acid (PFTeA)
Perfluorooctanesulfonic acid (PFOS)   ND   0.24   0.052   ug/Kg   11/09/21 18:26   11/14/21 22:42	Perfluorocotanesulfonic acid (PFOS)   ND   0.24   0.052   ug/Kg   11/09/21 18:26   11/14/21   N-methylperfluorocotanesulfonamidoa cetic acid (NMeFOSAA)   ND   0.24   0.058   ug/Kg   11/09/21 18:26   11/14/21   etic acid (NMeFOSAA)   ND   0.24   0.058   ug/Kg   11/09/21 18:26   11/14/21   etic acid (NEIFOSAA)   P-Chlorohexadecafluoro-3-oxanonan   ND   0.24   0.042   ug/Kg   11/09/21 18:26   11/14/21   etic acid (NEIFOSAA)   ND   0.24   0.049   ug/Kg   11/09/21 18:26   11/14/21   etic acid (NEIFOSAA)   ND   0.24   0.049   ug/Kg   11/09/21 18:26   11/14/21   etic acid (NEIFOSAA)   ND   0.24   0.049   ug/Kg   11/09/21 18:26   11/14/21   etic acid (NEIFO-DA)   ND   0.24   0.037   ug/Kg   11/09/21 18:26   11/14/21   etic acid (NEIFO-DA)   ND   0.24   0.037   ug/Kg   11/09/21 18:26   11/14/21   etic acid (NEIFO-DA)   ND   0.24   0.047   ug/Kg   11/09/21 18:26   11/14/21   etic acid (NEIFO-DA)   ND   0.24   0.047   ug/Kg   11/09/21 18:26   11/14/21   etic acid (NEIFO-DA)   ND   0.24   0.047   ug/Kg   11/09/21 18:26   11/14/21   etic acid (NEIFO-DA)   ND   0.24   0.047   ug/Kg   11/09/21 18:26   11/14/21   etic acid (NEIFO-DA)   ND   0.24   0.047   ug/Kg   11/09/21 18:26   11/14/21   etic acid (NEIFO-DA)   ND   0.24   0.047   ug/Kg   11/09/21 18:26   11/14/21   etic acid (NEIFO-DA)   ND   0.24   0.047   ug/Kg   11/09/21 18:26   11/14/21   etic acid (NEIFO-DA)   ND   0.24   0.047   ug/Kg   11/09/21 18:26   11/14/21   etic acid (NEIFO-DA)   ND   0.24   0.047   ug/Kg   11/09/21 18:26   11/14/21   etic acid (NEIFO-DA)   ND   0.24   0.047   ug/Kg   11/09/21 18:26   11/14/21   etic acid (NEIFO-DA)   ND   0.24   0.047   ug/Kg   11/09/21 18:26   11/14/21   etic acid (NEIFO-DA)   ND   0.24   0.047   ug/Kg   11/09/21 18:26   11/14/21   etic acid (NEIFO-DA)   ND   0.24   0.047   ug/Kg	2:42	11/14/21 22:42	11/09/21 18:26	☼	ug/Kg	0.046	0.24		ND	Perfluorobutanesulfonic acid (PFBS)
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA) N-bethylperfluorooctanesulfonamidoac cetic acid (NMeFOSAA) N-bethylperfluorooctanesulfonamidoac cetic acid (NEFOSAA) 9-Chlorohexadecafluoro-3-oxanonan ND 0.24 0.042 ug/Kg 0.11/09/21 18:26 11/14/21 22:42 e-1-sulfonic acid (NEFOSAA) 9-Chlorohexadecafluoro-3-oxanonan ND 0.24 0.042 ug/Kg 0.11/09/21 18:26 11/14/21 22:42 e-1-sulfonic acid (NEFOSAA) 11-Chloroeicosafluoro-3-oxanonan ND 0.24 0.049 ug/Kg 0.11/09/21 18:26 11/14/21 22:42 e-1-sulfonic acid (NEFOSAA) 11-Chloroeicosafluoro-3-oxanudecan ND 0.24 0.037 ug/Kg 0.11/09/21 18:26 11/14/21 22:42 e-1-sulfonic acid (NEFOSAA) 11-Chloroeicosafluoro-3-oxanudecan ND 0.24 0.047 ug/Kg 0.11/09/21 18:26 11/14/21 22:42 e-1-sulfonic acid (NEFOSAA) 11-Chloroeicosafluoro-3-oxanudecan ND 0.24 0.047 ug/Kg 0.11/09/21 18:26 11/14/21 22:42 e-1-sulfonic acid (NEFOSAA) 11-Chloroeicosafluoro-3-oxanudecan ND 0.24 0.047 ug/Kg 0.11/09/21 18:26 11/14/21 22:42 e-1-sulfonic acid (NEFOSAA) 11-Chloroeicosafluoro-3-oxanudecan ND 0.24 0.047 ug/Kg 0.11/09/21 18:26 11/14/21 22:42 e-1-sulfonic acid (NEFOSAA) 11-Chloroeicosafluoro-3-oxanudecan ND 0.24 0.047 ug/Kg 0.11/09/21 18:26 11/14/21 22:42 e-1-sulfonic acid (NEFOSAA) 11-Chloroeicosafluoro-3-oxanudecan ND 0.24 0.047 ug/Kg 0.11/09/21 18:26 11/14/21 22:42 e-1-sulfonic acid (NEFOSAA) 11-Chloroeicosafluoro-3-oxanudecan ND 0.24 0.047 ug/Kg 0.11/09/21 18:26 11/14/21 22:42 e-1-sulfonic acid (NEFOSAA) 11-Chloroeicosafluoro-3-oxanudecan ND 0.24 0.047 ug/Kg 0.11/09/21 18:26 11/14/21 22:42 e-1-sulfonic acid (NEFOSAA) 11-Chloroeicosafluoro-3-oxanudecan ND 0.24 0.047 ug/Kg 0.11/09/21 18:26 11/14/21 22:42 e-1-sulfonic acid (NEFOSAA) 11-Chloroeicosafluoro-3-oxanudecan ND 0.24 0.047 ug/Kg 0.11/09/21 18:26 11/14/21 22:42 e-1-sulfonic acid (NEFOSAA) 11-Chloroeicosafluoro-3-oxanudecan ND 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15	N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA) N-ethylperfluorooctanesulfonamidoac ND 0.24 0.058 ug/Kg 11/09/21 18:26 11/14/21 etic acid (NMeFOSAA) N-ethylperfluorooctanesulfonamidoac ND 0.24 0.058 ug/Kg 11/09/21 18:26 11/14/21 etic acid (NEFOSAA) 9-Chlorohexadecafluoro-3-oxanonan ND 0.24 0.042 ug/Kg 11/09/21 18:26 11/14/21 e-1-sulfonic acid Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxanudecan ND 0.24 0.049 ug/Kg 11/09/21 18:26 11/14/21 e-1-sulfonic acid e-1-sulfonic acid ND 0.24 0.047 ug/Kg 11/09/21 18:26 11/14/21 e-1-sulfonic acid (ADONA)  Isotope Dilution Recovery Qualifier Limits Prepared 11/09/21 18:26 11/14/21 13/02 PFHxA 103 50 -150 11/09/21 18:26 11/14/21 13/02 PFDA 86 50 -150 11/09/21 18:26 11/14/21 13/02 PFDA 87 50 -150 11/09/21 18:26 11/14/21 13/02 PFDA 87 50 -150 11/09/21 18:26 11/14/21 13/02 PFDA 83 50 -150 11/09/21 18:26 11/14/21 13/02 PFDA 83 50 -150 11/09/21 18:26 11/14/21 13/02 PFDA 83 50 -150 11/09/21 18:26 11/14/21 13/02 PFDA 83 50 -150 11/09/21 18:26 11/14/21 13/02 PFDA 83 50 -150 11/09/21 18:26 11/14/21 13/02 PFDA 84 50 -150 11/09/21 18:26 11/14/21 13/02 PFDA 85 50 -150 11/09/21 18:26 11/14/21 13/02 PFDA 84 50 -150 11/09/21 18:26 11/14/21 13/02 PFDA 85 50 -150 11/09/21 18:26 11/14/21 13/02 PFDA 84 50 -150 11/09/21 18:26 11/14/21 13/02 PFDA 85 50 -150 11/09/21 18:26 11/14/21 13/02 PFDA 84 50 -150 11/09/21 18:26 11/14/21 13/02 PFDA 85 50 -150 11/09/21 18:26 11/14/21 13/02 PFDA 85 50 -150 11/09/21 18:26 11/14/21 13/02 PFDA 85 50 -150 11/09/21 18:26 11/14/21 13/02 PFDA 85 50 -150 11/09/21 18:26 11/14/21 13/02 PFDA 85 50 -150 11/09/21 18:26 11/14/21 13/02 PFDA 85 50 -150 11/09/21 18:26 11/14/21 13/02 PFDA 85 50 -150 11/09/21 18:26 11/14/21 13/02 PFDA 85 50 -150 11/09/21 18:26 11/14/21 13/02 PFDA 85 50 -150 11/09/21 18:26 11/14/21 13/02 PFDA 85 50 -150 11/09/21 18:26 11/14/21 13/02 PFDA 85 50 -150 11/09/21 18:26 11/14/21 13/02 PFDA 85 50 -150 11/09/21 18:26 11/14/21 13/02 PFDA 85 50 -150 11/09/21 18:26 11/14/21 13/02 PFDA 85 50 -150 11/09/21 18:26 11/14/21	2:42	11/14/21 22:42	11/09/21 18:26	₩	ug/Kg	0.035	0.24		ND	Perfluorohexanesulfonic acid (PFHxS)
cetic acid (NMeFOSAA)         ND         0.24         0.058         ug/Kg         11/09/21 18:26         11/14/21 22:42         etic acid (NEFOSAA)           9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)         ND         0.24         0.042         ug/Kg         11/09/21 18:26         11/14/21 22:42         11/1	Cetic acid (NMeFOSAA)   N-ethylperfluorooctanesulfonamidoac   ND	2:42	11/14/21 22:42	11/09/21 18:26	₩	ug/Kg	0.052	0.24		ND	Perfluorooctanesulfonic acid (PFOS)
## Section   Sec	etic acid (NEtFOSAA) 9-Chlorohexadecafluoro-3-oxanonan 9-Chlorohexadecafluoro-3-oxanonan 9-Chlorohexadecafluoro-3-oxanonan 9-Chlorohexadecafluoro-3-oxanonan ND 0.24 0.049 0.0	2:42	11/14/21 22:42	11/09/21 18:26	₩	ug/Kg	0.028	0.24		ND	* *
e-1-sulfonic acid Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid 4-8-Dioxa-3H-perfluorononanoic acid (ADONA)    Sotope Dilution   SRecovery   Qualifier   Limits   Prepared   Analyzed   11/09/21 18:26   11/14/21 22:42     304 PFDA   96   50-150   11/09/21 18:26   11/14/21 22:42     305 PFNA   84   50-150   11/09/21 18:26   11/14/21 22:42     305 PFNA   84   50-150   11/09/21 18:26   11/14/21 22:42     305 PFDA   87   50-150   11/09/21 18:26   11/14/21 22:42     305 PFDA   88   50-150   11/09/21 18:26   11/14/21 22:42     305 PFDA   87   50-150   11/09/21 18:26   11/14/21 22:42     305 PFDA   88   50-150   11/09/21 18:26   11/14/21 22:42     305 PFBS   97   50-150   11/09/21 18:26   11/14/21 22:42     305 PFBS   90   50-150   11/09/21 18:26   11/14/21 22:42     305	e-1-sulfonic acid Hexafluoropropylene Oxide Dimer ND 0.24 0.049 ug/Kg 11/09/21 18:26 11/14/21 0.047 ug/Kg 11/09/21 0.047 ug/Kg 11	2:42	11/14/21 22:42	11/09/21 18:26	₽	ug/Kg	0.058	0.24		ND	N-ethylperfluorooctanesulfonamidoac
Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid (ADONA)    Sotope Dilution   WRecovery   Qualifier   Limits   Dilution   Prepared   Analyzed   Dilution   Male   Ma	Acid (HFPO-DA)  11-Chloroeicosafluoro-3-oxaundecan ND 0.24 0.037 ug/Kg 11/09/21 18:26 11/14/21 e-1-sulfonic acid  4,8-Dioxa-3H-perfluorononanoic acid (ADONA)  Isotope Dilution %Recovery Qualifier Limits Prepared Analysis 11/09/21 18:26 11/14/21 13:22 PFHxA 103 50 - 150 11/09/21 18:26 11/14/21 13:24 PFOA 86 50 - 150 11/09/21 18:26 11/14/21 13:25 PFNA 84 50 - 150 11/09/21 18:26 11/14/21 13:25 PFDA 87 50 - 150 11/09/21 18:26 11/14/21 13:25 PFDA 87 50 - 150 11/09/21 18:26 11/14/21 13:25 PFDA 88 50 - 150 11/09/21 18:26 11/14/21 13:25 PFDA 88 50 - 150 11/09/21 18:26 11/14/21 13:25 PFDA 88 50 - 150 11/09/21 18:26 11/14/21 13:25 PFDA 88 50 - 150 11/09/21 18:26 11/14/21 13:25 PFDA 88 50 - 150 11/09/21 18:26 11/14/21 13:25 PFDA 88 50 - 150 11/09/21 18:26 11/14/21 13:25 PFBS 97 50 - 150 11/09/21 18:26 11/14/21 13:25 PFBS 97 50 - 150 11/09/21 18:26 11/14/21 13:24 PFOS 90 50 - 150 11/09/21 18:26 11/14/21 13:24 PFOS 90 50 - 150 11/09/21 18:26 11/14/21 13:24 PFOS 90 50 - 150 11/09/21 18:26 11/14/21 13:24 PFOS 90 50 - 150 11/09/21 18:26 11/14/21 13:24 PFOS 90 50 - 150 11/09/21 18:26 11/14/21 13:24 PFOS 90 50 - 150 11/09/21 18:26 11/14/21 13:24 PFOS 90 50 - 150 11/09/21 18:26 11/14/21 13:24 PFOS 90 50 - 150 11/09/21 18:26 11/14/21 13:24 PFOS 90 50 - 150 11/09/21 18:26 11/14/21	2:42	11/14/21 22:42	11/09/21 18:26	≎	ug/Kg	0.042	0.24		ND	
e-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid 4,8-Dioxa-3H	e-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid 4,8-Dioxa-3H-perfluorononanoic acid (ADONA)    Sotope Dilution   %Recovery   Qualifier   Limits   Prepared   Analyzi   11/09/21   18:26   11/14/21   13C2 PFHxA   103   50 - 150   11/09/21   18:26   11/14/21   13C4 PFHpA   96   50 - 150   11/09/21   18:26   11/14/21   13C5 PFNA   84   50 - 150   11/09/21   18:26   11/14/21   13C2 PFDA   87   50 - 150   11/09/21   18:26   11/14/21   13C2 PFUnA   90   50 - 150   11/09/21   18:26   11/14/21   13C2 PFDA   87   50 - 150   11/09/21   18:26   11/14/21   13C2 PFDOA   85   50 - 150   11/09/21   18:26   11/14/21   13C2 PFTeDA   83   50 - 150   11/09/21   18:26   11/14/21   13C3 PFBS   97   50 - 150   11/09/21   18:26   11/14/21   13C3 PFBS   97   50 - 150   11/09/21   18:26   11/14/21   13C4 PFOS   90   50 - 150   11/09/21   18:26   11/14/21   13C4 PFOS   90   50 - 150   11/09/21   18:26   11/14/21   13C4 PFOS   90   50 - 150   11/09/21   18:26   11/14/21   13C4 PFOS   90   50 - 150   11/09/21   18:26   11/14/21   13C4 PFOS   90   50 - 150   11/09/21   18:26   11/14/21   13C4 PFOS   90   50 - 150   11/09/21   18:26   11/14/21   13C4 PFOS   90   50 - 150   11/09/21   18:26   11/14/21   13C4 PFOS   90   50 - 150   11/09/21   18:26   11/14/21   13C4 PFOS   90   50 - 150   11/09/21   18:26   11/14/21   13C4 PFOS   90   50 - 150   11/09/21   18:26   11/14/21   13C4 PFOS   90   50 - 150   11/09/21   18:26   11/14/21   13C4 PFOS   90   50 - 150   11/09/21   18:26   11/14/21   13C4 PFOS   90   50 - 150   11/09/21   18:26   11/14/21   13C4 PFOS   90   50 - 150   11/09/21   18:26   11/14/21   13C4 PFOS   90   50 - 150   11/09/21   18:26   11/14/21   13C4 PFOS   90   50 - 150   11/09/21   18:26   11/14/21   13C4 PFOS   90   90   90   90   90   90   90   9	2:42	11/14/21 22:42	11/09/21 18:26	₩	ug/Kg	0.049	0.24		ND	
Sotope Dilution   %Recovery   Qualifier   Limits   Prepared   Analyzed   Dil Fator   13C2 PFHxA   103   50 - 150   11/09/21 18:26   11/14/21 22:42   13C4 PFHpA   96   50 - 150   11/09/21 18:26   11/14/21 22:42   13C4 PFOA   86   50 - 150   11/09/21 18:26   11/14/21 22:42   13C5 PFNA   84   50 - 150   11/09/21 18:26   11/14/21 22:42   13C2 PFDA   87   50 - 150   11/09/21 18:26   11/14/21 22:42   13C2 PFDA   87   50 - 150   11/09/21 18:26   11/14/21 22:42   13C2 PFDA   85   50 - 150   11/09/21 18:26   11/14/21 22:42   13C2 PFDA   85   50 - 150   11/09/21 18:26   11/14/21 22:42   13C2 PFTeDA   83   50 - 150   11/09/21 18:26   11/14/21 22:42   13C3 PFBS   97   50 - 150   11/09/21 18:26   11/14/21 22:42   13C4 PFOS   90   50 - 150   11/09/21 18:26   11/14/21 22:42   13C4 PFOS   90   50 - 150   11/09/21 18:26   11/14/21 22:42   13C4 PFOS   90   50 - 150   11/09/21 18:26   11/14/21 22:42   13C4 PFOS   90   50 - 150   11/09/21 18:26   11/14/21 22:42   13C4 PFOS   90   50 - 150   11/09/21 18:26   11/14/21 22:42   13C4 PFOS   90   50 - 150   11/09/21 18:26   11/14/21 22:42   13C4 PFOS   90   50 - 150   11/09/21 18:26   11/14/21 22:42   13C4 PFOS   90   50 - 150   11/09/21 18:26   11/14/21 22:42   13C4 PFOS   90   50 - 150   11/09/21 18:26   11/14/21 22:42   13C4 PFOS   90   50 - 150   11/09/21 18:26   11/14/21 22:42   13C4 PFOS   13/09/21 18:26   11/14/21 22:42   13C4 PFOS   13/09/21 18:26   11/14/21 22:42   13C4 PFOS   13/09/21 18:26   11/14/21 22:42   13/09/21 18:26   11/14/21 22:42   13/09/21 18:26   11/14/21 22:42   13	Sotope Dilution   %Recovery   Qualifier   Limits   Prepared   Analyzi   13C2 PFHxA   103   50 - 150   11/09/21 18:26   11/14/21   13C4 PFHpA   96   50 - 150   11/09/21 18:26   11/14/21   13C4 PFOA   86   50 - 150   11/09/21 18:26   11/14/21   13C5 PFNA   84   50 - 150   11/09/21 18:26   11/14/21   13C2 PFDA   87   50 - 150   11/09/21 18:26   11/14/21   13C2 PFUnA   90   50 - 150   11/09/21 18:26   11/14/21   13C2 PFDOA   85   50 - 150   11/09/21 18:26   11/14/21   13C2 PFTDA   83   50 - 150   11/09/21 18:26   11/14/21   13C3 PFBS   97   50 - 150   11/09/21 18:26   11/14/21   13C3 PFBS   97   50 - 150   11/09/21 18:26   11/14/21   13C3 PFBS   97   50 - 150   11/09/21 18:26   11/14/21   13C4 PFOS   90   50 - 150   11/09/21 18:26   11/14/21   13C4 PFOS   90   50 - 150   11/09/21 18:26   11/14/21   13C4 PFOS   90   50 - 150   11/09/21 18:26   11/14/21   13C4 PFOS   90   50 - 150   11/09/21 18:26   11/14/21   13C4 PFOS   90   50 - 150   11/09/21 18:26   11/14/21   13C4 PFOS   90   50 - 150   11/09/21 18:26   11/14/21   13C4 PFOS   90   50 - 150   11/09/21 18:26   11/14/21   13C4 PFOS   90   50 - 150   11/09/21 18:26   11/14/21   13C4 PFOS   90   50 - 150   11/09/21 18:26   11/14/21   13C4 PFOS   90   50 - 150   11/09/21 18:26   11/14/21   13C4 PFOS   90   50 - 150   11/09/21 18:26   11/14/21   13C4 PFOS   90   50 - 150   11/09/21 18:26   11/14/21   13C4 PFOS   90   50 - 150   11/09/21 18:26   11/14/21   13C4 PFOS   90   50 - 150   11/09/21 18:26   11/14/21   13C4 PFOS   90   50 - 150   11/09/21 18:26   11/14/21   11/09/21 18:26   11/14/21   11/09/21 18:26   11/14/21   11/09/21 18:26   11/14/21   11/09/21 18:26   11/14/21   11/09/21 18:26   11/14/21   11/09/21 18:26   11/14/21   11/09/21 18:26   11/14/21   11/09/21 18:26   11/14/21   11/09/21 18:26   11/14/21   11/09/21 18:26   11/14/21   11/09/21 18:26   11/14/21   11/09/21 18:26   11/14/21   11/09/21 18:26   11/14/21   11/09/21 18:26   11/14/21   11/09/21 18:26   11/14/21   11/09/21 18:26   11/14/21   11/09/21 18:26   11/14/21   11/09/21 18:26   11/14/21   11/09/	2:42	11/14/21 22:42	11/09/21 18:26	₩	ug/Kg	0.037	0.24		ND	
13C2 PFHXA 103 50-150 11/09/21 18:26 11/14/21 22:42 13C4 PFHpA 96 50-150 11/09/21 18:26 11/14/21 22:42 13C5 PFNA 86 50-150 11/09/21 18:26 11/14/21 22:42 13C5 PFNA 87 50-150 11/09/21 18:26 11/14/21 22:42 13C2 PFDA 87 50-150 11/09/21 18:26 11/14/21 22:42 13C2 PFDA 87 50-150 11/09/21 18:26 11/14/21 22:42 13C2 PFDA 85 50-150 11/09/21 18:26 11/14/21 22:42 13C2 PFDA 85 50-150 11/09/21 18:26 11/14/21 22:42 13C2 PFDA 83 50-150 11/09/21 18:26 11/14/21 22:42 13C3 PFBS 97 50-150 11/09/21 18:26 11/14/21 22:42 13C3 PFBS 97 50-150 11/09/21 18:26 11/14/21 22:42 13C4 PFOS 90 50-150 11/09/21 18:26 11/14/21 22:42 13C3 PFPOSAA 85 50-150 11/09/21 18:26 11/14/21 22:42 13C3 HFPO-DA 85 50-150 11/09/21 18:26 11/14/21 22:42 13C3 HFPO-DA 82 50-150 50-15	13C2 PFHxA       103       50 - 150       11/09/21 18:26       11/14/21         13C4 PFHpA       96       50 - 150       11/09/21 18:26       11/14/21         13C4 PFOA       86       50 - 150       11/09/21 18:26       11/14/21         13C5 PFNA       84       50 - 150       11/09/21 18:26       11/14/21         13C2 PFDA       87       50 - 150       11/09/21 18:26       11/14/21         13C2 PFUnA       90       50 - 150       11/09/21 18:26       11/14/21         13C2 PFDOA       85       50 - 150       11/09/21 18:26       11/14/21         13C2 PFTeDA       83       50 - 150       11/09/21 18:26       11/14/21         13C3 PFBS       97       50 - 150       11/09/21 18:26       11/14/21         18O2 PFHxS       84       50 - 150       11/09/21 18:26       11/14/21         13C4 PFOS       90       50 - 150       11/09/21 18:26       11/14/21         d3-NMeFOSAA       85       50 - 150       11/09/21 18:26       11/14/21	2:42	11/14/21 22:42	11/09/21 18:26	₩	ug/Kg	0.047	0.24		ND	•
13C4 PFHpA 96 50 - 150 11/09/21 18:26 11/14/21 22:42 13C4 PFOA 86 50 - 150 11/09/21 18:26 11/14/21 22:42 13C5 PFNA 84 50 - 150 11/09/21 18:26 11/14/21 22:42 13C2 PFDA 87 50 - 150 11/09/21 18:26 11/14/21 22:42 13C2 PFUnA 90 50 - 150 11/09/21 18:26 11/14/21 22:42 13C2 PFDA 85 50 - 150 11/09/21 18:26 11/14/21 22:42 13C2 PFDA 83 50 - 150 11/09/21 18:26 11/14/21 22:42 13C2 PFTeDA 83 50 - 150 11/09/21 18:26 11/14/21 22:42 13C2 PFTEDA 83 50 - 150 11/09/21 18:26 11/14/21 22:42 13C2 PFTEDA 84 50 - 150 11/09/21 18:26 11/14/21 22:42 13C2 PFHxS 84 50 - 150 11/09/21 18:26 11/14/21 22:42 13C4 PFOS 90 50 - 150 11/09/21 18:26 11/14/21 22:42 13C4 PFOS 90 50 - 150 11/09/21 18:26 11/14/21 22:42 13C4 PFOS 90 50 - 150 11/09/21 18:26 11/14/21 22:42 13C4 PFOS 90 50 - 150 11/09/21 18:26 11/14/21 22:42 13C3 HFPO-DA 82 50 - 150 11/09/21 18:26 11/14/21 22:42 13C3 HFPO-DA 82 50 - 150 11/09/21 18:26 11/14/21 22:42 13C3 HFPO-DA 82 50 - 150 11/09/21 18:26 11/14/21 22:42 13C3 HFPO-DA 82 50 - 150 11/09/21 18:26 11/14/21 22:42 13C3 HFPO-DA 82 50 - 150 11/09/21 18:26 11/14/21 22:42 13C3 HFPO-DA 82 50 - 150 11/09/21 18:26 11/14/21 22:42 13C3 HFPO-DA 82 50 - 150 11/09/21 18:26 11/14/21 22:42 13C3 HFPO-DA 82 50 - 150 11/09/21 18:26 11/14/21 22:42 13C3 HFPO-DA 82 50 - 150 11/09/21 18:26 11/14/21 22:42 13C3 HFPO-DA 82 50 - 150 11/09/21 18:26 11/14/21 22:42 13C3 HFPO-DA 82 50 - 150 11/09/21 18:26 11/14/21 22:42 13C3 HFPO-DA 82 50 - 150 11/09/21 18:26 11/14/21 22:42 13C3 HFPO-DA 82 50 - 150 11/09/21 18:26 11/14/21 22:42 13C3 HFPO-DA 82 50 - 150 11/09/21 18:26 11/14/21 22:42 13C3 HFPO-DA 82 11/09/21 18:26 11/14/21 22:42 13C3 HFPO-DA 82 11/09/21 18:26 11/14/21 22:42 13C3 HFPO-DA 82 11/09/21 18:26 11/14/21 22:42 13/09/21 18:26 11/14/21 22:42 13/09/21 18:26 11/14/21 22:42 13/09/21 18:26 11/14/21 22:42 13/09/21 18:26 11/14/21 22:42 13/09/21 18:26 11/14/21 22:42 13/09/21 18:26 11/14/21 22:42 13/09/21 18:26 11/14/21 22:42 13/09/21 18:26 11/14/21 22:42 13/09/21 18:26 11/14/21 22:42 13/09/21 18:26 11/14/21 22:42 13/09/21 18:26 11/14/21 22:42 13/09/21 18:26 11/1	13C4 PFHpA       96       50 - 150       11/09/21 18:26       11/14/21         13C4 PFOA       86       50 - 150       11/09/21 18:26       11/14/21         13C5 PFNA       84       50 - 150       11/09/21 18:26       11/14/21         13C2 PFDA       87       50 - 150       11/09/21 18:26       11/14/21         13C2 PFUNA       90       50 - 150       11/09/21 18:26       11/14/21         13C2 PFDOA       85       50 - 150       11/09/21 18:26       11/14/21         13C2 PFTEDA       83       50 - 150       11/09/21 18:26       11/14/21         13C3 PFBS       97       50 - 150       11/09/21 18:26       11/14/21         18O2 PFHxS       84       50 - 150       11/09/21 18:26       11/14/21         13C4 PFOS       90       50 - 150       11/09/21 18:26       11/14/21         d3-NMeFOSAA       85       50 - 150       11/09/21 18:26       11/14/21	ed Dil F	Analyzed	Prepared				Limits	Qualifier	%Recovery	Isotope Dilution
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13C2 PFDA  87 50 - 150 11/09/21 18:26 11/14/21 22:42 13C2 PFUnA 90 50 - 150 11/09/21 18:26 11/14/21 22:42 13C2 PFDOA 85 50 - 150 11/09/21 18:26 11/14/21 22:42 13C2 PFTeDA 83 50 - 150 11/09/21 18:26 11/14/21 22:42 13C3 PFBS 97 50 - 150 11/09/21 18:26 11/14/21 22:42 13C3 PFBS 97 50 - 150 11/09/21 18:26 11/14/21 22:42 13C3 PFBS 97 50 - 150 11/09/21 18:26 11/14/21 22:42 13C4 PFOS 90 50 - 150 11/09/21 18:26 11/14/21 22:42 13C4 PFOS 43-NMEFOSAA 85 50 - 150 11/09/21 18:26 11/14/21 22:42 13C3 PFDOA 85 60 - 150 11/09/21 18:26 11/14/21 22:42 11/09/21 18:26 11/14/21 2:42 11/09/21 18:26 11/14/21 22:42 11/09/21 18:26 11/14/21 22:42 11/09/21 18:26 11/14/21 22:42 11/09/21 18:26 11/14/21 22:42 11/09/21 18:26 11/14/21 22:42 11/09/21 18:26 11/14/21 22:42 11/09/21	13C2 PFDA       87       50 - 150       11/09/21 18:26       11/14/21         13C2 PFUnA       90       50 - 150       11/09/21 18:26       11/14/21         13C2 PFDoA       85       50 - 150       11/09/21 18:26       11/14/21         13C2 PFTeDA       83       50 - 150       11/09/21 18:26       11/14/21         13C3 PFBS       97       50 - 150       11/09/21 18:26       11/14/21         18O2 PFHxS       84       50 - 150       11/09/21 18:26       11/14/21         13C4 PFOS       90       50 - 150       11/09/21 18:26       11/14/21         d3-NMeFOSAA       85       50 - 150       11/09/21 18:26       11/14/21	2:42	11/14/21 22:42	11/09/21 18:26				50 <sub>-</sub> 150	i	86	13C4 PFOA
13C2 PFUnA  90  50 - 150  11/09/21 18:26  11/14/21 22:42  13C2 PFDoA  85  50 - 150  11/09/21 18:26  11/14/21 22:42  13C2 PFTeDA  83  50 - 150  11/09/21 18:26  11/14/21 22:42  13C3 PFBS  97  50 - 150  11/09/21 18:26  11/14/21 22:42  13C3 PFBS  97  50 - 150  11/09/21 18:26  11/14/21 22:42  13C3 PFBS  84  50 - 150  11/09/21 18:26  11/14/21 22:42  13C4 PFOS  90  50 - 150  11/09/21 18:26  11/14/21 22:42  11/09/21 18:26  11/14/21 22:42  11/09/21 18:26  11/14/21 22:42  11/09/21 18:26  11/14/21 22:42  13C3 HFPO-DA  82  50 - 150  11/09/21 18:26  11/14/21 22:42  11/09/21 18:26  11/14/21 22:42  11/09/21 18:26  11/14/21 22:42  11/09/21 18:26  11/14/21 22:42  11/09/21 18:26  11/14/21 22:42  11/09/21 18:26  11/14/21 22:42  11/09/21 18:26  11/14/21 22:42  11/09/21 18:26  11/14/21 22:42  11/09/21 18:26  11/14/21 12:42	13C2 PFUnA       90       50 - 150       11/09/21 18:26 11/14/21         13C2 PFDoA       85       50 - 150       11/09/21 18:26 11/14/21         13C2 PFTeDA       83       50 - 150       11/09/21 18:26 11/14/21         13C3 PFBS       97       50 - 150       11/09/21 18:26 11/14/21         18O2 PFHxS       84       50 - 150       11/09/21 18:26 11/14/21         13C4 PFOS       90       50 - 150       11/09/21 18:26 11/14/21         d3-NMeFOSAA       85       50 - 150       11/09/21 18:26 11/14/21	2:42	11/14/21 22:42	11/09/21 18:26				50 - 150	!	84	13C5 PFNA
13C2 PFDoA 85 50 - 150 11/09/21 18:26 11/14/21 22:42 13C3 PFTeDA 83 50 - 150 11/09/21 18:26 11/14/21 22:42 13C3 PFBS 97 50 - 150 11/09/21 18:26 11/14/21 22:42 18O2 PFHxS 84 50 - 150 11/09/21 18:26 11/14/21 22:42 13C4 PFOS 90 50 - 150 11/09/21 18:26 11/14/21 22:42 13C4 PFOS 90 50 - 150 11/09/21 18:26 11/14/21 22:42 13C4 PFOSAA 85 50 - 150 11/09/21 18:26 11/14/21 22:42 13C3 HFPO-DA 82 50 - 150 1	13C2 PFDoA       85       50 - 150       11/09/21 18:26       11/14/21         13C2 PFTeDA       83       50 - 150       11/09/21 18:26       11/14/21         13C3 PFBS       97       50 - 150       11/09/21 18:26       11/14/21         18O2 PFHxS       84       50 - 150       11/09/21 18:26       11/14/21         13C4 PFOS       90       50 - 150       11/09/21 18:26       11/14/21         d3-NMeFOSAA       85       50 - 150       11/09/21 18:26       11/14/21	2:42	11/14/21 22:42	11/09/21 18:26				50 - 150	•	87	13C2 PFDA
13C2 PFTeDA 83 50 - 150 11/09/21 18:26 11/14/21 22:42 13C3 PFBS 97 50 - 150 11/09/21 18:26 11/14/21 22:42 1802 PFHxS 84 50 - 150 11/09/21 18:26 11/14/21 22:42 13C4 PFOS 90 50 - 150 11/09/21 18:26 11/14/21 22:42 13C4 PFOSAA 85 50 - 150 11/09/21 18:26 11/14/21 22:42 13C3 HFPO-DA 82 50 -	13C2 PFTeDA     83     50 - 150     11/09/21 18:26     11/14/21       13C3 PFBS     97     50 - 150     11/09/21 18:26     11/14/21       18O2 PFHxS     84     50 - 150     11/09/21 18:26     11/14/21       13C4 PFOS     90     50 - 150     11/09/21 18:26     11/14/21       d3-NMeFOSAA     85     50 - 150     11/09/21 18:26     11/14/21	2:42	11/14/21 22:42	11/09/21 18:26				50 - 150	)	90	13C2 PFUnA
13C3 PFBS 97 50 - 150 11/09/21 18:26 11/14/21 22:42 18O2 PFHxS 84 50 - 150 11/09/21 18:26 11/14/21 22:42 13C4 PFOS 90 50 - 150 11/09/21 18:26 11/14/21 22:42 d3-NMeFOSAA 85 50 - 150 11/09/21 18:26 11/14/21 22:42 d5-NEtFOSAA 90 50 - 150 11/09/21 18:26 11/14/21 22:42 13C3 HFPO-DA 82 50 - 150 11/09/21 18:26 11/14/21 12:42 13/09/21 18:26 11/14/	13C3 PFBS     97     50 - 150     11/09/21 18:26     11/14/21       18O2 PFHxS     84     50 - 150     11/09/21 18:26     11/14/21       13C4 PFOS     90     50 - 150     11/09/21 18:26     11/14/21       d3-NMeFOSAA     85     50 - 150     11/09/21 18:26     11/14/21	2:42	11/14/21 22:42	11/09/21 18:26				50 - 150	i	85	13C2 PFDoA
1802 PFHxS     84     50 - 150     11/09/21 18:26     11/14/21 22:42       13C4 PFOS     90     50 - 150     11/09/21 18:26     11/14/21 22:42       d3-NMeFOSAA     85     50 - 150     11/09/21 18:26     11/14/21 22:42       d5-NEtFOSAA     90     50 - 150     11/09/21 18:26     11/14/21 22:42       13C3 HFPO-DA     82     50 - 150     11/09/21 18:26     11/14/21 22:42       General Chemistry       Analyte     Result     Qualifier     RL     MDL     Unit     D     Prepared     Analyzed     Dil Fa       Percent Moisture	18O2 PFHxS     84     50 - 150     11/09/21 18:26     11/14/21       13C4 PFOS     90     50 - 150     11/09/21 18:26     11/14/21       d3-NMeFOSAA     85     50 - 150     11/09/21 18:26     11/14/21	2:42	11/14/21 22:42	11/09/21 18:26				50 - 150	}	83	13C2 PFTeDA
13C4 PFOS 90 50 - 150 11/09/21 18:26 11/14/21 22:42 d3-NMeFOSAA 85 50 - 150 11/09/21 18:26 11/14/21 22:42 d5-NEtFOSAA 90 50 - 150 11/09/21 18:26 11/14/21 22:42 13C3 HFPO-DA 82 50 - 150 11/09/21 18:26 11/14/21 22:42 1	13C4 PFOS     90     50 - 150     11/09/21 18:26     11/14/21       d3-NMeFOSAA     85     50 - 150     11/09/21 18:26     11/14/21	2:42	11/14/21 22:42	11/09/21 18:26				50 - 150	•	97	13C3 PFBS
d3-NMeFOSAA     85     50 - 150     11/09/21 18:26     11/14/21 22:42       d5-NEtFOSAA     90     50 - 150     11/09/21 18:26     11/14/21 22:42       13C3 HFPO-DA     82     50 - 150     11/09/21 18:26     11/14/21 22:42       General Chemistry       Analyte     Result     Qualifier     RL     MDL     Unit     D     Prepared     Analyzed     Dil Fa       Percent Moisture     20.1     0.1     0.1     %     11/05/21 12:51	d3-NMeFOSAA 85 50 - 150 11/09/21 18:26 11/14/21	2:42	11/14/21 22:42	11/09/21 18:26				50 - 150	!	84	1802 PFHxS
d5-NEtFOSAA     90     50 - 150     11/09/21 18:26     11/14/21 22:42       13C3 HFPO-DA     82     50 - 150     11/09/21 18:26     11/14/21 22:42       General Chemistry       Analyte     Result     Qualifier     RL     MDL     Unit     D     Prepared     Analyzed     Dil Fa       Percent Moisture     20.1     0.1     0.1     %     11/05/21 12:51		2:42	11/14/21 22:42	11/09/21 18:26				50 <sub>-</sub> 150	)	90	13C4 PFOS
13C3 HFPO-DA	d5-NF+FOSAA 90 50_150 11/09/21 18:26_11/14/21	2:42	11/14/21 22:42	11/09/21 18:26				50 - 150	i	85	d3-NMeFOSAA
13C3 HFPO-DA	35 (12.1 CS/1) 11/09/21 10.20 11/14/21	2:42	11/14/21 22:42	11/09/21 18:26				50 - 150	)	90	d5-NEtFOSAA
Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Farencent Moisture 0.1 0.1 0.1 % D Prepared 11/05/21 12:51	13C3 HFPO-DA 82 50 - 150 11/09/21 18:26 11/14/21	:2:42	11/14/21 22:42	11/09/21 18:26				50 - 150	?	82	13C3 HFPO-DA
Percent Moisture 20.1 0.1 0.1 % 11/05/21 12:51					_					_	
<del></del>				Prepared	_ <u>D</u>						

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Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

**Percent Solids** 

Client Sample ID: 21GST-SB005-01 Lab Sample ID: 320-81254-67

Date Collected: 10/30/21 15:10 **Matrix: Solid** Date Received: 11/03/21 14:01

Percent Solids: 93.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.031	ug/Kg	<u></u>	11/09/21 18:26	11/14/21 22:53	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.038	ug/Kg	₽	11/09/21 18:26	11/14/21 22:53	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.054	ug/Kg	₽	11/09/21 18:26	11/14/21 22:53	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.022	ug/Kg	₽	11/09/21 18:26	11/14/21 22:53	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.049	ug/Kg	₩	11/09/21 18:26	11/14/21 22:53	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.042	ug/Kg	₩	11/09/21 18:26	11/14/21 22:53	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.030	ug/Kg	₽	11/09/21 18:26	11/14/21 22:53	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.021	ug/Kg	₩	11/09/21 18:26	11/14/21 22:53	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.037	ug/Kg	₩	11/09/21 18:26	11/14/21 22:53	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.038	ug/Kg	≎	11/09/21 18:26	11/14/21 22:53	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.029	ug/Kg	≎	11/09/21 18:26	11/14/21 22:53	1
Perfluorooctanesulfonic acid (PFOS)	1.4		0.20	0.043	ug/Kg	₩	11/09/21 18:26	11/14/21 22:53	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg	₩	11/09/21 18:26	11/14/21 22:53	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.20	0.049	ug/Kg	₩	11/09/21 18:26	11/14/21 22:53	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.20	0.035	ug/Kg	₩	11/09/21 18:26	11/14/21 22:53	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.20		ug/Kg	₩	11/09/21 18:26	11/14/21 22:53	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.20		ug/Kg	₩	11/09/21 18:26	11/14/21 22:53	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.039	ug/Kg	₩	11/09/21 18:26	11/14/21 22:53	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	109		50 - 150				11/09/21 18:26	11/14/21 22:53	1
13C4 PFHpA	105		50 - 150				11/09/21 18:26	11/14/21 22:53	1
13C4 PFOA	96		50 - 150				11/09/21 18:26	11/14/21 22:53	1
13C5 PFNA	99		50 - 150				11/09/21 18:26	11/14/21 22:53	1
13C2 PFDA	101		50 - 150				11/09/21 18:26	11/14/21 22:53	1
13C2 PFUnA	107		50 - 150				11/09/21 18:26	11/14/21 22:53	1
13C2 PFDoA	101		50 - 150				11/09/21 18:26	11/14/21 22:53	1
13C2 PFTeDA	96		50 - 150				11/09/21 18:26	11/14/21 22:53	1
13C3 PFBS	107		50 - 150				11/09/21 18:26	11/14/21 22:53	1
1802 PFHxS	95		50 - 150				11/09/21 18:26	11/14/21 22:53	1
13C4 PFOS	99		50 - 150				11/09/21 18:26	11/14/21 22:53	1
d3-NMeFOSAA	100		50 <sub>-</sub> 150				11/09/21 18:26	11/14/21 22:53	1
d5-NEtFOSAA	116		50 - 150					11/14/21 22:53	1
13C3 HFPO-DA	90		50 - 150				11/09/21 18:26	11/14/21 22:53	1
General Chemistry									
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	6.5		0.1	0.1	%			11/05/21 12:51	1

Eurofins TestAmerica, Sacramento

11/05/21 12:51

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0.1

93.5

0.1 %

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

**Percent Solids** 

Date Collected: 10/30/21 15:15

Date Received: 11/03/21 14:01

Matrix: Solid
Percent Solids: 86.8

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.22	0.035	ug/Kg	<u></u>	11/09/21 18:26	11/14/21 23:03	1
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.043	ug/Kg	☼	11/09/21 18:26	11/14/21 23:03	1
Perfluorooctanoic acid (PFOA)	ND		0.22	0.059	ug/Kg	₩	11/09/21 18:26	11/14/21 23:03	1
Perfluorononanoic acid (PFNA)	ND		0.22	0.025	ug/Kg	≎	11/09/21 18:26	11/14/21 23:03	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.054	ug/Kg	₽	11/09/21 18:26	11/14/21 23:03	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.047	ug/Kg	₽	11/09/21 18:26	11/14/21 23:03	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.034	ug/Kg	₽	11/09/21 18:26	11/14/21 23:03	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.024	ug/Kg	₽	11/09/21 18:26	11/14/21 23:03	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.041	ug/Kg	₩	11/09/21 18:26	11/14/21 23:03	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.043	ug/Kg	₩	11/09/21 18:26	11/14/21 23:03	1
Perfluorohexanesulfonic acid (PFHxS)	0.038	J	0.22	0.033	ug/Kg	₩	11/09/21 18:26	11/14/21 23:03	1
Perfluorooctanesulfonic acid (PFOS)	0.60		0.22		ug/Kg	<b>#</b>	11/09/21 18:26	11/14/21 23:03	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.22		ug/Kg	\$		11/14/21 23:03	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.22		ug/Kg	☼	11/09/21 18:26		1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.22		ug/Kg	<b>*</b>	11/09/21 18:26		1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22	0.046	ug/Kg	☼		11/14/21 23:03	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.22	0.035	ug/Kg	☼	11/09/21 18:26	11/14/21 23:03	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.044	ug/Kg	₩	11/09/21 18:26	11/14/21 23:03	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	104		50 - 150				11/09/21 18:26	11/14/21 23:03	1
13C4 PFHpA	104		50 - 150				11/09/21 18:26	11/14/21 23:03	1
13C4 PFOA	95		50 - 150				11/09/21 18:26	11/14/21 23:03	1
13C5 PFNA	97		50 - 150				11/09/21 18:26	11/14/21 23:03	1
13C2 PFDA	94		50 - 150				11/09/21 18:26	11/14/21 23:03	1
13C2 PFUnA	96		50 - 150				11/09/21 18:26	11/14/21 23:03	1
13C2 PFDoA	88		50 - 150				11/09/21 18:26	11/14/21 23:03	1
13C2 PFTeDA	91		50 - 150				11/09/21 18:26	11/14/21 23:03	1
13C3 PFBS	101		50 - 150				11/09/21 18:26	11/14/21 23:03	1
1802 PFHxS	89		50 - 150				11/09/21 18:26	11/14/21 23:03	1
13C4 PFOS	96		50 <sub>-</sub> 150				11/09/21 18:26	11/14/21 23:03	1
d3-NMeFOSAA	92		50 - 150					11/14/21 23:03	1
d5-NEtFOSAA	97		50 <sub>-</sub> 150					11/14/21 23:03	1
13C3 HFPO-DA	90		50 - 150					11/14/21 23:03	1
General Chemistry				<b>.</b> :		_			
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Percent Moisture	13.2		0.1	0.1	%			11/05/21 12:51	1

Eurofins TestAmerica, Sacramento

11/05/21 12:51

0.1

0.1 %

86.8

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1

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-SB005-03 Lab Sample ID: 320-81254-69

Date Collected: 10/30/21 15:30 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 79.4

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.23	0.036	ug/Kg	₩	11/09/21 18:26	11/14/21 23:34	1
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.044	ug/Kg	₩	11/09/21 18:26	11/14/21 23:34	1
Perfluorooctanoic acid (PFOA)	ND		0.23	0.061	ug/Kg	₩	11/09/21 18:26	11/14/21 23:34	1
Perfluorononanoic acid (PFNA)	ND		0.23	0.025	ug/Kg	₩	11/09/21 18:26	11/14/21 23:34	1
Perfluorodecanoic acid (PFDA)	ND		0.23	0.055	ug/Kg	☼	11/09/21 18:26	11/14/21 23:34	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.049	ug/Kg	☼	11/09/21 18:26	11/14/21 23:34	1
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.035	ug/Kg	☼	11/09/21 18:26	11/14/21 23:34	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.024	ug/Kg	☼	11/09/21 18:26	11/14/21 23:34	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.043	ug/Kg	☼	11/09/21 18:26	11/14/21 23:34	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.044	ug/Kg	₽	11/09/21 18:26	11/14/21 23:34	1
Perfluorohexanesulfonic acid (PFHxS)	0.30		0.23	0.034	ug/Kg	₽	11/09/21 18:26	11/14/21 23:34	1
Perfluorooctanesulfonic acid (PFOS)	0.66		0.23		ug/Kg		11/09/21 18:26	11/14/21 23:34	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.23		ug/Kg	₩	11/09/21 18:26		1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.23	0.055	ug/Kg	₽	11/09/21 18:26	11/14/21 23:34	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.23		ug/Kg		11/09/21 18:26		1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23		ug/Kg	☼	11/09/21 18:26		1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.23		ug/Kg	☼		11/14/21 23:34	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.045	ug/Kg	☼	11/09/21 18:26	11/14/21 23:34	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	138		50 - 150				11/09/21 18:26	11/14/21 23:34	1
13C4 PFHpA	126		50 - 150				11/09/21 18:26	11/14/21 23:34	1
13C4 PFOA	121		50 - 150				11/09/21 18:26	11/14/21 23:34	1
13C5 PFNA	118		50 - 150				11/09/21 18:26	11/14/21 23:34	1
13C2 PFDA	122		50 - 150				11/09/21 18:26	11/14/21 23:34	1
13C2 PFUnA	120		50 - 150				11/09/21 18:26	11/14/21 23:34	1
13C2 PFDoA	116		50 - 150				11/09/21 18:26	11/14/21 23:34	1
13C2 PFTeDA	112		50 - 150				11/09/21 18:26	11/14/21 23:34	1
13C3 PFBS	142		50 - 150				11/09/21 18:26	11/14/21 23:34	1
1802 PFHxS	125		50 - 150				11/09/21 18:26	11/14/21 23:34	1
13C4 PFOS	130		50 - 150				11/09/21 18:26	11/14/21 23:34	1
d3-NMeFOSAA	122		50 - 150				11/09/21 18:26	11/14/21 23:34	1
d5-NEtFOSAA	127		50 - 150				11/09/21 18:26	11/14/21 23:34	1
13C3 HFPO-DA	111		50 - 150				11/09/21 18:26	11/14/21 23:34	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	20.6		0.1	0.1				11/05/21 12:51	1
Percent Solids	79.4		0.1	0.1	%			11/05/21 12:51	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	20.6		0.1	0.1	%			11/05/21 12:51	1
Percent Solids	79.4		0.1	0.1	%			11/05/21 12:51	1

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-SB007-01 Lab Sample ID: 320-81254-70

Date Collected: 10/30/21 16:00 Matrix: Solid
Date Received: 11/03/21 14:01 Percent Solids: 89.5

Method: EPA 537(Mod) - PFAS Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	0.059		0.21		ug/Kg		11/09/21 18:26	11/14/21 23:45	1
Perfluoroheptanoic acid (PFHpA)	0.11		0.21		ug/Kg	₩	11/09/21 18:26	11/14/21 23:45	1
Perfluorooctanoic acid (PFOA)	ND		0.21		ug/Kg	₩	11/09/21 18:26	11/14/21 23:45	1
Perfluorononanoic acid (PFNA)	ND		0.21		ug/Kg		11/09/21 18:26	11/14/21 23:45	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.049	ug/Kg	₩	11/09/21 18:26	11/14/21 23:45	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21		ug/Kg	₩	11/09/21 18:26	11/14/21 23:45	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.031	ug/Kg		11/09/21 18:26	11/14/21 23:45	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.022	ug/Kg	₽	11/09/21 18:26	11/14/21 23:45	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.038	ug/Kg	₽	11/09/21 18:26	11/14/21 23:45	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.039	ug/Kg		11/09/21 18:26	11/14/21 23:45	1
Perfluorohexanesulfonic acid (PFHxS)	0.038	JI	0.21	0.030	ug/Kg	₩	11/09/21 18:26	11/14/21 23:45	1
Perfluorooctanesulfonic acid (PFOS)	0.10	JI	0.21	0.044	ug/Kg	₽	11/09/21 18:26	11/14/21 23:45	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	⊅	11/09/21 18:26	11/14/21 23:45	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.21		ug/Kg			11/14/21 23:45	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.21		ug/Kg			11/14/21 23:45	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21		ug/Kg			11/14/21 23:45	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.21	0.032				11/14/21 23:45	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.040	ug/Kg	☼	11/09/21 18:26	11/14/21 23:45	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	109		50 - 150				11/09/21 18:26	11/14/21 23:45	1
13C4 PFHpA	108		50 - 150				11/09/21 18:26	11/14/21 23:45	1
13C4 PFOA	99		50 - 150				11/09/21 18:26	11/14/21 23:45	1
13C5 PFNA	99		50 - 150				11/09/21 18:26	11/14/21 23:45	1
13C2 PFDA	95		50 - 150				11/09/21 18:26	11/14/21 23:45	1
13C2 PFUnA	99		50 - 150				11/09/21 18:26	11/14/21 23:45	1
13C2 PFDoA	103		50 - 150				11/09/21 18:26	11/14/21 23:45	1
13C2 PFTeDA	95		50 <sub>-</sub> 150				11/09/21 18:26	11/14/21 23:45	1
13C3 PFBS	108		50 - 150				11/09/21 18:26	11/14/21 23:45	1
1802 PFHxS	94		50 - 150				11/09/21 18:26	11/14/21 23:45	1
13C4 PFOS	100		50 <sub>-</sub> 150				11/09/21 18:26	11/14/21 23:45	1
d3-NMeFOSAA	103		50 - 150				11/09/21 18:26	11/14/21 23:45	1
d5-NEtFOSAA	111		50 <sub>-</sub> 150				11/09/21 18:26	11/14/21 23:45	1
13C3 HFPO-DA	90		50 - 150				11/09/21 18:26	11/14/21 23:45	1
General Chemistry						_			<b>-</b>
Analyte		Qualifier	RL _	MDL		D	Prepared	Analyzed	Dil Fac
Percent Moisture	10.5		0.1	0.1				11/05/21 12:51	1
Percent Solids	89.5		0.1	0.1	%			11/05/21 12:51	1

Eurofins TestAmerica, Sacramento

11/17/2021

Client: Shannon & Wilson, Inc Job ID: 320-81254-1 Project/Site: SC Soils#3

Client Sample ID: 21GST-SB007-10 Lab Sample ID: 320-81254-71

**Matrix: Solid** 

Date Collected: 10/30/21 15:50 Date Received: 11/03/21 14:01 Percent Solids: 91.3

Method: EPA 537(Mod) - PFAS Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Perfluorohexanoic acid (PFHxA)	0.051	J	0.21	0.032	ug/Kg	— <del>-</del>	11/09/21 18:26	11/14/21 23:55	
Perfluoroheptanoic acid (PFHpA)	0.056	J	0.21	0.040	ug/Kg	₽	11/09/21 18:26	11/14/21 23:55	
Perfluorooctanoic acid (PFOA)	0.11	J	0.21	0.055	ug/Kg	₩	11/09/21 18:26	11/14/21 23:55	
Perfluorononanoic acid (PFNA)	ND		0.21	0.023	ug/Kg	₩	11/09/21 18:26	11/14/21 23:55	
Perfluorodecanoic acid (PFDA)	ND		0.21	0.050	ug/Kg	₩	11/09/21 18:26	11/14/21 23:55	
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.044	ug/Kg	₩	11/09/21 18:26	11/14/21 23:55	
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.031	ug/Kg	₩	11/09/21 18:26	11/14/21 23:55	
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.022	ug/Kg	₩	11/09/21 18:26	11/14/21 23:55	
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.039	ug/Kg	₩	11/09/21 18:26	11/14/21 23:55	
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.040	ug/Kg		11/09/21 18:26	11/14/21 23:55	
Perfluorohexanesulfonic acid (PFHxS)	0.038	JI	0.21	0.030	ug/Kg	₿	11/09/21 18:26	11/14/21 23:55	
Perfluorooctanesulfonic acid (PFOS)	0.27	1	0.21	0.045	ug/Kg	☼	11/09/21 18:26	11/14/21 23:55	
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.21		ug/Kg			11/14/21 23:55	
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.21		ug/Kg			11/14/21 23:55	
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.21	0.037	ug/Kg	₩	11/09/21 18:26	11/14/21 23:55	
e- i-sullonic acid Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.043	ug/Kg	☼	11/09/21 18:26	11/14/21 23:55	
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.21	0.032	ug/Kg	☼	11/09/21 18:26	11/14/21 23:55	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.041	ug/Kg	☼	11/09/21 18:26	11/14/21 23:55	
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	103		50 - 150				11/09/21 18:26	11/14/21 23:55	
13C4 PFHpA	103		50 - 150				11/09/21 18:26	11/14/21 23:55	
13C4 PFOA	95		50 - 150				11/09/21 18:26	11/14/21 23:55	
13C5 PFNA	95		50 - 150				11/09/21 18:26	11/14/21 23:55	
13C2 PFDA	96		50 <sub>-</sub> 150				11/09/21 18:26	11/14/21 23:55	
13C2 PFUnA	96		50 <sub>-</sub> 150				11/09/21 18:26	11/14/21 23:55	
13C2 PFDoA	91		50 - 150				11/09/21 18:26	11/14/21 23:55	
13C2 PFTeDA	94		50 <sub>-</sub> 150				11/09/21 18:26	11/14/21 23:55	
13C3 PFBS	100		50 <sub>-</sub> 150				11/09/21 18:26	11/14/21 23:55	
1802 PFHxS	90		50 <sub>-</sub> 150				11/09/21 18:26	11/14/21 23:55	
13C4 PFOS	90		50 <sub>-</sub> 150					11/14/21 23:55	
d3-NMeFOSAA	96		50 - 150					11/14/21 23:55	
d5-NEtFOSAA	94		50 - 150					11/14/21 23:55	
13C3 HFPO-DA	93		50 - 150					11/14/21 23:55	
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Percent Moisture	8.7		0.1	0.1			<del></del>	11/05/21 12:51	
Percent Solids	91.3		0.1	0.1	0/			11/05/21 12:51	

Client: Shannon & Wilson, Inc Job ID: 320-81254-1 Project/Site: SC Soils#3

Client Sample ID: 21GST-SB007-02

Lab Sample ID: 320-81254-72 Date Collected: 10/30/21 16:05 **Matrix: Solid** 

Date Received: 11/03/21 14:01 Percent Solids: 85.4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.22	0.035	ug/Kg	<u></u>	11/09/21 18:26	11/15/21 00:05	1
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.042	ug/Kg	≎	11/09/21 18:26	11/15/21 00:05	1
Perfluorooctanoic acid (PFOA)	ND		0.22	0.059	ug/Kg	☼	11/09/21 18:26	11/15/21 00:05	1
Perfluorononanoic acid (PFNA)	ND		0.22	0.025	ug/Kg	₩	11/09/21 18:26	11/15/21 00:05	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.054	ug/Kg	≎	11/09/21 18:26	11/15/21 00:05	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.047	ug/Kg	☆	11/09/21 18:26	11/15/21 00:05	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.033	ug/Kg	₩	11/09/21 18:26	11/15/21 00:05	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.023	ug/Kg	≎	11/09/21 18:26	11/15/21 00:05	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.041	ug/Kg	☆	11/09/21 18:26	11/15/21 00:05	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.042	ug/Kg	₽	11/09/21 18:26	11/15/21 00:05	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.22	0.032	ug/Kg	₽	11/09/21 18:26	11/15/21 00:05	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.22	0.048	ug/Kg	₽	11/09/21 18:26	11/15/21 00:05	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.22	0.026	ug/Kg	₩	11/09/21 18:26	11/15/21 00:05	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.22	0.054	ug/Kg	₩	11/09/21 18:26	11/15/21 00:05	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.22	0.039	ug/Kg	₩	11/09/21 18:26	11/15/21 00:05	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22		ug/Kg	₿	11/09/21 18:26	11/15/21 00:05	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.22		ug/Kg	₩	11/09/21 18:26	11/15/21 00:05	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.043	ug/Kg	₩	11/09/21 18:26	11/15/21 00:05	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	122		50 - 150				11/09/21 18:26	11/15/21 00:05	1
13C4 PFHpA	117		50 - 150				11/09/21 18:26	11/15/21 00:05	1
13C4 PFOA	112		50 - 150				11/09/21 18:26	11/15/21 00:05	1
13C5 PFNA	115		50 - 150				11/09/21 18:26	11/15/21 00:05	1
13C2 PFDA	115		50 - 150				11/09/21 18:26	11/15/21 00:05	1
13C2 PFUnA	118		50 - 150				11/09/21 18:26	11/15/21 00:05	1
13C2 PFDoA	112		50 - 150				11/09/21 18:26	11/15/21 00:05	1
13C2 PFTeDA	103		50 - 150				11/09/21 18:26	11/15/21 00:05	1
13C3 PFBS	128		50 - 150				11/09/21 18:26	11/15/21 00:05	1
1802 PFHxS	107		50 - 150				11/09/21 18:26	11/15/21 00:05	1
13C4 PFOS	110		50 - 150				11/09/21 18:26	11/15/21 00:05	1
d3-NMeFOSAA	116		50 - 150				11/09/21 18:26	11/15/21 00:05	1
d5-NEtFOSAA	125		50 - 150				11/09/21 18:26	11/15/21 00:05	1
13C3 HFPO-DA	109		50 - 150				11/09/21 18:26	11/15/21 00:05	1
General Chemistry		015			1114	_	<b>D</b> ance :	A	D:: -
Analyte		Qualifier	RL _	MDL		D	Prepared	Analyzed	Dil Fac
Percent Moisture	14.6		0.1	0.1				11/05/21 12:51	1
Percent Solids	85.4		0.1	0.1	%			11/05/21 12:51	1

11/17/2021

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-SB007-03 Lab Sample ID: 320-81254-73

Date Collected: 10/30/21 16:15 **Matrix: Solid** Date Received: 11/03/21 14:01 **Percent Solids: 81.6** 

Method: EPA 537(Mod) - PFAS				MDI	Unit	_	Droporod	Anghand	Dil Ess
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.23		ug/Kg	<b>‡</b>		11/15/21 00:16	1
Perfluere estancia acid (PFHpA)	ND		0.23		ug/Kg	ψ.		11/15/21 00:16	1
Perfluorooctanoic acid (PFOA)	ND		0.23		ug/Kg	<del></del>		11/15/21 00:16	1
Perfluorononanoic acid (PFNA)	ND		0.23		ug/Kg		11/09/21 18:26		1
Perfluorodecanoic acid (PFDA)	ND		0.23		ug/Kg	₩.		11/15/21 00:16	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23		ug/Kg		11/09/21 18:26		1
Perfluorododecanoic acid (PFDoA)	ND		0.23		ug/Kg	₩		11/15/21 00:16	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23		ug/Kg	₩		11/15/21 00:16	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23		ug/Kg	<b>#</b>	11/09/21 18:26		1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23		ug/Kg	₩	11/09/21 18:26	11/15/21 00:16	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.23		ug/Kg	☼	11/09/21 18:26	11/15/21 00:16	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.23		ug/Kg		11/09/21 18:26	11/15/21 00:16	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.23		ug/Kg	₽	11/09/21 18:26	11/15/21 00:16	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.23		ug/Kg	₽	11/09/21 18:26	11/15/21 00:16	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.23	0.041	ug/Kg	₩	11/09/21 18:26	11/15/21 00:16	•
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23	0.048	ug/Kg	₽	11/09/21 18:26	11/15/21 00:16	
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.23	0.036	ug/Kg	₽	11/09/21 18:26	11/15/21 00:16	,
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.046	ug/Kg	₩	11/09/21 18:26	11/15/21 00:16	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	98		50 - 150				11/09/21 18:26	11/15/21 00:16	•
13C4 PFHpA	94		50 - 150				11/09/21 18:26	11/15/21 00:16	
13C4 PFOA	89		50 - 150				11/09/21 18:26	11/15/21 00:16	1
13C5 PFNA	86		50 - 150				11/09/21 18:26	11/15/21 00:16	1
13C2 PFDA	87		50 - 150				11/09/21 18:26	11/15/21 00:16	1
13C2 PFUnA	90		50 <sub>-</sub> 150				11/09/21 18:26	11/15/21 00:16	1
13C2 PFDoA	86		50 - 150				11/09/21 18:26	11/15/21 00:16	
13C2 PFTeDA	81		50 <sub>-</sub> 150				11/09/21 18:26	11/15/21 00:16	1
13C3 PFBS	95		50 <sub>-</sub> 150				11/09/21 18:26	11/15/21 00:16	1
1802 PFHxS	86		50 - 150					11/15/21 00:16	
13C4 PFOS	87		50 <sub>-</sub> 150					11/15/21 00:16	1
d3-NMeFOSAA	95		50 - 150					11/15/21 00:16	1
d5-NEtFOSAA	96		50 - 150					11/15/21 00:16	
13C3 HFPO-DA	85		50 - 150					11/15/21 00:16	
General Chemistry									
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	18.4		0.1	0.1	%			11/05/21 12:51	1
Percent Solids	81.6		0.1	0.1	%			11/05/21 12:51	1

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

**Percent Moisture** 

**Percent Solids** 

Client Sample ID: 21GST-SS-030 Lab Sample ID: 320-81254-74

Date Collected: 10/31/21 13:49 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 65.2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	0.083	J	0.29	0.045	ug/Kg	<u></u>	11/09/21 18:26	11/15/21 00:26	1
Perfluoroheptanoic acid (PFHpA)	0.20	J	0.29	0.056	ug/Kg	≎	11/09/21 18:26	11/15/21 00:26	1
Perfluorooctanoic acid (PFOA)	ND		0.29	0.077	ug/Kg	₽	11/09/21 18:26	11/15/21 00:26	1
Perfluorononanoic acid (PFNA)	0.18	J	0.29	0.032	ug/Kg	₽	11/09/21 18:26	11/15/21 00:26	1
Perfluorodecanoic acid (PFDA)	ND		0.29	0.070	ug/Kg	₽	11/09/21 18:26	11/15/21 00:26	1
Perfluoroundecanoic acid (PFUnA)	ND		0.29	0.061	ug/Kg	₩	11/09/21 18:26	11/15/21 00:26	1
Perfluorododecanoic acid (PFDoA)	ND		0.29	0.044	ug/Kg	₩	11/09/21 18:26	11/15/21 00:26	1
Perfluorotridecanoic acid (PFTriA)	ND		0.29	0.031	ug/Kg	₩	11/09/21 18:26	11/15/21 00:26	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.29	0.054	ug/Kg	≎	11/09/21 18:26	11/15/21 00:26	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.29	0.056	ug/Kg	≎	11/09/21 18:26	11/15/21 00:26	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.29	0.042	ug/Kg	⇔	11/09/21 18:26	11/15/21 00:26	1
Perfluorooctanesulfonic acid (PFOS)	0.27	JI	0.29	0.063	ug/Kg	₩	11/09/21 18:26	11/15/21 00:26	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.29	0.034	ug/Kg	☼	11/09/21 18:26	11/15/21 00:26	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.29	0.070	ug/Kg	₩	11/09/21 18:26	11/15/21 00:26	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.29	0.051	ug/Kg	₩	11/09/21 18:26	11/15/21 00:26	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.29	0.060	ug/Kg	₩	11/09/21 18:26	11/15/21 00:26	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.29	0.045	ug/Kg	₩	11/09/21 18:26	11/15/21 00:26	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.29	0.057	ug/Kg	₩	11/09/21 18:26	11/15/21 00:26	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	91		50 - 150				11/09/21 18:26	11/15/21 00:26	1
13C4 PFHpA	89		50 - 150				11/09/21 18:26	11/15/21 00:26	1
13C4 PFOA	84		50 - 150				11/09/21 18:26	11/15/21 00:26	1
13C5 PFNA	87		50 <sub>-</sub> 150				11/09/21 18:26	11/15/21 00:26	1
13C2 PFDA	90		50 <sub>-</sub> 150				11/09/21 18:26	11/15/21 00:26	1
13C2 PFUnA	89		50 - 150				11/09/21 18:26	11/15/21 00:26	1
13C2 PFDoA	89		50 - 150				11/09/21 18:26	11/15/21 00:26	1
13C2 PFTeDA	79		50 <sub>-</sub> 150				11/09/21 18:26	11/15/21 00:26	1
13C3 PFBS	99		50 <sub>-</sub> 150				11/09/21 18:26	11/15/21 00:26	1
1802 PFHxS	85		50 <sub>-</sub> 150					11/15/21 00:26	1
13C4 PFOS	95		50 - 150					11/15/21 00:26	1
d3-NMeFOSAA	93		50 - 150					11/15/21 00:26	1
d5-NEtFOSAA	108		50 - 150					11/15/21 00:26	
13C3 HFPO-DA	80		50 - 150					11/15/21 00:26	1
General Chemistry							_		
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

0.1

0.1

34.8

65.2

0.1 %

0.1 %

11/05/21 12:51

11/05/21 12:51

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

4,8-Dioxa-3H-perfluorononanoic acid

Client Sample ID: 21GST-SS-010

Lab Sample ID: 320-81254-75 Date Collected: 10/31/21 13:54 Matrix: Solid Date Received: 11/03/21 14:01 Percent Solids: 88.0

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 Analyte Result Qualifier **MDL** Unit RL Prepared Analyzed Dil Fac Perfluorohexanoic acid (PFHxA) ND 0.21 0.033 ug/Kg 11/09/21 18:26 11/15/21 00:37 Perfluoroheptanoic acid (PFHpA) ND 0.21 0.040 ug/Kg 11/09/21 18:26 11/15/21 00:37 Perfluorooctanoic acid (PFOA) ND 0.21 0.056 ug/Kg 11/09/21 18:26 11/15/21 00:37 Perfluorononanoic acid (PFNA) ND 0.023 ug/Kg 11/09/21 18:26 11/15/21 00:37 0.21 Perfluorodecanoic acid (PFDA) ND 0.21 0.051 ug/Kg 11/09/21 18:26 11/15/21 00:37 Perfluoroundecanoic acid (PFUnA) ND 0.21 0.045 ug/Kg 11/09/21 18:26 11/15/21 00:37 Perfluorododecanoic acid (PFDoA) ND 0.21 0.032 ug/Kg 11/09/21 18:26 11/15/21 00:37 Perfluorotridecanoic acid (PFTriA) ND 0.21 0.022 ug/Kg 11/09/21 18:26 11/15/21 00:37 Perfluorotetradecanoic acid (PFTeA) ND 0.21 0.039 ug/Kg 11/09/21 18:26 11/15/21 00:37 0.040 ug/Kg Perfluorobutanesulfonic acid (PFBS) ND 0.21 11/09/21 18:26 11/15/21 00:37 Perfluorohexanesulfonic acid 0.034 JI 0.21 0.031 ug/Kg 11/09/21 18:26 11/15/21 00:37 (PFHxS) Perfluorooctanesulfonic acid 0.69 0.21 0.046 ug/Kg 11/09/21 18:26 11/15/21 00:37 (PFOS) N-methylperfluorooctanesulfonamidoa ND 0.21 0.024 ug/Kg 11/09/21 18:26 11/15/21 00:37 cetic acid (NMeFOSAA) 11/09/21 18:26 11/15/21 00:37 N-ethylperfluorooctanesulfonamidoac ND 0.21 0.051 ug/Kg etic acid (NEtFOSAA) 9-Chlorohexadecafluoro-3-oxanonan ND 0.21 0.037 ug/Kg 11/09/21 18:26 11/15/21 00:37 e-1-sulfonic acid ND 0.21 11/09/21 18:26 11/15/21 00:37 Hexafluoropropylene Oxide Dimer 0.044 ug/Kg Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaundecan ND 0.21 0.033 ug/Kg 11/09/21 18:26 11/15/21 00:37 e-1-sulfonic acid

(ADONA)					
Isotope Dilution	%Recovery 0	Qualifier Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	106	50 - 150	11/09/21 18:26	11/15/21 00:37	1
13C4 PFHpA	105	50 - 150	11/09/21 18:26	6 11/15/21 00:37	1
13C4 PFOA	103	50 - 150	11/09/21 18:26	6 11/15/21 00:37	1
13C5 PFNA	107	50 - 150	11/09/21 18:26	6 11/15/21 00:37	1
13C2 PFDA	101	50 - 150	11/09/21 18:26	6 11/15/21 00:37	1
13C2 PFUnA	113	50 - 150	11/09/21 18:26	6 11/15/21 00:37	1
13C2 PFDoA	100	50 - 150	11/09/21 18:26	5 11/15/21 00:37	1
13C2 PFTeDA	93	50 - 150	11/09/21 18:26	6 11/15/21 00:37	1
13C3 PFBS	114	50 <sub>-</sub> 150	11/09/21 18:26	6 11/15/21 00:37	1
1802 PFHxS	96	50 - 150	11/09/21 18:26	6 11/15/21 00:37	1
13C4 PFOS	106	50 - 150	11/09/21 18:26	6 11/15/21 00:37	1
d3-NMeFOSAA	111	50 - 150	11/09/21 18:26	6 11/15/21 00:37	1
d5-NEtFOSAA	116	50 - 150	11/09/21 18:26	5 11/15/21 00:37	1
13C3 HFPO-DA	81	50 - 150	11/09/21 18:28	6 11/15/21 00:37	1

0.21

0.041 ug/Kg

ND

General Chemistry								
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	12.0	0.1	0.1	%			11/05/21 12:51	1
Percent Solids	88.0	0.1	0.1	%			11/05/21 12:51	1

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11/09/21 18:26 11/15/21 00:37

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

**Percent Solids** 

Client Sample ID: 21GST-SS-031 Lab Sample ID: 320-81254-76

Date Collected: 10/31/21 13:59

Matrix: Solid
Date Received: 11/03/21 14:01

Percent Solids: 83.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Perfluorohexanoic acid (PFHxA)	0.051	J	0.22	0.035	ug/Kg	— <u></u>	11/09/21 18:26	11/15/21 00:47	
Perfluoroheptanoic acid (PFHpA)	0.093	J	0.22	0.042	ug/Kg	₩	11/09/21 18:26	11/15/21 00:47	
Perfluorooctanoic acid (PFOA)	0.088	J	0.22	0.059	ug/Kg	₩	11/09/21 18:26	11/15/21 00:47	
Perfluorononanoic acid (PFNA)	0.12	J	0.22	0.025	ug/Kg	≎	11/09/21 18:26	11/15/21 00:47	
Perfluorodecanoic acid (PFDA)	ND		0.22	0.054	ug/Kg	₩	11/09/21 18:26	11/15/21 00:47	
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.047	ug/Kg	≎	11/09/21 18:26	11/15/21 00:47	
Perfluorododecanoic acid (PFDoA)	ND		0.22		ug/Kg	≎	11/09/21 18:26	11/15/21 00:47	
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.023	ug/Kg	≎	11/09/21 18:26	11/15/21 00:47	
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.041	ug/Kg	⇔	11/09/21 18:26	11/15/21 00:47	
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.042	ug/Kg	₩	11/09/21 18:26	11/15/21 00:47	
Perfluorohexanesulfonic acid (PFHxS)	ND		0.22		ug/Kg	₩	11/09/21 18:26	11/15/21 00:47	
Perfluorooctanesulfonic acid	0.56	1	0.22		ug/Kg	₩	11/09/21 18:26		
(PFOS)	3.55	•			3 3				
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.22	0.026	ug/Kg	₩	11/09/21 18:26	11/15/21 00:47	
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.22	0.054	ug/Kg	₩	11/09/21 18:26	11/15/21 00:47	
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.22		ug/Kg	₩	11/09/21 18:26	11/15/21 00:47	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22	0.046	ug/Kg	₩	11/09/21 18:26	11/15/21 00:47	
11-Chloroeicosafluoro-3-oxaundecan	ND		0.22	0.035	ug/Kg	₩	11/09/21 18:26	11/15/21 00:47	
e-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.044	ug/Kg	₩	11/09/21 18:26	11/15/21 00:47	
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	102		50 - 150				11/09/21 18:26	11/15/21 00:47	-
13C4 PFHpA	91		50 - 150				11/09/21 18:26	11/15/21 00:47	
13C4 PFOA	91		50 - 150				11/09/21 18:26	11/15/21 00:47	
13C5 PFNA	94		50 - 150				11/09/21 18:26	11/15/21 00:47	
13C2 PFDA	92		50 <sub>-</sub> 150				11/09/21 18:26	11/15/21 00:47	
13C2 PFUnA	99		50 - 150				11/09/21 18:26	11/15/21 00:47	
13C2 PFDoA	94		50 - 150				11/09/21 18:26	11/15/21 00:47	
13C2 PFTeDA	86		50 <sub>-</sub> 150					11/15/21 00:47	
13C3 PFBS	104		50 <sub>-</sub> 150					11/15/21 00:47	
1802 PFHxS	93		50 <sub>-</sub> 150					11/15/21 00:47	
13C4 PFOS	95		50 - 150					11/15/21 00:47	
d3-NMeFOSAA	99		50 - 150					11/15/21 00:47	
d5-NEtFOSAA	108		50 - 150					11/15/21 00:47	
13C3 HFPO-DA	85		50 - 150					11/15/21 00:47	
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Percent Moisture	16.4		0.1	0.1	%			11/05/21 12:51	

Eurofins TestAmerica, Sacramento

11/17/2021

11/05/21 12:51

0.1

83.6

0.1 %

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

**Percent Solids** 

Client Sample ID: 21GST-SS-131 Lab Sample ID: 320-81254-77

Date Collected: 10/31/21 13:49 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 80.5

Perfluorooctanoic acid (PFDA)	Dil Fac	Analyzed	Prepared	D	Unit	MDL	RL	Qualifier	Result	Analyte
Perfluorootanoic acid (PFDA)		11/15/21 00:58	11/09/21 18:26	₩	ug/Kg	0.038	0.25		ND	Perfluorohexanoic acid (PFHxA)
Perfluoronoanoic acid (PFNA)	,	11/15/21 00:58	11/09/21 18:26	₩	ug/Kg	0.047	0.25	J	0.066	Perfluoroheptanoic acid (PFHpA)
Perfluoroudecanoic acid (PFDA)   ND   0.25   0.059   ug/Kg   0.11/09/21 18:26   11/15/21 00:58   Perfluoroundecanoic acid (PFUNA)   ND   0.25   0.052   ug/Kg   0.11/09/21 18:26   11/15/21 00:58   Perfluoroundecanoic acid (PFDA)   ND   0.25   0.052   ug/Kg   0.11/09/21 18:26   11/15/21 00:58   Perfluorototradecanoic acid (PFTNA)   ND   0.25   0.026   ug/Kg   0.11/09/21 18:26   11/15/21 00:58   Perfluorototradecanoic acid (PFTNA)   ND   0.25   0.046   ug/Kg   0.11/09/21 18:26   11/15/21 00:58   Perfluoroundecanoic acid (PFTNA)   ND   0.25   0.047   ug/Kg   0.11/09/21 18:26   11/15/21 00:58   Perfluoroundecanoic acid (PFTNA)   ND   0.25   0.046   ug/Kg   0.11/09/21 18:26   11/15/21 00:58   Perfluoroundecanoic acid (PFNS)   ND   0.25   0.036   ug/Kg   0.11/09/21 18:26   11/15/21 00:58   Perfluoroundecanoic acid (PFNS)   ND   0.25   0.036   ug/Kg   0.11/09/21 18:26   11/15/21 00:58   Perfluoroundecanoic acid (PFNS)   ND   0.25   0.053   ug/Kg   0.11/09/21 18:26   11/15/21 00:58   Perfluoroundecanoic acid (PFNS)   ND   0.25   0.059   ug/Kg   0.11/09/21 18:26   11/15/21 00:58   Perfluoroundecanoic acid (NEICOSAA)   ND   0.25   0.059   ug/Kg   0.11/09/21 18:26   11/15/21 00:58   Perfluoroundecanoic acid (NEICOSAA)   ND   0.25   0.051   ug/Kg   0.11/09/21 18:26   11/15/21 00:58   Perfluoroundecanoic acid   ND   0.25   0.051   ug/Kg   0.11/09/21 18:26   11/15/21 00:58   Perfluoroundecanoic acid   ND   0.25   0.051   ug/Kg   0.11/09/21 18:26   11/15/21 00:58   Perfluoroundecanoic acid   ND   0.25   0.051   ug/Kg   0.11/09/21 18:26   11/15/21 00:58   Perfluoroundecanoic acid   ND   0.25   0.051   ug/Kg   0.11/09/21 18:26   11/15/21 00:58   Perfluoroundecanoic acid   ND   0.25   0.051   ug/Kg   0.11/09/21 18:26   11/15/21 00:58   Perfluoroundecanoic acid   ND   0.25   0.051   ug/Kg   0.11/09/21 18:26   11/15/21 00:58   Ug/Kg   0.051   Ug/Kg   0.051   Ug/Kg   0.051   Ug/Kg   0.051   Ug/Kg   0.	1	11/15/21 00:58	11/09/21 18:26	☼	ug/Kg	0.065	0.25	J	0.070	Perfluorooctanoic acid (PFOA)
Perfluoroundecanoic acid (PFUnA)   ND   0.25   0.052   ug/Kg   0   11/09/21   18:26   11/15/21   00:58	1	11/15/21 00:58	11/09/21 18:26	₩	ug/Kg	0.027	0.25			Perfluorononanoic acid (PFNA)
Perfluorododecanoic acid (PFDoA)   ND   0.25   0.037   \( \text{ug/Kg} \)   11/09/21   18:26   11/15/21   00:58     Perfluorottridecanoic acid (PFTiA)   ND   0.25   0.026   \text{ug/Kg}   11/09/21   18:26   11/15/21   00:58     Perfluorottridecanoic acid (PFTiA)   ND   0.25   0.046   \text{ug/Kg}   11/09/21   18:26   11/15/21   00:58     Perfluorototanesulfonic acid (PFBS)   ND   0.25   0.036   \text{ug/Kg}   11/09/21   18:26   11/15/21   00:58     Perfluorototanesulfonic acid (PFHxS)   ND   0.25   0.036   \text{ug/Kg}   11/09/21   18:26   11/15/21   00:58     Perfluorototanesulfonic acid (PFHxS)   ND   0.25   0.036   \text{ug/Kg}   11/09/21   18:26   11/15/21   00:58     Perfluorototanesulfonic acid (PFHxS)   ND   0.25   0.053   \text{ug/Kg}   11/09/21   18:26   11/15/21   00:58     Perfluorototanesulfonamidoa   ND   0.25   0.059   \text{ug/Kg}   11/09/21   18:26   11/15/21   00:58     Perfluorototanesulfonamidoa   ND   0.25   0.059   \text{ug/Kg}   11/09/21   18:26   11/15/21   00:58     Perfluorototanesulfonamidoa   ND   0.25   0.059   \text{ug/Kg}   11/09/21   18:26   11/15/21   00:58     Perfluorototanesulfonamidoa   ND   0.25   0.043   \text{ug/Kg}   11/09/21   18:26   11/15/21   00:58     Perfluorototanesulfonic acid   ND   0.25   0.038   \text{ug/Kg}   11/09/21   18:26   11/15/21   00:58     Perfluorototanesulfonic acid   ND   0.25   0.038   \text{ug/Kg}   11/09/21   18:26   11/15/21   00:58     Perfluorototanesulfonic acid   ND   0.25   0.038   \text{ug/Kg}   11/09/21   18:26   11/15/21   00:58     Perpfluorototanesulfonic acid   ND   0.25   0.038   \text{ug/Kg}   11/09/21   18:26   11/15/21   00:58     Perpfluorototanesulfonic acid   ND   0.25   0.038   \text{ug/Kg}   11/09/21   18:26   11/15/21   00:58     Perpfluorototanesulfonic acid   ND   0.25   0.038   \text{ug/Kg}   11/09/21   18:26   11/15/21   00:58     Perpfluorototanesulfonic acid   ND   0.25   0.038   \text{ug/Kg}   11/09/21   18:26   11/15/21   00:58     Perpfluorototanesulfonic acid   ND   0.25   0.038   \text{ug/Kg}   11/09/21   18:26	1	11/15/21 00:58	11/09/21 18:26	₩	ug/Kg	0.059	0.25		ND	Perfluorodecanoic acid (PFDA)
Perfluorotridecanoic acid (PFTriA)   ND   0.25   0.026   ug/Kg   11/09/21 18:26   11/15/21 00:58	1	11/15/21 00:58	11/09/21 18:26	₩	ug/Kg	0.052	0.25		ND	Perfluoroundecanoic acid (PFUnA)
Perfluorotetradecanoic acid (PFTeA)   ND   0.25   0.046   ug/Kg   11/09/21 18:26   11/15/21 00:58	1	11/15/21 00:58	11/09/21 18:26	₩	ug/Kg	0.037	0.25		ND	Perfluorododecanoic acid (PFDoA)
Perfluorobutanesulfonic acid (PFBS)   ND   0.25   0.047   ug/Kg   31   11/19/21   18:26   11/15/21   10:58   Perfluoronexanesulfonic acid (PFHXS)   ND   0.25   0.036   ug/Kg   01   11/19/21   18:26   11/15/21   10:58   1	1	11/15/21 00:58	11/09/21 18:26	☼	ug/Kg	0.026	0.25		ND	Perfluorotridecanoic acid (PFTriA)
Perfluorohexanesulfonic acid (PFHxS)	1	11/15/21 00:58	11/09/21 18:26	₩	ug/Kg	0.046	0.25		ND	Perfluorotetradecanoic acid (PFTeA)
Perfluoroctanesulfonic acid (PFOS)   10.25   0.053   ug/Kg   11/09/21 18:26   11/15/21 00:58	1	11/15/21 00:58	11/09/21 18:26		ug/Kg	0.047	0.25		ND	Perfluorobutanesulfonic acid (PFBS)
N-methylperfluorocotanesulfonamidoa   ND   0.25   0.028   ug/Kg   11/09/21 18:26   11/15/21 00:58   cetic acid (MMeFOSAA)   N-ethylperfluorocotanesulfonamidoac   ND   0.25   0.059   ug/Kg   11/09/21 18:26   11/15/21 00:58   cetic acid (NEFOSAA)   N-ethylperfluorocotanesulfonamidoac   ND   0.25   0.059   ug/Kg   11/09/21 18:26   11/15/21 00:58   cetic acid (NEFOSAA)   ND   0.25   0.043   ug/Kg   11/09/21 18:26   11/15/21 00:58   cetic acid (NEFO-DA)   ND   0.25   0.051   ug/Kg   11/09/21 18:26   11/15/21 00:58   cetic acid (HEPO-DA)   ND   0.25   0.038   ug/Kg   11/09/21 18:26   11/15/21 00:58   cetic acid (HEPO-DA)   ND   0.25   0.048   ug/Kg   11/09/21 18:26   11/15/21 00:58   cetic acid (HEPO-DA)   ND   0.25   0.048   ug/Kg   11/09/21 18:26   11/15/21 00:58   cetic acid (HEPO-DA)   ND   0.25   0.048   ug/Kg   11/09/21 18:26   11/15/21 00:58   cetic acid (HEPO-DA)   ND   0.25   0.048   ug/Kg   11/09/21 18:26   11/15/21 00:58   cetic acid (HEPO-DA)   ND   0.25   0.048   ug/Kg   11/09/21 18:26   11/15/21 00:58   cetic acid (HEPO-DA)   ND   0.25   0.048   ug/Kg   11/09/21 18:26   11/15/21 00:58   cetic acid (HEPO-DA)   ND   0.25   0.048   ug/Kg   11/09/21 18:26   11/15/21 00:58   cetic acid (HEPO-DA)   ND   0.25   0.048   ug/Kg   11/09/21 18:26   11/15/21 00:58   cetic acid (HEPO-DA)   ND   0.25   0.048   ug/Kg   11/09/21 18:26   11/15/21 00:58   cetic acid (HEPO-DA)   ND   0.25   0.048   ug/Kg   11/09/21 18:26   11/15/21 00:58   cetic acid (HEPO-DA)   ND   0.25   0.048   ug/Kg   11/09/21 18:26   11/15/21 00:58   cetic acid (HEPO-DA)   ND   0.25   0.048   ug/Kg   11/09/21 18:26   11/15/21 00:58   cetic acid (HEPO-DA)   ND   0.25   0.048   ug/Kg   11/09/21 18:26   11/15/21 00:58   cetic acid (HEPO-DA)   ND   0.25   0.048   ug/Kg   11/09/21 18:26   11/15/21 00:58   cetic acid (HEPO-DA)   ND   0.25   0.048   ug/Kg   11/09/21 18:26   11/15/21 00:58   cetic acid (HEPO-DA)   ND   0.25   0.048   ug/Kg   11/09/21 18:26   11/15/21 00:58   cetic acid (HEPO-DA)   ND   0.25   0.058   cetic acid (HEPO-DA)   ND   0.25   0.05	1	11/15/21 00:58	11/09/21 18:26	₩	ug/Kg	0.036	0.25		ND	Perfluorohexanesulfonic acid (PFHxS)
N-methylperfluorooctanesulfonamidoa cetic acid (MMeFOSAA)   N-bethylperfluorooctanesulfonamidoac cetic acid (MMeFOSAA)   N-bethylperfluorooctanesulfonamidoac cetic acid (MEFOSAA)   N-bethylperfluorooctanesulfonamidoac cetic acid (NEFOSAA)   N-bethylperfluorooctanesulfonamidoac cetic acid (NEFOSAA   N-bethylperfluorooctanesulfon	1	11/15/21 00:58	11/09/21 18:26	₩	ug/Kg	0.053	0.25	L	0.60	
etic acid (NEIFOSAA) 9-Chlorohexadecafluoro-3-oxanonan 9-Chlorohexadecafluoro-3-oxanonan 1-sulfonic acid Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxanundecan e-1-sulfonic acid ND 0.25 0.051 0.9/Kg 11/09/21 18:26 11/15/21 00:58 Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxanundecan e-1-sulfonic acid 4.8-Dioxa-3H-perfluorononanoic acid (ABONA)  Isotope Dilution  I	1	11/15/21 00:58	11/09/21 18:26	₩	ug/Kg	0.028	0.25		ND	N-methylperfluorooctanesulfonamidoa
e-1-sulfonic acid Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) 11-Chloroeloosafluoro-3-oxaundecan e-1-sulfonic acid (AB-DA) 11-Chloroeloosafluoro-3-oxaundecan e-1-sulfonic acid (AB-Da) 11-Chloroeloosafluoro-3-oxaundecan e-1-sulfonic acid (AB-Dioxa-3H-perfluorononanoic acid (AB-Dioxa-3H-perfluorononanoic acid (ADONA)  Isotope Dilution   %Recovery   Qualifier   Limits   Prepared   Analyzed   11/09/21 18:26   11/15/21 00:58   11/09/21 18:26   11	1	11/15/21 00:58	11/09/21 18:26	≎	ug/Kg	0.059	0.25		ND	· ·
Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid (ADONA)  Isotope Dilution Sectope Dilu	1	11/15/21 00:58	11/09/21 18:26	₩			0.25		ND	
e-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid (ADONA)    Solope Dilution   Secovery   Qualifier   Limits   Prepared   Analyzed	1	11/15/21 00:58	11/09/21 18:26	≎			0.25		ND	
Sotope Dilution   Secovery   Qualifier   Limits   Prepared   Analyzed	1	11/15/21 00:58	11/09/21 18:26	≎			0.25		ND	
13C2 PFHxA 94 50 - 150 11/09/21 18:26 11/15/21 00:58 13C4 PFHpA 96 50 - 150 11/09/21 18:26 11/15/21 00:58 13C4 PFOA 91 50 - 150 11/09/21 18:26 11/15/21 00:58 13C5 PFNA 89 50 - 150 11/09/21 18:26 11/15/21 00:58 13C2 PFDA 99 50 - 150 11/09/21 18:26 11/15/21 00:58 13C2 PFUnA 94 50 - 150 11/09/21 18:26 11/15/21 00:58 13C2 PFUnA 94 50 - 150 11/09/21 18:26 11/15/21 00:58 13C2 PFDOA 92 50 - 150 11/09/21 18:26 11/15/21 00:58 13C2 PFTeDA 82 50 - 150 11/09/21 18:26 11/15/21 00:58 13C3 PFBS 106 50 - 150 11/09/21 18:26 11/15/21 00:58 13C4 PFOS 91 50 - 150 11/09/21 18:26 11/15/21 00:58 13C4 PFOS 91 50 - 150 11/09/21 18:26 11/15/21 00:58 13C3 NMeFOSAA 100 50 - 150 11/09/21 18:26 11/15/21 00:58 13C3 HFPO-DA 87 50 - 150 11/09/21 18:26 11/15/21 00:58 13C3 HFPO-DA 87 50 - 150 11/09/21 18:26 11/15/21 00:58	1	11/15/21 00:58	11/09/21 18:26	₩	ug/Kg	0.048	0.25		ND	•
13C4 PFHpA 96 50 . 150 11/09/21 18:26 11/15/21 00:58 13C4 PFOA 91 50 . 150 11/09/21 18:26 11/15/21 00:58 13C5 PFNA 89 50 . 150 11/09/21 18:26 11/15/21 00:58 13C2 PFDA 99 50 . 150 11/09/21 18:26 11/15/21 00:58 13C2 PFUnA 94 50 . 150 11/09/21 18:26 11/15/21 00:58 13C2 PFDAA 92 50 . 150 11/09/21 18:26 11/15/21 00:58 13C2 PFTeDA 82 50 . 150 11/09/21 18:26 11/15/21 00:58 13C2 PFTeDA 82 50 . 150 11/09/21 18:26 11/15/21 00:58 13C3 PFBS 106 50 . 150 11/09/21 18:26 11/15/21 00:58 13C4 PFOS 91 50 . 150 11/09/21 18:26 11/15/21 00:58 13C4 PFOS 91 50 . 150 11/09/21 18:26 11/15/21 00:58 13C4 PFOS 91 50 . 150 11/09/21 18:26 11/15/21 00:58 13C3 NMeFOSAA 100 50 . 150 11/09/21 18:26 11/15/21 00:58 13C3 NFFO-DA 87 50 . 150 11/09/21 18:26 11/15/21 00:58 13C3 HFPO-DA 87 50 . 150 11/09/21 18:	Dil Fa	Analyzed	Prepared				Limits	Qualifier	%Recovery	Isotope Dilution
13C4 PFOA 91 50 - 150 11/09/21 18:26 11/15/21 00:58 13C5 PFNA 89 50 - 150 11/09/21 18:26 11/15/21 00:58 13C2 PFDA 99 50 - 150 11/09/21 18:26 11/15/21 00:58 13C2 PFUnA 94 50 - 150 11/09/21 18:26 11/15/21 00:58 13C2 PFDOA 92 50 - 150 11/09/21 18:26 11/15/21 00:58 13C2 PFTeDA 82 50 - 150 11/09/21 18:26 11/15/21 00:58 13C3 PFBS 106 50 - 150 11/09/21 18:26 11/15/21 00:58 18C2 PFLXS 86 50 - 150 11/09/21 18:26 11/15/21 00:58 13C4 PFOS 91 50 - 150 11/09/21 18:26 11/15/21 00:58 d3-NMeFOSAA 100 50 - 150 11/09/21 18:26 11/15/21 00:58 d5-NEtFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 d5-NEtFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 d5-NEtFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 d5-NEtFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 d5-NEtFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 d5-NEtFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 d5-NEtFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 d5-NEtFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 d5-NEtFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 d5-NEtFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 d5-NEtFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 d5-NEtFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58	-	11/15/21 00:58	11/09/21 18:26				50 - 150		94	13C2 PFHxA
13C5 PFNA     89     50 - 150     11/09/21 18:26 11/15/21 00:58       13C2 PFDA     99     50 - 150     11/09/21 18:26 11/15/21 00:58       13C2 PFUnA     94     50 - 150     11/09/21 18:26 11/15/21 00:58       13C2 PFDOA     92     50 - 150     11/09/21 18:26 11/15/21 00:58       13C2 PFTEDA     82     50 - 150     11/09/21 18:26 11/15/21 00:58       13C3 PFBS     106     50 - 150     11/09/21 18:26 11/15/21 00:58       18O2 PFHXS     86     50 - 150     11/09/21 18:26 11/15/21 00:58       13C4 PFOS     91     50 - 150     11/09/21 18:26 11/15/21 00:58       d3-NMeFOSAA     100     50 - 150     11/09/21 18:26 11/15/21 00:58       d5-NEtFOSAA     101     50 - 150     11/09/21 18:26 11/15/21 00:58       13C3 HFPO-DA     87     50 - 150     11/09/21 18:26 11/15/21 00:58       General Chemistry       Analyte     Result Qualifier     RL     MDL Unit     D     Prepared     Analyzed	1	11/15/21 00:58	11/09/21 18:26				50 <sub>-</sub> 150		96	13C4 PFHpA
13C2 PFDA 99 50 - 150 11/09/21 18:26 11/15/21 00:58 13C2 PFUnA 94 50 - 150 11/09/21 18:26 11/15/21 00:58 13C2 PFDoA 92 50 - 150 11/09/21 18:26 11/15/21 00:58 13C2 PFTeDA 82 50 - 150 11/09/21 18:26 11/15/21 00:58 13C3 PFBS 106 50 - 150 11/09/21 18:26 11/15/21 00:58 18O2 PFHxS 86 50 - 150 11/09/21 18:26 11/15/21 00:58 13C4 PFOS 91 50 - 150 11/09/21 18:26 11/15/21 00:58 13C4 PFOS 91 50 - 150 11/09/21 18:26 11/15/21 00:58 13C5 NEFOSAA 100 50 - 150 11/09/21 18:26 11/15/21 00:58 13C6 NEFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 13C7 NEFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 13C7 NEFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 13C7 NEFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 13C7 NEFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 13C7 NEFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 13C7 NEFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 13C7 NEFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 13C7 NEFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 13C7 NEFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 13C7 NEFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 13C7 NEFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 13C7 NEFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58	1	11/15/21 00:58	11/09/21 18:26				50 <sub>-</sub> 150		91	13C4 PFOA
13C2 PFUnA 94 50 - 150 11/09/21 18:26 11/15/21 00:58 13C2 PFDoA 92 50 - 150 11/09/21 18:26 11/15/21 00:58 13C2 PFTeDA 82 50 - 150 11/09/21 18:26 11/15/21 00:58 13C3 PFBS 106 50 - 150 11/09/21 18:26 11/15/21 00:58 18O2 PFHxS 86 50 - 150 11/09/21 18:26 11/15/21 00:58 13C4 PFOS 91 50 - 150 11/09/21 18:26 11/15/21 00:58 d3-NMeFOSAA 100 50 - 150 11/09/21 18:26 11/15/21 00:58 d5-NEtFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 d5-NEtFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 d5-NEtFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 d5-NEtFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 d5-NEtFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 d5-NEtFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 d5-NEtFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 d5-NEtFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 d5-NEtFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 d5-NEtFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 d5-NEtFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 d5-NEtFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 d5-NEtFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 d5-NEtFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 d5-NEtFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 d5-NEtFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 d5-NEtFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58	1	11/15/21 00:58	11/09/21 18:26				50 - 150		89	13C5 PFNA
13C2 PFDoA 92 50 - 150 11/09/21 18:26 11/15/21 00:58 13C2 PFTeDA 82 50 - 150 11/09/21 18:26 11/15/21 00:58 13C3 PFBS 106 50 - 150 11/09/21 18:26 11/15/21 00:58 18O2 PFHxS 86 50 - 150 11/09/21 18:26 11/15/21 00:58 13C4 PFOS 91 50 - 150 11/09/21 18:26 11/15/21 00:58 d3-NMeFOSAA 100 50 - 150 11/09/21 18:26 11/15/21 00:58 d5-NEtFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 d5-NEtFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 d5-NEtFOSAA 50 101 50 - 150 11/09/21 18:26 11/15/21 00:58 d5-NEtFOSAA 87 50 - 150 11/09/21 18:26 11/15/21 00:58 General Chemistry Analyte Result Qualifier RL MDL Unit D Prepared Analyzed	1	11/15/21 00:58	11/09/21 18:26				50 - 150		99	13C2 PFDA
13C2 PFTeDA 82 50 - 150 11/09/21 18:26 11/15/21 00:58 13C3 PFBS 106 50 - 150 11/09/21 18:26 11/15/21 00:58 18O2 PFHxS 86 50 - 150 11/09/21 18:26 11/15/21 00:58 13C4 PFOS 91 50 - 150 11/09/21 18:26 11/15/21 00:58 d3-NMeFOSAA 100 50 - 150 11/09/21 18:26 11/15/21 00:58 d5-NEtFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 13C3 HFPO-DA 87 50 - 150 11/09/21 18:26 11/15/21 00:58  General Chemistry Analyte Result Qualifier RL MDL Unit D Prepared Analyzed	1	11/15/21 00:58	11/09/21 18:26				50 - 150		94	13C2 PFUnA
13C3 PFBS     106     50 - 150     11/09/21 18:26     11/15/21 00:58       18O2 PFHxS     86     50 - 150     11/09/21 18:26     11/15/21 00:58       13C4 PFOS     91     50 - 150     11/09/21 18:26     11/15/21 00:58       d3-NMeFOSAA     100     50 - 150     11/09/21 18:26     11/15/21 00:58       d5-NEtFOSAA     101     50 - 150     11/09/21 18:26     11/15/21 00:58       13C3 HFPO-DA     87     50 - 150     11/09/21 18:26     11/15/21 00:58       General Chemistry       Analyte     Result     Qualifier     RL     MDL     Unit     D     Prepared     Analyzed	1	11/15/21 00:58	11/09/21 18:26				50 - 150		92	13C2 PFDoA
1802 PFHxS     86     50 - 150     11/09/21 18:26     11/15/21 00:58       13C4 PFOS     91     50 - 150     11/09/21 18:26     11/15/21 00:58       d3-NMeFOSAA     100     50 - 150     11/09/21 18:26     11/15/21 00:58       d5-NEtFOSAA     101     50 - 150     11/09/21 18:26     11/15/21 00:58       13C3 HFPO-DA     87     50 - 150     11/09/21 18:26     11/15/21 00:58       General Chemistry       Analyte     Result Qualifier     RL     MDL Unit     D     Prepared     Analyzed	1	11/15/21 00:58	11/09/21 18:26				50 - 150		82	13C2 PFTeDA
13C4 PFOS 91 50 - 150 11/09/21 18:26 11/15/21 00:58 d3-NMeFOSAA 100 50 - 150 11/09/21 18:26 11/15/21 00:58 d5-NEtFOSAA 101 50 - 150 11/09/21 18:26 11/15/21 00:58 13C3 HFPO-DA 87 50 - 150 11/09/21 18:26 11/15/21 00:58  General Chemistry Analyte Result Qualifier RL MDL Unit D Prepared Analyzed	1	11/15/21 00:58	11/09/21 18:26				50 - 150		106	13C3 PFBS
d3-NMeFOSAA     100     50 - 150     11/09/21 18:26 11/15/21 00:58       d5-NEtFOSAA     101     50 - 150     11/09/21 18:26 11/15/21 00:58       13C3 HFPO-DA     87     50 - 150     11/09/21 18:26 11/15/21 00:58       General Chemistry       Analyte     Result Qualifier     RL     MDL Unit     D     Prepared     Analyzed	1	11/15/21 00:58	11/09/21 18:26				50 - 150		86	18O2 PFHxS
d5-NEtFOSAA     101     50 - 150     11/09/21 18:26     11/15/21 00:58       13C3 HFPO-DA     87     50 - 150     11/09/21 18:26     11/15/21 00:58       General Chemistry       Analyte     Result Qualifier     RL     MDL Unit     D     Prepared     Analyzed	1	11/15/21 00:58	11/09/21 18:26				50 - 150		91	13C4 PFOS
13C3 HFPO-DA 87 50 - 150 11/09/21 18:26 11/15/21 00:58  General Chemistry  Analyte Result Qualifier RL MDL Unit D Prepared Analyzed	1	11/15/21 00:58	11/09/21 18:26				50 - 150		100	d3-NMeFOSAA
General Chemistry Analyte Result Qualifier RL MDL Unit D Prepared Analyzed	1	11/15/21 00:58	11/09/21 18:26				50 - 150		101	d5-NEtFOSAA
Analyte Result Qualifier RL MDL Unit D Prepared Analyzed	1	11/15/21 00:58	11/09/21 18:26				50 - 150		87	13C3 HFPO-DA
			_	_					_	
Percent Moisture 19.5 0.1 0.1 % 11/05/21 12:51	Dil Fac	Analyzed 11/05/21 12:51	Prepared	D				Qualifier		<del>`</del>

Eurofins TestAmerica, Sacramento

0.1

80.5

0.1 %

11/05/21 12:51

Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

Client Sample ID: 21GST-SS-009 Lab Sample ID: 320-81254-78

Date Collected: 10/31/21 14:13 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 87.4

Job ID: 320-81254-1

Method: EPA 537(Mod) - PFAS Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	0.74		0.22	0.034	ug/Kg		11/09/21 18:26	11/15/21 01:08	1
Perfluoroheptanoic acid (PFHpA)	0.25		0.22	0.041	ug/Kg	₩	11/09/21 18:26	11/15/21 01:08	1
Perfluorooctanoic acid (PFOA)	0.69		0.22	0.058	ug/Kg	₩	11/09/21 18:26	11/15/21 01:08	1
Perfluorononanoic acid (PFNA)	ND		0.22	0.024	ug/Kg	₩	11/09/21 18:26	11/15/21 01:08	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.052	ug/Kg	₩	11/09/21 18:26	11/15/21 01:08	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.046	ug/Kg	₩	11/09/21 18:26	11/15/21 01:08	1
Perfluorododecanoic acid (PFDoA)	0.048	J	0.22	0.033	ug/Kg	₩	11/09/21 18:26	11/15/21 01:08	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.023	ug/Kg	₩	11/09/21 18:26	11/15/21 01:08	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.040	ug/Kg	₩	11/09/21 18:26	11/15/21 01:08	1
Perfluorobutanesulfonic acid (PFBS)	1.3		0.22	0.041	ug/Kg	₩	11/09/21 18:26	11/15/21 01:08	1
Perfluorohexanesulfonic acid (PFHxS)	8.4		0.22	0.032	ug/Kg	☼	11/09/21 18:26	11/15/21 01:08	1
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	0.038	JI	0.22	0.025	ug/Kg	☼	11/09/21 18:26	11/15/21 01:08	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.22		ug/Kg	₽	11/09/21 18:26	11/15/21 01:08	1
9-Chloronexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.22		ug/Kg	₩	11/09/21 18:26	11/15/21 01:08	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22		ug/Kg		11/09/21 18:26		
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.22	0.034	ug/Kg	₩	11/09/21 18:26	11/15/21 01:08	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.043	ug/Kg	₩	11/09/21 18:26	11/15/21 01:08	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	112		50 - 150				11/09/21 18:26	11/15/21 01:08	1
13C4 PFHpA	108		50 - 150				11/09/21 18:26	11/15/21 01:08	1
13C4 PFOA	104		50 - 150				11/09/21 18:26	11/15/21 01:08	1
13C5 PFNA	102		50 - 150				11/09/21 18:26	11/15/21 01:08	1
13C2 PFDA	114		50 - 150				11/09/21 18:26	11/15/21 01:08	1
13C2 PFUnA	109		50 - 150				11/09/21 18:26	11/15/21 01:08	1
13C2 PFDoA	111		50 - 150				11/09/21 18:26	11/15/21 01:08	1
13C2 PFTeDA	100		50 - 150				11/09/21 18:26	11/15/21 01:08	1
13C3 PFBS	114		50 - 150				11/09/21 18:26	11/15/21 01:08	1
1802 PFHxS	98		50 - 150				11/09/21 18:26	11/15/21 01:08	1
									1
	109		50 - 150				11/09/21 18:26	11/15/21 01:08	
13C4 PFOS	109 113		50 - 150 50 - 150					11/15/21 01:08 11/15/21 01:08	1
13C4 PFOS d3-NMeFOSAA	113						11/09/21 18:26		1
13C4 PFOS d3-NMeFOSAA			50 - 150				11/09/21 18:26 11/09/21 18:26	11/15/21 01:08	
13C4 PFOS d3-NMeFOSAA d5-NEtFOSAA 13C3 HFPO-DA Method: EPA 537(Mod) - PFAS	113 126 99 <b>S for QSM 5</b>	•	50 - 150 50 - 150 50 - 150 -15 - DL				11/09/21 18:26 11/09/21 18:26 11/09/21 18:26	11/15/21 01:08 11/15/21 01:08 11/15/21 01:08	1
13C4 PFOS d3-NMeFOSAA d5-NEtFOSAA 13C3 HFPO-DA Method: EPA 537(Mod) - PFAS Analyte	113 126 99 6 for QSM 5 Result	3, Table B Qualifier	50 - 150 50 - 150 50 - 150 -15 - DL RL		Unit	<u>D</u>	11/09/21 18:26 11/09/21 18:26 11/09/21 18:26 Prepared	11/15/21 01:08 11/15/21 01:08 11/15/21 01:08 Analyzed	Dil Fac
13C4 PFOS d3-NMeFOSAA d5-NEtFOSAA 13C3 HFPO-DA Method: EPA 537(Mod) - PFAS Analyte Perfluorooctanesulfonic acid	113 126 99 <b>S for QSM 5</b>	•	50 - 150 50 - 150 50 - 150 -15 - DL		Unit ug/Kg		11/09/21 18:26 11/09/21 18:26 11/09/21 18:26	11/15/21 01:08 11/15/21 01:08 11/15/21 01:08 Analyzed	Dil Fac
13C4 PFOS d3-NMeFOSAA d5-NEtFOSAA 13C3 HFPO-DA  Method: EPA 537(Mod) - PFAS Analyte Perfluorooctanesulfonic acid (PFOS)	113 126 99 6 for QSM 5 Result	Qualifier	50 - 150 50 - 150 50 - 150 -15 - DL RL				11/09/21 18:26 11/09/21 18:26 11/09/21 18:26 Prepared	11/15/21 01:08 11/15/21 01:08 11/15/21 01:08 Analyzed	Dil Fac
13C4 PFOS d3-NMeFOSAA d5-NEtFOSAA	113 126 99 6 for QSM 5 Result 64	Qualifier	50 - 150 50 - 150 50 - 150 -15 - DL RL 2.2				11/09/21 18:26 11/09/21 18:26 11/09/21 18:26 Prepared 11/09/21 18:26 Prepared	11/15/21 01:08 11/15/21 01:08 11/15/21 01:08 11/15/21 12:25	1 1 1
13C4 PFOS d3-NMeFOSAA d5-NEtFOSAA 13C3 HFPO-DA  Method: EPA 537(Mod) - PFAS Analyte Perfluorooctanesulfonic acid (PFOS) Isotope Dilution	113 126 99 6 for QSM 5 Result 64 %Recovery	Qualifier	50 - 150 50 - 150 50 - 150 -15 - DL RL 2.2		ug/Kg		11/09/21 18:26 11/09/21 18:26 11/09/21 18:26 Prepared 11/09/21 18:26 Prepared	11/15/21 01:08 11/15/21 01:08 11/15/21 01:08 Analyzed 11/15/21 12:25 Analyzed	Dil Fac

Eurofins TestAmerica, Sacramento

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-SS-009 Lab Sample ID: 320-81254-78

Date Collected: 10/31/21 14:13 Matrix: Solid
Date Received: 11/03/21 14:01 Percent Solids: 87.4

<b>General Chemistry (Continued</b>	)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	87.4		0.1	0.1	%			11/05/21 12:51	1

4

5

8

10

11

13

14

1

Client: Shannon & Wilson, Inc Job ID: 320-81254-1 Project/Site: SC Soils#3

Client Sample ID: 21GST-SS-012

**Percent Solids** 

Lab Sample ID: 320-81254-79 Date Collected: 10/31/21 14:19 **Matrix: Solid** 

Date Received: 11/03/21 14:01 Percent Solids: 94.0

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND	0.19	0.030	ug/Kg	<u></u>	11/09/21 18:26	11/15/21 01:39	1
Perfluoroheptanoic acid (PFHpA)	ND	0.19	0.037	ug/Kg	₽	11/09/21 18:26	11/15/21 01:39	1
Perfluorooctanoic acid (PFOA)	ND	0.19	0.051	ug/Kg	☼	11/09/21 18:26	11/15/21 01:39	1
Perfluorononanoic acid (PFNA)	ND	0.19	0.021	ug/Kg	₩	11/09/21 18:26	11/15/21 01:39	1
Perfluorodecanoic acid (PFDA)	ND	0.19	0.046	ug/Kg	☼	11/09/21 18:26	11/15/21 01:39	1
Perfluoroundecanoic acid (PFUnA)	ND	0.19	0.041	ug/Kg	₩	11/09/21 18:26	11/15/21 01:39	1
Perfluorododecanoic acid (PFDoA)	ND	0.19	0.029	ug/Kg	₩	11/09/21 18:26	11/15/21 01:39	1
Perfluorotridecanoic acid (PFTriA)	ND	0.19	0.020	ug/Kg	☼	11/09/21 18:26	11/15/21 01:39	1
Perfluorotetradecanoic acid (PFTeA)	ND	0.19	0.036	ug/Kg	≎	11/09/21 18:26	11/15/21 01:39	1
Perfluorobutanesulfonic acid (PFBS)	ND	0.19	0.037	ug/Kg	₩	11/09/21 18:26	11/15/21 01:39	1
Perfluorohexanesulfonic acid (PFHxS)	ND	0.19	0.028	ug/Kg	₽	11/09/21 18:26	11/15/21 01:39	1
Perfluorooctanesulfonic acid (PFOS)	0.23	0.19	0.042	ug/Kg	₩	11/09/21 18:26	11/15/21 01:39	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND	0.19	0.022	ug/Kg	₿	11/09/21 18:26	11/15/21 01:39	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND	0.19	0.046	ug/Kg	₩	11/09/21 18:26	11/15/21 01:39	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND	0.19	0.034	ug/Kg	₩	11/09/21 18:26	11/15/21 01:39	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	0.19	0.040	ug/Kg	₩	11/09/21 18:26	11/15/21 01:39	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND	0.19		ug/Kg	₩	11/09/21 18:26	11/15/21 01:39	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.19	0.038	ug/Kg	₩	11/09/21 18:26	11/15/21 01:39	1
Isotope Dilution	%Recovery Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	113	50 - 150				11/09/21 18:26	11/15/21 01:39	1
13C4 PFHpA	109	50 - 150				11/09/21 18:26	11/15/21 01:39	1
13C4 PFOA	101	50 - 150				11/09/21 18:26	11/15/21 01:39	1
13C5 PFNA	101	50 - 150				11/09/21 18:26	11/15/21 01:39	1
13C2 PFDA	103	50 <sub>-</sub> 150				11/09/21 18:26	11/15/21 01:39	1
13C2 PFUnA	98	50 - 150				11/09/21 18:26	11/15/21 01:39	1
13C2 PFDoA	92	50 - 150				11/09/21 18:26	11/15/21 01:39	1
13C2 PFTeDA	89	50 - 150				11/09/21 18:26	11/15/21 01:39	1
13C3 PFBS	103	50 <sub>-</sub> 150				11/09/21 18:26	11/15/21 01:39	1
1802 PFHxS	99	50 <sub>-</sub> 150				11/09/21 18:26	11/15/21 01:39	1
13C4 PFOS	98	50 - 150				11/09/21 18:26	11/15/21 01:39	1
d3-NMeFOSAA	98	50 <sub>-</sub> 150				11/09/21 18:26	11/15/21 01:39	1
d5-NEtFOSAA	103	50 - 150					11/15/21 01:39	1
13C3 HFPO-DA	101	50 - 150				11/09/21 18:26	11/15/21 01:39	1
General Chemistry								
Amalista	Result Qualifier	RL	MDI	Unit	D	Prepared	Analyzed	Dil Fac
Analyte Percent Moisture	6.0 Qualifier	0.1	0.1			Fiepaieu	11/05/21 12:51	1

11/05/21 12:51

0.1

94.0

0.1 %

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-SS-011 Lab Sample ID: 320-81254-80

Date Collected: 10/31/21 14:27 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 93.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Perfluorohexanoic acid (PFHxA)	ND		0.21	0.033	ug/Kg	<del></del>	11/09/21 18:26	11/15/21 01:50	
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.041	ug/Kg	₩	11/09/21 18:26	11/15/21 01:50	
Perfluorooctanoic acid (PFOA)	ND		0.21	0.057	ug/Kg	₩	11/09/21 18:26	11/15/21 01:50	
Perfluorononanoic acid (PFNA)	ND		0.21	0.024	ug/Kg	₩	11/09/21 18:26	11/15/21 01:50	
Perfluorodecanoic acid (PFDA)	ND		0.21	0.051	ug/Kg	₩	11/09/21 18:26	11/15/21 01:50	
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.045	ug/Kg	₩	11/09/21 18:26	11/15/21 01:50	
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.032	ug/Kg	₩	11/09/21 18:26	11/15/21 01:50	
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.023	ug/Kg	₩	11/09/21 18:26	11/15/21 01:50	
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.040	ug/Kg	₩	11/09/21 18:26	11/15/21 01:50	
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.041	ug/Kg	₩	11/09/21 18:26	11/15/21 01:50	
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21	0.031	ug/Kg	≎	11/09/21 18:26	11/15/21 01:50	
Perfluorooctanesulfonic acid	0.15	J	0.21		ug/Kg	₩	11/09/21 18:26	11/15/21 01:50	
(PFOS)									
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.21	0.025	ug/Kg	₩	11/09/21 18:26	11/15/21 01:50	
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.21	0.051	ug/Kg	☼	11/09/21 18:26	11/15/21 01:50	
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.21	0.038	ug/Kg	₩	11/09/21 18:26	11/15/21 01:50	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.044	ug/Kg	₩	11/09/21 18:26	11/15/21 01:50	
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.21		ug/Kg	₩	11/09/21 18:26	11/15/21 01:50	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.042	ug/Kg	₩	11/09/21 18:26	11/15/21 01:50	•
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	112		50 - 150				11/09/21 18:26	11/15/21 01:50	
13C4 PFHpA	107		50 - 150				11/09/21 18:26	11/15/21 01:50	
13C4 PFOA	101		50 - 150				11/09/21 18:26	11/15/21 01:50	
13C5 PFNA	106		50 - 150				11/09/21 18:26	11/15/21 01:50	
13C2 PFDA	108		50 - 150				11/09/21 18:26	11/15/21 01:50	
13C2 PFUnA	110		50 - 150				11/09/21 18:26	11/15/21 01:50	
13C2 PFDoA	101		50 - 150				11/09/21 18:26	11/15/21 01:50	
13C2 PFTeDA	97		50 - 150				11/09/21 18:26	11/15/21 01:50	
13C3 PFBS	112		50 - 150				11/09/21 18:26	11/15/21 01:50	
1802 PFHxS	95		50 - 150				11/09/21 18:26	11/15/21 01:50	
13C4 PFOS	100		50 - 150				11/09/21 18:26	11/15/21 01:50	
d3-NMeFOSAA	103		50 - 150				11/09/21 18:26	11/15/21 01:50	
d5-NEtFOSAA	113		50 - 150				11/09/21 18:26	11/15/21 01:50	
13C3 HFPO-DA	94		50 - 150				11/09/21 18:26	11/15/21 01:50	
General Chemistry									
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fa
Percent Moisture	6.9		0.1	0.1	%			11/05/21 12:51	

General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	6.9		0.1	0.1	%			11/05/21 12:51	1
Percent Solids	93.1		0.1	0.1	%			11/05/21 12:51	1

Client: Shannon & Wilson, Inc Job ID: 320-81254-1 Project/Site: SC Soils#3

Client Sample ID: 21GST-SS-013

Lab Sample ID: 320-81254-81 Date Collected: 10/31/21 14:31 **Matrix: Solid** 

Date Received: 11/03/21 14:01 Percent Solids: 86.2

Analyte	Result Qualit	fier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND	0.21	0.033	ug/Kg	<u></u>	11/10/21 13:52	11/12/21 03:56	
Perfluoroheptanoic acid (PFHpA)	ND	0.21	0.040	ug/Kg	₩	11/10/21 13:52	11/12/21 03:56	
Perfluorooctanoic acid (PFOA)	ND	0.21	0.056	ug/Kg	₩	11/10/21 13:52	11/12/21 03:56	
Perfluorononanoic acid (PFNA)	ND	0.21	0.023	ug/Kg	₩	11/10/21 13:52	11/12/21 03:56	
Perfluorodecanoic acid (PFDA)	ND	0.21	0.051	ug/Kg	₩	11/10/21 13:52	11/12/21 03:56	•
Perfluoroundecanoic acid (PFUnA)	ND	0.21	0.045	ug/Kg	☼	11/10/21 13:52	11/12/21 03:56	
Perfluorododecanoic acid (PFDoA)	ND	0.21	0.032	ug/Kg	₩	11/10/21 13:52	11/12/21 03:56	,
Perfluorotridecanoic acid (PFTriA)	ND	0.21	0.022	ug/Kg	☼	11/10/21 13:52	11/12/21 03:56	
Perfluorotetradecanoic acid (PFTeA)	ND	0.21	0.039	ug/Kg	≎	11/10/21 13:52	11/12/21 03:56	
Perfluorobutanesulfonic acid (PFBS)	ND	0.21	0.040	ug/Kg	≎	11/10/21 13:52	11/12/21 03:56	
Perfluorohexanesulfonic acid (PFHxS)	ND	0.21	0.031	ug/Kg	₽	11/10/21 13:52	11/12/21 03:56	
Perfluorooctanesulfonic acid (PFOS)	1.2	0.21	0.046	ug/Kg	₩	11/10/21 13:52	11/12/21 03:56	•
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND	0.21	0.024	ug/Kg	₽	11/10/21 13:52	11/12/21 03:56	,
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND	0.21		ug/Kg	₩	11/10/21 13:52	11/12/21 03:56	•
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND	0.21		ug/Kg		11/10/21 13:52		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	0.21		ug/Kg	₽	11/10/21 13:52	11/12/21 03:56	•
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND	0.21		ug/Kg	₩	11/10/21 13:52		•
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.21	0.042	ug/Kg	₩	11/10/21 13:52	11/12/21 03:56	•
Isotope Dilution	%Recovery Quality	fier Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	90	50 - 150				11/10/21 13:52	11/12/21 03:56	7
13C4 PFHpA	88	50 - 150				11/10/21 13:52	11/12/21 03:56	7
13C4 PFOA	90	50 - 150				11/10/21 13:52	11/12/21 03:56	
13C5 PFNA	97	50 - 150				11/10/21 13:52	11/12/21 03:56	
13C2 PFDA	100	50 - 150				11/10/21 13:52	11/12/21 03:56	
13C2 PFUnA	97	50 - 150				11/10/21 13:52	11/12/21 03:56	1
13C2 PFDoA	85	50 - 150				11/10/21 13:52	11/12/21 03:56	
13C2 PFTeDA	76	50 - 150				11/10/21 13:52	11/12/21 03:56	
13C3 PFBS	101	50 - 150				11/10/21 13:52	11/12/21 03:56	
1802 PFHxS	87	50 - 150				11/10/21 13:52	11/12/21 03:56	
13C4 PFOS	100	50 - 150				11/10/21 13:52	11/12/21 03:56	
d3-NMeFOSAA	99	50 - 150				11/10/21 13:52	11/12/21 03:56	
d5-NEtFOSAA	103	50 - 150				11/10/21 13:52	11/12/21 03:56	
13C3 HFPO-DA	71	50 - 150				11/10/21 13:52	11/12/21 03:56	
General Chemistry								
Analyte	Result Qualit			Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	13.8	0.1	0.1	%			11/05/21 14:24	•

Eurofins TestAmerica, Sacramento

11/05/21 14:24

0.1

0.1 %

86.2

**Percent Solids** 

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

**Percent Moisture** 

**Percent Solids** 

Client Sample ID: 21GST-SB003-01 Lab Sample ID: 320-81254-82

Date Collected: 10/31/21 11:35 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 64.2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	0.26	J	0.28	0.043	ug/Kg	₩	11/10/21 13:52	11/12/21 04:28	1
Perfluoroheptanoic acid (PFHpA)	0.21	J	0.28	0.053	ug/Kg	₩	11/10/21 13:52	11/12/21 04:28	1
Perfluorooctanoic acid (PFOA)	ND		0.28	0.074	ug/Kg	≎	11/10/21 13:52	11/12/21 04:28	1
Perfluorononanoic acid (PFNA)	0.061	JI	0.28	0.031	ug/Kg	₽	11/10/21 13:52	11/12/21 04:28	1
Perfluorodecanoic acid (PFDA)	ND		0.28	0.067	ug/Kg	₩	11/10/21 13:52	11/12/21 04:28	1
Perfluoroundecanoic acid (PFUnA)	ND		0.28	0.059	ug/Kg	₩	11/10/21 13:52	11/12/21 04:28	1
Perfluorododecanoic acid (PFDoA)	ND		0.28	0.042	ug/Kg	₩	11/10/21 13:52	11/12/21 04:28	1
Perfluorotridecanoic acid (PFTriA)	ND		0.28	0.029	ug/Kg	☼	11/10/21 13:52	11/12/21 04:28	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.28	0.052	ug/Kg	≎	11/10/21 13:52	11/12/21 04:28	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.28	0.053	ug/Kg	₩	11/10/21 13:52	11/12/21 04:28	1
Perfluorohexanesulfonic acid (PFHxS)	0.27	JI	0.28	0.040	ug/Kg	₽	11/10/21 13:52	11/12/21 04:28	1
Perfluorooctanesulfonic acid (PFOS)	10		0.28	0.060	ug/Kg	₽	11/10/21 13:52	11/12/21 04:28	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.28	0.032	ug/Kg		11/10/21 13:52	11/12/21 04:28	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.28	0.067	ug/Kg	₩	11/10/21 13:52	11/12/21 04:28	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.28	0.049	ug/Kg	₩	11/10/21 13:52	11/12/21 04:28	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.28	0.057	ug/Kg	₽	11/10/21 13:52	11/12/21 04:28	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.28	0.043	ug/Kg	₽	11/10/21 13:52	11/12/21 04:28	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.28	0.054	ug/Kg	₩	11/10/21 13:52	11/12/21 04:28	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	79		50 - 150				11/10/21 13:52	11/12/21 04:28	1
13C4 PFHpA	80		50 - 150				11/10/21 13:52	11/12/21 04:28	1
13C4 PFOA	80		50 - 150				11/10/21 13:52	11/12/21 04:28	1
13C5 PFNA	85		50 - 150				11/10/21 13:52	11/12/21 04:28	1
13C2 PFDA	87		50 <sub>-</sub> 150				11/10/21 13:52	11/12/21 04:28	1
13C2 PFUnA	84		50 <sub>-</sub> 150				11/10/21 13:52	11/12/21 04:28	1
13C2 PFDoA	78		50 - 150				11/10/21 13:52	11/12/21 04:28	1
13C2 PFTeDA	72		50 <sub>-</sub> 150				11/10/21 13:52	11/12/21 04:28	1
13C3 PFBS	90		50 <sub>-</sub> 150				11/10/21 13:52	11/12/21 04:28	1
1802 PFHxS	82		50 - 150				11/10/21 13:52	11/12/21 04:28	1
13C4 PFOS	90		50 - 150					11/12/21 04:28	1
d3-NMeFOSAA	89		50 - 150					11/12/21 04:28	1
d5-NEtFOSAA	103		50 <sub>-</sub> 150					11/12/21 04:28	
13C3 HFPO-DA	69		50 - 150					11/12/21 04:28	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

11/05/21 14:24

11/05/21 14:24

0.1

0.1

0.1 %

0.1 %

35.8

64.2

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-SB003-02 Lab Sample ID: 320-81254-83

Date Collected: 10/31/21 11:40 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 85.4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Perfluorohexanoic acid (PFHxA)	ND		0.21	0.033	ug/Kg	☆	11/10/21 13:52	11/12/21 04:38	•
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.041	ug/Kg	☼	11/10/21 13:52	11/12/21 04:38	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.057	ug/Kg	₩	11/10/21 13:52	11/12/21 04:38	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.024	ug/Kg	₩	11/10/21 13:52	11/12/21 04:38	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.051	ug/Kg	≎	11/10/21 13:52	11/12/21 04:38	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.045	ug/Kg	₽	11/10/21 13:52	11/12/21 04:38	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.032	ug/Kg	₽	11/10/21 13:52	11/12/21 04:38	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.023	ug/Kg	₽	11/10/21 13:52	11/12/21 04:38	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.040	ug/Kg	☼	11/10/21 13:52	11/12/21 04:38	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.041	ug/Kg	☼	11/10/21 13:52	11/12/21 04:38	1
Perfluorohexanesulfonic acid (PFHxS)	0.072	J	0.21	0.031	ug/Kg	₩	11/10/21 13:52	11/12/21 04:38	1
Perfluorooctanesulfonic acid (PFOS)	2.6		0.21	0.046	ug/Kg	₩	11/10/21 13:52	11/12/21 04:38	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.21	0.025	ug/Kg	₩	11/10/21 13:52	11/12/21 04:38	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.21	0.051	ug/Kg	₩	11/10/21 13:52	11/12/21 04:38	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.21	0.038	ug/Kg	₩	11/10/21 13:52	11/12/21 04:38	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.044	ug/Kg	₩	11/10/21 13:52	11/12/21 04:38	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.21	0.033	ug/Kg	₩	11/10/21 13:52	11/12/21 04:38	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.042	ug/Kg	₩	11/10/21 13:52	11/12/21 04:38	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	101		50 - 150				11/10/21 13:52	11/12/21 04:38	1
13C4 PFHpA	97		50 - 150				11/10/21 13:52	11/12/21 04:38	1
13C4 PFOA	95		50 - 150				11/10/21 13:52	11/12/21 04:38	1
13C5 PFNA	101		50 - 150				11/10/21 13:52	11/12/21 04:38	1
13C2 PFDA	100		50 - 150				11/10/21 13:52	11/12/21 04:38	1
13C2 PFUnA	100		50 - 150				11/10/21 13:52	11/12/21 04:38	1
13C2 PFDoA	92		50 - 150				11/10/21 13:52	11/12/21 04:38	1
13C2 PFTeDA	91		50 <sub>-</sub> 150				11/10/21 13:52	11/12/21 04:38	1
13C3 PFBS	107		50 <sub>-</sub> 150				11/10/21 13:52	11/12/21 04:38	1
1802 PFHxS	96		50 - 150				11/10/21 13:52	11/12/21 04:38	
13C4 PFOS	100		50 <sub>-</sub> 150					11/12/21 04:38	1
d3-NMeFOSAA	110		50 - 150					11/12/21 04:38	1
d5-NEtFOSAA	115		50 <sub>-</sub> 150					11/12/21 04:38	1
13C3 HFPO-DA	90		50 - 150					11/12/21 04:38	1
General Chemistry		<b>.</b>				_			<b></b> -
Analyte		Qualifier	RL _		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	14.6		0.1	0.1				11/05/21 14:24	1
Percent Solids	85.4		0.1	0.1	0/2			11/05/21 14:24	1

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-SB003-03 Lab Sample ID: 320-81254-84

Date Collected: 10/31/21 11:50 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 84.7

Method: EPA 537(Mod) - PFAS Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Perfluorohexanoic acid (PFHxA)	ND		0.22	0.034	ug/Kg	<u></u>	11/10/21 13:52	11/12/21 04:48	
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.042	ug/Kg	₽	11/10/21 13:52	11/12/21 04:48	1
Perfluorooctanoic acid (PFOA)	ND		0.22	0.058	ug/Kg	₽	11/10/21 13:52	11/12/21 04:48	1
Perfluorononanoic acid (PFNA)	ND		0.22	0.024	ug/Kg	☼	11/10/21 13:52	11/12/21 04:48	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.053	ug/Kg	₩	11/10/21 13:52	11/12/21 04:48	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.046	ug/Kg	≎	11/10/21 13:52	11/12/21 04:48	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.033	ug/Kg	₩	11/10/21 13:52	11/12/21 04:48	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.023	ug/Kg	≎	11/10/21 13:52	11/12/21 04:48	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.041	ug/Kg	₽	11/10/21 13:52	11/12/21 04:48	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.042	ug/Kg		11/10/21 13:52	11/12/21 04:48	1
Perfluorohexanesulfonic acid	0.033	J	0.22	0.032	ug/Kg	₩	11/10/21 13:52	11/12/21 04:48	1
(PFHxS)		_			0 0				
Perfluorooctanesulfonic acid	0.44		0.22	0.047	ug/Kg	₽	11/10/21 13:52	11/12/21 04:48	1
(PFOS)									
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.22	0.025	ug/Kg	₩	11/10/21 13:52	11/12/21 04:48	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.22	0.053	ug/Kg	₩	11/10/21 13:52	11/12/21 04:48	1
9-Chlorohexadecafluoro-3-oxanonan	ND		0.22	0.038	ug/Kg	₽	11/10/21 13:52	11/12/21 04:48	1
e-1-sulfonic acid	<u></u>				<u></u>				
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22		ug/Kg	☼	11/10/21 13:52		1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.22		ug/Kg	₩	11/10/21 13:52	11/12/21 04:48	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.043	ug/Kg	₩	11/10/21 13:52	11/12/21 04:48	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	108		50 - 150				11/10/21 13:52	11/12/21 04:48	1
13C4 PFHpA	107		50 - 150				11/10/21 13:52	11/12/21 04:48	1
13C4 PFOA	104		50 <sub>-</sub> 150				11/10/21 13:52	11/12/21 04:48	1
13C5 PFNA	99		50 - 150				11/10/21 13:52	11/12/21 04:48	1
13C2 PFDA	105		50 <sub>-</sub> 150				11/10/21 13:52	11/12/21 04:48	1
13C2 PFUnA	103		50 <sub>-</sub> 150				11/10/21 13:52	11/12/21 04:48	1
13C2 PFDoA	101		50 - 150					11/12/21 04:48	1
13C2 PFTeDA	96		50 <sub>-</sub> 150					11/12/21 04:48	1
13C3 PFBS	111		50 - 150					11/12/21 04:48	1
1802 PFHxS	94		50 <sub>-</sub> 150					11/12/21 04:48	
13C4 PFOS	104		50 - 150 50 - 150					11/12/21 04:48	1
d3-NMeFOSAA	113		50 - 150 50 - 150					11/12/21 04:48	1
d5-NEtFOSAA	122		50 - 150 50 - 150					11/12/21 04:48	
13C3 HFPO-DA	96		50 - 150 50 - 150					11/12/21 04:48	1
General Chemistry									
Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	15.3		0.1	0.1	%			11/05/21 14:24	1
Percent Solids	84.7		0.1	0.1	0/			11/05/21 14:24	1

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-SB004-01 Lab Sample ID: 320-81254-85

Date Collected: 10/31/21 11:05

Date Received: 11/03/21 14:01

Matrix: Solid
Percent Solids: 86.1

Method: EPA 537(Mod) - PFAS Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Perfluorohexanoic acid (PFHxA)	ND		0.22	0.035	ug/Kg	<u></u>	11/10/21 13:52	11/12/21 04:59	
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.042	ug/Kg	₩	11/10/21 13:52	11/12/21 04:59	•
Perfluorooctanoic acid (PFOA)	ND		0.22	0.059	ug/Kg	≎	11/10/21 13:52	11/12/21 04:59	1
Perfluorononanoic acid (PFNA)	ND		0.22	0.025	ug/Kg	₩	11/10/21 13:52	11/12/21 04:59	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.054	ug/Kg	₩	11/10/21 13:52	11/12/21 04:59	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.047	ug/Kg	₩	11/10/21 13:52	11/12/21 04:59	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.034	ug/Kg		11/10/21 13:52	11/12/21 04:59	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.023	ug/Kg	₩	11/10/21 13:52	11/12/21 04:59	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.041	ug/Kg	₩	11/10/21 13:52	11/12/21 04:59	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.042	ug/Kg		11/10/21 13:52	11/12/21 04:59	1
Perfluorohexanesulfonic acid	0.055	J	0.22	0.032	ug/Kg	₩	11/10/21 13:52	11/12/21 04:59	1
(PFHxS)		_			0 0				
Perfluorooctanesulfonic acid	1.0		0.22	0.048	ug/Kg	₩	11/10/21 13:52	11/12/21 04:59	1
(PFOS)									
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.22	0.026	ug/Kg			11/12/21 04:59	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.22	0.054	ug/Kg	₩	11/10/21 13:52	11/12/21 04:59	1
9-Chlorohexadecafluoro-3-oxanonan	ND		0.22	0.039	ug/Kg	₩	11/10/21 13:52	11/12/21 04:59	1
e-1-sulfonic acid									
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22		ug/Kg			11/12/21 04:59	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.22		ug/Kg	₩	11/10/21 13:52	11/12/21 04:59	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.044	ug/Kg	₩	11/10/21 13:52	11/12/21 04:59	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	100		50 - 150				11/10/21 13:52	11/12/21 04:59	1
13C4 PFHpA	100		50 - 150				11/10/21 13:52	11/12/21 04:59	1
13C4 PFOA	104		50 - 150				11/10/21 13:52	11/12/21 04:59	1
13C5 PFNA	93		50 - 150				11/10/21 13:52	11/12/21 04:59	1
13C2 PFDA	100		50 <sub>-</sub> 150				11/10/21 13:52	11/12/21 04:59	1
13C2 PFUnA	102		50 <sub>-</sub> 150				11/10/21 13:52	11/12/21 04:59	1
13C2 PFDoA	94		50 - 150				11/10/21 13:52	11/12/21 04:59	1
13C2 PFTeDA	84		50 <sub>-</sub> 150				11/10/21 13:52	11/12/21 04:59	1
13C3 PFBS	108		50 <sub>-</sub> 150				11/10/21 13:52	11/12/21 04:59	1
1802 PFHxS	97		50 - 150					11/12/21 04:59	1
13C4 PFOS	98		50 <sub>-</sub> 150					11/12/21 04:59	1
d3-NMeFOSAA	105		50 - 150					11/12/21 04:59	1
d5-NEtFOSAA	110		50 - 150					11/12/21 04:59	
13C3 HFPO-DA	92		50 <sub>-</sub> 150					11/12/21 04:59	1
General Chemistry									
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	13.9		0.1	0.1	%			11/05/21 14:24	1
Percent Solids	86.1		0.1	0.1	0/			11/05/21 14:24	1

Eurofins TestAmerica, Sacramento

3

6

8

10

12

14

15

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

d5-NEtFOSAA

13C3 HFPO-DA

Client Sample ID: 21GST-SB004-02 Lab Sample ID: 320-81254-86

Date Collected: 10/31/21 11:10 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 84.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.23	0.035	ug/Kg	— <u></u>	11/10/21 13:52	11/12/21 05:09	1
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.043	ug/Kg	₩	11/10/21 13:52	11/12/21 05:09	1
Perfluorooctanoic acid (PFOA)	ND		0.23	0.061	ug/Kg	≎	11/10/21 13:52	11/12/21 05:09	1
Perfluorononanoic acid (PFNA)	ND		0.23	0.025	ug/Kg	₽	11/10/21 13:52	11/12/21 05:09	1
Perfluorodecanoic acid (PFDA)	ND		0.23	0.055	ug/Kg	☼	11/10/21 13:52	11/12/21 05:09	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.048	ug/Kg	₩	11/10/21 13:52	11/12/21 05:09	1
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.034	ug/Kg	≎	11/10/21 13:52	11/12/21 05:09	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.024	ug/Kg	≎	11/10/21 13:52	11/12/21 05:09	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.042	ug/Kg	₽	11/10/21 13:52	11/12/21 05:09	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.043	ug/Kg	₽	11/10/21 13:52	11/12/21 05:09	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.23	0.033	ug/Kg	₽	11/10/21 13:52	11/12/21 05:09	1
Perfluorooctanesulfonic acid (PFOS)	0.24		0.23	0.049	ug/Kg	₩	11/10/21 13:52	11/12/21 05:09	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.23	0.026	ug/Kg	☼	11/10/21 13:52	11/12/21 05:09	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.23	0.055	ug/Kg	₩	11/10/21 13:52	11/12/21 05:09	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.23	0.040	ug/Kg	☼	11/10/21 13:52	11/12/21 05:09	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23	0.047	ug/Kg	₽	11/10/21 13:52	11/12/21 05:09	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.23	0.035	ug/Kg	☼	11/10/21 13:52	11/12/21 05:09	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.045	ug/Kg	₩	11/10/21 13:52	11/12/21 05:09	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	111		50 - 150				11/10/21 13:52	11/12/21 05:09	1
13C4 PFHpA	103		50 - 150				11/10/21 13:52	11/12/21 05:09	1
13C4 PFOA	102		50 - 150				11/10/21 13:52	11/12/21 05:09	1
13C5 PFNA	99		50 - 150				11/10/21 13:52	11/12/21 05:09	1
13C2 PFDA	102		50 - 150				11/10/21 13:52	11/12/21 05:09	1
13C2 PFUnA	100		50 - 150				11/10/21 13:52	11/12/21 05:09	1
13C2 PFDoA	93		50 - 150				11/10/21 13:52	11/12/21 05:09	1
13C2 PFTeDA	90		50 - 150				11/10/21 13:52	11/12/21 05:09	1
13C3 PFBS	114		50 <sub>-</sub> 150				11/10/21 13:52	11/12/21 05:09	1
1802 PFHxS	96		50 - 150				11/10/21 13:52	11/12/21 05:09	1
13C4 PFOS	97		50 - 150				11/10/21 13:52	11/12/21 05:09	1
d3-NMeFOSAA	110		50 <sub>-</sub> 150				11/10/21 13:52	11/12/21 05:09	1

General Chemistry Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	15.1	0.1	0.1	%			11/05/21 14:24	1
Percent Solids	84.9	0.1	0.1	%			11/05/21 14:24	1

50 - 150

50 - 150

114

97

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11/10/21 13:52 11/12/21 05:09

11/10/21 13:52 11/12/21 05:09

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

**Percent Solids** 

Client Sample ID: 21GST-SB004-03 Lab Sample ID: 320-81254-87

Date Collected: 10/31/21 11:20 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 79.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Perfluorohexanoic acid (PFHxA)	ND		0.24	0.038	ug/Kg	<del></del>	11/10/21 13:52	11/12/21 05:40	
Perfluoroheptanoic acid (PFHpA)	ND		0.24	0.046	ug/Kg	₩	11/10/21 13:52	11/12/21 05:40	
Perfluorooctanoic acid (PFOA)	ND		0.24	0.065	ug/Kg	₩	11/10/21 13:52	11/12/21 05:40	
Perfluorononanoic acid (PFNA)	ND		0.24	0.027	ug/Kg	₩	11/10/21 13:52	11/12/21 05:40	
Perfluorodecanoic acid (PFDA)	ND		0.24	0.058	ug/Kg	₩	11/10/21 13:52	11/12/21 05:40	
Perfluoroundecanoic acid (PFUnA)	ND		0.24	0.051	ug/Kg	₩	11/10/21 13:52	11/12/21 05:40	
Perfluorododecanoic acid (PFDoA)	ND		0.24	0.037	ug/Kg	₩	11/10/21 13:52	11/12/21 05:40	
Perfluorotridecanoic acid (PFTriA)	ND		0.24	0.026	ug/Kg	₩	11/10/21 13:52	11/12/21 05:40	
Perfluorotetradecanoic acid (PFTeA)	ND		0.24	0.045	ug/Kg	₩	11/10/21 13:52	11/12/21 05:40	
Perfluorobutanesulfonic acid (PFBS)	ND		0.24	0.046	ug/Kg	₽	11/10/21 13:52	11/12/21 05:40	
Perfluorohexanesulfonic acid (PFHxS)	ND		0.24	0.035	ug/Kg	₩	11/10/21 13:52	11/12/21 05:40	
Perfluorooctanesulfonic acid (PFOS)	0.25		0.24	0.052	ug/Kg	₽	11/10/21 13:52	11/12/21 05:40	
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.24	0.028	ug/Kg	₩	11/10/21 13:52	11/12/21 05:40	
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.24	0.058	ug/Kg	₩	11/10/21 13:52	11/12/21 05:40	•
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.24	0.043	ug/Kg	₩	11/10/21 13:52	11/12/21 05:40	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.24	0.050	ug/Kg	₩	11/10/21 13:52	11/12/21 05:40	
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.24		ug/Kg	₩	11/10/21 13:52	11/12/21 05:40	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.24	0.048	ug/Kg	₩	11/10/21 13:52	11/12/21 05:40	•
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	96		50 - 150				11/10/21 13:52	11/12/21 05:40	
13C4 PFHpA	93		50 - 150				11/10/21 13:52	11/12/21 05:40	
13C4 PFOA	91		50 - 150				11/10/21 13:52	11/12/21 05:40	
13C5 PFNA	86		50 - 150				11/10/21 13:52	11/12/21 05:40	
13C2 PFDA	95		50 - 150				11/10/21 13:52	11/12/21 05:40	
13C2 PFUnA	95		50 - 150				11/10/21 13:52	11/12/21 05:40	
13C2 PFDoA	91		50 - 150				11/10/21 13:52	11/12/21 05:40	
13C2 PFTeDA	88		50 - 150				11/10/21 13:52	11/12/21 05:40	
13C3 PFBS	99		50 - 150				11/10/21 13:52	11/12/21 05:40	
1802 PFHxS	90		50 - 150				11/10/21 13:52	11/12/21 05:40	
13C4 PFOS	88		50 - 150				11/10/21 13:52	11/12/21 05:40	
d3-NMeFOSAA	101		50 - 150				11/10/21 13:52	11/12/21 05:40	
d5-NEtFOSAA	118		50 - 150				11/10/21 13:52	11/12/21 05:40	
13C3 HFPO-DA	92		50 - 150				11/10/21 13:52	11/12/21 05:40	
General Chemistry		• 115				_			<b>-</b>
Analyte		Qualifier	RL _		Unit	D	Prepared	Analyzed	Dil Fa
Percent Moisture	20.9		0.1	0.1	%			11/05/21 14:24	•

0.1

0.1 %

79.1

11/05/21 14:24

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

**Percent Solids** 

Date Collected: 10/31/21 12:30

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 92.2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.030	ug/Kg	— <u></u>	11/10/21 13:52	11/12/21 05:51	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.037	ug/Kg	₩	11/10/21 13:52	11/12/21 05:51	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.052	ug/Kg	₩	11/10/21 13:52	11/12/21 05:51	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.022	ug/Kg	≎	11/10/21 13:52	11/12/21 05:51	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.047	ug/Kg	₩	11/10/21 13:52	11/12/21 05:51	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.041	ug/Kg	≎	11/10/21 13:52	11/12/21 05:51	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.029	ug/Kg	₩	11/10/21 13:52	11/12/21 05:51	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.021	ug/Kg	₽	11/10/21 13:52	11/12/21 05:51	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.036	ug/Kg	₩	11/10/21 13:52	11/12/21 05:51	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.037	ug/Kg	₩	11/10/21 13:52	11/12/21 05:51	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.028	ug/Kg	₩	11/10/21 13:52	11/12/21 05:51	1
Perfluorooctanesulfonic acid (PFOS)	0.15	JI	0.20	0.042	ug/Kg	₽	11/10/21 13:52	11/12/21 05:51	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg	\$	11/10/21 13:52	11/12/21 05:51	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.20	0.047	ug/Kg	₽	11/10/21 13:52	11/12/21 05:51	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.20	0.034	ug/Kg	₩	11/10/21 13:52	11/12/21 05:51	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.20	0.040	ug/Kg	₩	11/10/21 13:52	11/12/21 05:51	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.20	0.030	ug/Kg	₩	11/10/21 13:52	11/12/21 05:51	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.038	ug/Kg	₩	11/10/21 13:52	11/12/21 05:51	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	99		50 - 150				11/10/21 13:52	11/12/21 05:51	1
13C4 PFHpA	98		50 - 150				11/10/21 13:52	11/12/21 05:51	1
13C4 PFOA	95		50 - 150				11/10/21 13:52	11/12/21 05:51	1
13C5 PFNA	99		50 - 150				11/10/21 13:52	11/12/21 05:51	1
13C2 PFDA	96		50 - 150				11/10/21 13:52	11/12/21 05:51	1
13C2 PFUnA	96		50 - 150				11/10/21 13:52	11/12/21 05:51	1
13C2 PFDoA	90		50 - 150				11/10/21 13:52	11/12/21 05:51	1
13C2 PFTeDA	84		50 - 150				11/10/21 13:52	11/12/21 05:51	1
13C3 PFBS	101		50 - 150				11/10/21 13:52	11/12/21 05:51	1
1802 PFHxS	90		50 - 150				11/10/21 13:52	11/12/21 05:51	1
13C4 PFOS	90		50 - 150				11/10/21 13:52	11/12/21 05:51	1
d3-NMeFOSAA	105		50 - 150				11/10/21 13:52	11/12/21 05:51	1
d5-NEtFOSAA	112		50 - 150				11/10/21 13:52	11/12/21 05:51	1
13C3 HFPO-DA	89		50 - 150				11/10/21 13:52	11/12/21 05:51	1
General Chemistry						_			B
Analyte		Qualifier	RL _	MDL		D	Prepared	Analyzed	Dil Fac
Percent Moisture	7.8		0.1	0.1	%			11/05/21 14:24	1

Eurofins TestAmerica, Sacramento

11/05/21 14:24

0.1

92.2

0.1 %

3

5

7

9

10

12

14

15

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

**Percent Solids** 

Client Sample ID: 21GST-SB006-10 Lab Sample ID: 320-81254-89

Date Collected: 10/31/21 12:20 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 90.4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.22	0.034	ug/Kg	— <u></u>	11/10/21 13:52	11/12/21 06:01	
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.042	ug/Kg	₩	11/10/21 13:52	11/12/21 06:01	1
Perfluorooctanoic acid (PFOA)	ND		0.22	0.058	ug/Kg	₩	11/10/21 13:52	11/12/21 06:01	1
Perfluorononanoic acid (PFNA)	ND		0.22	0.024	ug/Kg	₩	11/10/21 13:52	11/12/21 06:01	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.053	ug/Kg	₩	11/10/21 13:52	11/12/21 06:01	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.046	ug/Kg	₩	11/10/21 13:52	11/12/21 06:01	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.033	ug/Kg	₩	11/10/21 13:52	11/12/21 06:01	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.023	ug/Kg	₩	11/10/21 13:52	11/12/21 06:01	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.041	ug/Kg	₩	11/10/21 13:52	11/12/21 06:01	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.042	ug/Kg	₩	11/10/21 13:52	11/12/21 06:01	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.22	0.032	ug/Kg	≎	11/10/21 13:52	11/12/21 06:01	1
Perfluorooctanesulfonic acid (PFOS)	0.76		0.22	0.047	ug/Kg	₽	11/10/21 13:52	11/12/21 06:01	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.22	0.025	ug/Kg	₩	11/10/21 13:52	11/12/21 06:01	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.22	0.053	ug/Kg	₩	11/10/21 13:52	11/12/21 06:01	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.22	0.039	ug/Kg	₩	11/10/21 13:52	11/12/21 06:01	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22	0.045	ug/Kg	₩	11/10/21 13:52	11/12/21 06:01	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.22	0.034	ug/Kg	₩	11/10/21 13:52	11/12/21 06:01	,
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.043	ug/Kg	☼	11/10/21 13:52	11/12/21 06:01	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	101		50 - 150				11/10/21 13:52	11/12/21 06:01	
13C4 PFHpA	98		50 - 150				11/10/21 13:52	11/12/21 06:01	1
13C4 PFOA	93		50 - 150				11/10/21 13:52	11/12/21 06:01	1
13C5 PFNA	97		50 - 150				11/10/21 13:52	11/12/21 06:01	
13C2 PFDA	97		50 - 150				11/10/21 13:52	11/12/21 06:01	1
13C2 PFUnA	94		50 - 150				11/10/21 13:52	11/12/21 06:01	1
13C2 PFDoA	94		50 - 150				11/10/21 13:52	11/12/21 06:01	1
13C2 PFTeDA	89		50 - 150				11/10/21 13:52	11/12/21 06:01	
13C3 PFBS	100		50 - 150				11/10/21 13:52	11/12/21 06:01	1
1802 PFHxS	90		50 - 150				11/10/21 13:52	11/12/21 06:01	1
13C4 PFOS	97		50 - 150				11/10/21 13:52	11/12/21 06:01	1
d3-NMeFOSAA	103		50 - 150				11/10/21 13:52	11/12/21 06:01	1
d5-NEtFOSAA	115		50 - 150				11/10/21 13:52	11/12/21 06:01	1
13C3 HFPO-DA	85		50 - 150				11/10/21 13:52	11/12/21 06:01	1
General Chemistry									
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	9.6		0.1	0.1	%			11/05/21 14:24	1

0.1

90.4

0.1 %

11/05/21 14:24

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-SB006-02 Lab Sample ID: 320-81254-90

Date Collected: 10/31/21 12:40 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 87.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Perfluorohexanoic acid (PFHxA)	ND		0.21	0.032	ug/Kg	<del></del>	11/10/21 13:52	11/12/21 06:12	
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.039	ug/Kg	₩	11/10/21 13:52	11/12/21 06:12	
Perfluorooctanoic acid (PFOA)	ND		0.21	0.055	ug/Kg	₩	11/10/21 13:52	11/12/21 06:12	
Perfluorononanoic acid (PFNA)	ND		0.21	0.023	ug/Kg	₩	11/10/21 13:52	11/12/21 06:12	
Perfluorodecanoic acid (PFDA)	ND		0.21	0.050	ug/Kg	₩	11/10/21 13:52	11/12/21 06:12	
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.043	ug/Kg	₩	11/10/21 13:52	11/12/21 06:12	
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.031	ug/Kg	≎	11/10/21 13:52	11/12/21 06:12	
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.022	ug/Kg	₩	11/10/21 13:52	11/12/21 06:12	
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.038	ug/Kg	₩	11/10/21 13:52	11/12/21 06:12	
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.039	ug/Kg	₩	11/10/21 13:52	11/12/21 06:12	
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21	0.030	ug/Kg	≎	11/10/21 13:52	11/12/21 06:12	
Perfluorooctanesulfonic acid	0.078	JI	0.21	0.044	ug/Kg	₽	11/10/21 13:52	11/12/21 06:12	
( <b>PFOS</b> ) N-methylperfluorooctanesulfonamidoa	ND		0.21	0.024	ug/Kg		11/10/21 13:52	11/12/21 06:12	
cetic acid (NMeFOSAA)	115		0.21			~	11/10/21 10:02	11/12/21 00:12	
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.21	0.050	ug/Kg	☼	11/10/21 13:52	11/12/21 06:12	•
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.21	0.036	ug/Kg	₩	11/10/21 13:52	11/12/21 06:12	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.042	ug/Kg	₽	11/10/21 13:52	11/12/21 06:12	
11-Chloroeicosafluoro-3-oxaundecan	ND		0.21	0.032	ug/Kg	₽	11/10/21 13:52	11/12/21 06:12	
e-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid	ND		0.21	0.040	ug/Kg	₽	11/10/21 13:52	11/12/21 06:12	
(ADONA)									
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	107		50 - 150				11/10/21 13:52	11/12/21 06:12	
13C4 PFHpA	103		50 - 150				11/10/21 13:52	11/12/21 06:12	
13C4 PFOA	95		50 - 150				11/10/21 13:52	11/12/21 06:12	
13C5 PFNA	94		50 - 150				11/10/21 13:52	11/12/21 06:12	
13C2 PFDA	91		50 - 150				11/10/21 13:52	11/12/21 06:12	
13C2 PFUnA	94		50 - 150				11/10/21 13:52	11/12/21 06:12	
13C2 PFDoA	93		50 - 150				11/10/21 13:52	11/12/21 06:12	
13C2 PFTeDA	87		50 - 150				11/10/21 13:52	11/12/21 06:12	
13C3 PFBS	107		50 <sub>-</sub> 150				11/10/21 13:52	11/12/21 06:12	
1802 PFHxS	92		50 - 150				11/10/21 13:52	11/12/21 06:12	
13C4 PFOS	95		50 - 150				11/10/21 13:52	11/12/21 06:12	
d3-NMeFOSAA	106		50 - 150				11/10/21 13:52	11/12/21 06:12	
d5-NEtFOSAA	110		50 - 150				11/10/21 13:52	11/12/21 06:12	
13C3 HFPO-DA	109		50 - 150				11/10/21 13:52	11/12/21 06:12	
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Percent Moisture	12.4		0.1	0.1	%			11/05/21 14:24	-

General Chemistry								
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	12.4	0.1	0.1	%			11/05/21 14:24	1
Percent Solids	87.6	0.1	0.1	%			11/05/21 14:24	1

Client: Shannon & Wilson, Inc Job ID: 320-81254-1 Project/Site: SC Soils#3

Client Sample ID: 21GST-SB006-03

**Percent Solids** 

Lab Sample ID: 320-81254-91 Date Collected: 10/31/21 12:45 **Matrix: Solid** 

Date Received: 11/03/21 14:01 Percent Solids: 84.7

Analyte	Result Qua	lifier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND	0.22	0.034	ug/Kg	<u></u>	11/10/21 18:34	11/13/21 14:45	
Perfluoroheptanoic acid (PFHpA)	ND	0.22	0.042	ug/Kg	₽	11/10/21 18:34	11/13/21 14:45	•
Perfluorooctanoic acid (PFOA)	ND	0.22	0.058	ug/Kg	₽	11/10/21 18:34	11/13/21 14:45	1
Perfluorononanoic acid (PFNA)	ND	0.22	0.024	ug/Kg	₩	11/10/21 18:34	11/13/21 14:45	1
Perfluorodecanoic acid (PFDA)	ND	0.22	0.053	ug/Kg	₽	11/10/21 18:34	11/13/21 14:45	1
Perfluoroundecanoic acid (PFUnA)	ND	0.22	0.046	ug/Kg	₩	11/10/21 18:34	11/13/21 14:45	1
Perfluorododecanoic acid (PFDoA)	ND	0.22	0.033	ug/Kg	₩	11/10/21 18:34	11/13/21 14:45	1
Perfluorotridecanoic acid (PFTriA)	ND	0.22	0.023	ug/Kg	₩	11/10/21 18:34	11/13/21 14:45	1
Perfluorotetradecanoic acid (PFTeA)	ND	0.22	0.041	ug/Kg	☼	11/10/21 18:34	11/13/21 14:45	1
Perfluorobutanesulfonic acid (PFBS)	ND	0.22	0.042	ug/Kg	₩	11/10/21 18:34	11/13/21 14:45	1
Perfluorohexanesulfonic acid (PFHxS)	ND	0.22	0.032	ug/Kg	☼	11/10/21 18:34	11/13/21 14:45	1
Perfluorooctanesulfonic acid (PFOS)	0.31	0.22	0.047	ug/Kg	₩	11/10/21 18:34	11/13/21 14:45	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND	0.22	0.025	ug/Kg	₩	11/10/21 18:34	11/13/21 14:45	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND	0.22	0.053	ug/Kg	₩	11/10/21 18:34	11/13/21 14:45	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND	0.22		ug/Kg		11/10/21 18:34	11/13/21 14:45	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	0.22		ug/Kg	₩	11/10/21 18:34	11/13/21 14:45	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND	0.22		ug/Kg	₽	11/10/21 18:34	11/13/21 14:45	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.22	0.043	ug/Kg	₩	11/10/21 18:34	11/13/21 14:45	1
lsotope Dilution	%Recovery Qua	lifier Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	100	50 - 150				11/10/21 18:34	11/13/21 14:45	
13C4 PFHpA	97	50 - 150				11/10/21 18:34	11/13/21 14:45	1
13C4 PFOA	98	50 - 150				11/10/21 18:34	11/13/21 14:45	1
13C5 PFNA	93	50 - 150				11/10/21 18:34	11/13/21 14:45	1
13C2 PFDA	101	50 - 150				11/10/21 18:34	11/13/21 14:45	1
13C2 PFUnA	107	50 - 150				11/10/21 18:34	11/13/21 14:45	1
13C2 PFDoA	96	50 - 150				11/10/21 18:34	11/13/21 14:45	1
13C2 PFTeDA	94	50 - 150				11/10/21 18:34	11/13/21 14:45	1
13C3 PFBS	98	50 <sub>-</sub> 150				11/10/21 18:34	11/13/21 14:45	1
1802 PFHxS	89	50 - 150				11/10/21 18:34	11/13/21 14:45	1
13C4 PFOS	94	50 - 150				11/10/21 18:34	11/13/21 14:45	1
d3-NMeFOSAA	108	50 - 150				11/10/21 18:34	11/13/21 14:45	1
d5-NEtFOSAA	115	50 - 150				11/10/21 18:34	11/13/21 14:45	1
13C3 HFPO-DA	89	50 - 150				11/10/21 18:34	11/13/21 14:45	1
General Chemistry								
Analyte	Result Qua			Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	15.3	0.1	0.1	%			11/05/21 14:24	1

Eurofins TestAmerica, Sacramento

11/05/21 14:24

0.1

84.7

0.1 %

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-SB008-01 Lab Sample ID: 320-81254-92

Date Collected: 10/31/21 13:05 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 84.8

Method: EPA 537(Mod) - PFAS Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	0.074	J	0.23	0.035	ug/Kg	— <u></u>	11/10/21 18:34		
Perfluoroheptanoic acid (PFHpA)	ND		0.23		ug/Kg	₽	11/10/21 18:34	11/13/21 15:17	1
Perfluorooctanoic acid (PFOA)	ND		0.23		ug/Kg	₽	11/10/21 18:34	11/13/21 15:17	1
Perfluorononanoic acid (PFNA)	ND		0.23		ug/Kg	₽	11/10/21 18:34	11/13/21 15:17	1
Perfluorodecanoic acid (PFDA)	ND		0.23		ug/Kg	₽	11/10/21 18:34	11/13/21 15:17	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23		ug/Kg	₽	11/10/21 18:34	11/13/21 15:17	1
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.034	ug/Kg	₽	11/10/21 18:34	11/13/21 15:17	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.024	ug/Kg	₽	11/10/21 18:34	11/13/21 15:17	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23		ug/Kg	₽	11/10/21 18:34	11/13/21 15:17	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.043	ug/Kg		11/10/21 18:34	11/13/21 15:17	1
Perfluorohexanesulfonic acid (PFHxS)	0.047	J	0.23		ug/Kg	₩	11/10/21 18:34	11/13/21 15:17	1
Perfluorooctanesulfonic acid (PFOS)	0.36	I	0.23	0.049	ug/Kg	₩	11/10/21 18:34	11/13/21 15:17	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.23	0.026	ug/Kg	₩	11/10/21 18:34	11/13/21 15:17	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.23		ug/Kg	₩	11/10/21 18:34	11/13/21 15:17	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.23		ug/Kg		11/10/21 18:34		1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23		ug/Kg	₩	11/10/21 18:34		1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.23		ug/Kg	₩		11/13/21 15:17	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.044	ug/Kg	₩	11/10/21 18:34	11/13/21 15:17	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	111		50 - 150				11/10/21 18:34	11/13/21 15:17	1
13C4 PFHpA	111		50 - 150				11/10/21 18:34	11/13/21 15:17	1
13C4 PFOA	108		50 - 150				11/10/21 18:34	11/13/21 15:17	1
13C5 PFNA	109		50 - 150				11/10/21 18:34	11/13/21 15:17	1
13C2 PFDA	113		50 - 150				11/10/21 18:34	11/13/21 15:17	1
13C2 PFUnA	114		50 - 150				11/10/21 18:34	11/13/21 15:17	1
13C2 PFDoA	107		50 - 150				11/10/21 18:34	11/13/21 15:17	1
13C2 PFTeDA	111		50 - 150				11/10/21 18:34	11/13/21 15:17	1
13C3 PFBS	118		50 - 150				11/10/21 18:34	11/13/21 15:17	1
1802 PFHxS	99		50 - 150				11/10/21 18:34	11/13/21 15:17	1
13C4 PFOS	107		50 - 150				11/10/21 18:34	11/13/21 15:17	1
d3-NMeFOSAA	114		50 - 150				11/10/21 18:34	11/13/21 15:17	1
d5-NEtFOSAA	124		50 - 150				11/10/21 18:34	11/13/21 15:17	1
13C3 HFPO-DA	109		50 - 150				11/10/21 18:34	11/13/21 15:17	1
General Chemistry							_		
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	15.2		0.1	0.1				11/05/21 14:24	1
Percent Solids	84.8		0.1	0.1	%			11/05/21 14:24	1

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-SB008-02 Lab Sample ID: 320-81254-93

Date Collected: 10/31/21 13:10 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 87.6

Perfluorocheptanoic acid (PFHpA)   ND   0.21   0.040	ND ND ND ND ND ND ND		0.21 0.21 0.21 0.21 0.21 0.21	0.040 0.055 0.023 0.050 0.044	ug/Kg ug/Kg ug/Kg ug/Kg	\$ \$ \$	11/10/21 18:34 11/10/21 18:34 11/10/21 18:34 11/10/21 18:34	11/13/21 15:27 11/13/21 15:27 11/13/21 15:27 11/13/21 15:27	1 1 1 1 1
Perfluoronocano acid (PFDA)   ND   0.21   0.055   ug/Kg   0   11/10/21 18.34   11/13/21 15.27     Perfluorononono acid (PFDA)   ND   0.21   0.023   ug/Kg   0   11/10/21 18.34   11/13/21 15.27     Perfluoroundecanoic acid (PFDA)   ND   0.21   0.044   ug/Kg   0   11/10/21 18.34   11/13/21 15.27     Perfluoroundecanoic acid (PFDA)   ND   0.21   0.031   ug/Kg   0   11/10/21 18.34   11/13/21 15.27     Perfluorotoroundecanoic acid (PFDA)   ND   0.21   0.031   ug/Kg   0   11/10/21 18.34   11/13/21 15.27     Perfluorotoroteraceacio acid (PFTA)   ND   0.21   0.032   ug/Kg   0   11/10/21 18.34   11/13/21 15.27     Perfluorotoroteraceacio acid (PFTA)   ND   0.21   0.030   ug/Kg   0   11/10/21 18.34   11/13/21 15.27     Perfluorotorotareacio acid (PFDS)   ND   0.21   0.040   ug/Kg   0   11/10/21 18.34   11/13/21 15.27     Perfluorocotanesulfonic acid (PFDS)   ND   0.21   0.030   ug/Kg   0   11/10/21 18.34   11/13/21 15.27     Perfluorocotanesulfonic acid (PFDS)   ND   0.21   0.040   ug/Kg   0   11/10/21 18.34   11/13/21 15.27     Perfluorocotanesulfonic acid (PFDS)   ND   0.21   0.050   ug/Kg   0   11/10/21 18.34   11/13/21 15.27     Perfluorocotanesulfonic acid (PFDS)   ND   0.21   0.050   ug/Kg   0   11/10/21 18.34   11/13/21 15.27     Perfluorocotanesulfonic acid (PFDS)   ND   0.21   0.050   ug/Kg   0   11/10/21 18.34   11/13/21 15.27     Perfluorocotanesulfonic acid (PFDS)   ND   0.21   0.050   ug/Kg   0   11/10/21 18.34   11/13/21 15.27     Perfluorocotanesulfonic acid (PFDS)   ND   0.21   0.050   ug/Kg   0   11/10/21 18.34   11/13/21 15.27     Perfluorocotanesulfonic acid (PFDS)   ND   0.21   0.050   ug/Kg   0   11/10/21 18.34   11/13/21 15.27     Perfluorocotanesulfonic acid (PFDS)   ND   0.21   0.050   ug/Kg   0   11/10/21 18.34   11/13/21 15.27     Perfluorocotanesulfonic acid (PFDS)   ND   0.21   0.050   ug/Kg   0   11/10/21 18.34   11/13/21 15.27     Perfluorocotanesulfonic acid (PFDSA)   ND   0.21   0.050   ug/Kg   0   11/10/21 18.34   11/13/21 15.27     Perfluorocotanesulfonic acid (PFDSA)   ND   0.21   0.05	ND ND ND ND ND ND		0.21 0.21 0.21 0.21 0.21	0.055 0.023 0.050 0.044	ug/Kg ug/Kg ug/Kg		11/10/21 18:34 11/10/21 18:34 11/10/21 18:34	11/13/21 15:27 11/13/21 15:27 11/13/21 15:27	1 1
Perfluoronananic acid (PFNA)	ND ND ND ND ND ND		0.21 0.21 0.21 0.21	0.023 0.050 0.044	ug/Kg ug/Kg		11/10/21 18:34 11/10/21 18:34	11/13/21 15:27 11/13/21 15:27	1
Perfluorodecanoic acid (PFDA)   ND   0.21   0.050   ug/Kg   0   11/10/21 18:34   11/13/21 15:27	ND ND ND ND ND		0.21 0.21 0.21	0.050 0.044	ug/Kg	₽	11/10/21 18:34	11/13/21 15:27	
Perfluoroundecanoic acid (PFUnA)   ND   0.21   0.044   ug/Kg   0   11/10/21 18:34   11/13/21 15:27	ND ND ND ND		0.21 0.21	0.044					1
Perfluorododecanoic acid (PFDA)   ND   0.21   0.031   ug/Kg   0   11/10/21   18.34   11/13/21   15.27     Perfluorotridecanoic acid (PFTrA)   ND   0.21   0.032   ug/Kg   0   11/10/21   18.34   11/13/21   15.27     Perfluorobutaneaulfonic acid (PFBS)   ND   0.21   0.040   ug/Kg   0   11/10/21   18.34   11/13/21   15.27     Perfluorobutaneaulfonic acid (PFBS)   ND   0.21   0.040   ug/Kg   0   11/10/21   18.34   11/13/21   15.27     Perfluorobutaneaulfonic acid (PFBS)   ND   0.21   0.045   ug/Kg   0   11/10/21   18.34   11/13/21   15.27     Perfluoroctaneaulfonic acid (PFBS)   ND   0.21   0.045   ug/Kg   0   11/10/21   18.34   11/13/21   15.27     Perfluoroctaneaulfonamidoa   ND   0.21   0.045   ug/Kg   0   11/10/21   18.34   11/13/21   15.27     Perfluoroctaneaulfonamidoa   ND   0.21   0.050   ug/Kg   0   11/10/21   18.34   11/13/21   15.27     Perfluoroctaneaulfonamidoa   ND   0.21   0.050   ug/Kg   0   11/10/21   18.34   11/13/21   15.27     Perfluoroctaneaulfonamidoa   ND   0.21   0.036   ug/Kg   0   11/10/21   18.34   11/13/21   15.27     Perfluoroctaneaulfonamidoa   ND   0.21   0.036   ug/Kg   0   11/10/21   18.34   11/13/21   15.27     Perfluoroctaneaulfonamidoa   ND   0.21   0.032   ug/Kg   0   11/10/21   18.34   11/13/21   15.27     Perfluoroctaneaulfonamidoa   ND   0.21   0.032   ug/Kg   0   11/10/21   18.34   11/13/21   15.27     Perfluoroctaneaulfonamidoa   ND   0.21   0.032   ug/Kg   0   11/10/21   18.34   11/13/21   15.27     Perfluoroctaneaulfonamidoa   ND   0.21   0.032   ug/Kg   0   11/10/21   18.34   11/13/21   15.27     Perfluoroctaneaulfonamidoa   ND   0.21   0.032   ug/Kg   0   11/10/21   18.34   11/13/21   15.27     Perfluoroctaneaulfonamidoa   ND   0.21   0.032   ug/Kg   0   11/10/21   18.34   11/13/21   15.27     Perfluoroctaneaulfonamidoa   ND   0.21   0.032   ug/Kg   0   11/10/21   18.34   11/13/21   15.27     Perfluoroctaneaulfonamidoa   ND   0.21   0.032   ug/Kg   0   11/10/21   18.34   11/13/21   15.27     Perfluoroctaneaulfonamidoa   ND   0.21   0.032   ug/Kg   0   11/10/21   18.34	ND ND ND ND		0.21		ug/Kg	**	44/40/04 40 6 1		
Perfluorotridecanoic acid (PFTriA)   ND   0.21   0.022   ug/Kg   0. 11/10/21 18:34   11/13/21 15:27	ND ND ND			0.031		74	11/10/21 18:34	11/13/21 15:27	1
Perfluorotetradecanoic acid (PFTeA)   ND   0.21   0.038   ug/Kg   0   11/10/21 18:34   11/13/21 15:27	ND ND		0.21		ug/Kg	☼	11/10/21 18:34	11/13/21 15:27	1
Perfluorobutanesulfonic acid (PFBS)   ND   0.21   0.040   ug/Kg   s   11/10/21 18:34   11/13/21 15:27     Perfluorochexanesulfonic acid (PFCS)   ND   0.21   0.030   ug/Kg   s   11/10/21 18:34   11/13/21 15:27     Perfluorocotanesulfonic acid (PFOS)   ND   0.21   0.045   ug/Kg   s   11/10/21 18:34   11/13/21 15:27     N-methylperfluorocotanesulfonamidoa   ND   0.21   0.050   ug/Kg   s   11/10/21 18:34   11/13/21 15:27     N-methylperfluorocotanesulfonamidoac   ND   0.21   0.050   ug/Kg   s   11/10/21 18:34   11/13/21 15:27     N-methylperfluorocotanesulfonamidoac   ND   0.21   0.050   ug/Kg   s   11/10/21 18:34   11/13/21 15:27     N-methylperfluorocotanesulfonamidoac   ND   0.21   0.036   ug/Kg   s   11/10/21 18:34   11/13/21 15:27     N-methylperfluorocotanesulfonamidoac   ND   0.21   0.036   ug/Kg   s   11/10/21 18:34   11/13/21 15:27     N-methylperfluorocotanesulfonamidoac   ND   0.21   0.036   ug/Kg   s   11/10/21 18:34   11/13/21 15:27     N-methylperfluorocotanesulfonamidoac   ND   0.21   0.032   ug/Kg   s   11/10/21 18:34   11/13/21 15:27     N-methylperfluorocotanesulfonamidoac   ND   0.21   0.032   ug/Kg   s   11/10/21 18:34   11/13/21 15:27     N-methylperfluorocotanesulfonamidoac   ND   0.21   0.032   ug/Kg   s   11/10/21 18:34   11/13/21 15:27     N-methylperfluorocotanesulfonamidoac   ND   0.21   0.032   ug/Kg   s   11/10/21 18:34   11/13/21 15:27     N-methylperfluorocotanesulfonamidoac   ND   0.21   0.032   ug/Kg   s   11/10/21 18:34   11/13/21 15:27     N-methylperfluorocotanesulfonamidoac   ND   0.21   0.032   ug/Kg   s   11/10/21 18:34   11/13/21 15:27     N-methylperfluorocotanesulfonamidoac   ND   0.21   0.032   ug/Kg   s   11/10/21 18:34   11/13/21 15:27     N-methylperfluorocotanesulfonamidoac   ND   0.21   0.032   ug/Kg   s   11/10/21 18:34   11/13/21 15:27     N-methylperfluorocotanesulfonamidoac   ND   0.21   0.032   ug/Kg   s   11/10/21 18:34   11/13/21 15:27     N-methylperfluorocotanesulfonamidoac   ND   0.21   0.032   ug/Kg   s   11/10/21 18:34   11/13/21 15:27     N-methylperflu	ND		··	0.022	ug/Kg	₩	11/10/21 18:34	11/13/21 15:27	1
Perfluorohexanesulfonic acid (PFHxS)   ND   0.21   0.030   ug/Kg   0 11/10/21 18:34   11/13/21 15:27			0.21	0.038	ug/Kg	☼	11/10/21 18:34	11/13/21 15:27	1
Perfluorooctanesulfonic acid (PFOS)   ND   0.21   0.045   ug/Kg   0 11/10/21 18:34   11/13/21 15:27			0.21	0.040	ug/Kg	☼	11/10/21 18:34	11/13/21 15:27	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA) N-bethylperfluorooctanesulfonamidoac ND 0.21 0.050 ug/kg 11/10/21 18:34 11/13/21 15:27 etic acid (NEFOSAA) 9-Chlorohexadecafluoro-3-oxanonan ND 0.21 0.036 ug/kg 11/10/21 18:34 11/13/21 15:27 e-1-sulfonic acid (NEFOSAA) 9-Chlorohexadecafluoro-3-oxanonan ND 0.21 0.036 ug/kg 11/10/21 18:34 11/13/21 15:27 e-1-sulfonic acid (NEFOSAA) 11-Chloroeicosafluoro-3-oxanudecan e-1-sulfonic acid (NEFOSAA) 11-Chloroeicosafluoro-3-oxanudecan e-1-sulfonic acid (NEFOSAA) 11-Chloroeicosafluoro-3-oxanudecan e-1-sulfonic acid (NEFOSAA) 11-Chloroeicosafluoro-3-oxanudecan e-1-sulfonic acid (ND 0.21 0.032 ug/kg 11/10/21 18:34 11/13/21 15:27 e-1-sulfonic acid (NB 0.21 0.032 ug/kg 11/10/21 18:34 11/13/21 15:27 e-1-sulfonic acid (NB 0.21 0.032 ug/kg 11/10/21 18:34 11/13/21 15:27 e-1-sulfonic acid (NB 0.21 0.032 ug/kg 11/10/21 18:34 11/13/21 15:27 e-1-sulfonic acid (NB 0.21 0.032 ug/kg 11/10/21 18:34 11/13/21 15:27 e-1-sulfonic acid (NB 0.21 0.032 ug/kg 11/10/21 18:34 11/13/21 15:27 e-1-sulfonic acid (NB 0.21 0.032 ug/kg 11/10/21 18:34 11/13/21 15:27 e-1-sulfonic acid (NB 0.21 0.032 ug/kg 11/10/21 18:34 11/13/21 15:27 e-1-sulfonic acid (NB 0.21 0.032 ug/kg 11/10/21 18:34 11/13/21 15:27 e-1-sulfonic acid (NB 0.21 0.032 ug/kg 11/10/21 18:34 11/13/21 15:27 e-1-sulfonic acid (NB 0.21 0.032 ug/kg 11/10/21 18:34 11/13/21 15:27 e-1-sulfonic acid (NB 0.21 0.032 ug/kg 11/10/21 18:34 11/13/21 15:27 e-1-sulfonic acid (NB 0.21 0.032 ug/kg 11/10/21 18:34 11/13/21 15:27 e-1-sulfonic acid (NB 0.21 0.032 ug/kg 11/10/21 18:34 11/13/21 15:27 e-1-sulfonic acid (NB 0.21 0.032 ug/kg 11/10/21 18:34 11/13/21 15:27 e-1-sulfonic acid (NB 0.21 0.032 ug/kg 11/10/21 18:34 11/13/21 15:27 e-1-sulfonic acid (NB 0.21 0.032 ug/kg 11/10/21 18:34 11/13/21 15:27 e-1-sulfonic acid (NB 0.21 0.032 ug/kg 11/10/21 18:34 11/13/21 15:27 e-1-sulfonic acid (NB 0.21 0.032 ug/kg 11/10/21 18:34 11/13/21 15:27 e-1-sulfonic acid (NB 0.21 0.032 ug/kg 11/10/21 18:34 11/13/21 15:27 e-1-sulfonic acid (NB 0.21 0.032 ug/kg 11/10/21 18:34	ND		0.21	0.030	ug/Kg	₩	11/10/21 18:34	11/13/21 15:27	1
Cetic acid (NMeFOSAA)   N-ethylperfluorooctanesulfonamidoac   ND   0.21   0.050   ug/Kg   0 11/10/21 18:34   11/13/21 15:27	ND		0.21	0.045	ug/Kg	₩	11/10/21 18:34	11/13/21 15:27	1
### etic acid (NEIFOSAA) 9-Chlorohexadecafluoro-3-oxanonan 9-Chlorohexadecafluoro-3-oxanonan ND 0.21 0.036 ug/Kg 11/10/21 18:34 11/13/21 15:27  -1-sulfonic acid Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaundecan ND 0.21 0.032 ug/Kg 11/10/21 18:34 11/13/21 15:27  -1-sulfonic acid Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaundecan ND 0.21 0.032 ug/Kg 11/10/21 18:34 11/13/21 15:27  -1-sulfonic acid 4-8-Dioxa-3H-perfluoronanoic acid ND 0.21 0.041 ug/Kg 11/10/21 18:34 11/13/21 15:27  -1-sulfonic acid 4-8-Dioxa-3H-perfluoronanoic acid ND 0.21 0.041 ug/Kg 11/10/21 18:34 11/13/21 15:27  -1-sulfonic acid 4-8-Dioxa-3H-perfluoronanoic acid ND 0.21 0.041 ug/Kg 11/10/21 18:34 11/13/21 15:27  -1-sulfonic acid 4-8-Dioxa-3H-perfluoronanoic acid ND 0.21 0.041 ug/Kg 11/10/21 18:34 11/13/21 15:27  -1-sulfonic acid 4-8-Dioxa-3H-perfluoronanoic acid ND 0.21 0.041 ug/Kg 11/10/21 18:34 11/13/21 15:27  -1-sulfonic acid 4-8-Dioxa-3H-perfluoronanoic acid ND 0.21 0.041 ug/Kg 11/10/21 18:34 11/13/21 15:27  -1-sulfonic acid 4-8-Dioxa-3H-perfluoronanoic acid ND 0.21 0.041 ug/Kg 11/10/21 18:34 11/13/21 15:27  -1-sulfonic acid 4-8-Dioxa-3H-perfluoronanoic acid ND 0.21 0.041 ug/Kg 11/10/21 18:34 11/13/21 15:27  -1-sulfonic acid 4-8-Dioxa-3H-perfluoronanoic acid ND 0.21 0.041 ug/Kg 11/10/21 18:34 11/13/21 15:27  -1-sulfonic acid 4-8-Dioxa-3H-perfluoronanoic acid ND 0.21 0.041 ug/Kg 11/10/21 18:34 11/13/21 15:27  -1-sulfonic acid -1-s	ND		0.21	0.024	ug/Kg	₽	11/10/21 18:34	11/13/21 15:27	1
e-1-sulfonic acid Hexafluoropropylene Oxide Dimer Acid (HFPC-DA) 11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid 4-8-Dioxa-3H-perfluorononanoic acid (ADONA)    Sotope Dilution   SRecovery   Qualifier   Limits   11/10/21 18:34   11/13/21 15:27     Sotope Dilution   SRecovery   Qualifier   Limits   11/10/21 18:34   11/13/21 15:27     Sotope Dilution   SRecovery   Qualifier   Limits   Prepared   Analyzed   11/10/21 18:34   11/13/21 15:27     Sotope Dilution   SRecovery   Qualifier   Limits   Prepared   Analyzed   11/10/21 18:34   11/13/21 15:27     Sotope Dilution   SRecovery   Qualifier   Limits   Prepared   Analyzed   11/10/21 18:34   11/13/21 15:27     Sotope Dilution   SRecovery   Qualifier   Limits   Prepared   Analyzed   11/10/21 18:34   11/13/21 15:27     Sotope Dilution   SRecovery   Sotope Dilution   State	ND		0.21	0.050	ug/Kg	₩	11/10/21 18:34	11/13/21 15:27	1
Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid (ADONA)  Isotope Dilution    ND	ND		0.21	0.036	ug/Kg	₩	11/10/21 18:34	11/13/21 15:27	1
e-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid (ABDIOxa-3H-perfluorononanoic acid (ABDIOxa-3H-perfluoronoic acid (ABDIOxa-3H	ND		0.21	0.043	ug/Kg	₩	11/10/21 18:34	11/13/21 15:27	1
Sotope Dilution   %Recovery   Qualifier   Limits   Prepared   Analyzed   Dil Fat   13C2 PFHxA   110   50 - 150   11/10/21 18:34   11/13/21 15:27   13C4 PFHpA   107   50 - 150   11/10/21 18:34   11/13/21 15:27   13C4 PFOA   109   50 - 150   11/10/21 18:34   11/13/21 15:27   13C2 PFDA   111   50 - 150   11/10/21 18:34   11/13/21 15:27   13C2 PFDA   111   50 - 150   11/10/21 18:34   11/13/21 15:27   13C2 PFDA   111   50 - 150   11/10/21 18:34   11/13/21 15:27   13C2 PFDA   110   50 - 150   11/10/21 18:34   11/13/21 15:27   13C2 PFDA   110   50 - 150   11/10/21 18:34   11/13/21 15:27   13C2 PFTeDA   107   50 - 150   11/10/21 18:34   11/13/21 15:27   13C3 PFBS   110   50 - 150   11/10/21 18:34   11/13/21 15:27   13C3 PFBS   110   50 - 150   11/10/21 18:34   11/13/21 15:27   13C4 PFOS   99   50 - 150   11/10/21 18:34   11/13/21 15:27   13C4 PFOS   99   50 - 150   11/10/21 18:34   11/13/21 15:27   13C4 PFOS   99   50 - 150   11/10/21 18:34   11/13/21 15:27   13C4 PFOS   99   50 - 150   11/10/21 18:34   11/13/21 15:27   13C4 PFOS   99   50 - 150   11/10/21 18:34   11/13/21 15:27   13C4 PFOS   11/10/21 18:34   11/13	ND		0.21	0.032	ug/Kg	☼	11/10/21 18:34	11/13/21 15:27	1
13C2 PFHXA	ND		0.21	0.041	ug/Kg	₩	11/10/21 18:34	11/13/21 15:27	1
13C4 PFHpA 107 50 - 150 11/10/21 18:34 11/13/21 15:27 13C4 PFOA 109 50 - 150 11/10/21 18:34 11/13/21 15:27 13C5 PFNA 110 50 - 150 11/10/21 18:34 11/13/21 15:27 13C2 PFDA 111 50 - 150 11/10/21 18:34 11/13/21 15:27 13C2 PFDA 111 50 - 150 11/10/21 18:34 11/13/21 15:27 13C2 PFUnA 110 50 - 150 11/10/21 18:34 11/13/21 15:27 13C2 PFDOA 110 50 - 150 11/10/21 18:34 11/13/21 15:27 13C2 PFEDA 107 50 - 150 11/10/21 18:34 11/13/21 15:27 13C2 PFBS 110 50 - 150 11/10/21 18:34 11/13/21 15:27 13C2 PFHxS 93 50 - 150 11/10/21 18:34 11/13/21 15:27 13C4 PFOS 99 50 - 150 11/10/21 18:34 11/13/21 15:27 13C4 PFOS 99 50 - 150 11/10/21 18:34 11/13/21 15:27 13C4 PFOS 99 50 - 150 11/10/21 18:34 11/13/21 15:27 13C3 NMEFOSAA 133 50 - 150 11/10/21 18:34 11/13/21 15:27 13C3 NFPO-DA 94 50 - 150 11/10/21	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA 109 50 - 150 11/10/21 18:34 11/13/21 15:27 13C5 PFNA 110 50 - 150 11/10/21 18:34 11/13/21 15:27 13C2 PFDA 111 50 - 150 11/10/21 18:34 11/13/21 15:27 13C2 PFUnA 112 50 - 150 11/10/21 18:34 11/13/21 15:27 13C2 PFUnA 112 50 - 150 11/10/21 18:34 11/13/21 15:27 13C2 PFDOA 110 50 - 150 11/10/21 18:34 11/13/21 15:27 13C2 PFTeDA 107 50 - 150 11/10/21 18:34 11/13/21 15:27 13C3 PFBS 110 50 - 150 11/10/21 18:34 11/13/21 15:27 13C3 PFBS 110 50 - 150 11/10/21 18:34 11/13/21 15:27 13C4 PFOS 99 50 - 150 11/10/21 18:34 11/13/21 15:27 13C4 PFOS 99 50 - 150 11/10/21 18:34 11/13/21 15:27 13C4 PFOS 99 50 - 150 11/10/21 18:34 11/13/21 15:27 13C5 NEtFOSAA 107 50 - 150 11/10/21 18:34 11/13/21 15:27 13C5 NEtFOSAA 133 50 - 150 11/10/21 18:34 11/13/21 15:27 13C5 NETFOSAA 133 50 - 150 11/10/21 18:34 11/13/21 15:27 13C5 NETFOSAA 133 50 - 150 11/10/21 18:34 11/13/21 15:27 13C5 NETFOSAA 133 50 - 150 11/10/21 18:34 11/13/21 15:27 13C5 NETFOSAA 133 50 - 150 11/10/21 18:34 11/13/21 15:27 13C5 NETFOSAA 133 50 - 150 11/10/21 18:34 11/13/21 15:27 13C5 NETFOSAA 133 50 - 150 11/10/21 18:34 11/13/21 15:27 13C5 NETFOSAA 133 50 - 150 11/10/21 18:34 11/13/21 15:27 13C5 NETFOSAA 133 50 - 150 11/10/21 18:34 11/13/21 15:27 13C5 NETFOSAA 133 50 - 150 11/10/21 18:34 11/13/21 15:27 13C5 NETFOSAA 133 50 - 150 11/10/21 18:34 11/13/21 15:27 13C5 NETFOSAA 133 50 - 150 11/10/21 18:34 11/13/21 15:27 13C5 NETFOSAA 133 13C5 NETFOSAA 133 13C5 NETFOSAA 133 13C5 NETFOSAA 133 13C5 NETFOSAA 133 13C5 NETFOSAA 133 13C5 NETFOSAA 133 13C5 NETFOSAA 133 13C5 NETFOSAA 133 13C5 NETFOSAA 1	110		50 - 150				11/10/21 18:34	11/13/21 15:27	1
13C5 PFNA 110 50 - 150 11/10/21 18:34 11/13/21 15:27 13C2 PFDA 111 50 - 150 11/10/21 18:34 11/13/21 15:27 13C2 PFUnA 112 50 - 150 11/10/21 18:34 11/13/21 15:27 13C2 PFDoA 110 50 - 150 11/10/21 18:34 11/13/21 15:27 13C2 PFTeDA 107 50 - 150 11/10/21 18:34 11/13/21 15:27 13C3 PFBS 110 50 - 150 11/10/21 18:34 11/13/21 15:27 13C3 PFBS 110 50 - 150 11/10/21 18:34 11/13/21 15:27 13C3 PFBS 99 50 - 150 11/10/21 18:34 11/13/21 15:27 13C4 PFOS 99 50 - 150 11/10/21 18:34 11/13/21 15:27 13C4 PFOS 99 50 - 150 11/10/21 18:34 11/13/21 15:27 13C4 PFOS 99 50 - 150 11/10/21 18:34 11/13/21 15:27 13C3 NMeFOSAA 107 50 - 150 11/10/21 18:34 11/13/21 15:27 13C3 NMeFOSAA 133 50 - 150 11/10/21 18:34 11/13/21 15:27 13C3 NFPO-DA 94 11/10/21 18:34 11/13/21 15:27 13C3 NFPO-DA 94 11/10/21 18:34 11/13/21 15:27 13C3 NFPO-DA 94 11/10/21 18:34 11/13/21 15:27 1	107		50 - 150				11/10/21 18:34	11/13/21 15:27	1
13C2 PFDA 111 50-150 11/10/21 18:34 11/13/21 15:27 13C2 PFUnA 112 50-150 11/10/21 18:34 11/13/21 15:27 13C2 PFDoA 110 50-150 11/10/21 18:34 11/13/21 15:27 13C2 PFTeDA 107 50-150 11/10/21 18:34 11/13/21 15:27 13C3 PFBS 110 50-150 11/10/21 18:34 11/13/21 15:27 18O2 PFHxS 93 50-150 11/10/21 18:34 11/13/21 15:27 13C4 PFOS 99 50-150 11/10/21 18:34 11/13/21 15:27 13C4 PFOS 99 50-150 11/10/21 18:34 11/13/21 15:27 13C4 PFOSAA 107 50-150 11/10/21 18:34 11/13/21 15:27 13C3 HFPO-DA 94 11/10/21 18:34 11/13/21 15:27	109		50 - 150				11/10/21 18:34	11/13/21 15:27	1
13C2 PFUnA 1112 50 - 150 11/10/21 18:34 11/13/21 15:27 13C2 PFDoA 110 50 - 150 11/10/21 18:34 11/13/21 15:27 13C3 PFBS 110 50 - 150 11/10/21 18:34 11/13/21 15:27 13C3 PFBS 110 50 - 150 11/10/21 18:34 11/13/21 15:27 18O2 PFHxS 93 50 - 150 11/10/21 18:34 11/13/21 15:27 13C4 PFOS 99 50 - 150 11/10/21 18:34 11/13/21 15:27 11/10/21 18:34 11/13/21 15:27 11/10/21 18:34 11/13/21 15:27 11/10/21 18:34 11/13/21 15:27 11/10/21 18:34 11/13/21 15:27 11/10/21 18:34 11/13/21 15:27 11/10/21 18:34 11/13/21 15:27 11/10/21 18:34 11/13/21 15:27 11/10/21 18:34 11/13/21 15:27 11/10/21 18:34 11/13/21 15:27 11/10/21 18:34 11/13/21 15:27 11/10/21 18:34 11/13/21 15:27 11/10/21 18:34 11/13/21 15:27 11/10/21 18:34 11/13/21 15:27 11/10/21 18:34 11/13/21 15:27 11/10/21 18:34 11/13/21 15:27 11/10/21 18:34 11/13/21 15:27 11/10/21 18:34 11/13/21 15:27	110		50 - 150				11/10/21 18:34	11/13/21 15:27	1
13C2 PFDoA       110       50 - 150       11/10/21 18:34       11/13/21 15:27         13C2 PFTeDA       107       50 - 150       11/10/21 18:34       11/13/21 15:27         13C3 PFBS       110       50 - 150       11/10/21 18:34       11/13/21 15:27         18O2 PFHxS       93       50 - 150       11/10/21 18:34       11/13/21 15:27         13C4 PFOS       99       50 - 150       11/10/21 18:34       11/13/21 15:27         d3-NMeFOSAA       107       50 - 150       11/10/21 18:34       11/13/21 15:27         d5-NEtFOSAA       133       50 - 150       11/10/21 18:34       11/13/21 15:27         13C3 HFPO-DA       94       50 - 150       11/10/21 18:34       11/13/21 15:27         General Chemistry         Analyte       Result       Qualifier       RL       MDL       Unit       D       Prepared       Analyzed       Dil Fa         Percent Moisture       12.4       0.1       0.1       0.1       0.1       0.1       0.1       11/10/21 14:24	111		50 - 150				11/10/21 18:34	11/13/21 15:27	1
13C2 PFTeDA 107 50 - 150 11/10/21 18:34 11/13/21 15:27 13C3 PFBS 110 50 - 150 11/10/21 18:34 11/13/21 15:27 18O2 PFHxS 93 50 - 150 11/10/21 18:34 11/13/21 15:27 13C4 PFOS 99 50 - 150 11/10/21 18:34 11/13/21 15:27 13C4 PFOS 107 50 - 150 11/10/21 18:34 11/13/21 15:27 13C3-NMeFOSAA 107 50 - 150 11/10/21 18:34 11/13/21 15:27 13C3 HFPO-DA 94 11/10/21 18:34 11/13/21 15:27 13C3 HFPO-DA 94 11/10/21 18:34 11/13/21 15:27 13C3 HFPO-DA 94 11/10/21 18:34 11/13/21 15:27 13C3 HFPO-DA 94 11/10/21 18:34 11/13/21 15:27 13C3 HFPO-DA 94 11/10/21 18:34 11/13/21 15:27 13C3 HFPO-DA 94 11/10/21 18:34 11/13/21 15:27 13C3 HFPO-DA 94 1	112		50 - 150				11/10/21 18:34	11/13/21 15:27	1
13C3 PFBS     110     50 - 150     11/10/21 18:34 11/13/21 15:27       18O2 PFHxS     93     50 - 150     11/10/21 18:34 11/13/21 15:27       13C4 PFOS     99     50 - 150     11/10/21 18:34 11/13/21 15:27       d3-NMeFOSAA     107     50 - 150     11/10/21 18:34 11/13/21 15:27       d5-NEtFOSAA     133     50 - 150     11/10/21 18:34 11/13/21 15:27       13C3 HFPO-DA     94     50 - 150     11/10/21 18:34 11/13/21 15:27       General Chemistry       Analyte     Result     Qualifier     RL     MDL     Unit     D     Prepared     Analyzed     Dil Fa       Percent Moisture	110		50 - 150				11/10/21 18:34	11/13/21 15:27	1
1802 PFHxS       93       50 - 150       11/10/21 18:34 11/13/21 15:27         13C4 PFOS       99       50 - 150       11/10/21 18:34 11/13/21 15:27         d3-NMeFOSAA       107       50 - 150       11/10/21 18:34 11/13/21 15:27         d5-NEtFOSAA       133       50 - 150       11/10/21 18:34 11/13/21 15:27         13C3 HFPO-DA       94       50 - 150       11/10/21 18:34 11/13/21 15:27         General Chemistry         Analyte       Result Qualifier       RL       MDL Unit       D Prepared       Analyzed       Dil Fa         Percent Moisture	107		50 - 150				11/10/21 18:34	11/13/21 15:27	1
13C4 PFOS 99 50 - 150 11/10/21 18:34 11/13/21 15:27 d3-NMeFOSAA 107 50 - 150 11/10/21 18:34 11/13/21 15:27 d5-NEtFOSAA 133 50 - 150 11/10/21 18:34 11/13/21 15:27 13C3 HFPO-DA 94 50 - 150 11/10/21 18:34 11/13/21 15:27	110		50 - 150				11/10/21 18:34	11/13/21 15:27	1
d3-NMeFOSAA     107     50 - 150     11/10/21 18:34     11/13/21 15:27       d5-NEtFOSAA     133     50 - 150     11/10/21 18:34     11/13/21 15:27       13C3 HFPO-DA     94     50 - 150     11/10/21 18:34     11/13/21 15:27       General Chemistry       Analyte     Result     Qualifier     RL     MDL     Unit     D     Prepared     Analyzed     Dil Fa       Percent Moisture     12.4     0.1     0.1     %     11/05/21 14:24	93		50 - 150				11/10/21 18:34	11/13/21 15:27	1
d5-NEtFOSAA       133       50 - 150       11/10/21 18:34       11/13/21 15:27         13C3 HFPO-DA       94       50 - 150       11/10/21 18:34       11/13/21 15:27         General Chemistry         Analyte       Result       Qualifier       RL       MDL       Unit       D       Prepared       Analyzed       Dil Fa         Percent Moisture       12.4       0.1       0.1       %       11/05/21 14:24	99		50 - 150				11/10/21 18:34	11/13/21 15:27	1
13C3 HFPO-DA 94 50 - 150 11/10/21 18:34 11/13/21 15:27    General Chemistry   Analyte   Result   Qualifier   RL   MDL   Unit   D   Prepared   Analyzed   Dil Fa	107		50 - 150				11/10/21 18:34	11/13/21 15:27	1
General Chemistry Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fa Percent Moisture 12.4 0.1 0.1 % 11/05/21 14:24	133		50 - 150				11/10/21 18:34	11/13/21 15:27	1
Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Farencent Moisture 0.1 0.1 0.1 % D Prepared 11/05/21 14:24	94		50 - 150				11/10/21 18:34	11/13/21 15:27	1
Percent Moisture 12.4 0.1 0.1 % 11/05/21 14:24		OUC			11-24	_	<b>.</b>	A	D.: -
		Qualitier				D	Prepared		Dil Fac
									1 1
Percent Solids		ND ND ND ND ND ND **Recovery 110 107 109 110 111 112 110 107 110 93 99 107 133 94  **Result	ND ND ND ND ND ND ND ND ND ND ND ND ND N	ND       0.21         ND       0.21         ND       0.21         ND       0.21         ND       0.21         ND       0.21         **Recovery       Qualifier       Limits         110       50 - 150         107       50 - 150         109       50 - 150         110       50 - 150         111       50 - 150         110       50 - 150         107       50 - 150         93       50 - 150         99       50 - 150         107       50 - 150         133       50 - 150         94       50 - 150         Result       Qualifier       RL         12.4       0.1	ND       0.21       0.024         ND       0.21       0.050         ND       0.21       0.036         ND       0.21       0.043         ND       0.21       0.032         ND       0.21       0.041         **Recovery Qualifier Limits       **         110       50 - 150         107       50 - 150         110       50 - 150         111       50 - 150         112       50 - 150         110       50 - 150         110       50 - 150         110       50 - 150         110       50 - 150         110       50 - 150         110       50 - 150         110       50 - 150         110       50 - 150         133       50 - 150         133       50 - 150         133       50 - 150         94       50 - 150         8esult       Qualifier       RL       MDL         12.4       0.1       0.1	ND       0.21       0.024       ug/kg         ND       0.21       0.050       ug/kg         ND       0.21       0.036       ug/kg         ND       0.21       0.043       ug/kg         ND       0.21       0.032       ug/kg         ND       0.21       0.041       ug/kg         ND       0.041 <t< td=""><td>ND       0.21       0.024 ug/Kg       ☆         ND       0.21       0.050 ug/Kg       ☆         ND       0.21       0.036 ug/Kg       ☆         ND       0.21       0.043 ug/Kg       ☆         ND       0.21       0.032 ug/Kg       ☆         ND       0.21       0.041 ug/Kg       ☆         ***       ***       ***         ***       ***       ***       ***         ***       ***       ***       ***         ***       ***       ***       ***         ***       ***       ***       ***         ***       ***       ***       ***         ***       ***       ***       ***         ***       ***       ***       ***         ***       ***       ***       ***         ***       ***       ***       ***         ***       ***       ***       ***         ***       ***       ***       ***         ***       ***       ***       ***         ***       ***       ***       ***         ***       ***       ***       ***         **</td><td>ND       0.21       0.024       ug/Kg       ☆ 11/10/21 18:34         ND       0.21       0.050       ug/Kg       ☆ 11/10/21 18:34         ND       0.21       0.036       ug/Kg       ☆ 11/10/21 18:34         ND       0.21       0.043       ug/Kg       ☆ 11/10/21 18:34         ND       0.21       0.032       ug/Kg       ☆ 11/10/21 18:34         ND       0.21       0.041       ug/Kg       ☆ 11/10/21 18:34         107       50-150       11/10/21 18:34       11/10/21 18:34         110       50-150       11/10/21 18:34       11/10/21 18:34         110       50-150       11/10/21 18:34</td><td>ND         0.21         0.024         ug/Kg         □ 11/10/21 18:34         11/13/21 15:27           ND         0.21         0.050         ug/Kg         □ 11/10/21 18:34         11/13/21 15:27           ND         0.21         0.036         ug/Kg         □ 11/10/21 18:34         11/13/21 15:27           ND         0.21         0.043         ug/Kg         □ 11/10/21 18:34         11/13/21 15:27           ND         0.21         0.032         ug/Kg         □ 11/10/21 18:34         11/13/21 15:27           ND         0.21         0.041         ug/Kg         □ 11/10/21 18:34         11/13/21 15:27           ND         0.21         0.041         ug/Kg         □ 11/10/21 18:34         11/13/21 15:27           ND         0.21         0.041         ug/Kg         □ 11/10/21 18:34         11/13/21 15:27           ND         0.21         0.041         ug/Kg         □ 11/10/21 18:34         11/13/21 15:27           ND         0.21         0.041         ug/Kg         □ 11/10/21 18:34         11/13/21 15:27           MRecovery         Qualifier         Limits         Prepared         Analyzed           110         50 - 150         11/10/21 18:34         11/13/21 15:27           111</td></t<>	ND       0.21       0.024 ug/Kg       ☆         ND       0.21       0.050 ug/Kg       ☆         ND       0.21       0.036 ug/Kg       ☆         ND       0.21       0.043 ug/Kg       ☆         ND       0.21       0.032 ug/Kg       ☆         ND       0.21       0.041 ug/Kg       ☆         ***       ***       ***         ***       ***       ***       ***         ***       ***       ***       ***         ***       ***       ***       ***         ***       ***       ***       ***         ***       ***       ***       ***         ***       ***       ***       ***         ***       ***       ***       ***         ***       ***       ***       ***         ***       ***       ***       ***         ***       ***       ***       ***         ***       ***       ***       ***         ***       ***       ***       ***         ***       ***       ***       ***         ***       ***       ***       ***         **	ND       0.21       0.024       ug/Kg       ☆ 11/10/21 18:34         ND       0.21       0.050       ug/Kg       ☆ 11/10/21 18:34         ND       0.21       0.036       ug/Kg       ☆ 11/10/21 18:34         ND       0.21       0.043       ug/Kg       ☆ 11/10/21 18:34         ND       0.21       0.032       ug/Kg       ☆ 11/10/21 18:34         ND       0.21       0.041       ug/Kg       ☆ 11/10/21 18:34         107       50-150       11/10/21 18:34       11/10/21 18:34         110       50-150       11/10/21 18:34       11/10/21 18:34         110       50-150       11/10/21 18:34	ND         0.21         0.024         ug/Kg         □ 11/10/21 18:34         11/13/21 15:27           ND         0.21         0.050         ug/Kg         □ 11/10/21 18:34         11/13/21 15:27           ND         0.21         0.036         ug/Kg         □ 11/10/21 18:34         11/13/21 15:27           ND         0.21         0.043         ug/Kg         □ 11/10/21 18:34         11/13/21 15:27           ND         0.21         0.032         ug/Kg         □ 11/10/21 18:34         11/13/21 15:27           ND         0.21         0.041         ug/Kg         □ 11/10/21 18:34         11/13/21 15:27           ND         0.21         0.041         ug/Kg         □ 11/10/21 18:34         11/13/21 15:27           ND         0.21         0.041         ug/Kg         □ 11/10/21 18:34         11/13/21 15:27           ND         0.21         0.041         ug/Kg         □ 11/10/21 18:34         11/13/21 15:27           ND         0.21         0.041         ug/Kg         □ 11/10/21 18:34         11/13/21 15:27           MRecovery         Qualifier         Limits         Prepared         Analyzed           110         50 - 150         11/10/21 18:34         11/13/21 15:27           111

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

**Percent Solids** 

Date Collected: 10/31/21 13:15

Matrix: Solid
Date Received: 11/03/21 14:01

Matrix: Solid
Percent Solids: 84.7

Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
ND	0.22	0.034	ug/Kg	<u></u>	11/10/21 18:34	11/13/21 15:38	
ND	0.22	0.041	ug/Kg	≎	11/10/21 18:34	11/13/21 15:38	•
ND	0.22	0.058	ug/Kg	₩	11/10/21 18:34	11/13/21 15:38	
ND	0.22	0.024	ug/Kg	₩	11/10/21 18:34	11/13/21 15:38	
ND	0.22	0.052	ug/Kg	₩	11/10/21 18:34	11/13/21 15:38	
ND	0.22	0.046	ug/Kg	₽	11/10/21 18:34	11/13/21 15:38	
ND	0.22	0.033	ug/Kg	₩	11/10/21 18:34	11/13/21 15:38	
ND	0.22	0.023	ug/Kg	₩	11/10/21 18:34	11/13/21 15:38	
ND	0.22	0.040	ug/Kg	≎	11/10/21 18:34	11/13/21 15:38	
ND	0.22	0.041	ug/Kg	≎	11/10/21 18:34	11/13/21 15:38	
ND	0.22	0.032	ug/Kg	⇔	11/10/21 18:34	11/13/21 15:38	
0.69	0.22	0.047	ug/Kg	₩	11/10/21 18:34	11/13/21 15:38	•
ND	0.22	0.025	ug/Kg	☼	11/10/21 18:34	11/13/21 15:38	
ND	0.22	0.052	ug/Kg	₩	11/10/21 18:34	11/13/21 15:38	•
ND	0.22			₩	11/10/21 18:34	11/13/21 15:38	
ND	0.22			₩	11/10/21 18:34	11/13/21 15:38	
ND	0.22			₩	11/10/21 18:34	11/13/21 15:38	
ND	0.22	0.043	ug/Kg	☼	11/10/21 18:34	11/13/21 15:38	•
%Recovery Qualifier	Limits				Prepared	Analyzed	Dil Fa
110	50 - 150				11/10/21 18:34	11/13/21 15:38	
108	50 - 150				11/10/21 18:34	11/13/21 15:38	
102	50 - 150				11/10/21 18:34	11/13/21 15:38	
98	50 - 150				11/10/21 18:34	11/13/21 15:38	
101	50 - 150				11/10/21 18:34	11/13/21 15:38	
109	50 - 150				11/10/21 18:34	11/13/21 15:38	
100	50 - 150				11/10/21 18:34	11/13/21 15:38	
102	50 - 150				11/10/21 18:34	11/13/21 15:38	
114	50 - 150				11/10/21 18:34	11/13/21 15:38	
94	50 - 150				11/10/21 18:34	11/13/21 15:38	
98	50 - 150				11/10/21 18:34	11/13/21 15:38	
104	50 - 150				11/10/21 18:34	11/13/21 15:38	
121	50 - 150						
98	50 - 150				11/10/21 18:34	11/13/21 15:38	
Result Qualifier	RL	<b>MDL</b> 0.1	Unit	D	Prepared	Analyzed 11/05/21 14:24	Dil Fac
	Result   Qualifier	ND         0.22           ND         0.25           ND	Result ND         Qualifier         RL         MDL           ND         0.22         0.034           ND         0.22         0.041           ND         0.22         0.058           ND         0.22         0.052           ND         0.22         0.052           ND         0.22         0.046           ND         0.22         0.033           ND         0.22         0.041           ND         0.22         0.041           ND         0.22         0.047           ND         0.22         0.047           ND         0.22         0.052           ND         0.22         0.052           ND         0.22         0.052           ND         0.22         0.038           ND         0.22         0.045           ND         0.22         0.045           ND         0.22         0.038           ND         0.22         0.045           ND         0.22         0.045           ND         0.22         0.045           ND         0.22         0.045           ND         0.22         0.045 <td>Result         Qualifier         RL         MDL         Unit           ND         0.22         0.034         ug/Kg           ND         0.22         0.041         ug/Kg           ND         0.22         0.058         ug/Kg           ND         0.22         0.052         ug/Kg           ND         0.22         0.052         ug/Kg           ND         0.22         0.046         ug/Kg           ND         0.22         0.033         ug/Kg           ND         0.22         0.040         ug/Kg           ND         0.22         0.040         ug/Kg           ND         0.22         0.041         ug/Kg           ND         0.22         0.032         ug/Kg           ND         0.22         0.047         ug/Kg           ND         0.22         0.052         ug/Kg           ND         0.22         0.052         ug/Kg           ND         0.22         0.045         ug/Kg           ND         0.22         0.043         ug/Kg           ND         0.22         0.043         ug/Kg           ND         0.22         0.043         ug/Kg&lt;</td> <td>Result ND         Qualifier         RL         MDL Unit         D           ND         0.22         0.034         ug/Kg         ☆           ND         0.22         0.041         ug/Kg         ☆           ND         0.22         0.058         ug/Kg         ☆           ND         0.22         0.052         ug/Kg         ☆           ND         0.22         0.052         ug/Kg         ☆           ND         0.22         0.046         ug/Kg         ☆           ND         0.22         0.033         ug/Kg         ☆           ND         0.22         0.040         ug/Kg         ☆           ND         0.22         0.041         ug/Kg         ☆           ND         0.22         0.041         ug/Kg         ☆           ND         0.22         0.047         ug/Kg         ☆           ND         0.22         0.052         ug/Kg         ☆           ND         0.22         0.052         ug/Kg         ☆           ND         0.22         0.045         ug/Kg         ☆           ND         0.22         0.043         ug/Kg         ☆</td> <td>  Result   Qualifier   RL   MDL   Unit   D   Prepared    </td> <td>  Result   Qualifier   RL   MDL   Unit   D   Prepared   Analyzed    </td>	Result         Qualifier         RL         MDL         Unit           ND         0.22         0.034         ug/Kg           ND         0.22         0.041         ug/Kg           ND         0.22         0.058         ug/Kg           ND         0.22         0.052         ug/Kg           ND         0.22         0.052         ug/Kg           ND         0.22         0.046         ug/Kg           ND         0.22         0.033         ug/Kg           ND         0.22         0.040         ug/Kg           ND         0.22         0.040         ug/Kg           ND         0.22         0.041         ug/Kg           ND         0.22         0.032         ug/Kg           ND         0.22         0.047         ug/Kg           ND         0.22         0.052         ug/Kg           ND         0.22         0.052         ug/Kg           ND         0.22         0.045         ug/Kg           ND         0.22         0.043         ug/Kg           ND         0.22         0.043         ug/Kg           ND         0.22         0.043         ug/Kg<	Result ND         Qualifier         RL         MDL Unit         D           ND         0.22         0.034         ug/Kg         ☆           ND         0.22         0.041         ug/Kg         ☆           ND         0.22         0.058         ug/Kg         ☆           ND         0.22         0.052         ug/Kg         ☆           ND         0.22         0.052         ug/Kg         ☆           ND         0.22         0.046         ug/Kg         ☆           ND         0.22         0.033         ug/Kg         ☆           ND         0.22         0.040         ug/Kg         ☆           ND         0.22         0.041         ug/Kg         ☆           ND         0.22         0.041         ug/Kg         ☆           ND         0.22         0.047         ug/Kg         ☆           ND         0.22         0.052         ug/Kg         ☆           ND         0.22         0.052         ug/Kg         ☆           ND         0.22         0.045         ug/Kg         ☆           ND         0.22         0.043         ug/Kg         ☆	Result   Qualifier   RL   MDL   Unit   D   Prepared	Result   Qualifier   RL   MDL   Unit   D   Prepared   Analyzed

Eurofins TestAmerica, Sacramento

0.1

84.7

0.1 %

3

6

8

10

12

14

15

11/05/21 14:24

Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

Isotope Dilution

13C4 PFOS

Lab Sample ID: 320-81254-95

Client Sample ID: 21GST-SB011-01 Date Collected: 10/31/21 14:15 **Matrix: Solid** Date Received: 11/03/21 14:01

Percent Solids: 91.2

Job ID: 320-81254-1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	0.68		0.21	0.033	ug/Kg	₩	11/10/21 18:34	11/13/21 15:48	
Perfluoroheptanoic acid (PFHpA)	0.21		0.21	0.040	ug/Kg	≎	11/10/21 18:34	11/13/21 15:48	,
Perfluorooctanoic acid (PFOA)	0.63		0.21	0.056	ug/Kg	≎	11/10/21 18:34	11/13/21 15:48	•
Perfluorononanoic acid (PFNA)	0.16	J	0.21	0.023	ug/Kg	≎	11/10/21 18:34	11/13/21 15:48	1
Perfluorodecanoic acid (PFDA)	1.0		0.21		ug/Kg	☆	11/10/21 18:34	11/13/21 15:48	1
Perfluoroundecanoic acid	1.3		0.21		ug/Kg	₩	11/10/21 18:34	11/13/21 15:48	1
(PFUnA)					3 3				
Perfluorododecanoic acid	0.63		0.21	0.032	ug/Kg	₩	11/10/21 18:34	11/13/21 15:48	1
(PFDoA)									
Perfluorotridecanoic acid (PFTriA)	0.10	J	0.21		ug/Kg	≎	11/10/21 18:34	11/13/21 15:48	1
Perfluorotetradecanoic acid (PFTeA)	0.16	J	0.21		ug/Kg	₩	11/10/21 18:34	11/13/21 15:48	1
Perfluorobutanesulfonic acid (PFBS)	1.2		0.21	0.040	ug/Kg	₩	11/10/21 18:34	11/13/21 15:48	1
Perfluorohexanesulfonic acid (PFHxS)	7.3		0.21	0.030	ug/Kg	₩	11/10/21 18:34	11/13/21 15:48	1
N-methylperfluorooctanesulfona	0.046	J	0.21	0.024	ug/Kg	₩	11/10/21 18:34	11/13/21 15:48	1
midoacetic acid (NMeFOSAA)									
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.21	0.050	ug/Kg	₩	11/10/21 18:34	11/13/21 15:48	•
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.21		ug/Kg	₩	11/10/21 18:34	11/13/21 15:48	•
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.043	ug/Kg	☼	11/10/21 18:34	11/13/21 15:48	•
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.21	0.033	ug/Kg	₩	11/10/21 18:34	11/13/21 15:48	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.041	ug/Kg	₩	11/10/21 18:34	11/13/21 15:48	•
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	90		50 - 150				11/10/21 18:34	11/13/21 15:48	
13C4 PFHpA	95		50 - 150				11/10/21 18:34	11/13/21 15:48	1
13C4 PFOA	90		50 <sub>-</sub> 150				11/10/21 18:34	11/13/21 15:48	1
13C5 PFNA	87		50 - 150				11/10/21 18:34	11/13/21 15:48	
13C2 PFDA	97		50 <sub>-</sub> 150				11/10/21 18:34	11/13/21 15:48	1
13C2 PFUnA	92		50 - 150					11/13/21 15:48	
13C2 PFDoA	91		50 <sub>-</sub> 150					11/13/21 15:48	
13C2 PFTeDA	89		50 - 150					11/13/21 15:48	•
13C3 PFBS	100		50 - 150 50 - 150					11/13/21 15:48	
1802 PFHxS	80		50 <sub>-</sub> 150					11/13/21 15:48	
13C4 PFOS	84		50 <sub>-</sub> 150					11/13/21 15:48	
d3-NMeFOSAA	103		50 - 150					11/13/21 15:48	
d5-NEtFOSAA	110		50 - 150					11/13/21 15:48	•
13C3 HFPO-DA	81		50 - 150				11/10/21 18:34	11/13/21 15:48	
Method: EPA 537(Mod) - PFAS						_	_		
Analyte		Qualifier	RL 2.1	MDL	Unit ug/Kg	D	Prepared 11/10/21 18:34	Analyzed	Dil Fac
Perfluorooctanesulfonic acid	79					₩		11/15/21 12:56	10

11/10/21 18:34 11/15/21 12:56

Analyzed

Prepared

Limits

50 - 150

%Recovery Qualifier

89

Dil Fac

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Date Collected: 10/31/21 14:15

Matrix: Solid
Date Received: 11/03/21 14:01

Matrix: Solid
Percent Solids: 91.2

ate Received: 11/03/21 14:01	Percent Solids: 91.2
General Chemistry	

General Chemistry							
Analyte	Result Qualifier	RL	MDL Un	nit D	Prepared	Analyzed	Dil Fac
Percent Moisture	8.8	0.1	0.1 %			11/05/21 14:24	1
Percent Solids	91.2	0.1	0.1 %			11/05/21 14:24	1

4

<u>۾</u>

40

11

13

14

Client: Shannon & Wilson, Inc Job ID: 320-81254-1 Project/Site: SC Soils#3

Lab Sample ID: 320-81254-96 Client Sample ID: 21GST-SB011-12

Date Collected: 10/31/21 14:25 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 93.2

Analyte	Result	Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
Perfluorohexanoic acid (PFHxA)	0.24		0.20	0.031	ug/Kg	☆	11/10/21 18:34	11/13/21 15:58	•
Perfluoroheptanoic acid (PFHpA)	0.26		0.20	0.038	ug/Kg	≎	11/10/21 18:34	11/13/21 15:58	
Perfluorooctanoic acid (PFOA)	4.9		0.20	0.054	ug/Kg	≎	11/10/21 18:34	11/13/21 15:58	
Perfluorononanoic acid (PFNA)	ND		0.20	0.022	ug/Kg	₽	11/10/21 18:34	11/13/21 15:58	
Perfluorodecanoic acid (PFDA)	ND		0.20	0.048	ug/Kg	≎	11/10/21 18:34	11/13/21 15:58	
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.042	ug/Kg	☆	11/10/21 18:34	11/13/21 15:58	
Perfluorododecanoic acid (PFDoA)	ND		0.20		ug/Kg		11/10/21 18:34	11/13/21 15:58	
Perfluorotridecanoic acid (PFTriA)	ND		0.20		ug/Kg	₩	11/10/21 18:34	11/13/21 15:58	
Perfluorotetradecanoic acid (PFTeA)	ND		0.20		ug/Kg	- -	11/10/21 18:34		
Perfluorobutanesulfonic acid (PFBS)	ND		0.20		ug/Kg		11/10/21 18:34		
Perfluorooctanesulfonic acid	0.67		0.20		ug/Kg		11/10/21 18:34		
(PFOS)	0.07		0.20	0.040	ug/itg	*	11/10/21 10:04	11/10/21 10:00	
N-methylperfluorooctanesulfonamidoa	ND		0.20	0.023	ug/Kg	₩	11/10/21 18:34	11/13/21 15:58	
cetic acid (NMeFOSAA)					3. 3				
N-ethylperfluorooctanesulfonamidoac	ND		0.20	0.048	ug/Kg	₽	11/10/21 18:34	11/13/21 15:58	
etic acid (NEtFOSAA)									
9-Chlorohexadecafluoro-3-oxanonan	ND		0.20	0.035	ug/Kg	₽	11/10/21 18:34	11/13/21 15:58	
e-1-sulfonic acid									
Hexafluoropropylene Oxide Dimer	ND		0.20	0.041	ug/Kg	≎	11/10/21 18:34	11/13/21 15:58	
Acid (HFPO-DA)			0.20	0.024	/IV.a.		11/10/01 10:01	11/12/21 15:50	
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.20	0.031	ug/Kg	4	11/10/21 18:34	11/13/21 15:56	
e-1-sullonic acid 4,8-Dioxa-3H-perfluorononanoic acid	ND		0.20	0 030	ug/Kg	*	11/10/21 18:34	11/13/21 15:58	
(ADONA)	ND		0.20	0.039	ug/itg	*	11/10/21 10.54	11/13/21 13.30	
	%Recovery	Ouglifier	Limita				Droporod	Analyzad	Dil Fa
Isotope Dilution 13C2 PFHxA	70 <b>Recovery</b> 125	Qualifier	Limits 50 - 150				Prepared 11/10/21 19:24	Analyzed 11/13/21 15:58	DII Fa
13C4 PFHpA	121		50 - 150					11/13/21 15:58	
13C4 PFOA	109		50 - 150					11/13/21 15:58	
13C5 PFNA	110		50 - 150					11/13/21 15:58	
13C2 PFDA	119		50 - 150					11/13/21 15:58	
13C2 PFUnA	122		50 - 150				11/10/21 18:34	11/13/21 15:58	
13C2 PFDoA	119		50 - 150				11/10/21 18:34	11/13/21 15:58	
13C2 PFTeDA	114		50 - 150				11/10/21 18:34	11/13/21 15:58	
13C3 PFBS	117		50 - 150				11/10/21 18:34	11/13/21 15:58	
1802 PFHxS	112		50 - 150				11/10/21 18:34	11/13/21 15:58	
13C4 PFOS	118		50 - 150				11/10/21 18:34	11/13/21 15:58	
d3-NMeFOSAA	127		50 - 150				11/10/21 18:34	11/13/21 15:58	
d5-NEtFOSAA	138		50 - 150					11/13/21 15:58	
13C3 HFPO-DA	102		50 - 150				11/10/21 18:34	11/13/21 15:58	
Method: EPA 537(Mod) - PFAS	for QSM 5	3, Table B	-15 - DL						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Perfluorohexanesulfonic acid (PFHxS)	20		1.0	0.15	ug/Kg	<del>*</del>	11/10/21 18:34	11/16/21 14:57	
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
1802 PFHxS	78		50 - 150				11/10/21 18:34	11/16/21 14:57	
	. •		- <del>-</del>						
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Percent Moisture	6.8		0.1	0.1	%			11/05/21 14:24	

Eurofins TestAmerica, Sacramento

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-97 Client Sample ID: 21GST-SB011-02 Date Collected: 10/31/21 14:35

**Matrix: Solid** 

Percent Solids: 89.1

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 Analyte Result Qualifier **MDL** Unit RL Prepared Analyzed Dil Fac Perfluorohexanoic acid (PFHxA) 0.21 0.033 ug/Kg 11/10/21 18:34 11/13/21 16:30 0.36 11/10/21 18:34 11/13/21 16:30 Perfluoroheptanoic acid (PFHpA) 0.18 J 0.21 0.041 ug/Kg Perfluorooctanoic acid (PFOA) 4.0 0.21 0.057 ug/Kg 11/10/21 18:34 11/13/21 16:30 Perfluorononanoic acid (PFNA) 11/10/21 18:34 11/13/21 16:30 ND 0.21 0.024 ug/Kg Perfluorodecanoic acid (PFDA) ND 0.21 0.052 ug/Kg 11/10/21 18:34 11/13/21 16:30 Perfluoroundecanoic acid (PFUnA) ND 0.21 0.045 ug/Kg 11/10/21 18:34 11/13/21 16:30 Perfluorododecanoic acid (PFDoA) ND 0.21 0.032 ug/Kg 11/10/21 18:34 11/13/21 16:30 Perfluorotridecanoic acid (PFTriA) ND 0.21 0.023 ug/Kg 11/10/21 18:34 11/13/21 16:30 Perfluorotetradecanoic acid (PFTeA) ND 0.21 0.040 ug/Kg 11/10/21 18:34 11/13/21 16:30 Perfluorobutanesulfonic acid (PFBS) ND 0.21 0.041 ug/Kg 11/10/21 18:34 11/13/21 16:30 Perfluorohexanesulfonic acid 0.21 0.031 ug/Kg 11/10/21 18:34 11/13/21 16:30 15 (PFHxS) N-methylperfluorooctanesulfonamidoa ND 0.21 0.025 ug/Kg 11/10/21 18:34 11/13/21 16:30 cetic acid (NMeFOSAA) N-ethylperfluorooctanesulfonamidoac ND 0.21 0.052 ug/Kg 11/10/21 18:34 11/13/21 16:30 etic acid (NEtFOSAA) 11/10/21 18:34 11/13/21 16:30 9-Chlorohexadecafluoro-3-oxanonan ND 0.21 0.038 ug/Kg e-1-sulfonic acid Hexafluoropropylene Oxide Dimer ND 0.21 0.044 ug/Kg 11/10/21 18:34 11/13/21 16:30 Acid (HFPO-DA) ND 0.21 11/10/21 18:34 11/13/21 16:30 11-Chloroeicosafluoro-3-oxaundecan 0.033 ug/Kg e-1-sulfonic acid ND 0.21 0.042 ug/Kg 11/10/21 18:34 11/13/21 16:30 4,8-Dioxa-3H-perfluorononanoic acid

(ADONA)						
Isotope Dilution	%Recovery Q	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	98		50 - 150	11/10/21 18:34	11/13/21 16:30	1
13C4 PFHpA	96		50 - 150	11/10/21 18:34	11/13/21 16:30	1
13C4 PFOA	90		50 - 150	11/10/21 18:34	11/13/21 16:30	1
13C5 PFNA	90		50 - 150	11/10/21 18:34	11/13/21 16:30	1
13C2 PFDA	95		50 - 150	11/10/21 18:34	11/13/21 16:30	1
13C2 PFUnA	93		50 - 150	11/10/21 18:34	11/13/21 16:30	1
13C2 PFDoA	91		50 - 150	11/10/21 18:34	11/13/21 16:30	1
13C2 PFTeDA	94		50 - 150	11/10/21 18:34	11/13/21 16:30	1
13C3 PFBS	97		50 - 150	11/10/21 18:34	11/13/21 16:30	1
1802 PFHxS	81		50 - 150	11/10/21 18:34	11/13/21 16:30	1
13C4 PFOS	86		50 - 150	11/10/21 18:34	11/13/21 16:30	1
d3-NMeFOSAA	101		50 - 150	11/10/21 18:34	11/13/21 16:30	1
d5-NEtFOSAA	107		50 - 150	11/10/21 18:34	11/13/21 16:30	1
13C3 HFPO-DA	83		50 - 150	11/10/21 18:34	11/13/21 16:30	1

Method: EPA 537(Mod) - PFAS	i tor QSM 5.	.3, Table B-1	5 - DL						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	25		1.1	0.23	ug/Kg	₩	11/10/21 18:34	11/15/21 12:46	5

I.	sotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1	3C4 PFOS	79		50 - 150	11/10/21 18:34	1/15/21 12:46	5

General Chemistry Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	10.9	0.1	0.1	%			11/05/21 14:24	1
Percent Solids	89.1	0.1	0.1	%			11/05/21 14:24	1

Eurofins TestAmerica, Sacramento

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

**Percent Solids** 

Client Sample ID: 21GST-SB011-03 Lab Sample ID: 320-81254-98

Date Collected: 10/31/21 14:45

Date Received: 11/03/21 14:01

Matrix: Solid
Percent Solids: 81.7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	0.085	J	0.23	0.035	ug/Kg	<u></u>	11/10/21 18:34	11/13/21 16:40	1
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.043	ug/Kg	₽	11/10/21 18:34	11/13/21 16:40	1
Perfluorooctanoic acid (PFOA)	0.10	J	0.23	0.061	ug/Kg	₽	11/10/21 18:34	11/13/21 16:40	1
Perfluorononanoic acid (PFNA)	ND		0.23	0.025	ug/Kg	₽	11/10/21 18:34	11/13/21 16:40	1
Perfluorodecanoic acid (PFDA)	ND		0.23	0.055	ug/Kg	₩	11/10/21 18:34	11/13/21 16:40	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.048	ug/Kg	₩	11/10/21 18:34	11/13/21 16:40	1
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.034	ug/Kg	₽	11/10/21 18:34	11/13/21 16:40	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.024	ug/Kg	₽	11/10/21 18:34	11/13/21 16:40	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.042	ug/Kg	₩	11/10/21 18:34	11/13/21 16:40	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.043	ug/Kg	₽	11/10/21 18:34	11/13/21 16:40	1
Perfluorohexanesulfonic acid	0.40		0.23	0.033	ug/Kg	₩	11/10/21 18:34	11/13/21 16:40	1
(PFHxS) Perfluorooctanesulfonic acid	2.4		0.23	0.049	ug/Kg	₩	11/10/21 18:34	11/13/21 16:40	1
(PFOS)			5.25		-99				•
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.23	0.026	ug/Kg	₽	11/10/21 18:34	11/13/21 16:40	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.23	0.055	ug/Kg	≎	11/10/21 18:34	11/13/21 16:40	1
9-Chlorohexadecafluoro-3-oxanonan	ND		0.23	0.040	ug/Kg	₩	11/10/21 18:34	11/13/21 16:40	1
e-1-sulfonic acid Hexafluoropropylene Oxide Dimer	ND		0.23	0.047	ug/Kg	₽	11/10/21 18:34	11/13/21 16:40	1
Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaundecan	ND		0.23	0.035	ug/Kg	₩	11/10/21 18:34	11/13/21 16:40	1
e-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid	ND		0.23	0.045	ug/Kg	ά	11/10/21 18:34	11/13/21 16:40	1
(ADONA)					3 3				
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	115		50 - 150				11/10/21 18:34	11/13/21 16:40	1
13C4 PFHpA	118		50 - 150				11/10/21 18:34	11/13/21 16:40	1
13C4 PFOA	109		50 - 150				11/10/21 18:34	11/13/21 16:40	1
13C5 PFNA	109		50 - 150				11/10/21 18:34	11/13/21 16:40	1
13C2 PFDA	112		50 - 150				11/10/21 18:34	11/13/21 16:40	1
13C2 PFUnA	115		50 - 150				11/10/21 18:34	11/13/21 16:40	1
13C2 PFDoA	109		50 - 150				11/10/21 18:34	11/13/21 16:40	1
13C2 PFTeDA	109		50 - 150				11/10/21 18:34	11/13/21 16:40	1
13C3 PFBS	123		50 - 150				11/10/21 18:34	11/13/21 16:40	1
1802 PFHxS	107		50 - 150				11/10/21 18:34	11/13/21 16:40	1
13C4 PFOS	109		50 - 150				11/10/21 18:34	11/13/21 16:40	1
d3-NMeFOSAA	117		50 - 150				11/10/21 18:34	11/13/21 16:40	1
d5-NEtFOSAA	120		50 - 150				11/10/21 18:34	11/13/21 16:40	1
13C3 HFPO-DA	108		50 - 150				11/10/21 18:34	11/13/21 16:40	1
General Chemistry									
Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	18.3		0.1	0.1	%			11/05/21 14:24	1
				~ .	0.1			44/05/04 44 04	

Eurofins TestAmerica, Sacramento

11/05/21 14:24

0.1

0.1 %

81.7

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**O** 

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10

12

14

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Analyte

**Percent Moisture** 

**Percent Solids** 

Client Sample ID: 21GST-SB014-01 Lab Sample ID: 320-81254-99

Date Collected: 10/31/21 15:00 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 88.7

Perfluorohexanolic acid (PFHA)	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Perfluorooctanoic acid (PFOA)   0.12	Perfluorohexanoic acid (PFHxA)	0.038	J	0.21	0.032	ug/Kg	<del>-</del>	11/10/21 18:34	11/13/21 16:51	
Perfluoronanoic acid (PFNA)   0.28   0.21   0.023   ug/Kg   0   11/10/21 18:34   11/13/21 16:51	Perfluoroheptanoic acid (PFHpA)	0.058	J	0.21	0.039	ug/Kg	☼	11/10/21 18:34	11/13/21 16:51	
Perfluorodecanoic acid (PFDA)	Perfluorooctanoic acid (PFOA)	0.12	J	0.21	0.055	ug/Kg	☼	11/10/21 18:34	11/13/21 16:51	
Perfuncion	Perfluorononanoic acid (PFNA)	0.29		0.21	0.023	ug/Kg	₩	11/10/21 18:34	11/13/21 16:51	
Perfluorodecanoic acid (PFDoA) Perfluorotridecanoic acid (PFTriA) ND 0.21 0.031 ug/Kg 11/10/21 18:34 11/13/21 16:51 Perfluorotridecanoic acid (PFTriA) ND 0.21 0.032 ug/Kg 11/10/21 18:34 11/13/21 16:51 Perfluorobutanesulfonic acid (PFTeA) ND 0.21 0.038 ug/Kg 11/10/21 18:34 11/13/21 16:51 Perfluorobutanesulfonic acid (PFTeA) ND 0.21 0.039 ug/Kg 11/10/21 18:34 11/13/21 16:51 PERFLOX	Perfluorodecanoic acid (PFDA)	0.14	J	0.21	0.049	ug/Kg	☼	11/10/21 18:34	11/13/21 16:51	
Perfluorotridecanoic acid (PFTriA) ND 0.21 0.022 ug/Kg 11/10/21 18:34 11/13/21 16:51 Perfluorotetradecanoic acid (PFTeA) ND 0.21 0.038 ug/Kg 11/10/21 18:34 11/13/21 16:51 Perfluorobtranesulfonic acid (PFBS) ND 0.21 0.030 ug/Kg 0 11/10/21 18:34 11/13/21 16:51 Perfluorobtranesulfonic acid (PFBS) ND 0.21 0.030 ug/Kg 0 11/10/21 18:34 11/13/21 16:51 PFHxS) Perfluoroctanesulfonic acid 1.2 0.21 0.044 ug/Kg 0 11/10/21 18:34 11/13/21 16:51 PFDS) ND 0.21 0.044 ug/Kg 0 11/10/21 18:34 11/13/21 16:51 PFOS) ND 0.21 0.044 ug/Kg 0 11/10/21 18:34 11/13/21 16:51 PFOS) ND 0.21 0.049 ug/Kg 0 11/10/21 18:34 11/13/21 16:51 PFOS) ND 0.21 0.049 ug/Kg 0 11/10/21 18:34 11/13/21 16:51 PFOS) ND 0.21 0.049 ug/Kg 0 11/10/21 18:34 11/13/21 16:51 PFOS) ND 0.21 0.049 ug/Kg 0 11/10/21 18:34 11/13/21 16:51 PFOS ND 0		0.095	J	0.21	0.043	ug/Kg	₩	11/10/21 18:34	11/13/21 16:51	
Perfluorotetradecanoic acid (PFEA)   ND   0.21   0.038   ug/Kg   0.11/10/21 18:34   11/13/21 16:51	Perfluorododecanoic acid (PFDoA)	ND		0.21	0.031	ug/Kg	≎	11/10/21 18:34	11/13/21 16:51	
Perfluorobutanesulfonic acid (PFBS)   ND   0.21   0.039   ug/Kg   0 11/10/21 18:34   11/13/21 16:51	Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.022	ug/Kg	☼	11/10/21 18:34	11/13/21 16:51	
Perfluorobexanesulfonic acid   0.071 J   0.21   0.030 ug/Kg   0 11/10/21 18:34   11/13/21 16:51	Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.038	ug/Kg	☼	11/10/21 18:34	11/13/21 16:51	
PFHXS    Perfluoroctanesulfonic acid   1.2   0.21   0.044   ug/Kg   11/10/21 18:34   11/13/21 16:51	Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.039	ug/Kg	⊅	11/10/21 18:34	11/13/21 16:51	
Note thylperfluorooctanesulfonamidoa betic acid (NMeFOSAA) N-ethylperfluorooctanesulfonamidoac by the perfluorooctanesulfonamidoac by the		0.071	J	0.21	0.030	ug/Kg	₩	11/10/21 18:34	11/13/21 16:51	
Petric acid (NMeFOSAA)   ND   0.21   0.049   ug/Kg   11/10/21 18:34   11/13/21 16:51		1.2		0.21	0.044	ug/Kg	₩	11/10/21 18:34	11/13/21 16:51	
Second   Marco   Mar	* *	ND								
-1-sulfonic acid lexafluoropropylene Oxide Dimer (xcid (HFPO-DA)) 1-Chloroeicosafluoro-3-oxaundecan ND 0.21 0.032 ug/Kg 11/10/21 18:34 11/13/21 16:51 -1-sulfonic acid (HFPO-DA) 1-Chloroeicosafluoro-3-oxaundecan ND 0.21 0.040 ug/Kg 11/10/21 18:34 11/13/21 16:51 -1-sulfonic acid (MD 0.21 0.040 ug/Kg 11/10/21 18:34 11/13/21 16:51 -1-sulfonic acid (MD 0.21 0.040 ug/Kg 11/10/21 18:34 11/13/21 16:51 -1-sulfonic acid (MD 0.21 0.040 ug/Kg 11/10/21 18:34 11/13/21 16:51 -1-sulfonic acid (MD 0.21 0.040 ug/Kg 11/10/21 18:34 11/13/21 16:51 -1-sulfonic acid (MD 0.21 0.040 ug/Kg 11/10/21 18:34 11/13/21 16:51 -1-sulfonic acid (MD 0.21 0.040 ug/Kg 11/10/21 18:34 11/13/21 16:51 -1-sulfonic acid (MD 0.21 0.040 ug/Kg 11/10/21 18:34 11/13/21 16:51 -1-sulfonic acid (MD 0.21 0.040 ug/Kg 11/10/21 18:34 11/13/21 16:51 -1-sulfonic acid (MD 0.21 0.040 ug/Kg 11/10/21 18:34 11/13/21 16:51 -1-sulfonic acid (MD 0.21 0.040 ug/Kg 11/10/21 18:34 11/13/21 16:51 -1-sulfonic acid (MD 0.21 0.040 ug/Kg 11/10/21 18:34 11/13/21 16:51 -1-sulfonic acid (MD 0.21 0.040 ug/Kg 11/10/21 18:34 11/13/21 16:51 -1-sulfonic acid (MD 0.21 0.040 ug/Kg 11/10/21 18:34 11/13/21 16:51 -1-sulfonic acid (MD 0.21 0.040 ug/Kg 11/10/21 18:34 11/13/21 16:51 -1-sulfonic acid (MD 0.21 0.040 ug/Kg 11/10/21 18:34 11/13/21 16:51 -1-sulfonic acid (MD 0.21 0.040 ug/Kg 11/10/21 18:34 11/13/21 16:51 -1-sulfonic acid (MD 0.21 0.040 ug/Kg 11/10/21 18:34 11/13/21 16:51 -1-sulfonic acid (MD 0.21 0.040 ug/Kg 11/10/21 18:34 11/13/21 16:51 -1-sulfonic acid (MD 0.21 0.040 ug/Kg 11/10/21 18:34 11/13/21 16:51 -1-sulfonic acid (MD 0.21 0.040 ug/Kg 11/10/21 18:34 11/13/21 16:51 -1-sulfonic acid (MD 0.21 0.040 ug/Kg 11/10/21 18:34 11/13/21 16:51 -1-sulfonic acid (MD 0.21 0.040 ug/Kg 11/10/21 18:34 11/13/21 16:51 -1-sulfonic acid (MD 0.21 0.040 ug/Kg 11/10/21 18:34 11/13/21 16:51 -1-sulfonic acid (MD 0.21 0.040 ug/Kg 11/10/21 18:34 11/13/21 16:51 -1-sulfonic acid (MD 0.21 0.040 ug/Kg 11/10/21 18:34 11/13/21 16:51 -1-sulfonic acid (MD 0.21 0.040 ug/Kg 11/10/21 18:34 11/13/21 16:51 -1-sulfonic acid	, .									
Acid (HFPO-DA)   1-Chloreicosafluoro-3-oxaundecan   ND   0.21   0.032   ug/Kg   11/10/21   18:34   11/13/21   16:51	-1-sulfonic acid	ND								
-1-sulfonic acid (1,8-Dioxa-3H-perfluorononanoic acid (1,1,10/21 18:34 11/13/21 16:51 13/304 PFPDA 11,10/21 18:34 11/13/21 16:51 13/304 PFPDA 11,10/21 18:34 11/13/21 16:51 13/304 PFDA 11,10/21 18:3	Acid (HFPO-DA)						₩			
ADONA)  Sotope Dilution  Sotope Dilution  MRecovery  Qualifier  Limits  Prepared  Analyzed  Dil 1  30C2 PFHxA  119  50 - 150  11/10/21 18:34  11/13/21 16:51  30C4 PFHpA  117  50 - 150  11/10/21 18:34  11/13/21 16:51  30C5 PFNA  117  50 - 150  11/10/21 18:34  11/13/21 16:51  30C2 PFDA  119  50 - 150  11/10/21 18:34  11/13/21 16:51  30C2 PFDA  119  50 - 150  11/10/21 18:34  11/13/21 16:51  30C2 PFDA  113  50 - 150  11/10/21 18:34  11/13/21 16:51  30C2 PFDA  113  50 - 150  11/10/21 18:34  11/13/21 16:51  30C2 PFDA  110  30C2 PFDA  110  30C2 PFDA  111  30C2 PFDA  113  50 - 150  11/10/21 18:34  11/13/21 16:51  30C2 PFBS  123  50 - 150  11/10/21 18:34  11/13/21 16:51  30C2 PFHxS  110  50 - 150  11/10/21 18:34  11/13/21 16:51  30C4 PFOS  11/10/21 18:34  11/13/21 16:51  30C4 PFOS  11/10/21 18:34  11/13/21 16:51  30C4 PFOS  11/10/21 18:34  11/13/21 16:51  30C4 PFOS  11/10/21 18:34  11/13/21 16:51  30C4 PFOS  11/10/21 18:34  11/13/21 16:51  30C4 PFOS  11/10/21 18:34  11/13/21 16:51  30C4 PFOS  11/10/21 18:34  11/13/21 16:51  30C4 PFOS  11/10/21 18:34  11/13/21 16:51  30C4 PFOS  11/10/21 18:34  11/13/21 16:51  30C4 PFOS  11/10/21 18:34  11/13/21 16:51	e-1-sulfonic acid									
13C2 PFHxA 119 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFHpA 117 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOA 111 50 - 150 11/10/21 18:34 11/13/21 16:51 13C5 PFNA 117 50 - 150 11/10/21 18:34 11/13/21 16:51 13C5 PFNA 117 50 - 150 11/10/21 18:34 11/13/21 16:51 13C2 PFDA 119 50 - 150 11/10/21 18:34 11/13/21 16:51 13C2 PFUnA 123 50 - 150 11/10/21 18:34 11/13/21 16:51 13C2 PFDOA 113 50 - 150 11/10/21 18:34 11/13/21 16:51 13C2 PFEDA 116 50 - 150 11/10/21 18:34 11/13/21 16:51 13C2 PFEDA 116 50 - 150 11/10/21 18:34 11/13/21 16:51 13C3 PFBS 123 50 - 150 11/10/21 18:34 11/13/21 16:51 13C2 PFHxS 110 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOS 115 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOS 115 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOS 115 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOS 115 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOS 115 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOS 115 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOS 11/10/21 18:34 11/13/21 16:51 13C4	•	ND		0.21	0.040	ug/Kg	₩	11/10/21 18:34	11/13/21 16:51	
13C4 PFHpA 117 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOA 111 50 - 150 11/10/21 18:34 11/13/21 16:51 13C5 PFNA 117 50 - 150 11/10/21 18:34 11/13/21 16:51 13C2 PFDA 119 50 - 150 11/10/21 18:34 11/13/21 16:51 13C2 PFUnA 123 50 - 150 11/10/21 18:34 11/13/21 16:51 13C2 PFDOA 113 50 - 150 11/10/21 18:34 11/13/21 16:51 13C2 PFTeDA 116 50 - 150 11/10/21 18:34 11/13/21 16:51 13C3 PFBS 123 50 - 150 11/10/21 18:34 11/13/21 16:51 13C3 PFBS 123 50 - 150 11/10/21 18:34 11/13/21 16:51 13C3 PFBS 123 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOS 115 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOS 115 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOS 115 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOS 125 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOS 125 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOSAA 132 50 - 150 11/10/21 18	sotope Dilution	%Recovery	Qualifier	Limits						Dil F
13C4 PFOA 111 50 - 150 11/10/21 18:34 11/13/21 16:51 13C5 PFNA 117 50 - 150 11/10/21 18:34 11/13/21 16:51 13C5 PFNA 119 50 - 150 11/10/21 18:34 11/13/21 16:51 13C2 PFUnA 123 50 - 150 11/10/21 18:34 11/13/21 16:51 13C2 PFUnA 113 50 - 150 11/10/21 18:34 11/13/21 16:51 13C2 PFTeDA 116 50 - 150 11/10/21 18:34 11/13/21 16:51 13C3 PFBS 123 50 - 150 11/10/21 18:34 11/13/21 16:51 13C3 PFBS 123 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOS 115 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOS 115 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOS 115 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOS 115 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOS 115 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOSAA 132 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOSAA 132 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOSAA 132 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOSAA 132 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOSAA 132 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOSAA 132 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOSAA 132 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOSAA 132 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOSAA	13C2 PFHxA	119		50 - 150				11/10/21 18:34	11/13/21 16:51	
3C5 PFNA 117 50 - 150 11/10/21 18:34 11/13/21 16:51 3C2 PFDA 119 50 - 150 11/10/21 18:34 11/13/21 16:51 3C2 PFUnA 123 50 - 150 11/10/21 18:34 11/13/21 16:51 3C2 PFDoA 113 50 - 150 11/10/21 18:34 11/13/21 16:51 3C2 PFTeDA 116 50 - 150 11/10/21 18:34 11/13/21 16:51 3C3 PFBS 123 50 - 150 11/10/21 18:34 11/13/21 16:51 802 PFHxS 110 50 - 150 11/10/21 18:34 11/13/21 16:51 3C4 PFOS 115 50 - 150 11/10/21 18:34 11/13/21 16:51 3C4 PFOS 115 50 - 150 11/10/21 18:34 11/13/21 16:51 3C4 PFOS 115 50 - 150 11/10/21 18:34 11/13/21 16:51 3C4 PFOS 115 50 - 150 11/10/21 18:34 11/13/21 16:51 3C4 PFOS 115 50 - 150 11/10/21 18:34 11/13/21 16:51 3C4 PFOS 115 50 - 150 11/10/21 18:34 11/13/21 16:51 3C5 PFEFOSAA 132 50 - 150 11/10/21 18:34 11/13/21 16:51	3C4 PFHpA	117		50 - 150				11/10/21 18:34	11/13/21 16:51	
3C2 PFDA 119 50 - 150 11/10/21 18:34 11/13/21 16:51 3C2 PFUnA 123 50 - 150 11/10/21 18:34 11/13/21 16:51 3C2 PFDoA 113 50 - 150 11/10/21 18:34 11/13/21 16:51 3C2 PFTeDA 116 50 - 150 11/10/21 18:34 11/13/21 16:51 3C3 PFBS 123 50 - 150 11/10/21 18:34 11/13/21 16:51 8O2 PFHxS 110 50 - 150 11/10/21 18:34 11/13/21 16:51 3C4 PFOS 115 50 - 150 11/10/21 18:34 11/13/21 16:51 3C4 PFOS 115 50 - 150 11/10/21 18:34 11/13/21 16:51 3C4 PFOS 125 50 - 150 11/10/21 18:34 11/13/21 16:51 3C4 PFOSAA 125 50 - 150 11/10/21 18:34 11/13/21 16:51 3C5 PFEFOSAA 132 50 - 150 11/10/21 18:34 11/13/21 16:51	3C4 PFOA	111		50 - 150				11/10/21 18:34	11/13/21 16:51	
13C2 PFUnA 123 50 - 150 11/10/21 18:34 11/13/21 16:51 13C2 PFDoA 113 50 - 150 11/10/21 18:34 11/13/21 16:51 13C2 PFTeDA 116 50 - 150 11/10/21 18:34 11/13/21 16:51 13C3 PFBS 123 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFDS 110 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOS 115 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOS 125 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOSAA 125 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOSAA 132 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOSAA 132 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOSAA 132 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOSAA 132 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOSAA 132 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOSAA 132 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOSAA 132 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOSAA	3C5 PFNA	117		50 - 150				11/10/21 18:34	11/13/21 16:51	
13C2 PFDoA 113 50 - 150 11/10/21 18:34 11/13/21 16:51 13C2 PFTeDA 116 50 - 150 11/10/21 18:34 11/13/21 16:51 13C3 PFBS 123 50 - 150 11/10/21 18:34 11/13/21 16:51 18:02 PFHxS 110 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOS 115 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOS 125 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOSAA 125 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOSAA 132 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOSAA 132 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOSAA 132 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOSAA 132 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOSAA 132 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOSAA	13C2 PFDA	119		50 - 150				11/10/21 18:34	11/13/21 16:51	
13C2 PFTeDA 116 50 - 150 11/10/21 18:34 11/13/21 16:51 13C3 PFBS 123 50 - 150 11/10/21 18:34 11/13/21 16:51 18:02 PFHxS 110 50 - 150 11/10/21 18:34 11/13/21 16:51 13C4 PFOS 115 50 - 150 11/10/21 18:34 11/13/21 16:51 13-NMeFOSAA 125 50 - 150 11/10/21 18:34 11/13/21 16:51 15-NEtFOSAA 132 50 - 150 11/10/21 18:34 11/13/21 16:51	3C2 PFUnA	123		50 - 150				11/10/21 18:34	11/13/21 16:51	
13C3 PFBS     123     50 - 150     11/10/21 18:34     11/13/21 16:51       18O2 PFHxS     110     50 - 150     11/10/21 18:34     11/13/21 16:51       13C4 PFOS     115     50 - 150     11/10/21 18:34     11/13/21 16:51       13-NMeFOSAA     125     50 - 150     11/10/21 18:34     11/13/21 16:51       15-NEtFOSAA     132     50 - 150     11/10/21 18:34     11/13/21 16:51	3C2 PFDoA	113		50 - 150				11/10/21 18:34	11/13/21 16:51	
802 PFHxS       110       50 - 150       11/10/21 18:34 11/13/21 16:51         3C4 PFOS       115       50 - 150       11/10/21 18:34 11/13/21 16:51         I3-NMeFOSAA       125       50 - 150       11/10/21 18:34 11/13/21 16:51         15-NEtFOSAA       132       50 - 150       11/10/21 18:34 11/13/21 16:51	3C2 PFTeDA	116		50 - 150				11/10/21 18:34	11/13/21 16:51	
3C4 PFOS     115     50 - 150     11/10/21 18:34 11/13/21 16:51       3-NMeFOSAA     125     50 - 150     11/10/21 18:34 11/13/21 16:51       5-NEtFOSAA     132     50 - 150     11/10/21 18:34 11/13/21 16:51	3C3 PFBS	123		50 - 150				11/10/21 18:34	11/13/21 16:51	
3C4 PFOS 115 50 - 150 11/10/21 18:34 11/13/21 16:51 13-NMeFOSAA 125 50 - 150 11/10/21 18:34 11/13/21 16:51 15-NEtFOSAA 132 50 - 150 11/10/21 18:34 11/13/21 16:51	8O2 PFHxS	110		50 - 150				11/10/21 18:34	11/13/21 16:51	
15-NEtFOSAA 132 50 - 150 11/10/21 18:34 11/13/21 16:51		115		50 - 150				11/10/21 18:34	11/13/21 16:51	
	13-NMeFOSAA	125		50 - 150				11/10/21 18:34	11/13/21 16:51	

Analyzed

11/05/21 14:24

11/05/21 14:24

Prepared

RL

0.1

0.1

MDL Unit

0.1 %

0.1 %

Result Qualifier

11.3

88.7

Dil Fac

Client: Shannon & Wilson, Inc Job ID: 320-81254-1 Project/Site: SC Soils#3

Client Sample ID: 21GST-SB014-02

**Percent Solids** 

Lab Sample ID: 320-81254-100 Date Collected: 10/31/21 15:05 **Matrix: Solid** 

Date Received: 11/03/21 14:01 Percent Solids: 83.5

Analyte	Result Qual	ifier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	0.12 J	0.21	0.033	ug/Kg	<u></u>	11/10/21 18:34	11/13/21 17:01	1
Perfluoroheptanoic acid (PFHpA)	ND	0.21	0.041	ug/Kg	☼	11/10/21 18:34	11/13/21 17:01	1
Perfluorooctanoic acid (PFOA)	ND	0.21	0.057	ug/Kg	≎	11/10/21 18:34	11/13/21 17:01	1
Perfluorononanoic acid (PFNA)	ND	0.21	0.024	ug/Kg	₽	11/10/21 18:34	11/13/21 17:01	1
Perfluorodecanoic acid (PFDA)	ND	0.21	0.051	ug/Kg	₽	11/10/21 18:34	11/13/21 17:01	1
Perfluoroundecanoic acid (PFUnA)	ND	0.21	0.045	ug/Kg	₩	11/10/21 18:34	11/13/21 17:01	1
Perfluorododecanoic acid (PFDoA)	ND	0.21	0.032	ug/Kg	₽	11/10/21 18:34	11/13/21 17:01	1
Perfluorotridecanoic acid (PFTriA)	ND	0.21	0.022	ug/Kg	₽	11/10/21 18:34	11/13/21 17:01	1
Perfluorotetradecanoic acid (PFTeA)	ND	0.21	0.040	ug/Kg	☼	11/10/21 18:34	11/13/21 17:01	1
Perfluorobutanesulfonic acid (PFBS)	ND	0.21	0.041	ug/Kg	☼	11/10/21 18:34	11/13/21 17:01	1
Perfluorohexanesulfonic acid (PFHxS)	ND	0.21	0.031	ug/Kg	☼	11/10/21 18:34	11/13/21 17:01	1
Perfluorooctanesulfonic acid (PFOS)	0.053 J	0.21	0.046	ug/Kg	₩	11/10/21 18:34	11/13/21 17:01	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND	0.21	0.025	ug/Kg	₩	11/10/21 18:34	11/13/21 17:01	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND	0.21	0.051	ug/Kg	₩	11/10/21 18:34	11/13/21 17:01	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND	0.21	0.037	ug/Kg		11/10/21 18:34	11/13/21 17:01	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	0.21		ug/Kg	₩	11/10/21 18:34	11/13/21 17:01	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND	0.21		ug/Kg		11/10/21 18:34		1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.21	0.042	ug/Kg	☼	11/10/21 18:34	11/13/21 17:01	1
Isotope Dilution	%Recovery Quar	lifier Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	104	50 - 150				11/10/21 18:34	11/13/21 17:01	1
13C4 PFHpA	97	50 - 150				11/10/21 18:34	11/13/21 17:01	1
13C4 PFOA	99	50 - 150				11/10/21 18:34	11/13/21 17:01	1
13C5 PFNA	99	50 - 150				11/10/21 18:34	11/13/21 17:01	1
13C2 PFDA	100	50 - 150				11/10/21 18:34	11/13/21 17:01	1
13C2 PFUnA	100	50 - 150				11/10/21 18:34	11/13/21 17:01	1
13C2 PFDoA	97	50 - 150				11/10/21 18:34	11/13/21 17:01	1
13C2 PFTeDA	99	50 - 150				11/10/21 18:34	11/13/21 17:01	1
13C3 PFBS	119	50 - 150				11/10/21 18:34	11/13/21 17:01	1
18O2 PFHxS	94	50 - 150				11/10/21 18:34	11/13/21 17:01	1
13C4 PFOS	96	50 - 150				11/10/21 18:34	11/13/21 17:01	1
d3-NMeFOSAA	102	50 - 150				11/10/21 18:34	11/13/21 17:01	1
d5-NEtFOSAA	111	50 - 150				11/10/21 18:34	11/13/21 17:01	1
13C3 HFPO-DA	84	50 - 150				11/10/21 18:34	11/13/21 17:01	1
General Chemistry	р. и е	Tell		1124	_	<b>.</b>	A	D.: -
Analyte	Result Qual			Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	16.5	0.1	0.1	%			11/05/21 14:24	1

Eurofins TestAmerica, Sacramento

11/17/2021

11/05/21 14:24

0.1

83.5

0.1 %

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SB014-03

**Percent Solids** 

Lab Sample ID: 320-81254-101

Date Collected: 10/31/21 15:10 Matrix: Solid
Date Received: 11/03/21 14:01 Percent Solids: 83.0

Analyte	Result Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND	0.23	0.035	ug/Kg	<u> </u>	11/10/21 18:34	11/13/21 17:11	1
Perfluoroheptanoic acid (PFHpA)	ND	0.23	0.043	ug/Kg	☼	11/10/21 18:34	11/13/21 17:11	1
Perfluorooctanoic acid (PFOA)	ND	0.23	0.060	ug/Kg	☼	11/10/21 18:34	11/13/21 17:11	1
Perfluorononanoic acid (PFNA)	ND	0.23	0.025	ug/Kg	₩	11/10/21 18:34	11/13/21 17:11	1
Perfluorodecanoic acid (PFDA)	ND	0.23	0.054	ug/Kg	≎	11/10/21 18:34	11/13/21 17:11	1
Perfluoroundecanoic acid (PFUnA)	ND	0.23	0.047	ug/Kg	₽	11/10/21 18:34	11/13/21 17:11	1
Perfluorododecanoic acid (PFDoA)	ND	0.23	0.034	ug/Kg	₽	11/10/21 18:34	11/13/21 17:11	1
Perfluorotridecanoic acid (PFTriA)	ND	0.23	0.024	ug/Kg	₽	11/10/21 18:34	11/13/21 17:11	1
Perfluorotetradecanoic acid (PFTeA)	ND	0.23	0.042	ug/Kg	☼	11/10/21 18:34	11/13/21 17:11	1
Perfluorobutanesulfonic acid (PFBS)	ND	0.23	0.043	ug/Kg	☼	11/10/21 18:34	11/13/21 17:11	1
Perfluorohexanesulfonic acid (PFHxS)	ND	0.23	0.033	ug/Kg	☼	11/10/21 18:34	11/13/21 17:11	1
Perfluorooctanesulfonic acid (PFOS)	0.13 J	0.23	0.048	ug/Kg	₩	11/10/21 18:34	11/13/21 17:11	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND	0.23	0.026	ug/Kg	₩	11/10/21 18:34	11/13/21 17:11	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND	0.23	0.054	ug/Kg	₩	11/10/21 18:34	11/13/21 17:11	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND	0.23	0.039	ug/Kg	₩	11/10/21 18:34	11/13/21 17:11	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	0.23	0.046	ug/Kg	₩	11/10/21 18:34	11/13/21 17:11	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND	0.23		ug/Kg	₩	11/10/21 18:34	11/13/21 17:11	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.23	0.044	ug/Kg	₩	11/10/21 18:34	11/13/21 17:11	1
Isotope Dilution	%Recovery Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	111	50 - 150				11/10/21 18:34	11/13/21 17:11	1
13C4 PFHpA	104	50 - 150				11/10/21 18:34	11/13/21 17:11	1
13C4 PFOA	101	50 - 150				11/10/21 18:34	11/13/21 17:11	1
13C5 PFNA	101	50 - 150				11/10/21 18:34	11/13/21 17:11	1
13C2 PFDA	103	50 - 150				11/10/21 18:34	11/13/21 17:11	1
13C2 PFUnA	108	50 - 150				11/10/21 18:34	11/13/21 17:11	1
13C2 PFDoA	99	50 - 150				11/10/21 18:34	11/13/21 17:11	1
13C2 PFTeDA	97	50 <sub>-</sub> 150				11/10/21 18:34	11/13/21 17:11	1
13C3 PFBS	108	50 <sub>-</sub> 150				11/10/21 18:34	11/13/21 17:11	1
18O2 PFHxS	94	50 - 150				11/10/21 18:34	11/13/21 17:11	1
13C4 PFOS	101	50 - 150				11/10/21 18:34	11/13/21 17:11	1
d3-NMeFOSAA	104	50 <sub>-</sub> 150				11/10/21 18:34	11/13/21 17:11	1
d5-NEtFOSAA	106	50 - 150				11/10/21 18:34	11/13/21 17:11	1
13C3 HFPO-DA	90	50 - 150				11/10/21 18:34	11/13/21 17:11	1
General Chemistry	Break 6 85		,	1124	_	<b>.</b>	A	D.: -
Analyte	Result Qualifier	RL _		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	17.0	0.1	0.1	%			11/05/21 14:24	1

Eurofins TestAmerica, Sacramento

11/17/2021

11/05/21 14:24

0.1

83.0

0.1 %

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-SS-032 Lab Sample ID: 320-81254-102

Date Collected: 11/01/21 09:48 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 93.9

Method: EPA 537(Mod) - PFAS Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.21	0.032	ug/Kg	— <del>-</del>	11/10/21 18:34	11/13/21 17:22	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21		ug/Kg	₽	11/10/21 18:34	11/13/21 17:22	1
Perfluorooctanoic acid (PFOA)	ND		0.21		ug/Kg	₽	11/10/21 18:34	11/13/21 17:22	1
Perfluorononanoic acid (PFNA)	ND		0.21		ug/Kg		11/10/21 18:34	11/13/21 17:22	1
Perfluorodecanoic acid (PFDA)	ND		0.21		ug/Kg	₽	11/10/21 18:34	11/13/21 17:22	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21		ug/Kg	₽	11/10/21 18:34	11/13/21 17:22	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.031	ug/Kg	₩	11/10/21 18:34	11/13/21 17:22	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21		ug/Kg	₽	11/10/21 18:34	11/13/21 17:22	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21		ug/Kg	₩	11/10/21 18:34	11/13/21 17:22	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21		ug/Kg			11/13/21 17:22	1
Perfluorohexanesulfonic acid (PFHxS)	0.040	J	0.21		ug/Kg	₩	11/10/21 18:34	11/13/21 17:22	1
Perfluorooctanesulfonic acid (PFOS)	0.64		0.21	0.045	ug/Kg	₩	11/10/21 18:34	11/13/21 17:22	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	₩	11/10/21 18:34	11/13/21 17:22	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.21	0.050	ug/Kg	₩	11/10/21 18:34	11/13/21 17:22	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.21	0.036	ug/Kg	₽	11/10/21 18:34	11/13/21 17:22	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.043	ug/Kg	₽	11/10/21 18:34	11/13/21 17:22	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.21	0.032	ug/Kg	≎	11/10/21 18:34	11/13/21 17:22	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.041	ug/Kg	₩	11/10/21 18:34	11/13/21 17:22	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	113		50 - 150				11/10/21 18:34	11/13/21 17:22	1
13C4 PFHpA	112		50 - 150				11/10/21 18:34	11/13/21 17:22	1
13C4 PFOA	106		50 <sub>-</sub> 150				11/10/21 18:34	11/13/21 17:22	1
13C5 PFNA	110		50 - 150				11/10/21 18:34	11/13/21 17:22	1
13C2 PFDA	112		50 - 150				11/10/21 18:34	11/13/21 17:22	1
13C2 PFUnA	118		50 - 150				11/10/21 18:34	11/13/21 17:22	1
13C2 PFDoA	113		50 - 150				11/10/21 18:34	11/13/21 17:22	1
13C2 PFTeDA	105		50 <sub>-</sub> 150				11/10/21 18:34	11/13/21 17:22	1
13C3 PFBS	113		50 <sub>-</sub> 150				11/10/21 18:34	11/13/21 17:22	1
1802 PFHxS	104		50 - 150				11/10/21 18:34	11/13/21 17:22	1
13C4 PFOS	105		50 <sub>-</sub> 150				11/10/21 18:34	11/13/21 17:22	1
d3-NMeFOSAA	119		50 - 150					11/13/21 17:22	1
d5-NEtFOSAA	126		50 - 150					11/13/21 17:22	1
13C3 HFPO-DA	101		50 - 150					11/13/21 17:22	1
General Chemistry							_		
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	6.1		0.1	0.1				11/05/21 14:24	1
Percent Solids	93.9		0.1	0.1	0/			11/05/21 14:24	1

Eurofins TestAmerica, Sacramento

Client: Shannon & Wilson, Inc Job ID: 320-81254-1 Project/Site: SC Soils#3

Client Sample ID: 21GST-SS-033

Lab Sample ID: 320-81254-103

Date Collected: 11/01/21 09:56 Date Received: 11/03/21 14:01

**Matrix: Solid** Percent Solids: 95.4

Method: EPA 537(Mod) - PFAS Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND	<del>Qualitioi</del>	0.20		ug/Kg	— <del>-</del>	<u>-</u>	11/13/21 17:32	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20		ug/Kg			11/13/21 17:32	1
Perfluorooctanoic acid (PFOA)	ND		0.20		ug/Kg	₩		11/13/21 17:32	1
Perfluorononanoic acid (PFNA)	ND		0.20		ug/Kg			11/13/21 17:32	1
Perfluorodecanoic acid (PFDA)	ND		0.20		ug/Kg	₩		11/13/21 17:32	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20		ug/Kg	₩		11/13/21 17:32	1
Perfluorododecanoic acid (PFDoA)	ND		0.20		ug/Kg			11/13/21 17:32	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20		ug/Kg	₩		11/13/21 17:32	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20		ug/Kg	<b>#</b>		11/13/21 17:32	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20		ug/Kg			11/13/21 17:32	1
Perfluorohexanesulfonic acid (PFHxS)	0.049	J	0.20		ug/Kg	₽		11/13/21 17:32	1
Perfluorooctanesulfonic acid (PFOS)	0.71		0.20	0.042	ug/Kg	☼	11/10/21 18:34	11/13/21 17:32	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.20		ug/Kg			11/13/21 17:32	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.20		ug/Kg	₩		11/13/21 17:32	1
9-Chlorohexadecafluoro-3-oxanonan	ND		0.20	0.034	ug/Kg	₩	11/10/21 18:34	11/13/21 17:32	1
e-1-sulfonic acid Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.20	0.040	ug/Kg	ಘ	11/10/21 18:34	11/13/21 17:32	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.20	0.030	ug/Kg	₩	11/10/21 18:34	11/13/21 17:32	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.038	ug/Kg	☼	11/10/21 18:34	11/13/21 17:32	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	94		50 - 150				11/10/21 18:34	11/13/21 17:32	1
13C4 PFHpA	92		50 - 150				11/10/21 18:34	11/13/21 17:32	1
13C4 PFOA	86		50 - 150				11/10/21 18:34	11/13/21 17:32	1
13C5 PFNA	89		50 - 150				11/10/21 18:34	11/13/21 17:32	1
13C2 PFDA	93		50 - 150				11/10/21 18:34	11/13/21 17:32	1
13C2 PFUnA	93		50 - 150				11/10/21 18:34	11/13/21 17:32	1
13C2 PFDoA	86		50 - 150				11/10/21 18:34	11/13/21 17:32	1
13C2 PFTeDA	84		50 - 150				11/10/21 18:34	11/13/21 17:32	1
13C3 PFBS	98		50 - 150				11/10/21 18:34	11/13/21 17:32	1
1802 PFHxS	83		50 - 150				11/10/21 18:34	11/13/21 17:32	1
13C4 PFOS	92		50 - 150				11/10/21 18:34	11/13/21 17:32	1
d3-NMeFOSAA	98		50 - 150				11/10/21 18:34	11/13/21 17:32	1
d5-NEtFOSAA	100		50 - 150				11/10/21 18:34	11/13/21 17:32	1
13C3 HFPO-DA	76		50 - 150				11/10/21 18:34	11/13/21 17:32	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Percent Moisture	4.6		0.1	0.1	%			11/05/21 14:24	1
Percent Solids	95.4		0.1	0.1	0/			11/05/21 14:24	1

Client: Shannon & Wilson, Inc Job ID: 320-81254-1 Project/Site: SC Soils#3

Client Sample ID: 21GST-SS-034

**Percent Solids** 

Lab Sample ID: 320-81254-104 Date Collected: 11/01/21 09:59 **Matrix: Solid** 

Date Received: 11/03/21 14:01 Percent Solids: 94.7

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Perfluorohexanoic acid (PFHxA)	ND	0.20	0.030	ug/Kg	<u></u>	11/10/21 18:34	11/13/21 17:43	
Perfluoroheptanoic acid (PFHpA)	ND	0.20	0.037	ug/Kg	₩	11/10/21 18:34	11/13/21 17:43	
Perfluorooctanoic acid (PFOA)	ND	0.20	0.052	ug/Kg	₩	11/10/21 18:34	11/13/21 17:43	
Perfluorononanoic acid (PFNA)	ND	0.20	0.022	ug/Kg	☼	11/10/21 18:34	11/13/21 17:43	
Perfluorodecanoic acid (PFDA)	ND	0.20	0.047	ug/Kg	₩	11/10/21 18:34	11/13/21 17:43	
Perfluoroundecanoic acid (PFUnA)	ND	0.20	0.041	ug/Kg	₩	11/10/21 18:34	11/13/21 17:43	
Perfluorododecanoic acid (PFDoA)	ND	0.20	0.030	ug/Kg	₩	11/10/21 18:34	11/13/21 17:43	
Perfluorotridecanoic acid (PFTriA)	ND	0.20	0.021	ug/Kg	₩	11/10/21 18:34	11/13/21 17:43	
Perfluorotetradecanoic acid (PFTeA)	ND	0.20	0.036	ug/Kg	₩	11/10/21 18:34	11/13/21 17:43	
Perfluorobutanesulfonic acid (PFBS)	ND	0.20	0.037	ug/Kg	₩	11/10/21 18:34	11/13/21 17:43	
Perfluorohexanesulfonic acid (PFHxS)	ND	0.20	0.029	ug/Kg	₩	11/10/21 18:34	11/13/21 17:43	
Perfluorooctanesulfonic acid (PFOS)	0.063 J	0.20	0.042	ug/Kg	₩	11/10/21 18:34	11/13/21 17:43	•
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND	0.20	0.023	ug/Kg	☼	11/10/21 18:34	11/13/21 17:43	
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND	0.20	0.047	ug/Kg	₩	11/10/21 18:34	11/13/21 17:43	•
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND	0.20		ug/Kg	₩	11/10/21 18:34	11/13/21 17:43	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	0.20		ug/Kg	₩	11/10/21 18:34		•
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND	0.20		ug/Kg	₩		11/13/21 17:43	•
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.20	0.038	ug/Kg	₩	11/10/21 18:34	11/13/21 17:43	•
Isotope Dilution	%Recovery Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	111	50 - 150				11/10/21 18:34	11/13/21 17:43	
13C4 PFHpA	113	50 - 150				11/10/21 18:34	11/13/21 17:43	
13C4 PFOA	103	50 - 150				11/10/21 18:34	11/13/21 17:43	
13C5 PFNA	100	50 - 150				11/10/21 18:34	11/13/21 17:43	
13C2 PFDA	107	50 - 150				11/10/21 18:34	11/13/21 17:43	
13C2 PFUnA	102	50 - 150				11/10/21 18:34	11/13/21 17:43	
13C2 PFDoA	100	50 - 150				11/10/21 18:34	11/13/21 17:43	
13C2 PFTeDA	103	50 - 150				11/10/21 18:34	11/13/21 17:43	
13C3 PFBS	115	50 - 150				11/10/21 18:34	11/13/21 17:43	
1802 PFHxS	92	50 - 150				11/10/21 18:34	11/13/21 17:43	
13C4 PFOS	99	50 - 150				11/10/21 18:34	11/13/21 17:43	
d3-NMeFOSAA	104	50 <sub>-</sub> 150				11/10/21 18:34	11/13/21 17:43	
d5-NEtFOSAA	106	50 - 150					11/13/21 17:43	
13C3 HFPO-DA	95	50 - 150				11/10/21 18:34	11/13/21 17:43	
General Chemistry					_	_		
Analyte	Result Qualifier	RL _		Unit	D	Prepared	Analyzed	Dil Fa
Percent Moisture	5.3	0.1	0.1	0/2			11/05/21 14:24	•

0.1

94.7

0.1 %

11/05/21 14:24

Client: Shannon & Wilson, Inc Job ID: 320-81254-1 Project/Site: SC Soils#3

Client Sample ID: 21GST-SS-004

Lab Sample ID: 320-81254-105 Date Collected: 11/01/21 10:16 **Matrix: Solid** 

Date Received: 11/03/21 14:01 Percent Solids: 89.2

Method: EPA 537(Mod) - PFAS Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.21	0.033	ug/Kg	— <u></u>	11/10/21 18:34	11/13/21 17:53	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.040	ug/Kg	₽	11/10/21 18:34	11/13/21 17:53	1
Perfluorooctanoic acid (PFOA)	0.16	J	0.21		ug/Kg	₽	11/10/21 18:34	11/13/21 17:53	1
Perfluorononanoic acid (PFNA)	0.026	J	0.21		ug/Kg		11/10/21 18:34	11/13/21 17:53	1
Perfluorodecanoic acid (PFDA)	0.066		0.21		ug/Kg	₩	11/10/21 18:34	11/13/21 17:53	1
Perfluoroundecanoic acid	0.065		0.21		ug/Kg	₩	11/10/21 18:34	11/13/21 17:53	1
(PFUnA)					0 0				
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.032	ug/Kg	₩	11/10/21 18:34	11/13/21 17:53	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.022	ug/Kg	☼	11/10/21 18:34	11/13/21 17:53	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.039	ug/Kg	₽	11/10/21 18:34	11/13/21 17:53	1
Perfluorobutanesulfonic acid (PFBS)	0.17	J	0.21	0.040	ug/Kg	₩	11/10/21 18:34	11/13/21 17:53	1
Perfluorohexanesulfonic acid (PFHxS)	1.3		0.21	0.031	ug/Kg	₽	11/10/21 18:34	11/13/21 17:53	1
Perfluorooctanesulfonic acid (PFOS)	11		0.21	0.046	ug/Kg	₩	11/10/21 18:34	11/13/21 17:53	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	₩	11/10/21 18:34	11/13/21 17:53	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.21	0.051	ug/Kg	₩	11/10/21 18:34	11/13/21 17:53	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.21	0.037	ug/Kg	₽	11/10/21 18:34	11/13/21 17:53	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.044	ug/Kg	₽	11/10/21 18:34	11/13/21 17:53	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.21	0.033	ug/Kg	₩	11/10/21 18:34	11/13/21 17:53	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.041	ug/Kg	₩	11/10/21 18:34	11/13/21 17:53	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	80		50 - 150				11/10/21 18:34	11/13/21 17:53	1
13C4 PFHpA	87		50 - 150				11/10/21 18:34	11/13/21 17:53	1
13C4 PFOA	87		50 - 150				11/10/21 18:34	11/13/21 17:53	1
13C5 PFNA	88		50 - 150				11/10/21 18:34	11/13/21 17:53	1
13C2 PFDA	95		50 - 150				11/10/21 18:34	11/13/21 17:53	1
13C2 PFUnA	87		50 - 150				11/10/21 18:34	11/13/21 17:53	1
13C2 PFDoA	77		50 - 150				11/10/21 18:34	11/13/21 17:53	1
13C2 PFTeDA	71		50 <sub>-</sub> 150				11/10/21 18:34	11/13/21 17:53	1
13C3 PFBS	100		50 <sub>-</sub> 150				11/10/21 18:34	11/13/21 17:53	1
1802 PFHxS	82		50 - 150				11/10/21 18:34	11/13/21 17:53	1
13C4 PFOS	115		50 <sub>-</sub> 150					11/13/21 17:53	1
d3-NMeFOSAA	80		50 - 150					11/13/21 17:53	1
d5-NEtFOSAA	85		50 <sub>-</sub> 150					11/13/21 17:53	1
13C3 HFPO-DA	78		50 - 150				11/10/21 18:34	11/13/21 17:53	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	10.8		0.1	0.1	%			11/05/21 14:24	1
Percent Solids	89.2		0.1	0.1	%			11/05/21 14:24	1

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

**Percent Moisture** 

**Percent Solids** 

Client Sample ID: 21GST-SS-003 Lab Sample ID: 320-81254-106

Date Collected: 11/01/21 10:19

Matrix: Solid
Date Received: 11/03/21 14:01

Matrix: Solid
Percent Solids: 87.8

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	0.094	J	0.22	0.034	ug/Kg	<u></u>	11/10/21 18:34	11/13/21 18:04	1
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.041	ug/Kg	≎	11/10/21 18:34	11/13/21 18:04	1
Perfluorooctanoic acid (PFOA)	0.076	J	0.22	0.058	ug/Kg	₽	11/10/21 18:34	11/13/21 18:04	1
Perfluorononanoic acid (PFNA)	0.027	J	0.22	0.024	ug/Kg	₽	11/10/21 18:34	11/13/21 18:04	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.052	ug/Kg	₽	11/10/21 18:34	11/13/21 18:04	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.046	ug/Kg	₩	11/10/21 18:34	11/13/21 18:04	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.033	ug/Kg	₩	11/10/21 18:34	11/13/21 18:04	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.023	ug/Kg	₩	11/10/21 18:34	11/13/21 18:04	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.040	ug/Kg	₩	11/10/21 18:34	11/13/21 18:04	1
Perfluorobutanesulfonic acid (PFBS)	0.099	J	0.22	0.041	ug/Kg	₽	11/10/21 18:34	11/13/21 18:04	1
Perfluorohexanesulfonic acid (PFHxS)	0.97		0.22	0.032	ug/Kg	₩	11/10/21 18:34	11/13/21 18:04	1
Perfluorooctanesulfonic acid (PFOS)	9.8		0.22		ug/Kg			11/13/21 18:04	
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.22	0.025	ug/Kg	₩	11/10/21 18:34	11/13/21 18:04	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.22		ug/Kg			11/13/21 18:04	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.22		ug/Kg			11/13/21 18:04	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22		ug/Kg			11/13/21 18:04	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.22		ug/Kg	☼	11/10/21 18:34	11/13/21 18:04	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.042	ug/Kg	☼	11/10/21 18:34	11/13/21 18:04	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	93		50 - 150				11/10/21 18:34	11/13/21 18:04	1
13C4 PFHpA	95		50 - 150				11/10/21 18:34	11/13/21 18:04	1
13C4 PFOA	103		50 - 150				11/10/21 18:34	11/13/21 18:04	1
13C5 PFNA	107		50 - 150				11/10/21 18:34	11/13/21 18:04	1
13C2 PFDA	108		50 - 150				11/10/21 18:34	11/13/21 18:04	1
13C2 PFUnA	103		50 - 150				11/10/21 18:34	11/13/21 18:04	1
13C2 PFDoA	90		50 - 150				11/10/21 18:34	11/13/21 18:04	1
13C2 PFTeDA	72		50 - 150				11/10/21 18:34	11/13/21 18:04	1
13C3 PFBS	117		50 - 150				11/10/21 18:34	11/13/21 18:04	1
1802 PFHxS	97		50 - 150				11/10/21 18:34	11/13/21 18:04	1
13C4 PFOS	111		50 - 150					11/13/21 18:04	1
d3-NMeFOSAA	82		50 - 150				11/10/21 18:34	11/13/21 18:04	1
d5-NEtFOSAA	99		50 - 150				11/10/21 18:34	11/13/21 18:04	1
13C3 HFPO-DA	83		50 - 150				11/10/21 18:34	11/13/21 18:04	1
General Chemistry		o				_			
Analyte	Result	Qualifier	RL	MDL	Unit	<u>D</u>	Prepared	Analyzed	Dil Fac

Eurofins TestAmerica, Sacramento

11/05/21 14:24

11/05/21 14:24

0.1

0.1

0.1 %

0.1 %

12.2

87.8

3

6

8

10

12

14

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Lab Sample ID: 320-81254-107

Client Sample ID: 21GST-SS-103 Date Collected: 11/01/21 10:09 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 89.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	0.094	J	0.21	0.032	ug/Kg	<u></u>	11/10/21 18:34	11/13/21 18:35	1
Perfluoroheptanoic acid (PFHpA)	0.056	J	0.21	0.040	ug/Kg	≎	11/10/21 18:34	11/13/21 18:35	1
Perfluorooctanoic acid (PFOA)	0.12	J	0.21	0.055	ug/Kg	≎	11/10/21 18:34	11/13/21 18:35	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.023	ug/Kg	₽	11/10/21 18:34	11/13/21 18:35	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.050	ug/Kg	≎	11/10/21 18:34	11/13/21 18:35	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.044	ug/Kg	₩	11/10/21 18:34	11/13/21 18:35	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.031	ug/Kg	₩	11/10/21 18:34	11/13/21 18:35	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.022	ug/Kg	₽	11/10/21 18:34	11/13/21 18:35	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.039	ug/Kg	₩	11/10/21 18:34	11/13/21 18:35	1
Perfluorobutanesulfonic acid (PFBS)	0.13	J	0.21	0.040	ug/Kg	₩	11/10/21 18:34	11/13/21 18:35	1
Perfluorohexanesulfonic acid (PFHxS)	1.1		0.21	0.030	ug/Kg	₩	11/10/21 18:34	11/13/21 18:35	1
Perfluorooctanesulfonic acid (PFOS)	9.9		0.21	0.045	ug/Kg	₩	11/10/21 18:34	11/13/21 18:35	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	₩	11/10/21 18:34	11/13/21 18:35	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.21	0.050	ug/Kg	₩	11/10/21 18:34	11/13/21 18:35	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.21	0.037	ug/Kg	₩	11/10/21 18:34	11/13/21 18:35	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.043	ug/Kg	₩	11/10/21 18:34	11/13/21 18:35	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.21	0.032	ug/Kg	₩	11/10/21 18:34	11/13/21 18:35	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.041	ug/Kg	₩	11/10/21 18:34	11/13/21 18:35	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	98		50 - 150				11/10/21 18:34	11/13/21 18:35	1
13C4 PFHpA	99		50 <sub>-</sub> 150				11/10/21 18:34	11/13/21 18:35	1

(ADOINA)					
Isotope Dilution	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	98	50 - 150	11/10/21 18:34	11/13/21 18:35	1
13C4 PFHpA	99	50 - 150	11/10/21 18:34	11/13/21 18:35	1
13C4 PFOA	97	50 - 150	11/10/21 18:34	11/13/21 18:35	1
13C5 PFNA	105	50 - 150	11/10/21 18:34	11/13/21 18:35	1
13C2 PFDA	107	50 - 150	11/10/21 18:34	11/13/21 18:35	1
13C2 PFUnA	102	50 - 150	11/10/21 18:34	11/13/21 18:35	1
13C2 PFDoA	81	50 - 150	11/10/21 18:34	11/13/21 18:35	1
13C2 PFTeDA	63	50 - 150	11/10/21 18:34	11/13/21 18:35	1
13C3 PFBS	120	50 - 150	11/10/21 18:34	11/13/21 18:35	1
1802 PFHxS	100	50 - 150	11/10/21 18:34	11/13/21 18:35	1
13C4 PFOS	116	50 - 150	11/10/21 18:34	11/13/21 18:35	1
d3-NMeFOSAA	84	50 - 150	11/10/21 18:34	11/13/21 18:35	1
d5-NEtFOSAA	94	50 - 150	11/10/21 18:34	11/13/21 18:35	1
13C3 HFPO-DA	90	50 - 150	11/10/21 18:34	11/13/21 18:35	1

General Chemistry Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	10.1	0.1	0.1	%			11/05/21 14:24	1
Percent Solids	89.9	0.1	0.1	%			11/05/21 14:24	1

Eurofins TestAmerica, Sacramento

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

**Percent Solids** 

Client Sample ID: 21GST-SS-002 Lab Sample ID: 320-81254-108

Date Collected: 11/01/21 10:36 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 89.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.22	0.034	ug/Kg	<u></u>	11/10/21 18:34	11/13/21 18:45	
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.041	ug/Kg	≎	11/10/21 18:34	11/13/21 18:45	1
Perfluorooctanoic acid (PFOA)	0.086	J	0.22	0.058	ug/Kg	₩	11/10/21 18:34	11/13/21 18:45	1
Perfluorononanoic acid (PFNA)	0.039	J	0.22	0.024	ug/Kg	≎	11/10/21 18:34	11/13/21 18:45	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.052	ug/Kg	≎	11/10/21 18:34	11/13/21 18:45	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.046	ug/Kg	⇔	11/10/21 18:34	11/13/21 18:45	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.033	ug/Kg	≎	11/10/21 18:34	11/13/21 18:45	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.023	ug/Kg	☆	11/10/21 18:34	11/13/21 18:45	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22		ug/Kg	₩	11/10/21 18:34	11/13/21 18:45	1
Perfluorobutanesulfonic acid	0.050		0.22		ug/Kg		11/10/21 18:34	11/13/21 18:45	1
(PFBS)	0.000				3 3				
Perfluorohexanesulfonic acid (PFHxS)	0.64		0.22	0.032	ug/Kg	₩	11/10/21 18:34	11/13/21 18:45	1
Perfluorooctanesulfonic acid (PFOS)	6.4		0.22	0.047	ug/Kg	₩	11/10/21 18:34	11/13/21 18:45	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.22	0.025	ug/Kg	₽	11/10/21 18:34	11/13/21 18:45	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.22	0.052	ug/Kg	₩	11/10/21 18:34	11/13/21 18:45	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.22	0.038	ug/Kg	☼	11/10/21 18:34	11/13/21 18:45	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22	0.045	ug/Kg	₩	11/10/21 18:34	11/13/21 18:45	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.22		ug/Kg	☼	11/10/21 18:34	11/13/21 18:45	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.042	ug/Kg	₩	11/10/21 18:34	11/13/21 18:45	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	82		50 - 150				11/10/21 18:34	11/13/21 18:45	1
13C4 PFHpA	89		50 - 150				11/10/21 18:34	11/13/21 18:45	1
13C4 PFOA	89		50 - 150				11/10/21 18:34	11/13/21 18:45	1
13C5 PFNA	95		50 - 150				11/10/21 18:34	11/13/21 18:45	
13C2 PFDA	98		50 <sub>-</sub> 150				11/10/21 18:34	11/13/21 18:45	1
13C2 PFUnA	88		50 - 150				11/10/21 18:34	11/13/21 18:45	1
13C2 PFDoA	80		50 - 150					11/13/21 18:45	
13C2 PFTeDA	65		50 - 150					11/13/21 18:45	1
13C3 PFBS	118		50 <sub>-</sub> 150					11/13/21 18:45	1
1802 PFHxS	91		50 - 150					11/13/21 18:45	· · · · · · · · · · · · · · · · · · ·
13C4 PFOS	140		50 - 150					11/13/21 18:45	
d3-NMeFOSAA	74		50 - 150 50 - 150					11/13/21 18:45	1
d5-NEtFOSAA	82		50 - 150 50 - 150					11/13/21 18:45	· · · · · · · · · · · · · · · · · · ·
13C3 HFPO-DA	82 76		50 - 150 50 - 150					11/13/21 18:45	1
General Chemistry									
	Docul4	Qualifier	RL	MDI	Unit	D	Dropared	Analyzod	Dil Fac
Analyte Percent Moisture	10.1	- Qualifier	0.1	0.1			Prepared	Analyzed 11/05/21 14:24	DII Fac
PORCONT MINISTURA	101		0.1	UT	7/0			11/05/21 14:74	- 1

0.1

0.1 %

89.9

11/05/21 14:24

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

**Percent Solids** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.19	0.030	ug/Kg	<u></u>	11/10/21 18:34	11/13/21 18:56	1
Perfluoroheptanoic acid (PFHpA)	ND		0.19	0.037	ug/Kg	₽	11/10/21 18:34	11/13/21 18:56	1
Perfluorooctanoic acid (PFOA)	ND		0.19	0.052	ug/Kg	₽	11/10/21 18:34	11/13/21 18:56	1
Perfluorononanoic acid (PFNA)	ND		0.19	0.021	ug/Kg	₽	11/10/21 18:34	11/13/21 18:56	1
Perfluorodecanoic acid (PFDA)	ND		0.19	0.047	ug/Kg	₽	11/10/21 18:34	11/13/21 18:56	1
Perfluoroundecanoic acid (PFUnA)	ND		0.19	0.041	ug/Kg	₩	11/10/21 18:34	11/13/21 18:56	1
Perfluorododecanoic acid (PFDoA)	ND		0.19	0.029	ug/Kg	₽	11/10/21 18:34	11/13/21 18:56	1
Perfluorotridecanoic acid (PFTriA)	ND		0.19	0.020	ug/Kg	₽	11/10/21 18:34	11/13/21 18:56	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.19	0.036	ug/Kg	₩	11/10/21 18:34	11/13/21 18:56	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.19	0.037	ug/Kg	₽	11/10/21 18:34	11/13/21 18:56	1
Perfluorohexanesulfonic acid (PFHxS)	0.20		0.19	0.028	ug/Kg	₩	11/10/21 18:34	11/13/21 18:56	1
Perfluorooctanesulfonic acid (PFOS)	2.4		0.19		ug/Kg	<b>#</b>	11/10/21 18:34	11/13/21 18:56	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.19	0.022	ug/Kg	₩	11/10/21 18:34	11/13/21 18:56	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.19		ug/Kg	₩	11/10/21 18:34		1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.19		ug/Kg		11/10/21 18:34		1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.19		ug/Kg	₩	11/10/21 18:34		1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.19		ug/Kg	₩	11/10/21 18:34	11/13/21 18:56	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.19	0.038	ug/Kg	₩	11/10/21 18:34	11/13/21 18:56	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	86		50 - 150				11/10/21 18:34	11/13/21 18:56	1
13C4 PFHpA	92		50 - 150				11/10/21 18:34	11/13/21 18:56	1
13C4 PFOA	100		50 - 150				11/10/21 18:34	11/13/21 18:56	1
13C5 PFNA	104		50 - 150				11/10/21 18:34	11/13/21 18:56	1
13C2 PFDA	104		50 - 150				11/10/21 18:34	11/13/21 18:56	1
13C2 PFUnA	97		50 - 150				11/10/21 18:34	11/13/21 18:56	1
13C2 PFDoA	85		50 - 150				11/10/21 18:34	11/13/21 18:56	1
13C2 PFTeDA	75		50 <sub>-</sub> 150				11/10/21 18:34	11/13/21 18:56	1
13C3 PFBS	109		50 <sub>-</sub> 150				11/10/21 18:34	11/13/21 18:56	1
1802 PFHxS	91		50 <sub>-</sub> 150				11/10/21 18:34	11/13/21 18:56	1
13C4 PFOS	106		50 <sub>-</sub> 150				11/10/21 18:34	11/13/21 18:56	1
d3-NMeFOSAA	88		50 - 150					11/13/21 18:56	1
d5-NEtFOSAA	99		50 - 150				11/10/21 18:34	11/13/21 18:56	1
13C3 HFPO-DA	78		50 - 150				11/10/21 18:34	11/13/21 18:56	1
General Chemistry						_			<b>-</b>
Analyte Percent Moisture	Result 7.7	Qualifier	— RL 0.1	<b>MDL</b> 0.1		D	Prepared	Analyzed 11/05/21 14:24	Dil Fac

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11/17/2021

11/05/21 14:24

0.1

0.1 %

92.3

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-MW16-01 Lab Sample ID: 320-81254-110

Date Collected: 10/31/21 09:55

Date Received: 11/03/21 14:01

Matrix: Solid
Percent Solids: 90.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	0.27		0.21	0.033	ug/Kg	<u></u>	11/10/21 18:34	11/13/21 19:06	1
Perfluoroheptanoic acid (PFHpA)	0.094	J	0.21	0.040	ug/Kg	₽	11/10/21 18:34	11/13/21 19:06	1
Perfluorooctanoic acid (PFOA)	0.094	J	0.21	0.056	ug/Kg	₩	11/10/21 18:34	11/13/21 19:06	1
Perfluorononanoic acid (PFNA)	0.042	J	0.21	0.023	ug/Kg	₽	11/10/21 18:34	11/13/21 19:06	1
Perfluorodecanoic acid (PFDA)	0.24		0.21	0.051	ug/Kg	₽	11/10/21 18:34	11/13/21 19:06	1
Perfluoroundecanoic acid (PFUnA)	0.20	J	0.21	0.045	ug/Kg	₽	11/10/21 18:34	11/13/21 19:06	1
Perfluorododecanoic acid (PFDoA)	0.28		0.21	0.032	ug/Kg	₽	11/10/21 18:34	11/13/21 19:06	1
Perfluorotridecanoic acid (PFTriA)	0.044	J	0.21	0.022	ug/Kg	₩	11/10/21 18:34	11/13/21 19:06	1
Perfluorotetradecanoic acid (PFTeA)	0.091		0.21		ug/Kg			11/13/21 19:06	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.040	ug/Kg		11/10/21 18:34	11/13/21 19:06	1
Perfluorohexanesulfonic acid (PFHxS)	0.33		0.21		ug/Kg	₩	11/10/21 18:34	11/13/21 19:06	1
Perfluorooctanesulfonic acid (PFOS)	3.7		0.21	0.046	ug/Kg	₩	11/10/21 18:34	11/13/21 19:06	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	₩	11/10/21 18:34	11/13/21 19:06	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.21	0.051	ug/Kg	₩	11/10/21 18:34	11/13/21 19:06	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.21	0.037	ug/Kg	₩	11/10/21 18:34	11/13/21 19:06	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.044	ug/Kg	☼	11/10/21 18:34	11/13/21 19:06	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.21	0.033	ug/Kg	₩	11/10/21 18:34	11/13/21 19:06	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.041	ug/Kg	₩	11/10/21 18:34	11/13/21 19:06	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	94		50 - 150				11/10/21 18:34	11/13/21 19:06	1
13C4 PFHpA	91		50 - 150				11/10/21 18:34	11/13/21 19:06	1
13C4 PFOA	92		50 - 150				11/10/21 18:34	11/13/21 19:06	1
13C5 PFNA	100		50 - 150				11/10/21 18:34	11/13/21 19:06	1
13C2 PFDA	105		50 - 150				11/10/21 18:34	11/13/21 19:06	1
13C2 PFUnA	101		50 - 150				11/10/21 18:34	11/13/21 19:06	1
13C2 PFDoA	97		50 - 150				11/10/21 18:34	11/13/21 19:06	1
13C2 PFTeDA	87		50 - 150				11/10/21 18:34	11/13/21 19:06	1
13C3 PFBS	102		50 <sub>-</sub> 150				11/10/21 18:34	11/13/21 19:06	1
1802 PFHxS	92		50 - 150					11/13/21 19:06	1
13C4 PFOS	106		50 - 150				11/10/21 18:34	11/13/21 19:06	1
d3-NMeFOSAA	107		50 <sub>-</sub> 150				11/10/21 18:34	11/13/21 19:06	1
d5-NEtFOSAA	116		50 - 150				11/10/21 18:34	11/13/21 19:06	1
13C3 HFPO-DA	86		50 - 150					11/13/21 19:06	1
General Chemistry									
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	9.5		0.1	0.1				11/05/21 14:24	1
Percent Solids	90.5		0.1	0.1	%			11/05/21 14:24	1

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3

8

11

12

14

Client: Shannon & Wilson, Inc Job ID: 320-81254-1 Project/Site: SC Soils#3

Client Sample ID: 21GST-MW16-02

**Percent Solids** 

Lab Sample ID: 320-81254-111 Date Collected: 10/31/21 10:00 **Matrix: Solid** 

Date Received: 11/03/21 14:01 Percent Solids: 92.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Perfluorohexanoic acid (PFHxA)	ND		0.21	0.033	ug/Kg	☆	11/10/21 18:37	11/12/21 22:27	
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.041	ug/Kg	☼	11/10/21 18:37	11/12/21 22:27	
Perfluorooctanoic acid (PFOA)	ND		0.21	0.057	ug/Kg	≎	11/10/21 18:37	11/12/21 22:27	
Perfluorononanoic acid (PFNA)	0.22		0.21	0.024	ug/Kg	₽	11/10/21 18:37	11/12/21 22:27	
Perfluorodecanoic acid (PFDA)	0.16	J	0.21	0.052	ug/Kg	₽	11/10/21 18:37	11/12/21 22:27	
Perfluoroundecanoic acid	0.20	J	0.21	0.045	ug/Kg	₩	11/10/21 18:37	11/12/21 22:27	
(PFUnA)									
Perfluorododecanoic acid (PFDoA)	ND		0.21		ug/Kg	₩	11/10/21 18:37	11/12/21 22:27	
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.023	ug/Kg	₩	11/10/21 18:37	11/12/21 22:27	
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.040	ug/Kg	₽	11/10/21 18:37	11/12/21 22:27	•
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.041	ug/Kg	₩	11/10/21 18:37	11/12/21 22:27	
Perfluorohexanesulfonic acid (PFHxS)	0.033	J	0.21		ug/Kg	₩	11/10/21 18:37	11/12/21 22:27	•
Perfluorooctanesulfonic acid (PFOS)	0.39		0.21	0.046	ug/Kg		11/10/21 18:37		
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.21		ug/Kg		11/10/21 18:37		,
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.21		ug/Kg			11/12/21 22:27	
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.21		ug/Kg		11/10/21 18:37		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21		ug/Kg			11/12/21 22:27	
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.21		ug/Kg			11/12/21 22:27	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.042	ug/Kg	₩	11/10/21 18:37	11/12/21 22:27	
lsotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	110		50 - 150				11/10/21 18:37	11/12/21 22:27	
13C4 PFHpA	97		50 - 150				11/10/21 18:37	11/12/21 22:27	
13C4 PFOA	96		50 - 150				11/10/21 18:37	11/12/21 22:27	
13C5 PFNA	99		50 - 150				11/10/21 18:37	11/12/21 22:27	
13C2 PFDA	98		50 - 150				11/10/21 18:37	11/12/21 22:27	
13C2 PFUnA	95		50 - 150				11/10/21 18:37	11/12/21 22:27	
13C2 PFDoA	99		50 - 150				11/10/21 18:37	11/12/21 22:27	
13C2 PFTeDA	90		50 <sub>-</sub> 150				11/10/21 18:37	11/12/21 22:27	
13C3 PFBS	101		50 <sub>-</sub> 150				11/10/21 18:37	11/12/21 22:27	
1802 PFHxS	91		50 - 150					11/12/21 22:27	
13C4 PFOS	93		50 - 150					11/12/21 22:27	
d3-NMeFOSAA	102		50 <sub>-</sub> 150					11/12/21 22:27	
d5-NEtFOSAA	109		50 - 150					11/12/21 22:27	
13C3 HFPO-DA	89		50 - 150 50 - 150					11/12/21 22:27	
General Chemistry									
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fa
Percent Moisture	7.9		0.1	0.1	0/			11/05/21 14:24	

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0.1

0.1 %

92.1

11/05/21 14:24

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-MW16-03 Lab Sample ID: 320-81254-112

Date Collected: 10/31/21 10:05 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 79.4

Method: EPA 537(Mod) - PFAS Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Perfluorohexanoic acid (PFHxA)	0.053	J	0.25	0.038	ug/Kg	☼	11/10/21 18:37	11/12/21 22:58	-
Perfluoroheptanoic acid (PFHpA)	ND		0.25	0.047	ug/Kg	₩	11/10/21 18:37	11/12/21 22:58	1
Perfluorooctanoic acid (PFOA)	ND		0.25	0.065	ug/Kg	☼	11/10/21 18:37	11/12/21 22:58	1
Perfluorononanoic acid (PFNA)	ND		0.25	0.027	ug/Kg	₩	11/10/21 18:37	11/12/21 22:58	1
Perfluorodecanoic acid (PFDA)	ND		0.25	0.059	ug/Kg	₩	11/10/21 18:37	11/12/21 22:58	1
Perfluoroundecanoic acid (PFUnA)	ND		0.25	0.051	ug/Kg	₩	11/10/21 18:37	11/12/21 22:58	1
Perfluorododecanoic acid (PFDoA)	ND		0.25	0.037	ug/Kg	₩	11/10/21 18:37	11/12/21 22:58	1
Perfluorotridecanoic acid (PFTriA)	ND		0.25	0.026	ug/Kg	₩	11/10/21 18:37	11/12/21 22:58	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.25	0.045	ug/Kg	₩	11/10/21 18:37	11/12/21 22:58	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.25	0.047	ug/Kg		11/10/21 18:37	11/12/21 22:58	1
Perfluorohexanesulfonic acid	0.066	J	0.25		ug/Kg	₩	11/10/21 18:37	11/12/21 22:58	1
(PFHxS)	0.000				-99				
Perfluorooctanesulfonic acid	1.8		0.25	0.053	ug/Kg	₩	11/10/21 18:37	11/12/21 22:58	1
(PFOS)									
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.25	0.028	ug/Kg	₩	11/10/21 18:37	11/12/21 22:58	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.25	0.059	ug/Kg	₩	11/10/21 18:37	11/12/21 22:58	1
9-Chlorohexadecafluoro-3-oxanonan	ND		0.25	0.043	ug/Kg	☼	11/10/21 18:37	11/12/21 22:58	1
e-1-sulfonic acid									
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25		ug/Kg		11/10/21 18:37		1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.25		ug/Kg	₩	11/10/21 18:37	11/12/21 22:58	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.25	0.048	ug/Kg	₩	11/10/21 18:37	11/12/21 22:58	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	107		50 - 150				11/10/21 18:37	11/12/21 22:58	1
13C4 PFHpA	103		50 - 150				11/10/21 18:37	11/12/21 22:58	1
13C4 PFOA	101		50 <sub>-</sub> 150				11/10/21 18:37	11/12/21 22:58	1
13C5 PFNA	104		50 - 150				11/10/21 18:37	11/12/21 22:58	
13C2 PFDA	98		50 <sub>-</sub> 150				11/10/21 18:37	11/12/21 22:58	1
13C2 PFUnA	103		50 <sub>-</sub> 150					11/12/21 22:58	1
13C2 PFDoA	99		50 - 150					11/12/21 22:58	
13C2 PFTeDA	98		50 <sub>-</sub> 150					11/12/21 22:58	1
13C3 PFBS	125		50 <sub>-</sub> 150					11/12/21 22:58	1
1802 PFHxS	99		50 - 150					11/12/21 22:58	· · · · · · · · · · · · · · · · · · ·
13C4 PFOS	97		50 - 150 50 - 150					11/12/21 22:58	1
d3-NMeFOSAA	103		50 - 150 50 - 150					11/12/21 22:58	1
d5-NEtFOSAA			50 - 150 50 - 150					11/12/21 22:58	
13C3 HFPO-DA	109 102		50 <sub>-</sub> 150					11/12/21 22:58	1 1
General Chemistry									
Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	20.6		0.1	0.1	%	_		11/05/21 14:24	1
Percent Solids	79.4		0.1	0.1	0/			11/05/21 14:24	1

Eurofins TestAmerica, Sacramento

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-MW16-04 Lab Sample ID: 320-81254-113

Date Collected: 10/31/21 10:15

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 79.3

Method: EPA 537(Mod) - PFAS Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.25	0.039	ug/Kg	<u></u>	11/10/21 18:37	11/12/21 23:08	1
Perfluoroheptanoic acid (PFHpA)	ND		0.25	0.048	ug/Kg	₩	11/10/21 18:37	11/12/21 23:08	1
Perfluorooctanoic acid (PFOA)	ND		0.25	0.067	ug/Kg	₩	11/10/21 18:37	11/12/21 23:08	1
Perfluorononanoic acid (PFNA)	ND		0.25	0.028	ug/Kg	₩	11/10/21 18:37	11/12/21 23:08	1
Perfluorodecanoic acid (PFDA)	ND		0.25	0.060	ug/Kg	₩	11/10/21 18:37	11/12/21 23:08	1
Perfluoroundecanoic acid (PFUnA)	ND		0.25	0.053	ug/Kg	₩	11/10/21 18:37	11/12/21 23:08	1
Perfluorododecanoic acid (PFDoA)	ND		0.25	0.038	ug/Kg	₩	11/10/21 18:37	11/12/21 23:08	1
Perfluorotridecanoic acid (PFTriA)	ND		0.25	0.026	ug/Kg	₩	11/10/21 18:37	11/12/21 23:08	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.25	0.046	ug/Kg	₩	11/10/21 18:37	11/12/21 23:08	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.25	0.048	ug/Kg	₩	11/10/21 18:37	11/12/21 23:08	1
Perfluorohexanesulfonic acid (PFHxS)	0.054	J	0.25	0.036	ug/Kg	₩	11/10/21 18:37	11/12/21 23:08	1
Perfluorooctanesulfonic acid (PFOS)	1.5		0.25	0.054	ug/Kg	₩	11/10/21 18:37	11/12/21 23:08	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.25	0.029	ug/Kg	₩		11/12/21 23:08	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.25		ug/Kg	₩	11/10/21 18:37		1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.25	0.044	ug/Kg	₩	11/10/21 18:37	11/12/21 23:08	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.051	ug/Kg	₩	11/10/21 18:37	11/12/21 23:08	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.25	0.039	ug/Kg	₩	11/10/21 18:37	11/12/21 23:08	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.25	0.049	ug/Kg	₩	11/10/21 18:37	11/12/21 23:08	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	102	-	50 - 150				11/10/21 18:37	11/12/21 23:08	1
13C4 PFHpA	101		50 - 150				11/10/21 18:37	11/12/21 23:08	1
13C4 PFOA	92		50 <sub>-</sub> 150				11/10/21 18:37	11/12/21 23:08	1
13C5 PFNA	93		50 - 150				11/10/21 18:37	11/12/21 23:08	1
13C2 PFDA	97		50 <sub>-</sub> 150				11/10/21 18:37	11/12/21 23:08	1
13C2 PFUnA	99		50 - 150				11/10/21 18:37	11/12/21 23:08	1
13C2 PFDoA	91		50 - 150				11/10/21 18:37	11/12/21 23:08	1
13C2 PFTeDA	94		50 - 150				11/10/21 18:37	11/12/21 23:08	1
13C3 PFBS	102		50 - 150				11/10/21 18:37	11/12/21 23:08	1
18O2 PFHxS	87		50 <sub>-</sub> 150				11/10/21 18:37	11/12/21 23:08	1
13C4 PFOS	102		50 <sub>-</sub> 150				11/10/21 18:37	11/12/21 23:08	1
d3-NMeFOSAA	104		50 - 150				11/10/21 18:37	11/12/21 23:08	1
d5-NEtFOSAA	109		50 - 150				11/10/21 18:37	11/12/21 23:08	1
13C3 HFPO-DA	89		50 - 150				11/10/21 18:37	11/12/21 23:08	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>_</b>			0.1	0.1				11/05/21 14:24	1
Percent Moisture	20.7		0.1	0.1	70			11/03/21 14.24	

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11/17/2021

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Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-MW19-01

Lab Sample ID: 320-81254-114 Date Collected: 10/31/21 16:05 **Matrix: Solid** 

Date Received: 11/03/21 14:01 Percent Solids: 76.8

Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.26	0.040	ug/Kg	☼	11/10/21 18:37	11/12/21 23:19	1
Perfluoroheptanoic acid (PFHpA)	ND		0.26	0.049	ug/Kg	₩	11/10/21 18:37	11/12/21 23:19	1
Perfluorooctanoic acid (PFOA)	ND		0.26	0.068	ug/Kg	₩	11/10/21 18:37	11/12/21 23:19	1
Perfluorononanoic acid (PFNA)	ND		0.26	0.028	ug/Kg	₩	11/10/21 18:37	11/12/21 23:19	1
Perfluorodecanoic acid (PFDA)	ND		0.26	0.062	ug/Kg	₩	11/10/21 18:37	11/12/21 23:19	1
Perfluoroundecanoic acid (PFUnA)	ND		0.26	0.054	ug/Kg	₩	11/10/21 18:37	11/12/21 23:19	1
Perfluorododecanoic acid (PFDoA)	ND		0.26	0.039	ug/Kg	₩	11/10/21 18:37	11/12/21 23:19	1
Perfluorotridecanoic acid (PFTriA)	ND		0.26	0.027	ug/Kg	₩	11/10/21 18:37	11/12/21 23:19	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.26	0.047	ug/Kg	₩	11/10/21 18:37	11/12/21 23:19	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.26	0.049	ug/Kg	₩	11/10/21 18:37	11/12/21 23:19	1
Perfluorohexanesulfonic acid (PFHxS)	0.039	J	0.26	0.037	ug/Kg	≎	11/10/21 18:37	11/12/21 23:19	1
Perfluorooctanesulfonic acid (PFOS)	0.24	J	0.26	0.055	ug/Kg	₩	11/10/21 18:37	11/12/21 23:19	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.26		ug/Kg	☼		11/12/21 23:19	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.26		ug/Kg			11/12/21 23:19	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.26		ug/Kg	<sub>.</sub> .		11/12/21 23:19	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.26		ug/Kg			11/12/21 23:19	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.26		ug/Kg	<b>.</b>		11/12/21 23:19	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.26	0.050	ug/Kg	₩	11/10/21 18:37	11/12/21 23:19	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	105		50 - 150				11/10/21 18:37	11/12/21 23:19	1
13C4 PFHpA	107		50 - 150				11/10/21 18:37	11/12/21 23:19	1
13C4 PFOA	99		50 - 150				11/10/21 18:37	11/12/21 23:19	1
13C5 PFNA	106		50 - 150				11/10/21 18:37	11/12/21 23:19	1
13C2 PFDA	106		50 - 150				11/10/21 18:37	11/12/21 23:19	1
13C2 PFUnA	102		50 - 150				11/10/21 18:37	11/12/21 23:19	1
13C2 PFDoA	104		50 - 150				11/10/21 18:37	11/12/21 23:19	1
13C2 PFTeDA	102		50 - 150				11/10/21 18:37	11/12/21 23:19	1
13C3 PFBS	115		50 <sub>-</sub> 150				11/10/21 18:37	11/12/21 23:19	1
1802 PFHxS	101		50 - 150				11/10/21 18:37	11/12/21 23:19	1
13C4 PFOS	102		50 <sub>-</sub> 150					11/12/21 23:19	1
d3-NMeFOSAA	106		50 - 150					11/12/21 23:19	1
d5-NEtFOSAA	111		50 <sub>-</sub> 150					11/12/21 23:19	1
13C3 HFPO-DA	101		50 - 150					11/12/21 23:19	1
General Chemistry									
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Percent Moisture	23.2		0.1	0.1	%			11/05/21 14:24	1
Percent Solids	76.8		0.1	0.1	0/2			11/05/21 14:24	1

Eurofins TestAmerica, Sacramento

11/17/2021

Client: Shannon & Wilson, Inc Job ID: 320-81254-1 Project/Site: SC Soils#3

Client Sample ID: 21GST-MW19-02 Lab Sample ID: 320-81254-115 Date Collected: 11/01/21 10:30 **Matrix: Solid** 

Date Received: 11/03/21 14:01 Percent Solids: 83.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.22	0.034	ug/Kg	<del></del>	11/10/21 18:37	11/12/21 23:29	
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.042	ug/Kg	₩	11/10/21 18:37	11/12/21 23:29	
Perfluorooctanoic acid (PFOA)	ND		0.22	0.059	ug/Kg	₽	11/10/21 18:37	11/12/21 23:29	
Perfluorononanoic acid (PFNA)	ND		0.22	0.024	ug/Kg	₩	11/10/21 18:37	11/12/21 23:29	
Perfluorodecanoic acid (PFDA)	ND		0.22	0.053	ug/Kg	₽	11/10/21 18:37	11/12/21 23:29	
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.047	ug/Kg	₽	11/10/21 18:37	11/12/21 23:29	•
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.033	ug/Kg	₽	11/10/21 18:37	11/12/21 23:29	
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.023	ug/Kg	₩	11/10/21 18:37	11/12/21 23:29	•
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.041	ug/Kg	₩	11/10/21 18:37	11/12/21 23:29	•
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.042	ug/Kg	₩	11/10/21 18:37	11/12/21 23:29	
Perfluorohexanesulfonic acid (PFHxS)	ND		0.22	0.032	ug/Kg	₩	11/10/21 18:37	11/12/21 23:29	•
Perfluorooctanesulfonic acid (PFOS)	ND		0.22	0.048	ug/Kg	₩	11/10/21 18:37	11/12/21 23:29	•
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.22	0.025	ug/Kg	₩	11/10/21 18:37	11/12/21 23:29	,
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.22	0.053	ug/Kg	₩	11/10/21 18:37	11/12/21 23:29	,
9-Chlorohexadecafluoro-3-oxanonan	ND		0.22	0.039	ug/Kg	≎	11/10/21 18:37	11/12/21 23:29	•
e-1-sulfonic acid Hexafluoropropylene Oxide Dimer	ND		0.22	0.045	ug/Kg		11/10/21 18:37	11/12/21 23:29	,
Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.22	0.034	ug/Kg	₩	11/10/21 18:37	11/12/21 23:29	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.043	ug/Kg	₩	11/10/21 18:37	11/12/21 23:29	,
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	102		50 - 150					11/12/21 23:29	
13C4 PFHpA	100		50 - 150				11/10/21 18:37	11/12/21 23:29	
13C4 PFOA	98		50 <sub>-</sub> 150				11/10/21 18:37	11/12/21 23:29	
13C5 PFNA	98		50 - 150				11/10/21 18:37	11/12/21 23:29	
13C2 PFDA	100		50 - 150				11/10/21 18:37	11/12/21 23:29	
13C2 PFUnA	100		50 <sub>-</sub> 150				11/10/21 18:37	11/12/21 23:29	
13C2 PFDoA	95		50 - 150				11/10/21 18:37	11/12/21 23:29	
13C2 PFTeDA	91		50 <sub>-</sub> 150				11/10/21 18:37	11/12/21 23:29	
13C3 PFBS	104		50 <sub>-</sub> 150				11/10/21 18:37	11/12/21 23:29	
1802 PFHxS	96		50 <sub>-</sub> 150				11/10/21 18:37	11/12/21 23:29	
13C4 PFOS	98		50 <sub>-</sub> 150				11/10/21 18:37	11/12/21 23:29	
d3-NMeFOSAA	108		50 <sub>-</sub> 150				11/10/21 18:37	11/12/21 23:29	
d5-NEtFOSAA	109		50 <sub>-</sub> 150				11/10/21 18:37	11/12/21 23:29	
13C3 HFPO-DA	86		50 - 150				11/10/21 18:37	11/12/21 23:29	
General Chemistry							_		
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Percent Moisture	16.1		0.1	0.1				11/05/21 14:24	•
Percent Solids	83.9		0.1	0.1	0/2			11/05/21 14:24	•

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-MW20-01 Lab Sample ID: 320-81254-116

Date Collected: 11/01/21 13:45 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 90.8

Method: EPA 537(Mod) - PFAS Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.031	ug/Kg	— <u></u>	11/10/21 18:37	11/12/21 23:40	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.038	ug/Kg	₩	11/10/21 18:37	11/12/21 23:40	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.053	ug/Kg	₩	11/10/21 18:37	11/12/21 23:40	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.022	ug/Kg	₩	11/10/21 18:37	11/12/21 23:40	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.048	ug/Kg	☼	11/10/21 18:37	11/12/21 23:40	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.042	ug/Kg	≎	11/10/21 18:37	11/12/21 23:40	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.030	ug/Kg	≎	11/10/21 18:37	11/12/21 23:40	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.021	ug/Kg	☼	11/10/21 18:37	11/12/21 23:40	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.037	ug/Kg	≎	11/10/21 18:37	11/12/21 23:40	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.038	ug/Kg	≎	11/10/21 18:37	11/12/21 23:40	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.029	ug/Kg	₽	11/10/21 18:37	11/12/21 23:40	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.20	0.043	ug/Kg	₽	11/10/21 18:37	11/12/21 23:40	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg		11/10/21 18:37	11/12/21 23:40	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.20	0.048	ug/Kg	₩	11/10/21 18:37	11/12/21 23:40	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.20	0.035	ug/Kg	₽	11/10/21 18:37	11/12/21 23:40	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.20	0.041	ug/Kg	₽	11/10/21 18:37	11/12/21 23:40	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.20	0.031	ug/Kg	₩	11/10/21 18:37	11/12/21 23:40	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.039	ug/Kg	₩	11/10/21 18:37	11/12/21 23:40	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	107		50 - 150				11/10/21 18:37	11/12/21 23:40	1
13C4 PFHpA	100		50 - 150				11/10/21 18:37	11/12/21 23:40	1
13C4 PFOA	93		50 - 150				11/10/21 18:37	11/12/21 23:40	1
13C5 PFNA	92		50 - 150				11/10/21 18:37	11/12/21 23:40	1
13C2 PFDA	102		50 - 150				11/10/21 18:37	11/12/21 23:40	1
13C2 PFUnA	98		50 - 150				11/10/21 18:37	11/12/21 23:40	1
13C2 PFDoA	93		50 - 150				11/10/21 18:37	11/12/21 23:40	1
13C2 PFTeDA	101		50 - 150				11/10/21 18:37	11/12/21 23:40	1
13C3 PFBS	108		50 - 150				11/10/21 18:37	11/12/21 23:40	1
1802 PFHxS	93		50 - 150				11/10/21 18:37	11/12/21 23:40	1
13C4 PFOS	100		50 - 150				11/10/21 18:37	11/12/21 23:40	1
d3-NMeFOSAA	99		50 - 150				11/10/21 18:37	11/12/21 23:40	1
d5-NEtFOSAA	120		50 - 150				11/10/21 18:37	11/12/21 23:40	1
13C3 HFPO-DA	92		50 - 150				11/10/21 18:37	11/12/21 23:40	1
General Chemistry						_			
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	9.2		0.1	0.1				11/05/21 14:24	1
Percent Solids	90.8		0.1	0.1	%			11/05/21 14:24	1

Client: Shannon & Wilson, Inc Job ID: 320-81254-1 Project/Site: SC Soils#3

Client Sample ID: 21GST-MW20-10

Lab Sample ID: 320-81254-117 Date Collected: 11/01/21 13:35 **Matrix: Solid** 

Date Received: 11/03/21 14:01 Percent Solids: 91.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.21	0.032	ug/Kg	<del>-</del>	11/10/21 18:37	11/13/21 00:11	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.039	ug/Kg	₩	11/10/21 18:37	11/13/21 00:11	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.055	ug/Kg	₽	11/10/21 18:37	11/13/21 00:11	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.023	ug/Kg	₩	11/10/21 18:37	11/13/21 00:11	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.050	ug/Kg	₩	11/10/21 18:37	11/13/21 00:11	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.043	ug/Kg	₩	11/10/21 18:37	11/13/21 00:11	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.031	ug/Kg	₩	11/10/21 18:37	11/13/21 00:11	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.022	ug/Kg	₩	11/10/21 18:37	11/13/21 00:11	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.038	ug/Kg	₩	11/10/21 18:37	11/13/21 00:11	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.039	ug/Kg	₩	11/10/21 18:37	11/13/21 00:11	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21	0.030	ug/Kg	₩	11/10/21 18:37	11/13/21 00:11	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.21	0.044	ug/Kg	₩	11/10/21 18:37	11/13/21 00:11	1
N-methylperfluorooctanesulfona	0.035	J	0.21	0.024	ug/Kg	₽	11/10/21 18:37	11/13/21 00:11	1
midoacetic acid (NMeFOSAA) N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.21	0.050	ug/Kg	₩	11/10/21 18:37	11/13/21 00:11	1
9-Chlorohexadecafluoro-3-oxanonan	ND		0.21	0.036	ug/Kg	≎	11/10/21 18:37	11/13/21 00:11	1
e-1-sulfonic acid Hexafluoropropylene Oxide Dimer	ND		0.21	0.042	ug/Kg		11/10/21 18:37	11/13/21 00:11	1
Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaundecan	ND		0.21	0.032	ug/Kg	₽	11/10/21 18:37	11/13/21 00:11	1
e-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid	ND		0.21	0.040	ug/Kg	₩	11/10/21 18:37	11/13/21 00:11	1
(ADONA) Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	116		50 - 150				11/10/21 18:37		1
13C4 PFHpA	109		50 - 150				11/10/21 18:37	11/13/21 00:11	1
13C4 PFOA	104		50 <sub>-</sub> 150					11/13/21 00:11	1
13C5 PFNA	104		50 - 150				11/10/21 18:37	11/13/21 00:11	1
13C2 PFDA	101		50 - 150				11/10/21 18:37	11/13/21 00:11	1
13C2 PFUnA	110		50 <sub>-</sub> 150				11/10/21 18:37	11/13/21 00:11	1
13C2 PFDoA	99		50 - 150				11/10/21 18:37	11/13/21 00:11	1
13C2 PFTeDA	99		50 <sub>-</sub> 150					11/13/21 00:11	1
13C3 PFBS	115		50 <sub>-</sub> 150				11/10/21 18:37	11/13/21 00:11	1
1802 PFHxS	96		50 - 150				11/10/21 18:37	11/13/21 00:11	1
13C4 PFOS	103		50 <sub>-</sub> 150				11/10/21 18:37	11/13/21 00:11	1
d3-NMeFOSAA	105		50 <sub>-</sub> 150					11/13/21 00:11	1
d5-NEtFOSAA	117		50 <sub>-</sub> 150				11/10/21 18:37	11/13/21 00:11	1
13C3 HFPO-DA	97		50 - 150				11/10/21 18:37		1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	8.4		0.1	0.1	%			11/05/21 14:24	1
Percent Solids	91.6		0.1	0.1				11/05/21 14:24	

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Client Sample ID: 21GST-MW20-02 Lab Sample ID: 320-81254-118

Date Collected: 11/01/21 16:10 **Matrix: Solid** Percent Solids: 75.7 Date Received: 11/03/21 14:01

Perfluorocheptanoic acid (PFIpA)	for QSM 5 Result		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorocotanola acid (PFOA)   ND   0.25   0.067   ug/Kg   0   11/10/21 18:37   11/13/21 00:21	ND		0.25	0.039	ug/Kg		11/10/21 18:37	11/13/21 00:21	1
Perfluoronanoic acid (PFNA)   ND   0.25   0.028   ug/Kg   c   11/10/21 18.37   11/13/21 00.21	ND		0.25	0.048	ug/Kg	₩	11/10/21 18:37	11/13/21 00:21	1
Perfluorodecanoic acid (PFDA)   ND   0.25   0.080   ug/Kg   0 11/10/21 18:37   11/13/21 00:21	ND		0.25	0.067	ug/Kg	₩	11/10/21 18:37	11/13/21 00:21	1
Perfluoroundecanoic acid (PFUnA)   ND   0.25   0.053   ug/Kg   c 11/10/21 18.37   11/13/21 00.21	ND		0.25	0.028	ug/Kg	₩	11/10/21 18:37	11/13/21 00:21	1
Perfluorododecanoic acid (PFDoA)   ND   0.25   0.038   ug/Kg   0   11/10/21   18:37   11/13/21   00.21	ND		0.25	0.060	ug/Kg	₩	11/10/21 18:37	11/13/21 00:21	1
Perfluorotridecanoic acid (PFTriA)   ND   0.25   0.026   ug/Kg   0.11/10/21 18:37   11/13/21 00:21	ND		0.25	0.053	ug/Kg	₩	11/10/21 18:37	11/13/21 00:21	1
Perfluorotetradecanoic acid (PFTeA)   ND   0.25   0.047   vg/Kg   0 11/10/21 18:37   11/13/21 00:21	ND		0.25	0.038	ug/Kg	₩	11/10/21 18:37	11/13/21 00:21	1
Perfluorobutanesulfonic acid (PFBS)   ND   0.25   0.048   ug/Kg   0.11/10/21   18:37   11/13/21   00:21	ND		0.25	0.026	ug/Kg	₩	11/10/21 18:37	11/13/21 00:21	1
Perfluorohexanesulfonic acid (PFHxS) ND	ND		0.25	0.047	ug/Kg	₩	11/10/21 18:37	11/13/21 00:21	1
Perfluorooctanesulfonic acid (PFOS)   ND   0.25   0.054   ug/Kg   3 11/10/21 18:37 11/13/21 00:21	ND		0.25	0.048	ug/Kg	₩	11/10/21 18:37	11/13/21 00:21	1
N-methylperfluorocotanesulfonamidoa celic acid (NMeFOSAA) N-bethylperfluorocotanesulfonamidoac olic acid (NMeFOSAA) N-bethylperfluorocotanesulfonamidoac olic acid (NEFOSAA) 9-Chlorohexadecafluoro-3-oxanonan olic acid (NEFOSAA) 9-Chlorohexadecafluoro-3-oxanonan olic acid (NEFOSAA) 9-Chlorohexadecafluoro-3-oxanonan olic acid (NEFOSAA) 9-Chlorohexadecafluoro-3-oxanonan olic acid (NEFOSAA) 11-Chloroelcosafluoro-3-oxanonan ic acid (ND	ND		0.25	0.037	ug/Kg	₽	11/10/21 18:37	11/13/21 00:21	1
N-methylperfluoroctanesulfonamidoa celic acid (NMeFOSAA) N-bethylperfluoroctanesulfonamidoac celic acid (NMeFOSAA) N-bethylperfluoroctanesulfonamidoac nND	ND		0.25	0.054	ug/Kg	₽	11/10/21 18:37	11/13/21 00:21	1
### Britance   Section   S	ND		0.25	0.029	ug/Kg		11/10/21 18:37	11/13/21 00:21	1
e-1-sulfonic acid Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) 11-Chlorocicosafluoro-3-oxaundecan e-1-sulfonic acid (ADONA)  Isotope Dilution    ND   0.25   0.039   ug/Kg   11/10/21 18:37   11/13/21 00:21	ND		0.25	0.060	ug/Kg	₩	11/10/21 18:37	11/13/21 00:21	1
Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid (ADONA)  Isotope Dilution    ND	ND		0.25	0.044	ug/Kg	₩	11/10/21 18:37	11/13/21 00:21	1
e-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid 4,8-Dioxa-4-perfluorononanoic acid 4,8-D	ND		0.25	0.052	ug/Kg	₩	11/10/21 18:37	11/13/21 00:21	1
Sotope Dilution   %Recovery   Qualifier   Limits   Prepared   Analyzed   Dil Fa	ND		0.25	0.039	ug/Kg	₩	11/10/21 18:37	11/13/21 00:21	1
13C2 PFHXA 125 50 - 150 11/10/21 18:37 11/13/21 00:21 13C4 PFHpA 121 50 - 150 11/10/21 18:37 11/13/21 00:21 13C5 PFNA 115 50 - 150 11/10/21 18:37 11/13/21 00:21 13C5 PFNA 115 50 - 150 11/10/21 18:37 11/13/21 00:21 13C2 PFDA 117 50 - 150 11/10/21 18:37 11/13/21 00:21 13C2 PFDA 117 50 - 150 11/10/21 18:37 11/13/21 00:21 13C2 PFDA 113 50 - 150 11/10/21 18:37 11/13/21 00:21 13C2 PFDA 115 50 - 150 11/10/21 18:37 11/13/21 00:21 13C2 PFDAA 115 50 - 150 11/10/21 18:37 11/13/21 00:21 13C2 PFDAA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C3 PFBS 136 50 - 150 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 118 50 - 150 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 118 50 - 150 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 118 50 - 150 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 118 50 - 150 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 118 50 - 150 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 118 50 - 150 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 118 50 - 150 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 118 50 - 150 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 118 50 - 150 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 118 50 - 150 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 118 50 - 150 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 118 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 118 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 118 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 118 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 118 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 11/10/	ND		0.25	0.049	ug/Kg	₩	11/10/21 18:37	11/13/21 00:21	1
13C4 PFHpA 121 50 - 150 11/10/21 18:37 11/13/21 00:21 13C4 PFOA 1112 50 - 150 11/10/21 18:37 11/13/21 00:21 13C5 PFNA 115 50 - 150 11/10/21 18:37 11/13/21 00:21 13C2 PFDA 117 50 - 150 11/10/21 18:37 11/13/21 00:21 13C2 PFUnA 113 50 - 150 11/10/21 18:37 11/13/21 00:21 13C2 PFUnA 115 50 - 150 11/10/21 18:37 11/13/21 00:21 13C2 PFDA 116 50 - 150 11/10/21 18:37 11/13/21 00:21 13C2 PFEDA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C2 PFEDA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C2 PFBS 136 50 - 150 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 118 50 - 150 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 118 50 - 150 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 118 50 - 150 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 118 50 - 150 11/10/21 18:37 11/13/21 00:21 13C3 PFFOSAA 144 50 - 150 11/10/21 18:37 11/13/21 00:21 13C3 PFFO-DA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C3 PFFO-DA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C3 PFFO-DA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C3 PFFO-DA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C3 PFFO-DA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C3 PFFO-DA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C3 PFFO-DA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C3 PFFO-DA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C3 PFFO-DA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C3 PFFO-DA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C3 PFFO-DA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C3 PFFO-DA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C3 PFFO-DA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C3 PFFO-DA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C3 PFFO-DA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C3 PFFO-DA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C3 PFFO-DA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C3 PFFO-DA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C3 PFFO-DA 106 11/10/21 18:37 11/13/21 00:21 13C3 PFFO-DA 106 11/10/21 18:37 11/13/21 00:21 13C3 PFFO-DA 106 11/10/21 18:37 11/13/21 00:21 13C3 PFFO-DA 10/10/21 18:37 11/13/21 00:21 13C3 PFFO-DA 10/10/21 18:37 11/13/21 00:21 13C3 PF	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA 112 50 - 150 11/10/21 18:37 11/13/21 00:21 13C5 PFNA 115 50 - 150 11/10/21 18:37 11/13/21 00:21 13C2 PFDA 117 50 - 150 11/10/21 18:37 11/13/21 00:21 13C2 PFUnA 113 50 - 150 11/10/21 18:37 11/13/21 00:21 13C2 PFDOA 115 50 - 150 11/10/21 18:37 11/13/21 00:21 13C2 PFTeDA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C3 PFBS 136 50 - 150 11/10/21 18:37 11/13/21 00:21 13C3 PFBS 136 50 - 150 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 118 50 - 150 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 118 50 - 150 11/10/21 18:37 11/13/21 00:21 13C5 PFTeDA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 118 50 - 150 11/10/21 18:37 11/13/21 00:21 13C5 PFDA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C5 PFTeDA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C5 PFTeDA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C5 PFDA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C5 PFDA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C5 PFDA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C5 PFDA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C5 PFDA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C5 PFDA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C5 PFDA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C5 PFDA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C5 PFDA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C5 PFDA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C5 PFTEDA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C5 PFDA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C5 PFDA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C5 PFDA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C5 PFTEDA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C5 PFTEDA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C5 PFTEDA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C5 PFTEDA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C5 PFTEDA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C5 PFTEDA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C5 PFTEDA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C5 PFTEDA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C5 PFTEDA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13	125		50 - 150				11/10/21 18:37	11/13/21 00:21	1
13C5 PFNA 115 50 - 150 11/10/21 18:37 11/13/21 00:21 13C2 PFDA 117 50 - 150 11/10/21 18:37 11/13/21 00:21 13C2 PFDA 113 50 - 150 11/10/21 18:37 11/13/21 00:21 13C2 PFDoA 115 50 - 150 11/10/21 18:37 11/13/21 00:21 13C2 PFDoA 116 50 - 150 11/10/21 18:37 11/13/21 00:21 13C2 PFTeDA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C3 PFBS 136 50 - 150 11/10/21 18:37 11/13/21 00:21 13C3 PFBS 136 50 - 150 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 118 50 - 150 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 118 50 - 150 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 118 50 - 150 11/10/21 18:37 11/13/21 00:21 13C3 NMeFOSAA 123 50 - 150 11/10/21 18:37 11/13/21 00:21 13C3 NMeFOSAA 144 50 - 150 11/10/21 18:37 11/13/21 00:21 13C3 NFPO-DA 106 NFPO-DA 106 NFPO-DA 106 NFPO-DA 106 NFPO-DA 106 NFPO-DA 106 NFPO-DA 106 NFPO-DA 106 NFPO-DA 106 NFPO-DA 106 NFPO-DA 106 NFPO-DA 106 NFPO-DA 106 NFPO-DA 106 NFPO-DA 106 NFPO-DA 106 NFPO-DA 106 NFPO-DA 106 NFPO	121		50 - 150				11/10/21 18:37	11/13/21 00:21	1
13C2 PFDA 117 50 - 150 11/10/21 18:37 11/13/21 00:21 13C2 PFUnA 113 50 - 150 11/10/21 18:37 11/13/21 00:21 13C2 PFDoA 115 50 - 150 11/10/21 18:37 11/13/21 00:21 13C2 PFTeDA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C3 PFBS 136 50 - 150 11/10/21 18:37 11/13/21 00:21 18O2 PFHxS 113 50 - 150 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 118 50 - 150 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 118 50 - 150 11/10/21 18:37 11/13/21 00:21 13C4 PFOS 118 50 - 150 11/10/21 18:37 11/13/21 00:21 13C3 NMEFOSAA 123 50 - 150 11/10/21 18:37 11/13/21 00:21 13C3 NFPO-DA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 13C3 NFPO-DA 10/10/21 18:37 11/13/21 00:21 13C3 NFPO-DA 10/10/21 18:37 11/13/21 00:21 13C3 NFPO-DA 10/10/21	112		50 - 150				11/10/21 18:37	11/13/21 00:21	1
13C2 PFUnA       113       50 - 150       11/10/21 18:37       11/13/21 00:21         13C2 PFDoA       115       50 - 150       11/10/21 18:37       11/13/21 00:21         13C2 PFTeDA       106       50 - 150       11/10/21 18:37       11/13/21 00:21         13C3 PFBS       136       50 - 150       11/10/21 18:37       11/13/21 00:21         18O2 PFHxS       113       50 - 150       11/10/21 18:37       11/13/21 00:21         13C4 PFOS       118       50 - 150       11/10/21 18:37       11/13/21 00:21         d3-NMeFOSAA       123       50 - 150       11/10/21 18:37       11/13/21 00:21         d5-NEtFOSAA       144       50 - 150       11/10/21 18:37       11/13/21 00:21         13C3 HFPO-DA       106       50 - 150       11/10/21 18:37       11/13/21 00:21         General Chemistry         Analyte       Result       Qualifier       RL       MDL       Unit       D       Prepared       Analyzed       Dil Fa         Percent Moisture       24.3       0.1       0.1       %       11/05/21 14:24	115		50 - 150				11/10/21 18:37	11/13/21 00:21	1
13C2 PFDoA       115       50 - 150       11/10/21 18:37 11/13/21 00:21         13C2 PFTeDA       106       50 - 150       11/10/21 18:37 11/13/21 00:21         13C3 PFBS       136       50 - 150       11/10/21 18:37 11/13/21 00:21         18O2 PFHxS       113       50 - 150       11/10/21 18:37 11/13/21 00:21         13C4 PFOS       118       50 - 150       11/10/21 18:37 11/13/21 00:21         d3-NMeFOSAA       123       50 - 150       11/10/21 18:37 11/13/21 00:21         d5-NEtFOSAA       144       50 - 150       11/10/21 18:37 11/13/21 00:21         13C3 HFPO-DA       106       50 - 150       11/10/21 18:37 11/13/21 00:21         General Chemistry         Analyte       Result Qualifier       RL       MDL Unit       D Prepared       Analyzed       Dil Farencent Moisture         Percent Moisture       24.3       0.1       0.1       %       11/05/21 14:24	117		50 - 150				11/10/21 18:37	11/13/21 00:21	1
13C2 PFTeDA       106       50 - 150       11/10/21 18:37       11/13/21 00:21         13C3 PFBS       136       50 - 150       11/10/21 18:37       11/13/21 00:21         18O2 PFHxS       113       50 - 150       11/10/21 18:37       11/13/21 00:21         13C4 PFOS       118       50 - 150       11/10/21 18:37       11/13/21 00:21         d3-NMeFOSAA       123       50 - 150       11/10/21 18:37       11/13/21 00:21         d5-NEtFOSAA       144       50 - 150       11/10/21 18:37       11/13/21 00:21         13C3 HFPO-DA       106       50 - 150       11/10/21 18:37       11/13/21 00:21         General Chemistry         Analyte       Result       Qualifier       RL       MDL       Unit       D       Prepared       Analyzed       Dil Fa         Percent Moisture       24.3       0.1       0.1       %       11/05/21 14:24	113		50 - 150				11/10/21 18:37	11/13/21 00:21	1
13C3 PFBS     136     50 - 150     11/10/21 18:37 11/13/21 00:21       18O2 PFHxS     113     50 - 150     11/10/21 18:37 11/13/21 00:21       13C4 PFOS     118     50 - 150     11/10/21 18:37 11/13/21 00:21       d3-NMeFOSAA     123     50 - 150     11/10/21 18:37 11/13/21 00:21       d5-NEtFOSAA     144     50 - 150     11/10/21 18:37 11/13/21 00:21       13C3 HFPO-DA     106     50 - 150     11/10/21 18:37 11/13/21 00:21       General Chemistry       Analyte     Result Qualifier     RL     MDL     Unit     D     Prepared     Analyzed     Dil Fa       Percent Moisture	115		50 - 150				11/10/21 18:37	11/13/21 00:21	1
1802 PFHxS       113       50 - 150       11/10/21 18:37       11/13/21 00:21         13C4 PFOS       118       50 - 150       11/10/21 18:37       11/13/21 00:21         d3-NMeFOSAA       123       50 - 150       11/10/21 18:37       11/13/21 00:21         d5-NEtFOSAA       144       50 - 150       11/10/21 18:37       11/13/21 00:21         13C3 HFPO-DA       106       50 - 150       11/10/21 18:37       11/13/21 00:21         General Chemistry         Analyte       Result       Qualifier       RL       MDL       Unit       D       Prepared       Analyzed       Dil Farence Dil Farence         Percent Moisture       24.3       0.1       0.1       %       11/10/21 14:24	106		50 - 150				11/10/21 18:37	11/13/21 00:21	1
13C4 PFOS 118 50 - 150 11/10/21 18:37 11/13/21 00:21 d3-NMeFOSAA 123 50 - 150 11/10/21 18:37 11/13/21 00:21 d5-NEtFOSAA 144 50 - 150 11/10/21 18:37 11/13/21 00:21 13C3 HFPO-DA 106 50 - 150 11/10/21 18:37 11/13/21 00:21 11/10/21 18:37 11/13/21 00:	136		50 - 150				11/10/21 18:37	11/13/21 00:21	1
d3-NMeFOSAA     123     50 - 150     11/10/21 18:37 11/13/21 00:21       d5-NEtFOSAA     144     50 - 150     11/10/21 18:37 11/13/21 00:21       13C3 HFPO-DA     106     50 - 150     11/10/21 18:37 11/13/21 00:21       General Chemistry       Analyte     Result     Qualifier     RL     MDL     Unit     D     Prepared     Analyzed     Dil Farence Di	113		50 - 150				11/10/21 18:37	11/13/21 00:21	1
d5-NEtFOSAA       144       50 - 150       11/10/21 18:37 11/13/21 00:21         13C3 HFPO-DA       106       50 - 150       11/10/21 18:37 11/13/21 00:21         General Chemistry         Analyte       Result       Qualifier       RL       MDL Unit       D Prepared       Analyzed       Dil Farent Moisture         Percent Moisture       24.3       0.1       0.1       %       11/05/21 14:24	118		50 <sub>-</sub> 150				11/10/21 18:37	11/13/21 00:21	1
13C3 HFPO-DA	123		50 - 150				11/10/21 18:37	11/13/21 00:21	1
13C3 HFPO-DA	144		50 - 150				11/10/21 18:37	11/13/21 00:21	1
Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Farecent Moisture 0.1 0.1 0.1 % D Prepared 11/05/21 14:24	106		50 - 150				11/10/21 18:37	11/13/21 00:21	1
Percent Moisture 24.3 0.1 0.1 % 11/05/21 14:24						_			
<del></del>		Qualifier				D	Prepared		
	24.3		0.1	0.1	%			11/05/21 14:24	1
		ND ND ND ND ND ND ND ND ND ND ND ND ND N	ND ND ND ND ND ND ND ND ND ND ND ND ND N	ND         0.25           ND	ND         0.25         0.039           ND         0.25         0.048           ND         0.25         0.067           ND         0.25         0.028           ND         0.25         0.060           ND         0.25         0.053           ND         0.25         0.038           ND         0.25         0.026           ND         0.25         0.047           ND         0.25         0.048           ND         0.25         0.048           ND         0.25         0.054           ND         0.25         0.060           ND         0.25         0.060           ND         0.25         0.044           ND         0.25         0.044           ND         0.25         0.049           **Recovery         Qualifier         Limits           125         50 - 150           112         50 - 150           113         50 - 150           115         50 - 150           116         50 - 150           113         50 - 150           113         50 - 150           114         50 - 150	ND         0.25         0.039         ug/Kg           ND         0.25         0.048         ug/Kg           ND         0.25         0.067         ug/Kg           ND         0.25         0.028         ug/Kg           ND         0.25         0.060         ug/Kg           ND         0.25         0.053         ug/Kg           ND         0.25         0.038         ug/Kg           ND         0.25         0.026         ug/Kg           ND         0.25         0.047         ug/Kg           ND         0.25         0.047         ug/Kg           ND         0.25         0.048         ug/Kg           ND         0.25         0.048         ug/Kg           ND         0.25         0.054         ug/Kg           ND         0.25         0.060         ug/Kg           ND         0.25         0.060         ug/Kg           ND         0.25         0.044         ug/Kg           ND         0.25         0.052         ug/Kg           ND         0.25         0.049         ug/Kg           ND         0.25         0.049         ug/Kg	ND         0.25         0.039         ug/Kg         ☆           ND         0.25         0.048         ug/Kg         ☆           ND         0.25         0.067         ug/Kg         ☆           ND         0.25         0.060         ug/Kg         ☆           ND         0.25         0.060         ug/Kg         ☆           ND         0.25         0.053         ug/Kg         ☆           ND         0.25         0.038         ug/Kg         ☆           ND         0.25         0.038         ug/Kg         ☆           ND         0.25         0.047         ug/Kg         ☆           ND         0.25         0.047         ug/Kg         ☆           ND         0.25         0.048         ug/Kg         ☆           ND         0.25         0.049         ug/Kg         ☆           ND         0.25         0.054         ug/Kg         ☆           ND         0.25         0.060         ug/Kg         ☆           ND         0.25         0.044         ug/Kg         ☆           ND         0.25         0.049         ug/Kg         ☆           ** <td>  ND</td> <td>  ND</td>	ND	ND

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15

Matrix: Solid Prep Type: Total/NA

				-	Dilution Re		-	imits)	
		PFHxA	C4PFHA	PFOA	PFNA	PFDA	PFUnA	PFDoA	PFTD
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-15
320-81254-1	21GST-SS-023	82	83	91	89	88	90	94	92
320-81254-1 MS	21GST-SS-023	77	84	92	87	86	92	92	93
320-81254-1 MSD	21GST-SS-023	91	105	109	110	110	105	114	118
320-81254-2	21GST-SS-029	77	81	90	86	81	84	93	84
320-81254-3	21GST-SS-028	78	93	89	90	91	90	88	95
320-81254-4	21GST-SS-027	98	97	104	93	97	103	100	108
320-81254-5	21GST-SS-026	89	90	97	90	93	99	106	10
320-81254-6	21GST-SS-126	76	90	97	86	87	83	86	93
320-81254-7	21GST-SS-025	85	90	99	90	99	92	99	10
320-81254-8	21GST-SS-024	82	93	90	91	92	90	95	10
320-81254-9	21GST-SS-022	90	90	99	87	99	105	91	90
320-81254-9 320-81254-9 - DL	21GST-SS-022	90	90	99	07	99	103	91	90
				07					
320-81254-10	21GST-SS-021	75	89	97	91	94	94	84	91
320-81254-10 - DL	21GST-SS-021	00	0.4	400	400	400	400	407	40
320-81254-11	21GST-SS-020	88	91	108	103	102	103	107	10
320-81254-11 - DL	21GST-SS-020								
320-81254-12	21GST-SS-019	92	95	114	114	117	121	110	11:
320-81254-13	21GST-SS-018	99	117	116	110	116	114	119	12
320-81254-14	21GST-SS-014	82	87	97	93	94	94	91	86
20-81254-15	21GST-SS-017	88	100	107	107	104	97	106	11
320-81254-16	21GST-SS-016	87	92	102	94	98	94	100	11
320-81254-17	21GST-SS-015	79	86	97	87	91	96	92	9
20-81254-18	21GST-SS-008	76	84	96	85	90	90	91	8
320-81254-18 - DL	21GST-SS-008								
20-81254-19	21GST-SS-006	77	75	92	92	95	83	75	6
320-81254-20	21GST-SS-106	77	83	89	91	99	88	71	57
320-81254-20 - DL	21GST-SS-106				•				
320-81254-21	21GST-SS-005	100	93	99	98	104	102	96	89
320-81254-22	21GST-SS-007	85	86	94	94	103	88	85	80
320-81254-23	21GST-MW14-01	100	98	92	90	93	100	85	86
320-81254-24	21GST-MW14-10	106	97	101	89	94	93	86	85
320-81254-25	21GST-MW14-02	113	111	100	106	105	108	94	93
320-81254-26	21GST-MW14-03	123	113	104	104	106	101	91	98
320-81254-27	21GST-MW14-04	115	102	101	102	105	105	89	8
320-81254-28	21GST-MW14-05	100	99	90	92	91	89	76	80
320-81254-29	21GST-MW14-06	104	97	94	95	91	94	86	82
20-81254-30	21GST-MW18-01	114	106	102	103	110	103	93	92
320-81254-31	21GST-MW18-02	113	105	104	98	93	101	90	8
320-81254-32	21GST-MW18-12	122	113	106	104	99	96	90	86
320-81254-33	21GST-MW18-03	123	122	108	107	111	106	100	99
320-81254-34	21GST-MW18-04	111	106	104	102	106	101	91	90
20-81254-35	21GST-MW18-05	108	101	93	93	95	93	85	78
320-81254-36	21GST-MW18-06	114	106	99	101	99	100	90	89
320-81254-37	21GST-MW15-01	114	106	102	112	118	120	105	93
320-81254-38	21GST-MW15-02	109	108	107	99	102	106	95	9
320-81254-39	21GST-MW15-03	110	106	104	94	104	95	83	80
320-81254-40	21GST-MW15-04	110	100	104	104	104	105	93	90
320-81254-40 MS 320-81254-40 MSD	21GST-MW15-04 21GST-MW15-04	113 112	101 114	102 110	97	105 111	100 105	87 96	82 87

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Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

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

Lab Sample ID 320-81254-41 320-81254-42 320-81254-43 320-81254-44 320-81254-45 320-81254-46	Client Sample ID 21GST-MW15-14 21GST-MW15-05 21GST-MW15-06 21GST-SB002-01 21GST-SB002-02	PFHxA (50-150) 97 90 93	<b>C4PFHA</b> (50-150) 94	PFOA (50-150)	PFNA (50-150)	PFDA	PFUnA	PFDoA	PFTDA
320-81254-41 320-81254-42 320-81254-43 320-81254-44 320-81254-45 320-81254-46	21GST-MW15-14 21GST-MW15-05 21GST-MW15-06 21GST-SB002-01	97 90		(50-150)	(50-150)				
320-81254-42 320-81254-43 320-81254-44 320-81254-45 320-81254-46	21GST-MW15-05 21GST-MW15-06 21GST-SB002-01	90	94			(50-150)	(50-150)	(50-150)	(50-150
320-81254-43 320-81254-44 320-81254-45 320-81254-46	21GST-MW15-06 21GST-SB002-01			87	94	89	94	89	87
320-81254-44 320-81254-45 320-81254-46	21GST-SB002-01	93	87	82	87	86	88	79	83
320-81254-45 320-81254-46			88	86	90	94	87	87	83
320-81254-46		89	91	87	82	91	93	87	84
		99	97	92	95	93	96	90	93
32N_8125 <i>1</i> _17	21GST-SB002-03	94	90	89	91	92	96	91	91
	21GST-SB002-04	101	94	88	87	89	95	87	86
320-81254-48	21GST-SB001-01	97	90	87	85	87	90	82	81
320-81254-49	21GST-SB001-02	91	89	85	86	84	84	78	64
320-81254-50	21GST-SB001-03	87	90	83	82	86	84	78	71
320-81254-51	21GST-SB001-04	104	101	94	93	95	91	89	80
320-81254-52	21GST-SB009-01	96	93	85	88	94	96	88	85
320-81254-53	21GST-SB009-10	90	87	86	83	88	92	87	78
320-81254-54	21GST-SB009-02	95	88	87	96	89	88	83	75
320-81254-55	21GST-SB009-03	95	99	85	91	95	93	87	86
320-81254-56	21GST-SB009-04	98	88	85	87	91	89	78	77
320-81254-57	21GST-SB010-01	93	87	84	90	89	97	86	76
320-81254-58	21GST-SB010-10	91	85	80	79	85	84	81	78
320-81254-59	21GST-SB010-02	95	97	91	89	92	85	83	81
320-81254-60	21GST-SB010-03	97	91	86	86	90	89	81	81
320-81254-60 MS	21GST-SB010-03	98	96	87	94	93	93	85	83
320-81254-60 MSD	21GST-SB010-03	90	93	83	86	89	89	80	75
320-81254-61	21GST-SB012-01	99	89	81	78	83	77	78	69
320-81254-62	21GST-SB012-02	106	105	100	99	100	102	102	93
320-81254-63	21GST-SB012-03	100	99	93	93	100	105	98	92
320-81254-64	21GST-SB013-01	131	125	113	119	118	118	109	106
320-81254-65	21GST-SB013-02	107	98	96	97	98	104	97	91
320-81254-66	21GST-SB013-03	103	96	86	84	87	90	85	83
320-81254-67	21GST-SB005-01	109	105	96	99	101	107	101	96
320-81254-68	21GST-SB005-02	104	104	95	97	94	96	88	91
320-81254-69	21GST-SB005-03	138	126	121	118	122	120	116	112
320-81254-70	21GST-SB007-01	109	108	99	99	95	99	103	95
320-81254-71	21GST-SB007-10	103	103	95	95	96	96	91	94
320-81254-72	21GST-SB007-02	122	117	112	115	115	118	112	103
320-81254-73	21GST-SB007-03	98	94	89	86	87	90	86	81
320-81254-74	21GST-SS-030	91	89	84	87	90	89	89	79
320-81254-75	21GST-SS-010	106	105	103	107	101	113	100	93
320-81254-76	21GST-SS-031	102	91	91	94	92	99	94	86
320-81254-77	21GST-SS-131	94	96	91	89	99	94	92	82
320-81254-78	21GST-SS-009	112	108	104	102	114	109	111	100
320-81254-78 - DL	21GST-SS-009	112	100	104	102	114	103		100
320-81254-79	21GST-SS-012	113	109	101	101	103	98	92	89
320-81254-79 320-81254-80	21GST-SS-012 21GST-SS-011	112	109	101	106	103	110	101	97
320-81254-80 MS	21GST-SS-011 21GST-SS-011	100	98	92	96	108	104	91	90
320-81254-80 MSD	21GST-SS-011 21GST-SS-011	106	104	97		102		104	96
					102 07		113		
320-81254-81 320-81254-81 MS	21GST-SS-013	90 86	88	90	97	100 05	97 02	85 00	76 70
320-81254-81 MS	21GST-SS-013	86	93	90	98	95	92	90	79
320-81254-81 MSD	21GST-SS-013	96	97	96	106	94	96	90	85
320-81254-82 320-81254-83	21GST-SB003-01 21GST-SB003-02	79 101	80 97	80 95	85 101	87 100	84 100	78 92	72 91

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Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Matrix: Solid Prep Type: Total/NA

		PFHxA	Perco	ent Isotope PFOA	Dilution Re	covery (Ac	ceptance L PFUnA	imits) PFDoA	PFTD/
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150
320-81254-84	21GST-SB003-03	108	107	104	99	105	103	101	96
320-81254-85	21GST-SB004-01	100	100	104	93	100	102	94	84
320-81254-86	21GST-SB004-02	111	103	102	99	102	100	93	90
320-81254-87	21GST-SB004-03	96	93	91	86	95	95	91	88
320-81254-88	21GST-SB006-01	99	98	95	99	96	96	90	84
320-81254-89	21GST-SB006-10	101	98	93	97	97	94	94	89
320-81254-90	21GST-SB006-02	107	103	95	94	91	94	93	87
320-81254-91	21GST-SB006-03	100	97	98	93	101	107	96	94
320-81254-91 MS	21GST-SB006-03	103	100	96	95	104	106	97	98
320-81254-91 MSD	21GST-SB006-03	118	119	111	110	109	112	105	108
320-81254-92	21GST-SB008-01	111	111	108	109	113	114	107	111
320-81254-93	21GST-SB008-02	110	107	109	110	111	112	110	107
320-81254-94	21GST-SB008-03	110	108	102	98	101	109	100	102
320-81254-95	21GST-SB011-01	90	95	90	87	97	92	91	89
320-81254-95 - DL	21GST-SB011-01				٠.	٠.		•	
320-81254-96	21GST-SB011-12	125	121	109	110	119	122	119	114
320-81254-96 - DL	21GST-SB011-12	120	121	100	110	110	122	110	
320-81254-97	21GST-SB011-02	98	96	90	90	95	93	91	94
320-81254-97 - DL	21GST-SB011-02								
320-81254-98	21GST-SB011-03	115	118	109	109	112	115	109	109
320-81254-99	21GST-SB014-01	119	117	111	117	119	123	113	116
320-81254-100	21GST-SB014-01	104	97	99	99	100	100	97	99
320-81254-101	21GST-SB014-02 21GST-SB014-03	111	104	101	101	103	108	99	97
320-81254-101 320-81254-102	21GST-SS-032	113	112	106	110	112	118	113	105
320-81254-103	21GST-SS-032	94	92	86	89	93	93	86	84
320-81254-104	21GST-SS-034	111 80	113 87	103 87	100 88	107	102 87	100 77	103
320-81254-105	21GST-SS-004					95			71
320-81254-106	21GST-SS-003	93	95	103	107	108	103	90	72
320-81254-107	21GST-SS-103	98	99	97	105	107	102	81	63
320-81254-108	21GST-SS-002	82	89	89	95	98	88	80	65
320-81254-109	21GST-SS-001	86	92	100	104	104	97	85	75 07
320-81254-110	21GST-MW16-01	94	91	92	100	105	101	97	87
320-81254-111	21GST-MW16-02	110	97	96	99	98	95	99	90
320-81254-111 MS	21GST-MW16-02	101	96	93	93	96	97	94	93
320-81254-111 MSD	21GST-MW16-02	108	105	98	101	108	103	100	103
320-81254-112	21GST-MW16-03	107	103	101	104	98	103	99	98
320-81254-113	21GST-MW16-04	102	101	92	93	97	99	91	94
20-81254-114	21GST-MW19-01	105	107	99	106	106	102	104	102
320-81254-115	21GST-MW19-02	102	100	98	98	100	100	95	91
320-81254-116	21GST-MW20-01	107	100	93	92	102	98	93	101
320-81254-117	21GST-MW20-10	116	109	104	104	101	110	99	99
320-81254-118	21GST-MW20-02	125	121	112	115	117	113	115	106
CS 320-540825/2-A	Lab Control Sample	88	93	98	94	85	97	94	98
CS 320-541157/2-A	Lab Control Sample	100	99	103	99	93	96	91	91
CS 320-541434/2-A	Lab Control Sample	113	94	94	98	97	92	93	87
CS 320-541446/2-A	Lab Control Sample	85	75	73	77	79	81	75	69
CS 320-541628/2-A	Lab Control Sample	104	96	92	97	95	94	84	88
.CS 320-541730/2-A	Lab Control Sample	102	99	98	97	100	97	97	94
_CS 320-541731/2-A	Lab Control Sample	118	114	106	106	107	110	100	104
MB 320-540825/1-A	Method Blank	105	113	118	112	112	111	116	126

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Client: Shannon & Wilson, Inc

Job ID: 320-81254-1

Project/Site: SC Soils#3

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Matrix: Solid Prep Type: Total/NA

					Bu 4 =				
					Dilution Re				
		PFHxA	C4PFHA	PFOA	PFNA	PFDA	PFUnA	PFDoA	PFTDA
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)
MB 320-541157/1-A	Method Blank	102	97	102	104	94	100	95	93
MB 320-541434/1-A	Method Blank	124	126	114	116	111	121	111	105
MB 320-541446/1-A	Method Blank	81	85	79	76	88	81	78	70
MB 320-541628/1-A	Method Blank	104	102	94	95	95	93	92	89
MB 320-541730/1-A	Method Blank	136	131	116	112	119	127	123	114
MB 320-541731/1-A	Method Blank	107	102	95	94	103	100	95	94
			Perce	ent Isotope	Dilution Re	covery (Ac	ceptance L	imits)	
		C3PFBS	PFHxS	PFOS	d3NMFOS	d5NEFOS	HFPODA		
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)		
320-81254-1	21GST-SS-023	94	76	78	77	76	80		
320-81254-1 MS	21GST-SS-023	89	71	79	78	80	83		
320-81254-1 MSD	21GST-SS-023	102	93	102	92	94	101		
320-81254-2	21GST-SS-029	79	76	77	75	71	81		
320-81254-3	21GST-SS-028	86	77	86	77	73	80		
320-81254-4	21GST-SS-027	102	87	84	87	86	94		
320-81254-5	21GST-SS-026	97	88	91	83	88	94		
320-81254-6	21GST-SS-126	92	81	86	77	77	86		
320-81254-7	21GST-SS-025	92	88	89	85	88	85		
320-81254-8	21GST-SS-024	95	82	89	80	78	89		
320-81254-9	21GST-SS-022	128	92	92	94	91	90		
320-81254-9 - DL	21GST-SS-022		113	82		• •			
320-81254-10	21GST-SS-021	103	78	87	80	82	83		
320-81254-10 - DL	21GST-SS-021	100	, 0	95	00	02	00		
320-81254-11	21GST-SS-020	107	92	96	99	97	94		
320-81254-11 - DL	21GST-SS-020			115					
320-81254-12	21GST-SS-019	113	98	103	96	102	100		
320-81254-13	21GST-SS-018	112	96	106	98	100	102		
320-81254-14	21GST-SS-014	102	86	87	79	84	81		
320-81254-15	21GST-SS-017	100	89	97	93	99	91		
320-81254-16	21GST-SS-016	101	90	93	90	89	87		
320-81254-17	21GST-SS-015	88	75	81	81	84	89		
320-81254-18	21GST-SS-008	90	76	81	76	79	78		
320-81254-18 - DL	21GST-SS-008	30	70	110	70	15	70		
320-81254-19	21GST-SS-006	96	82	89	67	71	82		
320-81254-20	21GST-SS-106	98	82	90	65	68	87		
320-81254-20 - DL	21GST-SS-106	90	02	90	03	00	01		
	21GST-SS-005	104	94			102	96		
320-81254-21		104		100 91	93	102 94	81		
320-81254-22	21GST-SS-007		93		80				
320-81254-23	21GST-MW14-01	100	79	84	79	94	85		
320-81254-24	21GST-MW14-10	105	93	91	86	93	102		
320-81254-25	21GST-MW14-02	122	108	108	100	108	103		
320-81254-26	21GST-MW14-03	121	97	107	93	106	110		
320-81254-27	21GST-MW14-04	112	99	103	93	96	96		
320-81254-28	21GST-MW14-05	103	88	89	84	89	80		
320-81254-29	21GST-MW14-06	108	97	99	90	96	102		
320-81254-30	21GST-MW18-01	112	89	104	98	95	100		
320-81254-31	21GST-MW18-02	109	102	98	94	95	106		
320-81254-32	21GST-MW18-12	121	104	106	96	100	97		
320-81254-33	21GST-MW18-03	117	105	114	104	110	103		
320-81254-34	21GST-MW18-04	115	96	105	92	103	110		

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Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Matrix: Solid Prep Type: Total/NA

20-81254-35 320-81254-36 320-81254-37 320-81254-38 320-81254-39 320-81254-40 320-81254-40 MS	Client Sample ID 21GST-MW18-05 21GST-MW15-01 21GST-MW15-02 21GST-MW15-03 21GST-MW15-04 21GST-MW15-04	(50-150) 115 119 119 112 116	(50-150) 94 100 101	97 98	( <b>50-150</b> ) 86	(50-150)	(50-150)	
320-81254-36 320-81254-37 320-81254-38 320-81254-39 320-81254-40 320-81254-40 MS	21GST-MW18-06 21GST-MW15-01 21GST-MW15-02 21GST-MW15-03 21GST-MW15-04	119 119 112 116	100		80		00	
20-81254-37 20-81254-38 20-81254-39 20-81254-40 20-81254-40 MS	21GST-MW15-01 21GST-MW15-02 21GST-MW15-03 21GST-MW15-04	119 112 116				93	89	
20-81254-38 20-81254-39 20-81254-40 20-81254-40 MS	21GST-MW15-02 21GST-MW15-03 21GST-MW15-04	112 116	101		95	94	93	
20-81254-39 20-81254-40 20-81254-40 MS	21GST-MW15-03 21GST-MW15-04	116		111	118	127	93	
20-81254-40 20-81254-40 MS	21GST-MW15-04		103	102	96	96	91	
20-81254-40 MS			96	98	100	107	95	
	21GST-MW15-04	115	105	106	108	114	93	
00 04054 40 1405		115	97	102	104	101	102	
20-81254-40 MSD	21GST-MW15-04	121	105	104	113	112	107	
20-81254-41	21GST-MW15-14	101	91	94	104	108	76	
20-81254-42	21GST-MW15-05	97	82	83	98	97	80	
20-81254-43	21GST-MW15-06	96	83	89	100	99	83	
20-81254-44	21GST-SB002-01	89	77	86	96	97	84	
20-81254-45	21GST-SB002-02	101	95	97	111	107	75	
20-81254-46	21GST-SB002-03	94	78	93	101	106	84	
20-81254-47	21GST-SB002-04	104	91	94	101	102	92	
20-81254-48	21GST-SB001-01	93	81	84	92	100	77	
20-81254-49	21GST-SB001-02	94	80	84	92	97	77	
20-81254-50	21GST-SB001-03	94	77	86	88	92	77	
20-81254-51	21GST-SB001-04	101	91	94	102	107	91	
20-81254-52	21GST-SB009-01	100	79	89	101	107	87	
20-81254-53	21GST-SB009-10	90	77	84	96	100	80	
20-81254-54	21GST-SB009-02	98	80	90	95	98	84	
20-81254-55	21GST-SB009-03	96	79	90	98	98	81	
20-81254-56	21GST-SB009-03 21GST-SB009-04	104	79 79	89	91	103	79	
20-81254-50 20-81254-57	21GST-SB009-04 21GST-SB010-01	97	7 <i>9</i> 84	90	96	97	90	
						88		
20-81254-58	21GST-SB010-10	84	75 70	82	83		84	
20-81254-59	21GST-SB010-02	91	79	81	97	97	79	
20-81254-60	21GST-SB010-03	93	78	79	93	101	80	
20-81254-60 MS	21GST-SB010-03	96	78	83	95	93	80	
20-81254-60 MSD	21GST-SB010-03	83	74	84	92	94	74	
20-81254-61	21GST-SB012-01	100	74	76	70	77	92	
20-81254-62	21GST-SB012-02	111	94	100	104	113	92	
20-81254-63	21GST-SB012-03	108	93	99	96	106	94	
20-81254-64	21GST-SB013-01	126	115	118	121	125	110	
20-81254-65	21GST-SB013-02	107	94	99	92	109	91	
20-81254-66	21GST-SB013-03	97	84	90	85	90	82	
20-81254-67	21GST-SB005-01	107	95	99	100	116	90	
20-81254-68	21GST-SB005-02	101	89	96	92	97	90	
20-81254-69	21GST-SB005-03	142	125	130	122	127	111	
20-81254-70	21GST-SB007-01	108	94	100	103	111	90	
20-81254-71	21GST-SB007-10	100	90	90	96	94	93	
20-81254-72	21GST-SB007-02	128	107	110	116	125	109	
20-81254-73	21GST-SB007-03	95	86	87	95	96	85	
20-81254-74	21GST-SS-030	99	85	95	93	108	80	
20-81254-75	21GST-SS-010	114	96	106	111	116	81	
20-81254-76	21GST-SS-031	104	93	95	99	108	85	
20-81254-77	21GST-SS-131					101		
		106	86 08	91 100	100		87 00	
20-81254-78	21GST-SS-009	114	98	109	113	126	99	
20-81254-78 - DL 20-81254-79	21GST-SS-009 21GST-SS-012	103	99	98	98	103	101	

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Client: Shannon & Wilson, Inc

Job ID: 320-81254-1

Project/Site: SC Soils#3

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Matrix: Solid Prep Type: Total/NA

		C3PFBS	Perce PFHxS	ent Isotope PFOS		covery (Ac	ceptance Limits) HFPODA
₋ab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)
20-81254-80	21GST-SS-011	112	95	100	103	113	94
20-81254-80 MS	21GST-SS-011	104	89	93	101	107	89
20-81254-80 MSD	21GST-SS-011	109	93	99	104	114	87
20-81254-81	21GST-SS-013	101	87	100	99	103	71
20-81254-81 MS	21GST-SS-013	106	89	96	98	107	68
20-81254-81 MSD	21GST-SS-013	106	95	104	102	111	75
20-81254-82	21GST-SB003-01	90	82	90	89	103	69
20-81254-83	21GST-SB003-02	107	96	100	110	115	90
20-81254-84	21GST-SB003-03	111	94	104	113	122	96
20-81254-85	21GST-SB004-01	108	97	98	105	110	92
20-81254-86	21GST-SB004-02	114	96	97	110	114	97
0-81254-87	21GST-SB004-03	99	90	88	101	118	92
0-81254-88	21GST-SB006-01	101	90	90	105	112	89
0-81254-89	21GST-SB006-10	100	90	97	103	115	85
0-81254-90	21GST-SB006-02	107	92	95	106	110	109
20-81254-91	21GST-SB006-03	98	89	94	108	115	89
20-81254-91 MS	21GST-SB006-03	104	94	96	112	120	93
20-81254-91 MSD	21GST-SB006-03	136	108	115	115	118	105
20-81254-92	21GST-SB008-01	118	99	107	114	124	109
0-81254-93	21GST-SB008-02	110	93	99	107	133	94
0-81254-94	21GST-SB008-03	114	94	98	104	121	98
0-81254-95	21GST-SB000-03	100	80	84	104	110	81
0-81254-95 - DL	21GST-SB011-01	100	00	89	100	110	01
0-81254-96	21GST-SB011-12	117	112	118	127	138	102
0-81254-96 - DL	21GST-SB011-12 21GST-SB011-12	117	78	110	127	130	102
		07	76 81	0.6	101	107	83
0-81254-97 0-81254-97 - DL	21GST-SB011-02 21GST-SB011-02	97	01	86 79	101	107	00
		100	107		117	100	100
20-81254-98	21GST-SB011-03	123	107	109	117	120	108
0-81254-99	21GST-SB014-01	123	110	115	125	132	106
0-81254-100	21GST-SB014-02	119	94	96	102	111	84
20-81254-101	21GST-SB014-03	108	94	101	104	106	90
0-81254-102	21GST-SS-032	113	104	105	119	126	101
20-81254-103	21GST-SS-033	98	83	92	98	100	76
0-81254-104	21GST-SS-034	115	92	99	104	106	95
20-81254-105	21GST-SS-004	100	82	115	80	85	78
0-81254-106	21GST-SS-003	117	97	111	82	99	83
20-81254-107	21GST-SS-103	120	100	116	84	94	90
20-81254-108	21GST-SS-002	118	91	140	74	82	76
20-81254-109	21GST-SS-001	109	91	106	88	99	78
20-81254-110	21GST-MW16-01	102	92	106	107	116	86
0-81254-111	21GST-MW16-02	101	91	93	102	109	89
0-81254-111 MS	21GST-MW16-02	108	86	94	97	103	92
0-81254-111 MSD	21GST-MW16-02	109	97	106	111	111	96
0-81254-112	21GST-MW16-03	125	99	97	103	109	102
0-81254-113	21GST-MW16-04	102	87	102	104	109	89
0-81254-114	21GST-MW19-01	115	101	102	106	111	101
0-81254-115	21GST-MW19-02	104	96	98	108	109	86
0-81254-116	21GST-MW20-01	108	93	100	99	120	92
20-81254-117	21GST-MW20-10	115	96	103	105	117	97
20-81254-118	21GST-MW20-02	136	113	118	123	144	106

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Client: Shannon & Wilson, Inc Job ID: 320-81254-1 Project/Site: SC Soils#3

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

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

	Percent Isotope Dilution Recovery (Acceptance Limits)								
		C3PFBS	PFHxS	PFOS	d3NMFOS	d5NEFOS	HFPODA		
ab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)		
S 320-540825/2-A	Lab Control Sample	101	79	88	86	88	85		
320-541157/2-A	Lab Control Sample	118	99	100	92	90	92		
320-541434/2-A	Lab Control Sample	103	95	99	97	105	87		
320-541446/2-A	Lab Control Sample	92	73	75	82	87	71		
320-541628/2-A	Lab Control Sample	104	92	99	101	101	85		
320-541730/2-A	Lab Control Sample	113	92	100	103	105	92		
320-541731/2-A	Lab Control Sample	124	107	115	125	119	100		
20-540825/1-A	Method Blank	127	108	112	102	99	112		
320-541157/1-A	Method Blank	117	98	103	97	105	95		
320-541434/1-A	Method Blank	120	106	117	109	126	105		
320-541446/1-A	Method Blank	92	77	88	90	89	73		
320-541628/1-A	Method Blank	105	94	98	102	107	90		
20-541730/1-A	Method Blank	126	112	113	128	138	119		
320-541731/1-A	Method Blank	115	97	101	106	118	93		

#### **Surrogate Legend**

PFHxA = 13C2 PFHxA

C4PFHA = 13C4 PFHpA

PFOA = 13C4 PFOA

PFNA = 13C5 PFNA

PFDA = 13C2 PFDA

PFUnA = 13C2 PFUnA

PFDoA = 13C2 PFDoA

PFTDA = 13C2 PFTeDA

C3PFBS = 13C3 PFBS

PFHxS = 18O2 PFHxS

PFOS = 13C4 PFOS

d3NMFOS = d3-NMeFOSAA

d5NEFOS = d5-NEtFOSAA

HFPODA = 13C3 HFPO-DA

Eurofins TestAmerica, Sacramento

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3 Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15

Lab Sample ID: MB 320-540825/1-A

**Matrix: Solid** 

Analysis Batch: 541064

Client Sample ID: Method Blank

**Prep Type: Total/NA** 

**Prep Batch: 540825** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.031	ug/Kg		11/07/21 18:20	11/08/21 22:55	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.038	ug/Kg		11/07/21 18:20	11/08/21 22:55	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.053	ug/Kg		11/07/21 18:20	11/08/21 22:55	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.022	ug/Kg		11/07/21 18:20	11/08/21 22:55	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.048	ug/Kg		11/07/21 18:20	11/08/21 22:55	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.042	ug/Kg		11/07/21 18:20	11/08/21 22:55	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.030	ug/Kg		11/07/21 18:20	11/08/21 22:55	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.021	ug/Kg		11/07/21 18:20	11/08/21 22:55	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.037	ug/Kg		11/07/21 18:20	11/08/21 22:55	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.038	ug/Kg		11/07/21 18:20	11/08/21 22:55	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.029	ug/Kg		11/07/21 18:20	11/08/21 22:55	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.20	0.043	ug/Kg		11/07/21 18:20	11/08/21 22:55	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg		11/07/21 18:20	11/08/21 22:55	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.20	0.048	ug/Kg		11/07/21 18:20	11/08/21 22:55	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.20	0.035	ug/Kg		11/07/21 18:20	11/08/21 22:55	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.20	0.041	ug/Kg		11/07/21 18:20	11/08/21 22:55	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.20	0.031	ug/Kg		11/07/21 18:20	11/08/21 22:55	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.039	ug/Kg		11/07/21 18:20	11/08/21 22:55	1
	MB	MB							

MB MB

	IVID IVID				
Isotope Dilution	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	105	50 - 150	11/07/21 18:20	11/08/21 22:55	1
13C4 PFHpA	113	50 - 150	11/07/21 18:20	11/08/21 22:55	1
13C4 PFOA	118	50 - 150	11/07/21 18:20	11/08/21 22:55	1
13C5 PFNA	112	50 - 150	11/07/21 18:20	11/08/21 22:55	1
13C2 PFDA	112	50 - 150	11/07/21 18:20	11/08/21 22:55	1
13C2 PFUnA	111	50 - 150	11/07/21 18:20	11/08/21 22:55	1
13C2 PFDoA	116	50 - 150	11/07/21 18:20	11/08/21 22:55	1
13C2 PFTeDA	126	50 - 150	11/07/21 18:20	11/08/21 22:55	1
13C3 PFBS	127	50 - 150	11/07/21 18:20	11/08/21 22:55	1
1802 PFHxS	108	50 - 150	11/07/21 18:20	11/08/21 22:55	1
13C4 PFOS	112	50 - 150	11/07/21 18:20	11/08/21 22:55	1
d3-NMeFOSAA	102	50 - 150	11/07/21 18:20	11/08/21 22:55	1
d5-NEtFOSAA	99	50 - 150	11/07/21 18:20	11/08/21 22:55	1
13C3 HFPO-DA	112	50 - 150	11/07/21 18:20	11/08/21 22:55	1

Lab Sample ID: LCS 320-540825/2-A

**Matrix: Solid** 

Analysis Batch: 541064

**Client Sample ID: Lab Control Sample Prep Type: Total/NA** 

Prep Batch: 540825

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorohexanoic acid (PFHxA)	2.00	1.85		ug/Kg		92	70 - 132	
Perfluoroheptanoic acid (PFHpA)	2.00	1.79		ug/Kg		89	71 - 131	
Perfluorooctanoic acid (PFOA)	2.00	1.83		ug/Kg		92	69 - 133	
Perfluorononanoic acid (PFNA)	2.00	1.86		ug/Kg		93	72 - 129	

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Job ID: 320-81254-1

Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: LCS 320-540825/2-A

**Matrix: Solid** 

**Analysis Batch: 541064** 

**Client Sample ID: Lab Control Sample Prep Type: Total/NA** 

**Prep Batch: 540825** 

	Spike	LCS I	LCS				%Rec.	
Analyte	Added	Result (	Qualifier	Unit	D	%Rec	Limits	
Perfluorodecanoic acid (PFDA)	2.00	1.92		ug/Kg		96	69 - 133	
Perfluoroundecanoic acid	2.00	1.92		ug/Kg		96	64 - 136	
(PFUnA)								
Perfluorododecanoic acid	2.00	1.87		ug/Kg		93	69 - 135	
(PFDoA)								
Perfluorotridecanoic acid	2.00	1.93		ug/Kg		96	66 - 139	
(PFTriA)								
Perfluorotetradecanoic acid	2.00	1.77		ug/Kg		89	69 - 133	
(PFTeA)								
Perfluorobutanesulfonic acid	1.77	1.40		ug/Kg		79	72 - 128	
(PFBS)								
Perfluorohexanesulfonic acid	1.82	1.80		ug/Kg		99	67 - 130	
(PFHxS)								
Perfluorooctanesulfonic acid	1.86	1.70		ug/Kg		92	68 - 136	
(PFOS)								
N-methylperfluorooctanesulfona	2.00	1.75		ug/Kg		87	63 - 144	
midoacetic acid (NMeFOSAA)								
N-ethylperfluorooctanesulfonami	2.00	1.75		ug/Kg		87	61 - 139	
doacetic acid (NEtFOSAA)								
9-Chlorohexadecafluoro-3-oxan	1.86	1.84		ug/Kg		99	75 - 135	
onane-1-sulfonic acid								
Hexafluoropropylene Oxide	2.00	1.94		ug/Kg		97	77 <sub>-</sub> 137	
Dimer Acid (HFPO-DA)								
11-Chloroeicosafluoro-3-oxaund	1.88	1.79		ug/Kg		95	76 - 136	
ecane-1-sulfonic acid								
4,8-Dioxa-3H-perfluorononanoic	1.88	1.86		ug/Kg		98	79 - 139	

LCS LCS

	200	200	
Isotope Dilution	%Recovery	Qualifier	Limits
13C2 PFHxA	88		50 - 150
13C4 PFHpA	93		50 - 150
13C4 PFOA	98		50 <sub>-</sub> 150
13C5 PFNA	94		50 - 150
13C2 PFDA	85		50 - 150
13C2 PFUnA	97		50 <sub>-</sub> 150
13C2 PFDoA	94		50 - 150
13C2 PFTeDA	98		50 <sub>-</sub> 150
13C3 PFBS	101		50 <sub>-</sub> 150
1802 PFHxS	79		50 - 150
13C4 PFOS	88		50 <sub>-</sub> 150
d3-NMeFOSAA	86		50 <sub>-</sub> 150
d5-NEtFOSAA	88		50 - 150
13C3 HFPO-DA	85		50 - 150

Lab Sample ID: 320-81254-1 MS

**Matrix: Solid** 

acid (ADONA)

Analysis Batch: 541064

Client Sample	ID:	<b>21GS</b>	T-SS-023
		Turner	Total/NIA

Prep Type: Total/NA Prep Batch: 540825

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorohexanoic acid (PFHxA)	ND		2.04	2.21		ug/Kg	<u></u>	109	70 - 132	
Perfluoroheptanoic acid (PFHpA)	ND		2.04	2.05		ug/Kg	₩	101	71 - 131	
Perfluorooctanoic acid (PFOA)	ND		2.04	1.91		ug/Kg	₩	94	69 - 133	

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Job ID: 320-81254-1

Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: 320-81254-1 MS

Matrix: Solid

ecane-1-sulfonic acid

acid (ADONA)

**Matrix: Solid** 

4,8-Dioxa-3H-perfluorononanoic

Lab Sample ID: 320-81254-1 MSD

Analysis Batch: 541064

Client Sample ID: 21GST-SS-023

Prep Type: Total/NA Prep Batch: 540825

-	Sample	Sample	Spike	MS	MS				%Rec.
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Perfluorononanoic acid (PFNA)	0.033	J	2.04	1.87		ug/Kg	<del>-</del>	90	72 - 129
Perfluorodecanoic acid (PFDA)	ND		2.04	2.00		ug/Kg	≎	98	69 - 133
Perfluoroundecanoic acid (PFUnA)	ND		2.04	1.90		ug/Kg	₩	93	64 - 136
Perfluorododecanoic acid (PFDoA)	ND		2.04	1.90		ug/Kg	₩	93	69 - 135
Perfluorotridecanoic acid (PFTriA)	ND		2.04	1.96		ug/Kg	₽	96	66 - 139
Perfluorotetradecanoic acid (PFTeA)	ND		2.04	1.87		ug/Kg	₽	92	69 - 133
Perfluorobutanesulfonic acid (PFBS)	ND		1.80	1.58		ug/Kg	₽	88	72 - 128
Perfluorohexanesulfonic acid (PFHxS)	ND		1.85	1.86		ug/Kg	₽	100	67 - 130
Perfluorooctanesulfonic acid (PFOS)	0.091	JI	1.89	1.74		ug/Kg	₩	87	68 - 136
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	ND		2.04	1.68		ug/Kg	₽	83	63 - 144
N-ethylperfluorooctanesulfonami doacetic acid (NEtFOSAA)	ND		2.04	1.93		ug/Kg	₩	95	61 - 139
9-Chlorohexadecafluoro-3-oxan onane-1-sulfonic acid	ND		1.90	1.89		ug/Kg	₩	100	75 - 135
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		2.04	2.07		ug/Kg	₩	102	77 - 137
11-Chloroeicosafluoro-3-oxaund	ND		1.92	1.97		ug/Kg	₩	103	76 - 136

1.92

2.06

ug/Kg

107

79 - 139

MS MS

ND

	1110		
Isotope Dilution	%Recovery	Qualifier	Limits
13C2 PFHxA	77		50 - 150
13C4 PFHpA	84		50 - 150
13C4 PFOA	92		50 - 150
13C5 PFNA	87		50 - 150
13C2 PFDA	86		50 - 150
13C2 PFUnA	92		50 - 150
13C2 PFDoA	92		50 - 150
13C2 PFTeDA	93		50 - 150
13C3 PFBS	89		50 - 150
1802 PFHxS	71		50 - 150
13C4 PFOS	79		50 - 150
d3-NMeFOSAA	78		50 - 150
d5-NEtFOSAA	80		50 - 150
13C3 HFPO-DA	83		50 - 150

Client Sample ID: 21GST-SS-023

Prep Type: Total/NA Prep Batch: 540825

**Analysis Batch: 541064** Sample Sample Spike MSD MSD %Rec. **RPD** Result Qualifier Added Limits Limit Result Qualifier Unit D %Rec RPD Perfluorohexanoic acid (PFHxA) ND 2.00 1.95 ug/Kg ₩ 97 70 - 132 13 30 Perfluoroheptanoic acid (PFHpA) ND 2.00 1.92 ug/Kg 96 71 - 131 30 6

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68 - 136

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77 - 137

76 - 136

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Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

(PFHxS)

(PFOS)

Perfluorooctanesulfonic acid

N-methylperfluorooctanesulfona

N-ethylperfluorooctanesulfonami

midoacetic acid (NMeFOSAA)

doacetic acid (NEtFOSAA) 9-Chlorohexadecafluoro-3-oxan

onane-1-sulfonic acid Hexafluoropropylene Oxide

Dimer Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaund

ecane-1-sulfonic acid

### Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

0.091 JI

ND

ND

ND

ND

ND

Lab Sample ID: 320-81254-1 MSD Client Sample ID: 21GST-SS-023 **Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 541064** Prep Batch: 540825 MSD MSD **RPD** Sample Sample Spike %Rec. Result Qualifier Added Result Qualifier Unit D %Rec Limits RPD Limit Perfluorooctanoic acid (PFOA) ND 2.00 1.76 ug/Kg 88 69 - 133 9 30 Ö Perfluorononanoic acid (PFNA) 0.033 2.00 1.79 ug/Kg ₩ 88 72 - 1294 30 Perfluorodecanoic acid (PFDA) ND 2.00 95 30 1.90 ug/Kg ÷Ċ÷ 69 - 133 5 Perfluoroundecanoic acid ND 2.00 1.84 ug/Kg ☼ 92 64 - 136 3 30 (PFUnA) Perfluorododecanoic acid ND 2.00 1.92 ug/Kg ∜ 96 69 - 135 1 30 (PFDoA) ND 2.00 1.92 ug/Kg 96 66 - 139 2 30 Perfluorotridecanoic acid Ŭ (PFTriA) Perfluorotetradecanoic acid ND 2.00 1.86 ug/Kg ₩ 93 69 - 133 0 30 (PFTeA) ND 1.77 81 72 - 128 30 Perfluorobutanesulfonic acid 1.44 ug/Kg (PFBS) Perfluorohexanesulfonic acid ND 1.82 1.65 ug/Kg ₩ 90 67 - 130 12 30

1.86

2.00

2.00

1.87

2.00

1.89

1.89

1.70

1.78

1.84

1.71

1.90

1.76

1.96

ug/Kg

ug/Kg

ug/Kg

ug/Kg

ug/Kg

ug/Kg

ug/Kg

ND 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) MSD MSD

Isotope Dilution %Recovery Qualifier Limits 13C2 PFHxA 91 50 - 150 13C4 PFHpA 105 50 - 150 13C4 PFOA 109 50 - 150 13C5 PFNA 110 50 - 150 50 - 150 13C2 PFDA 110 13C2 PFUnA 105 50 - 150 13C2 PFDoA 114 50 - 150 13C2 PFTeDA 50 - 150 118 13C3 PFBS 102 50 - 150 1802 PFHxS 50 - 150 93 13C4 PFOS 102 50 - 150 d3-NMeFOSAA 92 50 - 150 d5-NEtFOSAA 94 50 - 150 13C3 HFPO-DA 101 50 - 150

Lab Sample ID: MB 320-541157/1-A

**Matrix: Solid** 

Analysis Batch: 542324

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.031	ug/Kg		11/09/21 04:35	11/12/21 13:56	1

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Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 541157

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Client: Shannon & Wilson, Inc

Project/Site: SC Soils#3

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: MB 320-541157/1-A **Client Sample ID: Method Blank** 

**Matrix: Solid** 

**Analysis Batch: 542324** 

Prep Type: Total/NA Prep Batch: 541157 MB MB Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac ND 0.20 0.038 ug/Kg 11/09/21 04:35 11/12/21 13:56

Perfluoroheptanoic acid (PFHpA) Perfluorooctanoic acid (PFOA) ND 0.20 0.053 ug/Kg 11/09/21 04:35 11/12/21 13:56 Perfluorononanoic acid (PFNA) ND 0.20 0.022 ug/Kg 11/09/21 04:35 11/12/21 13:56 Perfluorodecanoic acid (PFDA) ND 0.20 0.048 ug/Kg 11/09/21 04:35 11/12/21 13:56 Perfluoroundecanoic acid (PFUnA) ND 11/09/21 04:35 11/12/21 13:56 0.20 0.042 ug/Kg Perfluorododecanoic acid (PFDoA) ND 0.20 0.030 ug/Kg 11/09/21 04:35 11/12/21 13:56 0.021 ug/Kg Perfluorotridecanoic acid (PFTriA) ND 0.20 11/09/21 04:35 11/12/21 13:56 Perfluorotetradecanoic acid (PFTeA) ND 0.20 0.037 ug/Kg 11/09/21 04:35 11/12/21 13:56 Perfluorobutanesulfonic acid (PFBS) ND 0.20 0.038 ug/Kg 11/09/21 04:35 11/12/21 13:56 Perfluorohexanesulfonic acid (PFHxS) 11/09/21 04:35 11/12/21 13:56 ND 0.20 0.029 ug/Kg Perfluorooctanesulfonic acid (PFOS) 11/09/21 04:35 ND 0.20 0.043 ug/Kg 11/12/21 13:56 11/09/21 04:35 11/12/21 13:56 N-methylperfluorooctanesulfonamidoa ND 0.20 0.023 ug/Kg cetic acid (NMeFOSAA) N-ethylperfluorooctanesulfonamidoac ND 0.20 0.048 ug/Kg 11/09/21 04:35 11/12/21 13:56 etic acid (NEtFOSAA) 9-Chlorohexadecafluoro-3-oxanonan ND 0.20 0.035 ug/Kg 11/09/21 04:35 11/12/21 13:56 e-1-sulfonic acid Hexafluoropropylene Oxide Dimer ND 0.20 0.041 ug/Kg 11/09/21 04:35 11/12/21 13:56 Acid (HFPO-DA) ND 0.20 11-Chloroeicosafluoro-3-oxaundecan 0.031 ug/Kg 11/09/21 04:35 11/12/21 13:56 e-1-sulfonic acid ND 0.20 0.039 ug/Kg 11/09/21 04:35 11/12/21 13:56 4,8-Dioxa-3H-perfluorononanoic acid

(ADONA) MB MB Isotope Dilution %Recovery Prepared Dil Fac Qualifier Limits Analyzed 13C2 PFHxA 102 50 - 150 11/09/21 04:35 11/12/21 13:56 13C4 PFHpA 97 50 - 150 11/09/21 04:35 11/12/21 13:56 13C4 PFOA 102 50 - 150 11/09/21 04:35 11/12/21 13:56 13C5 PFNA 50 - 150 11/09/21 04:35 11/12/21 13:56 104 13C2 PFDA 94 50 - 150 11/09/21 04:35 11/12/21 13:56 13C2 PFUnA 100 50 - 150 11/09/21 04:35 11/12/21 13:56 11/09/21 04:35 11/12/21 13:56 13C2 PFDoA 95 50 - 150 13C2 PFTeDA 93 11/09/21 04:35 11/12/21 13:56 50 - 150 13C3 PFBS 117 50 - 150 11/09/21 04:35 11/12/21 13:56 1802 PFHxS 98 50 - 150 11/09/21 04:35 11/12/21 13:56 13C4 PFOS 103 50 - 150 11/09/21 04:35 11/12/21 13:56 d3-NMeFOSAA 97 50 - 150 11/09/21 04:35 11/12/21 13:56 d5-NEtFOSAA 105 50 - 150 11/09/21 04:35 11/12/21 13:56 13C3 HFPO-DA 95 50 - 150 11/09/21 04:35 11/12/21 13:56

Lab Sample ID: LCS 320-541157/2-A

**Matrix: Solid** 

Analysis Batch: 542324

<b>Client Sample ID: Lab Control Sample</b>
Prep Type: Total/NA

Prep Batch: 541157

ı		Spike	LCS	LCS				%Rec.	
l	Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
	Perfluorohexanoic acid (PFHxA)	2.00	1.73		ug/Kg		87	70 - 132	
	Perfluoroheptanoic acid (PFHpA)	2.00	1.95		ug/Kg		97	71 - 131	
	Perfluorooctanoic acid (PFOA)	2.00	1.73		ug/Kg		87	69 - 133	
	Perfluorononanoic acid (PFNA)	2.00	1.90		ug/Kg		95	72 - 129	
	Perfluorodecanoic acid (PFDA)	2.00	2.01		ug/Kg		101	69 - 133	

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Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: LCS 320-541157/2-A

**Matrix: Solid** 

Analysis Batch: 542324

**Client Sample ID: Lab Control Sample Prep Type: Total/NA** 

**Prep Batch: 541157** 

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluoroundecanoic acid	2.00	1.73		ug/Kg		87	64 - 136	
(PFUnA)								
Perfluorododecanoic acid	2.00	2.02		ug/Kg		101	69 - 135	
(PFDoA)								
Perfluorotridecanoic acid	2.00	1.77		ug/Kg		88	66 - 139	
(PFTriA)								
Perfluorotetradecanoic acid	2.00	1.77		ug/Kg		89	69 - 133	
(PFTeA)								
Perfluorobutanesulfonic acid	1.77	1.40		ug/Kg		79	72 - 128	
(PFBS)								
Perfluorohexanesulfonic acid	1.82	1.63		ug/Kg		90	67 - 130	
(PFHxS)								
Perfluorooctanesulfonic acid	1.86	1.68		ug/Kg		91	68 - 136	
(PFOS)								
N-methylperfluorooctanesulfona	2.00	1.87		ug/Kg		93	63 - 144	
midoacetic acid (NMeFOSAA)								
N-ethylperfluorooctanesulfonami	2.00	1.89		ug/Kg		95	61 - 139	
doacetic acid (NEtFOSAA)								
9-Chlorohexadecafluoro-3-oxan	1.86	1.70		ug/Kg		91	75 <sub>-</sub> 135	
onane-1-sulfonic acid						<u></u>		
Hexafluoropropylene Oxide	2.00	1.84		ug/Kg		92	77 <sub>-</sub> 137	
Dimer Acid (HFPO-DA)	4.00	4.04		11.6			70 400	
11-Chloroeicosafluoro-3-oxaund	1.88	1.84		ug/Kg		98	76 - 136	
ecane-1-sulfonic acid	4.00	4.00		11.6			70 400	
4,8-Dioxa-3H-perfluorononanoic	1.88	1.68		ug/Kg		89	79 <sub>-</sub> 139	
acid (ADONA)								

LCS LCS

6Recovery	Qualifier	Limits
100		
, 00		50 - 150
99		50 <sub>-</sub> 150
103		50 <sub>-</sub> 150
99		50 <sub>-</sub> 150
93		50 - 150
96		50 - 150
91		50 - 150
91		50 - 150
118		50 <sub>-</sub> 150
99		50 - 150
100		50 <sub>-</sub> 150
92		50 <sub>-</sub> 150
90		50 - 150
92		50 - 150
	99 103 99 93 96 91 118 99 100 92	99 103 99 93 96 91 91 118 99 100 92 90

Lab Sample ID: 320-81254-40 MS

**Matrix: Solid** 

Client Sample ID: 21GST-MW15-04

Prep Type: Total/NA

Prep Batch: 541157

Analysis Batch: 542528									Prep Ba	atch: 541157
-	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorohexanoic acid (PFHxA)	ND		2.44	1.93		ug/Kg	<u></u>	79	70 - 132	
Perfluoroheptanoic acid (PFHpA)	ND		2.44	2.41		ug/Kg	☼	99	71 - 131	
Perfluorooctanoic acid (PFOA)	ND		2.44	2.21		ug/Kg	☼	90	69 - 133	
Perfluorononanoic acid (PFNA)	ND		2.44	2.31		ua/Ka	☆	95	72 - 129	

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Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: 320-81254-40 MS

**Matrix: Solid** 

**Analysis Batch: 542528** 

Client Sample ID: 21GST-MW15-04

**Prep Type: Total/NA Prep Batch: 541157** 

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorodecanoic acid (PFDA)	ND		2.44	2.16		ug/Kg	☆	89	69 - 133	
Perfluoroundecanoic acid (PFUnA)	ND		2.44	2.13		ug/Kg	₩	87	64 - 136	
Perfluorododecanoic acid (PFDoA)	ND		2.44	2.44		ug/Kg	₩	100	69 - 135	
Perfluorotridecanoic acid (PFTriA)	ND		2.44	2.16		ug/Kg	₩	88	66 - 139	
Perfluorotetradecanoic acid (PFTeA)	ND		2.44	2.06		ug/Kg	₩	85	69 - 133	
Perfluorobutanesulfonic acid (PFBS)	ND		2.16	1.64		ug/Kg	₩	76	72 - 128	
Perfluorohexanesulfonic acid (PFHxS)	ND		2.22	1.93		ug/Kg	☼	87	67 - 130	
Perfluorooctanesulfonic acid (PFOS)	0.60		2.27	2.28		ug/Kg	☼	74	68 - 136	
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	ND		2.44	2.05		ug/Kg	☼	84	63 - 144	
N-ethylperfluorooctanesulfonami doacetic acid (NEtFOSAA)	ND		2.44	2.39		ug/Kg	₩	98	61 - 139	
9-Chlorohexadecafluoro-3-oxan onane-1-sulfonic acid	ND		2.28	1.91		ug/Kg	₩	84	75 - 135	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	F1	2.44	2.31		ug/Kg	₩	94	77 - 137	
11-Chloroeicosafluoro-3-oxaund ecane-1-sulfonic acid	ND		2.30	2.07		ug/Kg	₩	90	76 - 136	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.30	2.17		ug/Kg	₩	94	79 - 139	
•										

(			
	MS	MS	
Isotope Dilution	%Recovery	Qualifier	Limits
13C2 PFHxA	113		50 - 150
13C4 PFHpA	101		50 - 150
13C4 PFOA	102		50 - 150
13C5 PFNA	97		50 - 150
13C2 PFDA	105		50 - 150
13C2 PFUnA	100		50 - 150
13C2 PFDoA	87		50 - 150
13C2 PFTeDA	82		50 - 150
13C3 PFBS	115		50 - 150
1802 PFHxS	97		50 - 150
13C4 PFOS	102		50 - 150
d3-NMeFOSAA	104		50 - 150
d5-NEtFOSAA	101		50 - 150
13C3 HFPO-DA	102		50 <sub>-</sub> 150

Lab Sample ID: 320-81254-40 MSD

Matrix: Solid									Prep Ty	pe: Tot	al/NA
Analysis Batch: 542528									Prep B	atch: 54	11157
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluorohexanoic acid (PFHxA)	ND		2.31	1.80		ug/Kg	<u></u>	78	70 - 132	7	30
Perfluoroheptanoic acid (PFHpA)	ND		2.31	1.93		ug/Kg	☼	83	71 - 131	22	30
Perfluorooctanoic acid (PFOA)	ND		2.31	1.90		ug/Kg	₩	82	69 - 133	15	30

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Client Sample ID: 21GST-MW15-04

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Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: 320-81254-40 MSD

**Matrix: Solid** 

**Analysis Batch: 542528** 

Client Sample ID: 21GST-MW15-04

Prep Type: Total/NA Prep Batch: 541157

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluorononanoic acid (PFNA)	ND		2.31	1.90		ug/Kg	<u></u>	82	72 - 129	20	30
Perfluorodecanoic acid (PFDA)	ND		2.31	1.85		ug/Kg	☼	80	69 - 133	15	30
Perfluoroundecanoic acid (PFUnA)	ND		2.31	1.92		ug/Kg	₩	83	64 - 136	10	30
Perfluorododecanoic acid (PFDoA)	ND		2.31	1.95		ug/Kg	₽	84	69 - 135	22	30
Perfluorotridecanoic acid (PFTriA)	ND		2.31	1.69		ug/Kg	₽	73	66 - 139	25	30
Perfluorotetradecanoic acid (PFTeA)	ND		2.31	1.77		ug/Kg	₽	76	69 - 133	16	30
Perfluorobutanesulfonic acid (PFBS)	ND		2.04	1.52		ug/Kg	₽	74	72 - 128	7	30
Perfluorohexanesulfonic acid (PFHxS)	ND		2.10	1.70		ug/Kg	₽	81	67 - 130	13	30
Perfluorooctanesulfonic acid (PFOS)	0.60		2.15	2.13		ug/Kg	₽	71	68 - 136	7	30
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	ND		2.31	1.74		ug/Kg	₽	75	63 - 144	16	30
N-ethylperfluorooctanesulfonami doacetic acid (NEtFOSAA)	ND		2.31	1.89		ug/Kg	₽	82	61 - 139	23	30
9-Chlorohexadecafluoro-3-oxan onane-1-sulfonic acid	ND		2.16	1.75		ug/Kg	₽	81	75 - 135	9	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	F1	2.31	1.75	F1	ug/Kg	₽	76	77 - 137	27	30
11-Chloroeicosafluoro-3-oxaund ecane-1-sulfonic acid	ND		2.18	1.79		ug/Kg	₽	82	76 - 136	14	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.18	1.90		ug/Kg	₽	87	79 - 139	13	30

MSD MSD

Isotope Dilution	%Recovery	Qualifier	Limits
13C2 PFHxA	112		50 - 150
13C4 PFHpA	114		50 - 150
13C4 PFOA	110		50 - 150
13C5 PFNA	106		50 - 150
13C2 PFDA	111		50 - 150
13C2 PFUnA	105		50 - 150
13C2 PFDoA	96		50 - 150
13C2 PFTeDA	87		50 - 150
13C3 PFBS	121		50 - 150
1802 PFHxS	105		50 - 150
13C4 PFOS	104		50 - 150
d3-NMeFOSAA	113		50 - 150
d5-NEtFOSAA	112		50 - 150
13C3 HFPO-DA	107		50 - 150

Lab Sample ID: MB 320-541434/1-A

**Matrix: Solid** 

Analysis Batch: 542653

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 541434

Prep Batch: 541434

•	MB	MB						•	
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.031	ug/Kg		11/09/21 18:26	11/14/21 21:29	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.038	ug/Kg		11/09/21 18:26	11/14/21 21:29	1

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Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: MB 320-541434/1-A

Matrix: Solid

**Analysis Batch: 542653** 

**Client Sample ID: Method Blank** 

Prep Type: Total/NA Prep Batch: 541434

							. Top Zatom o		
MB	MB								
Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
ND		0.20	0.053	ug/Kg		11/09/21 18:26	11/14/21 21:29	1	
ND		0.20	0.022	ug/Kg		11/09/21 18:26	11/14/21 21:29	1	
ND		0.20	0.048	ug/Kg		11/09/21 18:26	11/14/21 21:29	1	
ND		0.20	0.042	ug/Kg		11/09/21 18:26	11/14/21 21:29	1	
ND		0.20	0.030	ug/Kg		11/09/21 18:26	11/14/21 21:29	1	
ND		0.20	0.021	ug/Kg		11/09/21 18:26	11/14/21 21:29	1	
ND		0.20	0.037	ug/Kg		11/09/21 18:26	11/14/21 21:29	1	
ND		0.20	0.038	ug/Kg		11/09/21 18:26	11/14/21 21:29	1	
ND		0.20	0.029	ug/Kg		11/09/21 18:26	11/14/21 21:29	1	
ND		0.20	0.043	ug/Kg		11/09/21 18:26	11/14/21 21:29	1	
ND		0.20	0.023	ug/Kg		11/09/21 18:26	11/14/21 21:29	1	
ND		0.20	0.048	ug/Kg		11/09/21 18:26	11/14/21 21:29	1	
ND		0.20	0.035	ug/Kg		11/09/21 18:26	11/14/21 21:29	1	
ND		0.20	0.041	ug/Kg		11/09/21 18:26	11/14/21 21:29	1	
ND		0.20	0.031	ug/Kg		11/09/21 18:26	11/14/21 21:29	1	
ND		0.20	0.039	ug/Kg		11/09/21 18:26	11/14/21 21:29	1	
	Result ND ND ND ND ND ND ND ND ND ND ND ND ND	ND ND ND ND ND ND ND ND ND ND ND ND ND N	Result         Qualifier         RL           ND         0.20           ND         0.20	Result         Qualifier         RL         MDL           ND         0.20         0.053           ND         0.20         0.022           ND         0.20         0.048           ND         0.20         0.030           ND         0.20         0.031           ND         0.20         0.037           ND         0.20         0.038           ND         0.20         0.029           ND         0.20         0.043           ND         0.20         0.048           ND         0.20         0.035           ND         0.20         0.035           ND         0.20         0.041           ND         0.20         0.031	Result         Qualifier         RL         MDL unit           ND         0.20         0.053 ug/Kg           ND         0.20         0.022 ug/Kg           ND         0.20         0.048 ug/Kg           ND         0.20         0.042 ug/Kg           ND         0.20         0.030 ug/Kg           ND         0.20         0.037 ug/Kg           ND         0.20         0.037 ug/Kg           ND         0.20         0.038 ug/Kg           ND         0.20         0.043 ug/Kg           ND         0.20         0.043 ug/Kg           ND         0.20         0.048 ug/Kg           ND         0.20         0.048 ug/Kg           ND         0.20         0.048 ug/Kg           ND         0.20         0.041 ug/Kg           ND         0.20         0.041 ug/Kg           ND         0.20         0.041 ug/Kg	Result         Qualifier         RL         MDL unit         D           ND         0.20         0.053         ug/Kg           ND         0.20         0.022         ug/Kg           ND         0.20         0.048         ug/Kg           ND         0.20         0.042         ug/Kg           ND         0.20         0.030         ug/Kg           ND         0.20         0.037         ug/Kg           ND         0.20         0.038         ug/Kg           ND         0.20         0.043         ug/Kg           ND         0.20         0.043         ug/Kg           ND         0.20         0.048         ug/Kg           ND         0.20         0.048         ug/Kg           ND         0.20         0.048         ug/Kg           ND         0.20         0.035         ug/Kg           ND         0.20         0.041         ug/Kg           ND         0.20         0.031         ug/Kg	Result         Qualifier         RL         MDL         Unit         D         Prepared           ND         0.20         0.053         ug/Kg         11/09/21 18:26           ND         0.20         0.022         ug/Kg         11/09/21 18:26           ND         0.20         0.048         ug/Kg         11/09/21 18:26           ND         0.20         0.042         ug/Kg         11/09/21 18:26           ND         0.20         0.030         ug/Kg         11/09/21 18:26           ND         0.20         0.031         ug/Kg         11/09/21 18:26           ND         0.20         0.037         ug/Kg         11/09/21 18:26           ND         0.20         0.038         ug/Kg         11/09/21 18:26           ND         0.20         0.043         ug/Kg         11/09/21 18:26           ND         0.20         0.043         ug/Kg         11/09/21 18:26           ND         0.20         0.048         ug/Kg         11/09/21 18:26           ND         0.20         0.048         ug/Kg         11/09/21 18:26           ND         0.20         0.035         ug/Kg         11/09/21 18:26           ND         0.20	Result         Qualifier         RL         MDL         Unit         D         Prepared         Analyzed           ND         0.20         0.053         ug/Kg         11/09/21 18:26         11/14/21 21:29           ND         0.20         0.022         ug/Kg         11/09/21 18:26         11/14/21 21:29           ND         0.20         0.048         ug/Kg         11/09/21 18:26         11/14/21 21:29           ND         0.20         0.042         ug/Kg         11/09/21 18:26         11/14/21 21:29           ND         0.20         0.030         ug/Kg         11/09/21 18:26         11/14/21 21:29           ND         0.20         0.037         ug/Kg         11/09/21 18:26         11/14/21 21:29           ND         0.20         0.037         ug/Kg         11/09/21 18:26         11/14/21 21:29           ND         0.20         0.038         ug/Kg         11/09/21 18:26         11/14/21 21:29           ND         0.20         0.043         ug/Kg         11/09/21 18:26         11/14/21 21:29           ND         0.20         0.048         ug/Kg         11/09/21 18:26         11/14/21 21:29           ND         0.20         0.048         ug/Kg         11/09/21 18:26	

MB MB

	IVIB	IVIB				
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	124		50 - 150	11/09/21 18:26	11/14/21 21:29	1
13C4 PFHpA	126		50 - 150	11/09/21 18:26	11/14/21 21:29	1
13C4 PFOA	114		50 - 150	11/09/21 18:26	11/14/21 21:29	1
13C5 PFNA	116		50 - 150	11/09/21 18:26	11/14/21 21:29	1
13C2 PFDA	111		50 - 150	11/09/21 18:26	11/14/21 21:29	1
13C2 PFUnA	121		50 - 150	11/09/21 18:26	11/14/21 21:29	1
13C2 PFDoA	111		50 - 150	11/09/21 18:26	11/14/21 21:29	1
13C2 PFTeDA	105		50 - 150	11/09/21 18:26	11/14/21 21:29	1
13C3 PFBS	120		50 - 150	11/09/21 18:26	11/14/21 21:29	1
18O2 PFHxS	106		50 - 150	11/09/21 18:26	11/14/21 21:29	1
13C4 PFOS	117		50 - 150	11/09/21 18:26	11/14/21 21:29	1
d3-NMeFOSAA	109		50 - 150	11/09/21 18:26	11/14/21 21:29	1
d5-NEtFOSAA	126		50 - 150	11/09/21 18:26	11/14/21 21:29	1
13C3 HFPO-DA	105		50 - 150	11/09/21 18:26	11/14/21 21:29	1

Lab Sample ID: LCS 320-541434/2-A

**Matrix: Solid** 

**Analysis Batch: 542653** 

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 541434

, , , , , , , , , , , , , , , , , , , ,	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorohexanoic acid (PFHxA)	2.00	1.73		ug/Kg		86	70 - 132	
Perfluoroheptanoic acid (PFHpA)	2.00	2.14		ug/Kg		107	71 - 131	
Perfluorooctanoic acid (PFOA)	2.00	2.05		ug/Kg		103	69 - 133	
Perfluorononanoic acid (PFNA)	2.00	1.93		ug/Kg		96	72 - 129	
Perfluorodecanoic acid (PFDA)	2.00	2.05		ug/Kg		103	69 - 133	
Perfluoroundecanoic acid	2.00	2.20		ug/Kg		110	64 - 136	

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Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: LCS 320-541434/2-A

**Matrix: Solid** 

**Analysis Batch: 542653** 

**Client Sample ID: Lab Control Sample** 

**Prep Type: Total/NA** Prep Batch: 541434

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorododecanoic acid (PFDoA)	2.00	2.17		ug/Kg		108	69 - 135	
Perfluorotridecanoic acid (PFTriA)	2.00	1.77		ug/Kg		88	66 - 139	
Perfluorotetradecanoic acid (PFTeA)	2.00	1.82		ug/Kg		91	69 - 133	
Perfluorobutanesulfonic acid (PFBS)	1.77	1.60		ug/Kg		91	72 - 128	
Perfluorohexanesulfonic acid (PFHxS)	1.82	1.77		ug/Kg		97	67 - 130	
Perfluorooctanesulfonic acid (PFOS)	1.86	1.78		ug/Kg		96	68 - 136	
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	2.00	1.88		ug/Kg		94	63 - 144	
N-ethylperfluorooctanesulfonami doacetic acid (NEtFOSAA)	2.00	1.93		ug/Kg		97	61 - 139	
9-Chlorohexadecafluoro-3-oxan onane-1-sulfonic acid	1.86	1.67		ug/Kg		89	75 - 135	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	2.00	2.11		ug/Kg		105	77 - 137	
11-Chloroeicosafluoro-3-oxaund ecane-1-sulfonic acid	1.88	1.91		ug/Kg		102	76 - 136	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.88	1.91		ug/Kg		102	79 - 139	
` '	_							

LCS LCS

	LUJ	LUJ	
Isotope Dilution	%Recovery	Qualifier	Limits
13C2 PFHxA	113		50 - 150
13C4 PFHpA	94		50 - 150
13C4 PFOA	94		50 - 150
13C5 PFNA	98		50 - 150
13C2 PFDA	97		50 - 150
13C2 PFUnA	92		50 - 150
13C2 PFDoA	93		50 - 150
13C2 PFTeDA	87		50 - 150
13C3 PFBS	103		50 - 150
1802 PFHxS	95		50 - 150
13C4 PFOS	99		50 - 150
d3-NMeFOSAA	97		50 - 150
d5-NEtFOSAA	105		50 - 150
13C3 HFPO-DA	87		50 <sub>-</sub> 150

Lab Sample ID: 320-81254-80 MS Client Sample ID: 21GST-SS-011

Ma

An

latrix: Solid									Prep Type: Total/NA
nalysis Batch: 542653									<b>Prep Batch: 541434</b>
	Sample	Sample	Spike	MS	MS				%Rec.
nalyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits

Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorohexanoic acid (PFHxA)	ND		1.99	1.82		ug/Kg	<u></u>	92	70 - 132	
Perfluoroheptanoic acid (PFHpA)	ND		1.99	1.96		ug/Kg	₩	99	71 - 131	
Perfluorooctanoic acid (PFOA)	ND		1.99	2.06		ug/Kg	₩	103	69 - 133	
Perfluorononanoic acid (PFNA)	ND		1.99	2.12		ug/Kg	₩	107	72 - 129	
Perfluorodecanoic acid (PFDA)	ND		1.99	1.91		ug/Kg	≎	96	69 - 133	

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Spike

MS MS

Job ID: 320-81254-1

Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

**Analysis Batch: 542653** 

**Matrix: Solid** 

Lab Sample ID: 320-81254-80 MS

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Sample Sample

Client Sample ID: 21GST-SS-011

Prep	rype: i	Otal/INA
Prep	<b>Batch:</b>	541434
% Boo		

	Campic	Campic	Opino	1410	14.0				/01 CC.
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Perfluoroundecanoic acid	ND		1.99	1.88		ug/Kg	☆	94	64 - 136
(PFUnA)									
Perfluorododecanoic acid	ND		1.99	2.13		ug/Kg	₩	107	69 - 135
(PFDoA)									
Perfluorotridecanoic acid	ND		1.99	1.88		ug/Kg	☼	95	66 - 139
(PFTriA)									
Perfluorotetradecanoic acid	ND		1.99	1.86		ug/Kg	₩	94	69 - 133
(PFTeA)									
Perfluorobutanesulfonic acid	ND		1.76	1.50		ug/Kg	₩	85	72 - 128
(PFBS) Perfluorohexanesulfonic acid	ND		1.81	1.71		/1/		94	67 120
(PFHxS)	ND		1.01	1.71		ug/Kg	₽	94	67 - 130
Perfluorooctanesulfonic acid	0.15	1	1.85	2.00		ug/Kg	₩	100	68 - 136
(PFOS)	0.13	J	1.00	2.00		ug/itg	74	100	00 - 100
N-methylperfluorooctanesulfona	ND		1.99	1.91		ug/Kg		96	63 - 144
midoacetic acid (NMeFOSAA)						9/9			
N-ethylperfluorooctanesulfonami	ND		1.99	2.09		ug/Kg	☼	105	61 - 139
doacetic acid (NEtFOSAA)						0 0			
9-Chlorohexadecafluoro-3-oxan	ND		1.85	1.76		ug/Kg	☆	95	75 - 135
onane-1-sulfonic acid									
Hexafluoropropylene Oxide	ND		1.99	1.94		ug/Kg	₽	98	77 - 137
Dimer Acid (HFPO-DA)									
11-Chloroeicosafluoro-3-oxaund	ND		1.87	1.95		ug/Kg	₩	104	76 - 136
ecane-1-sulfonic acid									
4,8-Dioxa-3H-perfluorononanoic	ND		1.87	1.90		ug/Kg	₩	101	79 - 139
acid (ADONA)									

MS MS

	IVIS	IVIS	
Isotope Dilution	%Recovery	Qualifier	Limits
13C2 PFHxA	100		50 - 150
13C4 PFHpA	98		50 - 150
13C4 PFOA	92		50 - 150
13C5 PFNA	96		50 - 150
13C2 PFDA	102		50 - 150
13C2 PFUnA	104		50 - 150
13C2 PFDoA	91		50 - 150
13C2 PFTeDA	90		50 - 150
13C3 PFBS	104		50 - 150
18O2 PFHxS	89		50 - 150
13C4 PFOS	93		50 - 150
d3-NMeFOSAA	101		50 - 150
d5-NEtFOSAA	107		50 - 150
13C3 HFPO-DA	89		50 - 150

Lab Sample ID: 320-81254-80 MSD

**Matrix: Solid** 

Client Sample ID: 21GST-SS-011

**Prep Type: Total/NA** 

Prep Batch: 541434

Analysis Batch: 542653									Prep Batch: 5		41434	
-	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Perfluorohexanoic acid (PFHxA)	ND		2.05	1.85		ug/Kg	<u></u>	90	70 - 132	1	30	
Perfluoroheptanoic acid (PFHpA)	ND		2.05	2.07		ug/Kg	☆	101	71 - 131	5	30	
Perfluorooctanoic acid (PFOA)	ND		2.05	2.09		ug/Kg	₩	102	69 - 133	2	30	
Perfluorononanoic acid (PFNA)	ND		2.05	2.03		ug/Kg	₩	99	72 - 129	4	30	

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Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: 320-81254-80 MSD Client Sample ID: 21GST-SS-011

**Matrix: Solid** 

Analysis Batch: 542653

Client Sample ID: 21GST-SS-011 Prep Type: Total/NA

Prep Batch: 541434

Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
ND		2.05	2.04		ug/Kg	☆	99	69 - 133	7	30
ND		2.05	1.94		ug/Kg	₩	95	64 - 136	3	30
ND		2.05	2.06		ug/Kg	₩	100	69 - 135	4	30
ND		2.05	1.82		ug/Kg	☼	89	66 - 139	3	30
ND		2.05	2.02		ug/Kg	☼	98	69 - 133	8	30
ND		1.82	1.50		ug/Kg	☼	82	72 - 128	0	30
ND		1.87	1.73		ug/Kg	☼	92	67 - 130	1	30
0.15	J	1.91	1.87		ug/Kg	₩	90	68 - 136	7	30
ND		2.05	1.94		ug/Kg	₩	94	63 - 144	2	30
ND		2.05	1.90		ug/Kg	₩	93	61 - 139	9	30
ND		1.91	1.77		ug/Kg	₩	92	75 - 135	0	30
ND		2.05	2.39		ug/Kg	₩	116	77 - 137	21	30
ND		1.94	2.00		ug/Kg	₩	103	76 - 136	3	30
ND		1.94	1.83		ug/Kg	₩	94	79 - 139	4	30
	Result ND ND ND ND ND ND ND ND ND ND ND ND ND	ND ND ND ND ND ND ND ND ND ND ND ND ND N	Result         Qualifier         Added           ND         2.05           ND         2.05           ND         2.05           ND         2.05           ND         2.05           ND         1.82           ND         1.87           0.15         J         1.91           ND         2.05           ND         2.05           ND         1.91           ND         2.05           ND         1.91           ND         2.05           ND         1.94	Result         Qualifier         Added 2.05         Result 2.04           ND         2.05         2.04           ND         2.05         1.94           ND         2.05         2.06           ND         2.05         1.82           ND         1.82         1.50           ND         1.87         1.73           0.15         J         1.91         1.87           ND         2.05         1.94           ND         1.91         1.77           ND         1.91         1.77           ND         2.05         2.39           ND         1.94         2.00	Result         Qualifier         Added ND         Result 2.04         Qualifier           ND         2.05         2.04         1.94           ND         2.05         1.94           ND         2.05         2.06           ND         2.05         2.02           ND         1.82         1.50           ND         1.87         1.73           0.15         J         1.91         1.87           ND         2.05         1.94           ND         1.91         1.77           ND         2.05         2.39           ND         1.94         2.00	Result         Qualifier         Added         Result         Qualifier         Unit           ND         2.05         2.04         ug/Kg           ND         2.05         1.94         ug/Kg           ND         2.05         2.06         ug/Kg           ND         2.05         1.82         ug/Kg           ND         1.82         1.50         ug/Kg           ND         1.87         1.73         ug/Kg           ND         1.87         1.87         ug/Kg           ND         2.05         1.94         ug/Kg           ND         2.05         1.90         ug/Kg           ND         1.91         1.77         ug/Kg           ND         1.91         1.77         ug/Kg           ND         2.05         2.39         ug/Kg           ND         1.94         2.00         ug/Kg	Result ND         Qualifier         Added Added Nesult 2.05         Qualifier 2.04         Unit ug/Kg ug/Kg         D ug/Kg           ND         2.05         1.94         ug/Kg         ☆           ND         2.05         2.06         ug/Kg         ☆           ND         2.05         1.82         ug/Kg         ☆           ND         2.05         2.02         ug/Kg         ☆           ND         1.82         1.50         ug/Kg         ☆           ND         1.87         1.73         ug/Kg         ☆           ND         1.91         1.87         ug/Kg         ☆           ND         2.05         1.94         ug/Kg         ☆           ND         2.05         1.90         ug/Kg         ☆           ND         1.91         1.77         ug/Kg         ☆           ND         2.05         2.39         ug/Kg         ☆           ND         2.05         2.39         ug/Kg         ☆           ND         1.94         2.00         ug/Kg         ☆	Result ND         Qualifier         Added Added No.         Result 2.04         Qualifier Unit Ug/Kg         D wg/Kg         %Rec 99           ND         2.05         2.04         ug/Kg         □ 99           ND         2.05         1.94         ug/Kg         □ 95           ND         2.05         2.06         ug/Kg         □ 100           ND         2.05         1.82         ug/Kg         □ 89           ND         2.05         2.02         ug/Kg         □ 98           ND         1.82         1.50         ug/Kg         □ 98           ND         1.87         1.73         ug/Kg         □ 92           0.15         J         1.91         1.87         ug/Kg         □ 92           ND         2.05         1.94         ug/Kg         □ 94           ND         2.05         1.90         ug/Kg         □ 93           ND         1.91         1.77         ug/Kg         □ 92           ND         2.05         2.39         ug/Kg         □ 116           ND         1.94         2.00         ug/Kg         □ 103	Result ND ND         2.05         2.04 ug/Kg         wg/Kg         wg/Kg         wg/Rec         Limits           ND ND 2.05         2.04 ug/Kg         wg/Kg         wg	Result ND ND         Qualifier 2.05         Added 2.05         Result 2.04         Qualifier ug/Kg         Unit ug/Kg         D %Rec 99         69 - 133 7         7           ND ND         2.05         1.94         ug/Kg         □ 95         69 - 133 7         3           ND 2.05         2.05         2.06         ug/Kg         □ 100         69 - 135 4         4           ND 2.05         1.82         ug/Kg         □ 89         66 - 139 3         3           ND 2.05         2.02         ug/Kg         □ 98         69 - 133 3         8           ND 3.82         1.50         ug/Kg         □ 98         69 - 133 3         8           ND 4.83         1.87         1.73         ug/Kg         □ 98         69 - 133 3         8           ND 5         1.87         1.73         ug/Kg         □ 92         67 - 130 3         1           0.15 J         1.91         1.87         ug/Kg         □ 90         68 - 136 7         7           ND 2.05         1.94         ug/Kg         □ 94         63 - 144 2         2           ND 3.91         1.91         1.77         ug/Kg         □ 92         75 - 135 0           ND 3.92         1.94         2.05

	MSD	MSD	
Isotope Dilution	%Recovery	Qualifier	Limits
13C2 PFHxA	106		50 - 150
13C4 PFHpA	104		50 - 150
13C4 PFOA	97		50 - 150
13C5 PFNA	102		50 - 150
13C2 PFDA	102		50 - 150
13C2 PFUnA	113		50 - 150
13C2 PFDoA	104		50 - 150
13C2 PFTeDA	96		50 - 150
13C3 PFBS	109		50 - 150
1802 PFHxS	93		50 - 150
13C4 PFOS	99		50 - 150
d3-NMeFOSAA	104		50 - 150

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Lab Sample ID: MB 320-541446/1-A

**Matrix: Solid** 

d5-NEtFOSAA

13C3 HFPO-DA

**Analysis Batch: 542350** 

Client Sample ID: Method Blank Prep Type: Total/NA Prep Batch: 541446

MB MB Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac Perfluorohexanoic acid (PFHxA) ND 0.20 0.031 ug/Kg 11/09/21 18:26 11/13/21 09:02 Perfluoroheptanoic acid (PFHpA) ND 0.20 0.038 ug/Kg 11/09/21 18:26 11/13/21 09:02 Perfluorooctanoic acid (PFOA) ND 0.20 0.053 ug/Kg 11/09/21 18:26 11/13/21 09:02

50 - 150

50 - 150

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Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

MB MB

Lab Sample ID: MB 320-541446/1-A

Matrix: Solid

**Analysis Batch: 542350** 

**Client Sample ID: Method Blank** 

**Prep Type: Total/NA Prep Batch: 541446** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	ND		0.20	0.022	ug/Kg		11/09/21 18:26	11/13/21 09:02	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.048	ug/Kg		11/09/21 18:26	11/13/21 09:02	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.042	ug/Kg		11/09/21 18:26	11/13/21 09:02	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.030	ug/Kg		11/09/21 18:26	11/13/21 09:02	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.021	ug/Kg		11/09/21 18:26	11/13/21 09:02	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.037	ug/Kg		11/09/21 18:26	11/13/21 09:02	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.038	ug/Kg		11/09/21 18:26	11/13/21 09:02	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.029	ug/Kg		11/09/21 18:26	11/13/21 09:02	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.20	0.043	ug/Kg		11/09/21 18:26	11/13/21 09:02	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg		11/09/21 18:26	11/13/21 09:02	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.20	0.048	ug/Kg		11/09/21 18:26	11/13/21 09:02	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.20	0.035	ug/Kg		11/09/21 18:26	11/13/21 09:02	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.20	0.041	ug/Kg		11/09/21 18:26	11/13/21 09:02	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.20	0.031	ug/Kg		11/09/21 18:26	11/13/21 09:02	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.039	ug/Kg		11/09/21 18:26	11/13/21 09:02	1
	MD	MD							

	МВ	MB				
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	81		50 - 150	11/09/21 18:26	11/13/21 09:02	1
13C4 PFHpA	85		50 - 150	11/09/21 18:26	11/13/21 09:02	1
13C4 PFOA	79		50 - 150	11/09/21 18:26	11/13/21 09:02	1
13C5 PFNA	76		50 - 150	11/09/21 18:26	11/13/21 09:02	1
13C2 PFDA	88		50 - 150	11/09/21 18:26	11/13/21 09:02	1
13C2 PFUnA	81		50 - 150	11/09/21 18:26	11/13/21 09:02	1
13C2 PFDoA	78		50 - 150	11/09/21 18:26	11/13/21 09:02	1
13C2 PFTeDA	70		50 - 150	11/09/21 18:26	11/13/21 09:02	1
13C3 PFBS	92		50 - 150	11/09/21 18:26	11/13/21 09:02	1
1802 PFHxS	77		50 - 150	11/09/21 18:26	11/13/21 09:02	1
13C4 PFOS	88		50 - 150	11/09/21 18:26	11/13/21 09:02	1
d3-NMeFOSAA	90		50 - 150	11/09/21 18:26	11/13/21 09:02	1
d5-NEtFOSAA	89		50 - 150	11/09/21 18:26	11/13/21 09:02	1
13C3 HFPO-DA	73		50 <sub>-</sub> 150	11/09/21 18:26	11/13/21 09:02	1

Lab Sample ID: LCS 320-541446/2-A

**Matrix: Solid** 

Analysis Batch: 542350

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 541446

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorohexanoic acid (PFHxA)	2.00	1.71		ug/Kg		86	70 - 132	
Perfluoroheptanoic acid (PFHpA)	2.00	2.06		ug/Kg		103	71 - 131	
Perfluorooctanoic acid (PFOA)	2.00	2.04		ug/Kg		102	69 - 133	
Perfluorononanoic acid (PFNA)	2.00	1.94		ug/Kg		97	72 - 129	
Perfluorodecanoic acid (PFDA)	2.00	1.95		ug/Kg		97	69 - 133	
Perfluoroundecanoic acid	2.00	1.92		ug/Kg		96	64 - 136	
(PFUnA)								

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Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

### Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: LCS 320-541446/2-A Client Sample ID: Lab Control Sample

**Matrix: Solid** 

**Analysis Batch: 542350** 

	Cheff Sample ID. Lab Control Sample											
					Prep Type: Total/NA							
					Prep Batch: 541446							
LCS	LCS				%Rec.							
Result	Qualifier	Unit	D	%Rec	Limits							

7	Spike	LCS	LCS				%Rec.
Analyte	Added			Unit	D	%Rec	Limits
Perfluorododecanoic acid	2.00	2.09		ug/Kg		104	69 - 135
(PFDoA)				0 0			
Perfluorotridecanoic acid	2.00	1.69		ug/Kg		84	66 - 139
(PFTriA)							
Perfluorotetradecanoic acid	2.00	1.92		ug/Kg		96	69 - 133
(PFTeA)							
Perfluorobutanesulfonic acid	1.77	1.49		ug/Kg		84	72 - 128
(PFBS)							
Perfluorohexanesulfonic acid	1.82	1.84		ug/Kg		101	67 - 130
(PFHxS)							
Perfluorooctanesulfonic acid	1.86	1.88		ug/Kg		101	68 - 136
(PFOS)							
N-methylperfluorooctanesulfona	2.00	1.88		ug/Kg		94	63 - 144
midoacetic acid (NMeFOSAA)							
N-ethylperfluorooctanesulfonami	2.00	1.92		ug/Kg		96	61 - 139
doacetic acid (NEtFOSAA)							
9-Chlorohexadecafluoro-3-oxan	1.86	1.77		ug/Kg		95	75 - 135
onane-1-sulfonic acid							<u></u> <u></u>
Hexafluoropropylene Oxide	2.00	2.14		ug/Kg		107	77 - 137
Dimer Acid (HFPO-DA)	4.00	4.00				400	70 400
11-Chloroeicosafluoro-3-oxaund	1.88	1.93		ug/Kg		102	76 - 136
ecane-1-sulfonic acid	4.00	4.04				404	70 400
4,8-Dioxa-3H-perfluorononanoic	1.88	1.91		ug/Kg		101	79 - 139
acid (ADONA)							

LCS LCS

Isotope Dilution	%Recovery Qualifie	r Limits
13C2 PFHxA	85	50 - 150
13C4 PFHpA	75	50 - 150
13C4 PFOA	73	50 - 150
13C5 PFNA	77	50 - 150
13C2 PFDA	79	50 - 150
13C2 PFUnA	81	50 - 150
13C2 PFDoA	75	50 - 150
13C2 PFTeDA	69	50 - 150
13C3 PFBS	92	50 - 150
1802 PFHxS	73	50 - 150
13C4 PFOS	75	50 - 150
d3-NMeFOSAA	82	50 - 150
d5-NEtFOSAA	87	50 - 150
13C3 HFPO-DA	71	50 - 150

Lab Sample ID: 320-81254-60 MS Client Sample ID: 21GST-SB010-03 **Prep Type: Total/NA** 

**Matrix: Solid** 

Analysis Batch: 542350

Analysis batch: 542350									Prep Batch: 541446	
	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorohexanoic acid (PFHxA)	ND		2.09	1.87		ug/Kg	<u></u>	90	70 - 132	
Perfluoroheptanoic acid (PFHpA)	ND		2.09	2.02		ug/Kg	₩	97	71 - 131	
Perfluorooctanoic acid (PFOA)	ND		2.09	2.08		ug/Kg	₩	100	69 - 133	
Perfluorononanoic acid (PFNA)	ND		2.09	1.94		ug/Kg	₩	93	72 - 129	
Perfluorodecanoic acid (PFDA)	ND		2.09	2.17		ug/Kg	₩	104	69 - 133	

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Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: 320-81254-60 MS Client Sample ID: 21GST-SB010-03 **Matrix: Solid** 

**Analysis Batch: 542350** 

**Prep Type: Total/NA Prep Batch: 541446** 

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluoroundecanoic acid	ND		2.09	2.04		ug/Kg	<del>-</del>	98	64 - 136	
(PFUnA)										
Perfluorododecanoic acid	ND		2.09	2.26		ug/Kg	☼	108	69 - 135	
(PFDoA)										
Perfluorotridecanoic acid	ND		2.09	1.97		ug/Kg	₽	94	66 - 139	
(PFTriA)										
Perfluorotetradecanoic acid	ND		2.09	2.01		ug/Kg	≎	96	69 - 133	
(PFTeA)										
Perfluorobutanesulfonic acid	ND		1.84	1.59		ug/Kg	₩	86	72 - 128	
(PFBS)										
Perfluorohexanesulfonic acid	ND		1.90	1.79		ug/Kg	☼	94	67 - 130	
(PFHxS)										
Perfluorooctanesulfonic acid	0.12	J	1.94	1.96		ug/Kg	₩	95	68 - 136	
(PFOS)										
N-methylperfluorooctanesulfona	ND		2.09	1.98		ug/Kg	₩	95	63 - 144	
midoacetic acid (NMeFOSAA)										
N-ethylperfluorooctanesulfonami	ND		2.09	2.02		ug/Kg	☼	97	61 - 139	
doacetic acid (NEtFOSAA)										
9-Chlorohexadecafluoro-3-oxan	ND		1.94	1.98		ug/Kg	☼	102	75 - 135	
onane-1-sulfonic acid										
Hexafluoropropylene Oxide	ND		2.09	2.36		ug/Kg	≎	113	77 - 137	
Dimer Acid (HFPO-DA)	NB		4.07	0.00		"		400	70 400	
11-Chloroeicosafluoro-3-oxaund	ND		1.97	2.03		ug/Kg	≎	103	76 - 136	
ecane-1-sulfonic acid	NB		4.07	0.07		"		405	70 400	
4,8-Dioxa-3H-perfluorononanoic	ND		1.97	2.07		ug/Kg	₩	105	79 - 139	
acid (ADONA)										
	MC	MC								

MC MC

	IVIS	IVIS	
Isotope Dilution	%Recovery	Qualifier	Limits
13C2 PFHxA	98		50 - 150
13C4 PFHpA	96		50 - 150
13C4 PFOA	87		50 - 150
13C5 PFNA	94		50 <sub>-</sub> 150
13C2 PFDA	93		50 - 150
13C2 PFUnA	93		50 - 150
13C2 PFDoA	85		50 - 150
13C2 PFTeDA	83		50 - 150
13C3 PFBS	96		50 - 150
1802 PFHxS	78		50 - 150
13C4 PFOS	83		50 - 150
d3-NMeFOSAA	95		50 - 150
d5-NEtFOSAA	93		50 - 150
13C3 HFPO-DA	80		50 - 150

Lab Sample ID: 320-81254-60 MSD Client Sample ID: 21GST-SB010-03 Prep Type: Total/NA

**Matrix: Solid** 

**Analysis Batch: 542350** Sample Sample Spike MSD MSD

Prep Batch. 541446							
	%Rec.		RPD				
Rec	Limits	RPD	Limit				
88	70 - 132	0	30				
90	71 - 131	6	30				
98	69 - 133	1	30				

Result Qualifier Added Result Qualifier Unit D Perfluorohexanoic acid (PFHxA) ND 2.11 1.87 ug/Kg ✡ Perfluoroheptanoic acid (PFHpA) ND 2.11 1.90 ug/Kg ₩ Perfluorooctanoic acid (PFOA) ND 2.11 2.06 ug/Kg Perfluorononanoic acid (PFNA) ND 2.11 2.00 ug/Kg 72 - 129 30

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Client: Shannon & Wilson, Inc

Project/Site: SC Soils#3

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: 320-81254-60 MSD Client Sample ID: 21GST-SB010-03

**Matrix: Solid** 

**Analysis Batch: 542350** 

**Prep Type: Total/NA** 

**Prep Batch: 541446** 

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluorodecanoic acid (PFDA)	ND		2.11	1.94		ug/Kg	<u></u>	92	69 - 133	11	30
Perfluoroundecanoic acid (PFUnA)	ND		2.11	2.03		ug/Kg	₽	96	64 - 136	0	30
Perfluorododecanoic acid (PFDoA)	ND		2.11	2.11		ug/Kg	₽	100	69 - 135	7	30
Perfluorotridecanoic acid (PFTriA)	ND		2.11	1.92		ug/Kg	≎	91	66 - 139	3	30
Perfluorotetradecanoic acid (PFTeA)	ND		2.11	1.90		ug/Kg	≎	90	69 - 133	6	30
Perfluorobutanesulfonic acid (PFBS)	ND		1.87	1.67		ug/Kg	₽	90	72 - 128	5	30
Perfluorohexanesulfonic acid (PFHxS)	ND		1.92	1.76		ug/Kg	₽	92	67 - 130	2	30
Perfluorooctanesulfonic acid (PFOS)	0.12	J	1.96	1.71		ug/Kg	₽	81	68 - 136	14	30
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	ND		2.11	1.92		ug/Kg	₽	91	63 - 144	3	30
N-ethylperfluorooctanesulfonami doacetic acid (NEtFOSAA)	ND		2.11	2.09		ug/Kg	₽	99	61 - 139	3	30
9-Chlorohexadecafluoro-3-oxan onane-1-sulfonic acid	ND		1.97	1.81		ug/Kg	₽	92	75 - 135	9	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		2.11	2.20		ug/Kg	₽	104	77 - 137	7	30
11-Chloroeicosafluoro-3-oxaund ecane-1-sulfonic acid	ND		1.99	1.88		ug/Kg	₽	95	76 - 136	8	30
4,8-Dioxa-3H-perfluorononanoic	ND		1.99	2.02		ug/Kg	☼	101	79 - 139	3	30

MSD MSD

%Recovery Qualifier	Limits
90	50 - 150
93	50 - 150
83	50 - 150
86	50 - 150
89	50 - 150
89	50 - 150
80	50 - 150
75	50 - 150
83	50 - 150
74	50 - 150
84	50 - 150
92	50 - 150
94	50 - 150
74	50 - 150
	90 93 83 86 89 89 80 75 83 74 84 92

Lab Sample ID: MB 320-541628/1-A

**Matrix: Solid** 

acid (ADONA)

**Analysis Batch: 541977** 

**Client Sample ID: Method Blank Prep Type: Total/NA** 

**Prep Batch: 541628** 

	MBI	MR							
Analyte	Result (	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.031	ug/Kg		11/10/21 13:52	11/12/21 03:35	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.038	ug/Kg		11/10/21 13:52	11/12/21 03:35	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.053	ug/Kg		11/10/21 13:52	11/12/21 03:35	1

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Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: MB 320-541628/1-A

Matrix: Solid

**Analysis Batch: 541977** 

**Prep Type: Total/NA** 

**Prep Batch: 541628** 

7 mm, 500 = 2000 m 0 1101 1									•
		MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	ND		0.20	0.022	ug/Kg		11/10/21 13:52	11/12/21 03:35	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.048	ug/Kg		11/10/21 13:52	11/12/21 03:35	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.042	ug/Kg		11/10/21 13:52	11/12/21 03:35	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.030	ug/Kg		11/10/21 13:52	11/12/21 03:35	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.021	ug/Kg		11/10/21 13:52	11/12/21 03:35	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.037	ug/Kg		11/10/21 13:52	11/12/21 03:35	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.038	ug/Kg		11/10/21 13:52	11/12/21 03:35	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.029	ug/Kg		11/10/21 13:52	11/12/21 03:35	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.20	0.043	ug/Kg		11/10/21 13:52	11/12/21 03:35	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg		11/10/21 13:52	11/12/21 03:35	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.20	0.048	ug/Kg		11/10/21 13:52	11/12/21 03:35	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.20	0.035	ug/Kg		11/10/21 13:52	11/12/21 03:35	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.20	0.041	ug/Kg		11/10/21 13:52	11/12/21 03:35	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.20	0.031	ug/Kg		11/10/21 13:52	11/12/21 03:35	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.039	ug/Kg		11/10/21 13:52	11/12/21 03:35	1
	MB	MB							

	MB	МВ					
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac	
13C2 PFHxA	104		50 - 150	11/10/21 13:52	11/12/21 03:35	1	
13C4 PFHpA	102		50 - 150	11/10/21 13:52	11/12/21 03:35	1	
13C4 PFOA	94		50 - 150	11/10/21 13:52	11/12/21 03:35	1	
13C5 PFNA	95		50 - 150	11/10/21 13:52	11/12/21 03:35	1	
13C2 PFDA	95		50 - 150	11/10/21 13:52	11/12/21 03:35	1	
13C2 PFUnA	93		50 - 150	11/10/21 13:52	11/12/21 03:35	1	
13C2 PFDoA	92		50 - 150	11/10/21 13:52	11/12/21 03:35	1	
13C2 PFTeDA	89		50 - 150	11/10/21 13:52	11/12/21 03:35	1	
13C3 PFBS	105		50 - 150	11/10/21 13:52	11/12/21 03:35	1	
1802 PFHxS	94		50 - 150	11/10/21 13:52	11/12/21 03:35	1	
13C4 PFOS	98		50 - 150	11/10/21 13:52	11/12/21 03:35	1	
d3-NMeFOSAA	102		50 - 150	11/10/21 13:52	11/12/21 03:35	1	
d5-NEtFOSAA	107		50 - 150	11/10/21 13:52	11/12/21 03:35	1	
13C3 HFPO-DA	90		50 <sub>-</sub> 150	11/10/21 13:52	11/12/21 03:35	1	

Lab Sample ID: LCS 320-541628/2-A

Matrix: Solid

**Analysis Batch: 541977** 

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 541628

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorohexanoic acid (PFHxA)	2.00	1.77		ug/Kg		88	70 - 132	
Perfluoroheptanoic acid (PFHpA)	2.00	2.01		ug/Kg		100	71 - 131	
Perfluorooctanoic acid (PFOA)	2.00	2.11		ug/Kg		106	69 - 133	
Perfluorononanoic acid (PFNA)	2.00	1.95		ug/Kg		98	72 - 129	
Perfluorodecanoic acid (PFDA)	2.00	1.92		ug/Kg		96	69 - 133	
Perfluoroundecanoic acid	2.00	2.00		ug/Kg		100	64 - 136	
(PFUnA)								

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Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Lab Sample ID: LCS 320-541628/2-A

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

**Matrix: Solid** 

**Analysis Batch: 541977** 

Client Sample ID: Lab Control Sample Prep Type: Total/NA Prep Batch: 541628

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorododecanoic acid	2.00	2.15		ug/Kg		108	69 - 135	
(PFDoA)								
Perfluorotridecanoic acid	2.00	1.94		ug/Kg		97	66 - 139	
(PFTriA)								
Perfluorotetradecanoic acid	2.00	1.79		ug/Kg		90	69 - 133	
(PFTeA)								
Perfluorobutanesulfonic acid	1.77	1.60		ug/Kg		91	72 - 128	
(PFBS)								
Perfluorohexanesulfonic acid	1.82	1.81		ug/Kg		100	67 - 130	
(PFHxS)								
Perfluorooctanesulfonic acid	1.86	1.74		ug/Kg		94	68 - 136	
(PFOS)								
N-methylperfluorooctanesulfona	2.00	1.91		ug/Kg		95	63 - 144	
midoacetic acid (NMeFOSAA)								
N-ethylperfluorooctanesulfonami	2.00	1.94		ug/Kg		97	61 - 139	
doacetic acid (NEtFOSAA)								
9-Chlorohexadecafluoro-3-oxan	1.86	1.65		ug/Kg		89	75 - 135	
onane-1-sulfonic acid								
Hexafluoropropylene Oxide	2.00	2.34		ug/Kg		117	77 - 137	
Dimer Acid (HFPO-DA)	4.00	4.07		11.6			70 400	
11-Chloroeicosafluoro-3-oxaund	1.88	1.87		ug/Kg		99	76 - 136	
ecane-1-sulfonic acid	4.00	4.00		11.6		400	70 400	
4,8-Dioxa-3H-perfluorononanoic	1.88	1.92		ug/Kg		102	79 - 139	
acid (ADONA)								

LCS LCS

	LUS	LUJ	
Isotope Dilution	%Recovery	Qualifier	Limits
13C2 PFHxA	104		50 - 150
13C4 PFHpA	96		50 - 150
13C4 PFOA	92		50 - 150
13C5 PFNA	97		50 - 150
13C2 PFDA	95		50 - 150
13C2 PFUnA	94		50 - 150
13C2 PFDoA	84		50 - 150
13C2 PFTeDA	88		50 - 150
13C3 PFBS	104		50 - 150
1802 PFHxS	92		50 - 150
13C4 PFOS	99		50 - 150
d3-NMeFOSAA	101		50 - 150
d5-NEtFOSAA	101		50 - 150
13C3 HFPO-DA	85		50 <sub>-</sub> 150

Lab Sample ID: 320-81254-81 MS

**Matrix: Solid** 

**Analysis Batch: 541977** 

Client Sample ID: 21GST-SS-013
Prep Type: Total/NA
Pron Batch: 541628

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorohexanoic acid (PFHxA)	ND		2.14	2.09		ug/Kg	<u></u>	98	70 - 132	
Perfluoroheptanoic acid (PFHpA)	ND		2.14	2.02		ug/Kg	≎	94	71 - 131	
Perfluorooctanoic acid (PFOA)	ND		2.14	2.22		ug/Kg	≎	103	69 - 133	
Perfluorononanoic acid (PFNA)	ND		2.14	2.11		ug/Kg	₽	98	72 - 129	
Perfluorodecanoic acid (PFDA)	ND		2.14	2.06		ug/Kg	₩	96	69 - 133	

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Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

**Analysis Batch: 541977** 

Matrix: Solid

Lab Sample ID: 320-81254-81 MS

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Client Sample ID: 21GST-SS-013

**Prep Type: Total/NA** 

**Prep Batch: 541628** 

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluoroundecanoic acid (PFUnA)	ND		2.14	2.01		ug/Kg	<u></u>	94	64 - 136	
Perfluorododecanoic acid (PFDoA)	ND		2.14	2.16		ug/Kg	₩	101	69 - 135	
Perfluorotridecanoic acid (PFTriA)	ND		2.14	1.78		ug/Kg	₽	83	66 - 139	
Perfluorotetradecanoic acid (PFTeA)	ND		2.14	2.01		ug/Kg	₩	94	69 - 133	
Perfluorobutanesulfonic acid (PFBS)	ND		1.90	1.69		ug/Kg	≎	89	72 - 128	
Perfluorohexanesulfonic acid (PFHxS)	ND		1.95	2.00		ug/Kg	☼	103	67 - 130	
Perfluorooctanesulfonic acid (PFOS)	1.2		1.99	3.47		ug/Kg	☼	116	68 - 136	
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	ND		2.14	2.08		ug/Kg	₩	97	63 - 144	
N-ethylperfluorooctanesulfonami doacetic acid (NEtFOSAA)	ND		2.14	2.24		ug/Kg	₩	105	61 - 139	
9-Chlorohexadecafluoro-3-oxan onane-1-sulfonic acid	ND		2.00	1.86		ug/Kg	₽	93	75 - 135	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		2.14	2.38		ug/Kg	₽	111	77 - 137	
11-Chloroeicosafluoro-3-oxaund ecane-1-sulfonic acid	ND		2.02	1.84		ug/Kg	₩	91	76 - 136	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.02	1.98		ug/Kg	₩	98	79 - 139	

MS MS

	1110	11.0	
Isotope Dilution	%Recovery	Qualifier	Limits
13C2 PFHxA	86		50 - 150
13C4 PFHpA	93		50 - 150
13C4 PFOA	90		50 - 150
13C5 PFNA	98		50 - 150
13C2 PFDA	95		50 - 150
13C2 PFUnA	92		50 - 150
13C2 PFDoA	90		50 - 150
13C2 PFTeDA	79		50 - 150
13C3 PFBS	106		50 - 150
1802 PFHxS	89		50 - 150
13C4 PFOS	96		50 - 150
d3-NMeFOSAA	98		50 - 150
d5-NEtFOSAA	107		50 - 150
13C3 HFPO-DA	68		50 - 150

Lab Sample ID: 320-81254-81 MSD

**Matrix: Solid** 

Client Sample ID: 21GST-SS-013

Prep Type: Total/NA **Prep Batch: 541628** 

11/17/2021

Analysis Batch: 541977									Prep Ba	tch: 54	<b>41628</b>
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluorohexanoic acid (PFHxA)	ND		2.28	1.99		ug/Kg	₩	87	70 - 132	5	30
Perfluoroheptanoic acid (PFHpA)	ND		2.28	2.34		ug/Kg	≎	103	71 - 131	15	30
Perfluorooctanoic acid (PFOA)	ND		2.28	2.27		ug/Kg	≎	100	69 - 133	2	30
Perfluorononanoic acid (PFNA)	ND		2.28	2.09		ug/Kg	₽	92	72 - 129	0	30

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Client: Shannon & Wilson, Inc

Project/Site: SC Soils#3

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: 320-81254-81 MSD

**Matrix: Solid** 

**Analysis Batch: 541977** 

Client Sample ID: 21GST-SS-013

**Prep Type: Total/NA** Prep Batch: 541628

•	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluorodecanoic acid (PFDA)	ND		2.28	2.53	-	ug/Kg	<u></u>	111	69 - 133	21	30
Perfluoroundecanoic acid (PFUnA)	ND		2.28	2.20		ug/Kg	☼	96	64 - 136	9	30
Perfluorododecanoic acid (PFDoA)	ND		2.28	2.43		ug/Kg	☼	106	69 - 135	12	30
Perfluorotridecanoic acid (PFTriA)	ND		2.28	2.03		ug/Kg	₩	89	66 - 139	13	30
Perfluorotetradecanoic acid (PFTeA)	ND		2.28	2.04		ug/Kg	₩	89	69 - 133	2	30
Perfluorobutanesulfonic acid (PFBS)	ND		2.02	1.88		ug/Kg	₩	93	72 - 128	10	30
Perfluorohexanesulfonic acid (PFHxS)	ND		2.08	1.94		ug/Kg	₩	93	67 - 130	3	30
Perfluorooctanesulfonic acid (PFOS)	1.2		2.12	3.60		ug/Kg	₩	115	68 - 136	4	30
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	ND		2.28	2.34		ug/Kg	₩	102	63 - 144	12	30
N-ethylperfluorooctanesulfonami doacetic acid (NEtFOSAA)	ND		2.28	2.22		ug/Kg	₩	97	61 - 139	1	30
9-Chlorohexadecafluoro-3-oxan onane-1-sulfonic acid	ND		2.13	1.90		ug/Kg	₩	89	75 - 135	2	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		2.28	2.15		ug/Kg	₩	94	77 - 137	10	30
11-Chloroeicosafluoro-3-oxaund ecane-1-sulfonic acid	ND		2.15	1.95		ug/Kg	₩	90	76 - 136	6	30
4,8-Dioxa-3H-perfluorononanoic	ND		2.15	1.99		ug/Kg	≎	92	79 - 139	0	30

MSD MSD

Isotope Dilution	%Recovery	Qualifier	Limits
13C2 PFHxA	96		50 - 150
13C4 PFHpA	97		50 <sub>-</sub> 150
13C4 PFOA	96		50 - 150
13C5 PFNA	106		50 <sub>-</sub> 150
13C2 PFDA	94		50 - 150
13C2 PFUnA	96		50 <sub>-</sub> 150
13C2 PFDoA	90		50 - 150
13C2 PFTeDA	85		50 <sub>-</sub> 150
13C3 PFBS	106		50 - 150
1802 PFHxS	95		50 - 150
13C4 PFOS	104		50 <sub>-</sub> 150
d3-NMeFOSAA	102		50 - 150
d5-NEtFOSAA	111		50 - 150
13C3 HFPO-DA	75		50 - 150

Lab Sample ID: MB 320-541730/1-A

**Matrix: Solid** 

acid (ADONA)

**Analysis Batch: 542490** 

**Client Sample ID: Method Blank Prep Type: Total/NA** 

**Prep Batch: 541730** 

	MR	MR							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.031	ug/Kg		11/10/21 18:34	11/13/21 14:25	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.038	ug/Kg		11/10/21 18:34	11/13/21 14:25	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.053	ug/Kg		11/10/21 18:34	11/13/21 14:25	1

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Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

MB MB

Lab Sample ID: MB 320-541730/1-A

**Matrix: Solid** 

**Analysis Batch: 542490** 

Client Sample ID: Method Blank

Prep Type: Total/NA Prep Batch: 541730

	IVID	IVID							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	ND		0.20	0.022	ug/Kg		11/10/21 18:34	11/13/21 14:25	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.048	ug/Kg		11/10/21 18:34	11/13/21 14:25	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.042	ug/Kg		11/10/21 18:34	11/13/21 14:25	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.030	ug/Kg		11/10/21 18:34	11/13/21 14:25	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.021	ug/Kg		11/10/21 18:34	11/13/21 14:25	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.037	ug/Kg		11/10/21 18:34	11/13/21 14:25	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.038	ug/Kg		11/10/21 18:34	11/13/21 14:25	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.029	ug/Kg		11/10/21 18:34	11/13/21 14:25	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.20	0.043	ug/Kg		11/10/21 18:34	11/13/21 14:25	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg		11/10/21 18:34	11/13/21 14:25	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.20	0.048	ug/Kg		11/10/21 18:34	11/13/21 14:25	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.20	0.035	ug/Kg		11/10/21 18:34	11/13/21 14:25	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.20	0.041	ug/Kg		11/10/21 18:34	11/13/21 14:25	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.20	0.031	ug/Kg		11/10/21 18:34	11/13/21 14:25	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.039	ug/Kg		11/10/21 18:34	11/13/21 14:25	1
	140	440							

MB MB

	IVID IVID				
Isotope Dilution	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	136	50 - 150	11/10/21 18:34	11/13/21 14:25	1
13C4 PFHpA	131	50 - 150	11/10/21 18:34	11/13/21 14:25	1
13C4 PFOA	116	50 - 150	11/10/21 18:34	11/13/21 14:25	1
13C5 PFNA	112	50 - 150	11/10/21 18:34	11/13/21 14:25	1
13C2 PFDA	119	50 - 150	11/10/21 18:34	11/13/21 14:25	1
13C2 PFUnA	127	50 - 150	11/10/21 18:34	11/13/21 14:25	1
13C2 PFDoA	123	50 - 150	11/10/21 18:34	11/13/21 14:25	1
13C2 PFTeDA	114	50 - 150	11/10/21 18:34	11/13/21 14:25	1
13C3 PFBS	126	50 - 150	11/10/21 18:34	11/13/21 14:25	1
1802 PFHxS	112	50 - 150	11/10/21 18:34	11/13/21 14:25	1
13C4 PFOS	113	50 - 150	11/10/21 18:34	11/13/21 14:25	1
d3-NMeFOSAA	128	50 - 150	11/10/21 18:34	11/13/21 14:25	1
d5-NEtFOSAA	138	50 - 150	11/10/21 18:34	11/13/21 14:25	1
13C3 HFPO-DA	119	50 - 150	11/10/21 18:34	11/13/21 14:25	1

Lab Sample ID: LCS 320-541730/2-A

**Matrix: Solid** 

**Analysis Batch: 542490** 

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 541730

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorohexanoic acid (PFHxA)	2.00	1.92		ug/Kg		96	70 - 132	
Perfluoroheptanoic acid (PFHpA)	2.00	1.97		ug/Kg		99	71 - 131	
Perfluorooctanoic acid (PFOA)	2.00	1.84		ug/Kg		92	69 - 133	
Perfluorononanoic acid (PFNA)	2.00	2.00		ug/Kg		100	72 - 129	
Perfluorodecanoic acid (PFDA)	2.00	2.07		ug/Kg		104	69 - 133	
Perfluoroundecanoic acid	2.00	2.03		ug/Kg		102	64 - 136	
(PFUnA)								

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Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: LCS 320-541730/2-A

**Matrix: Solid** 

acid (ADONA)

Analysis Batch: 542490

**Client Sample ID: Lab Control Sample** 

**Prep Type: Total/NA** 

**Prep Batch: 541730** 

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorododecanoic acid	2.00	2.20		ug/Kg		110	69 - 135	
(PFDoA)								
Perfluorotridecanoic acid	2.00	1.88		ug/Kg		94	66 - 139	
(PFTriA)								
Perfluorotetradecanoic acid	2.00	1.83		ug/Kg		91	69 - 133	
(PFTeA)								
Perfluorobutanesulfonic acid	1.77	1.47		ug/Kg		83	72 - 128	
(PFBS)								
Perfluorohexanesulfonic acid	1.82	1.67		ug/Kg		92	67 - 130	
(PFHxS)								
Perfluorooctanesulfonic acid	1.86	1.69		ug/Kg		91	68 - 136	
(PFOS)								
N-methylperfluorooctanesulfona	2.00	1.92		ug/Kg		96	63 - 144	
midoacetic acid (NMeFOSAA)	0.00	0.00				400	04 400	
N-ethylperfluorooctanesulfonami	2.00	2.03		ug/Kg		102	61 - 139	
doacetic acid (NEtFOSAA) 9-Chlorohexadecafluoro-3-oxan	1.06	1.72		/1/		92	75 105	
onane-1-sulfonic acid	1.86	1.72		ug/Kg		92	75 - 135	
Hexafluoropropylene Oxide	2.00	1.99		ug/Kg		99	77 - 137	
Dimer Acid (HFPO-DA)	2.00	1.99		ug/Kg		99	11 - 131	
11-Chloroeicosafluoro-3-oxaund	1.88	1.89		ug/Kg		100	76 - 136	
ecane-1-sulfonic acid	1.00	1.03		ug/itg		100	70 - 130	
4,8-Dioxa-3H-perfluorononanoic	1.88	1.84		ug/Kg		98	79 - 139	
T,O-DIOAG-OI I-PEHIUOIOHOHOHOHO	1.00	1.04		agritg		50	70-100	

LCS LCS

	200 200	
Isotope Dilution	%Recovery Qualifi	er Limits
13C2 PFHxA	102	50 - 150
13C4 PFHpA	99	50 <sub>-</sub> 150
13C4 PFOA	98	50 - 150
13C5 PFNA	97	50 - 150
13C2 PFDA	100	50 <sub>-</sub> 150
13C2 PFUnA	97	50 - 150
13C2 PFDoA	97	50 - 150
13C2 PFTeDA	94	50 - 150
13C3 PFBS	113	50 - 150
1802 PFHxS	92	50 - 150
13C4 PFOS	100	50 - 150
d3-NMeFOSAA	103	50 - 150
d5-NEtFOSAA	105	50 - 150
13C3 HFPO-DA	92	50 <sub>-</sub> 150

Lab Sample ID: 320-81254-91 MS

**Matrix: Solid** 

Client Sample ID: 21GST-SB006-03

Prep Type: Total/NA **Prep Batch: 541730** 

11/17/2021

Analysis Batch: 542490									Prep B	atch: 541730
	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorohexanoic acid (PFHxA)	ND		2.27	1.96		ug/Kg	<u></u>	86	70 - 132	
Perfluoroheptanoic acid (PFHpA)	ND		2.27	2.27		ug/Kg	≎	100	71 - 131	
Perfluorooctanoic acid (PFOA)	ND		2.27	2.25		ug/Kg	≎	99	69 - 133	
Perfluorononanoic acid (PFNA)	ND		2.27	2.27		ug/Kg	₽	100	72 - 129	
Perfluorodecanoic acid (PFDA)	ND		2.27	2.22		ug/Kg	₽	98	69 - 133	

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Spike

Client: Shannon & Wilson, Inc Job ID: 320-81254-1 Project/Site: SC Soils#3

MS MS

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Sample Sample

Lab Sample ID: 320-81254-91 MS

**Matrix: Solid** 

Analysis Batch: 542490

Client Sample ID: 21GST-SB006-03

**Prep Type: Total/NA** 

**Prep Batch: 541730** %Rec.

	Cumpic	Cumpic	Opino	14.0	14.0				/01 <b>CO</b> .	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluoroundecanoic acid (PFUnA)	ND		2.27	2.12		ug/Kg	<del>*</del>	93	64 - 136	
Perfluorododecanoic acid (PFDoA)	ND		2.27	2.31		ug/Kg	.☆	102	69 - 135	
Perfluorotridecanoic acid (PFTriA)	ND		2.27	2.14		ug/Kg	₽	94	66 - 139	
Perfluorotetradecanoic acid (PFTeA)	ND		2.27	2.14		ug/Kg	₽	94	69 - 133	
Perfluorobutanesulfonic acid (PFBS)	ND		2.01	1.76		ug/Kg	₽	88	72 - 128	
Perfluorohexanesulfonic acid (PFHxS)	ND		2.07	1.92		ug/Kg	₽	93	67 - 130	
Perfluorooctanesulfonic acid (PFOS)	0.31		2.11	2.18		ug/Kg	₽	89	68 - 136	
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	ND		2.27	1.90		ug/Kg	₽	84	63 - 144	
N-ethylperfluorooctanesulfonami doacetic acid (NEtFOSAA)	ND		2.27	2.19		ug/Kg	₩	96	61 - 139	
9-Chlorohexadecafluoro-3-oxan onane-1-sulfonic acid	ND		2.12	2.06		ug/Kg	☼	97	75 - 135	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		2.27	2.19		ug/Kg	☼	96	77 - 137	
11-Chloroeicosafluoro-3-oxaund ecane-1-sulfonic acid	ND		2.14	2.26		ug/Kg	☼	106	76 - 136	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.14	2.15		ug/Kg	☼	100	79 - 139	

MS MS

	IVIS	WIS	
Isotope Dilution	%Recovery	Qualifier	Limits
13C2 PFHxA	103		50 - 150
13C4 PFHpA	100		50 - 150
13C4 PFOA	96		50 - 150
13C5 PFNA	95		50 - 150
13C2 PFDA	104		50 <sub>-</sub> 150
13C2 PFUnA	106		50 - 150
13C2 PFDoA	97		50 - 150
13C2 PFTeDA	98		50 - 150
13C3 PFBS	104		50 - 150
1802 PFHxS	94		50 - 150
13C4 PFOS	96		50 - 150
d3-NMeFOSAA	112		50 <sub>-</sub> 150
d5-NEtFOSAA	120		50 - 150
13C3 HFPO-DA	93		50 - 150

Lab Sample ID: 320-81254-91 MSD

**Matrix: Solid** 

Client Sample ID: 21GST-SB006-03

**Prep Type: Total/NA** 

Analysis Batch: 542490									Prep Ba	itch: 54	11730
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluorohexanoic acid (PFHxA)	ND		2.16	1.98		ug/Kg	<del>-</del>	92	70 - 132	1	30
Perfluoroheptanoic acid (PFHpA)	ND		2.16	2.03		ug/Kg	☼	94	71 - 131	11	30
Perfluorooctanoic acid (PFOA)	ND		2.16	1.94		ug/Kg	☼	90	69 - 133	15	30
Perfluorononanoic acid (PFNA)	ND		2.16	2.11		ug/Kg	₽	98	72 - 129	7	30

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Client: Shannon & Wilson, Inc

Project/Site: SC Soils#3

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: 320-81254-91 MSD

**Matrix: Solid** 

Analysis Batch: 542490

Client Sample ID: 21GST-SB006-03

**Prep Type: Total/NA Prep Batch: 541730** 

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluorodecanoic acid (PFDA)	ND		2.16	2.02		ug/Kg	☆	94	69 - 133	9	30
Perfluoroundecanoic acid (PFUnA)	ND		2.16	2.10		ug/Kg	₩	97	64 - 136	1	30
Perfluorododecanoic acid (PFDoA)	ND		2.16	2.20		ug/Kg	₩	102	69 - 135	5	30
Perfluorotridecanoic acid (PFTriA)	ND		2.16	1.87		ug/Kg	☼	87	66 - 139	13	30
Perfluorotetradecanoic acid (PFTeA)	ND		2.16	1.92		ug/Kg	☼	89	69 - 133	11	30
Perfluorobutanesulfonic acid (PFBS)	ND		1.91	1.64		ug/Kg	₩	86	72 - 128	7	30
Perfluorohexanesulfonic acid (PFHxS)	ND		1.96	1.81		ug/Kg	☼	92	67 - 130	6	30
Perfluorooctanesulfonic acid (PFOS)	0.31		2.00	2.15		ug/Kg	₩	92	68 - 136	1	30
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	ND		2.16	2.04		ug/Kg	₩	94	63 - 144	7	30
N-ethylperfluorooctanesulfonami doacetic acid (NEtFOSAA)	ND		2.16	2.08		ug/Kg	₩	96	61 - 139	5	30
9-Chlorohexadecafluoro-3-oxan onane-1-sulfonic acid	ND		2.01	1.87		ug/Kg	₩	93	75 - 135	9	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		2.16	2.20		ug/Kg	₩	102	77 - 137	0	30
11-Chloroeicosafluoro-3-oxaund ecane-1-sulfonic acid	ND		2.03	2.01		ug/Kg	₩	99	76 - 136	12	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.03	1.90		ug/Kg	☼	94	79 - 139	12	30

,	MSD	MSD	
Isotope Dilution	%Recovery	Qualifier	Limits
13C2 PFHxA	118		50 - 150
13C4 PFHpA	119		50 - 150
13C4 PFOA	111		50 - 150
13C5 PFNA	110		50 - 150
13C2 PFDA	109		50 - 150
13C2 PFUnA	112		50 - 150
13C2 PFDoA	105		50 - 150
13C2 PFTeDA	108		50 - 150
13C3 PFBS	136		50 - 150
1802 PFHxS	108		50 - 150
13C4 PFOS	115		50 - 150
d3-NMeFOSAA	115		50 - 150
d5-NEtFOSAA	118		50 - 150
13C3 HFPO-DA	105		50 <sub>-</sub> 150

Lab Sample ID: MB 320-541731/1-A

**Matrix: Solid** 

**Analysis Batch: 542335** 

**Client Sample ID: Method Blank Prep Type: Total/NA** 

**Prep Batch: 541731** 

	MR	MR							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.031	ug/Kg		11/10/21 18:37	11/12/21 22:06	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.038	ug/Kg		11/10/21 18:37	11/12/21 22:06	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.053	ug/Kg		11/10/21 18:37	11/12/21 22:06	1

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Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

MB MB

Lab Sample ID: MB 320-541731/1-A

Matrix: Solid

**Analysis Batch: 542335** 

**Prep Type: Total/NA** 

**Prep Batch: 541731** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	ND		0.20	0.022	ug/Kg		11/10/21 18:37	11/12/21 22:06	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.048	ug/Kg		11/10/21 18:37	11/12/21 22:06	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.042	ug/Kg		11/10/21 18:37	11/12/21 22:06	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.030	ug/Kg		11/10/21 18:37	11/12/21 22:06	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.021	ug/Kg		11/10/21 18:37	11/12/21 22:06	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.037	ug/Kg		11/10/21 18:37	11/12/21 22:06	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.038	ug/Kg		11/10/21 18:37	11/12/21 22:06	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.029	ug/Kg		11/10/21 18:37	11/12/21 22:06	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.20	0.043	ug/Kg		11/10/21 18:37	11/12/21 22:06	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg		11/10/21 18:37	11/12/21 22:06	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		0.20	0.048	ug/Kg		11/10/21 18:37	11/12/21 22:06	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		0.20	0.035	ug/Kg		11/10/21 18:37	11/12/21 22:06	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.20	0.041	ug/Kg		11/10/21 18:37	11/12/21 22:06	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		0.20	0.031	ug/Kg		11/10/21 18:37	11/12/21 22:06	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.039	ug/Kg		11/10/21 18:37	11/12/21 22:06	1
	MD	MD							

	IVIB	WB				
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	107		50 - 150	11/10/21 18:37	11/12/21 22:06	1
13C4 PFHpA	102		50 - 150	11/10/21 18:37	11/12/21 22:06	1
13C4 PFOA	95		50 - 150	11/10/21 18:37	11/12/21 22:06	1
13C5 PFNA	94		50 - 150	11/10/21 18:37	11/12/21 22:06	1
13C2 PFDA	103		50 - 150	11/10/21 18:37	11/12/21 22:06	1
13C2 PFUnA	100		50 - 150	11/10/21 18:37	11/12/21 22:06	1
13C2 PFDoA	95		50 - 150	11/10/21 18:37	11/12/21 22:06	1
13C2 PFTeDA	94		50 - 150	11/10/21 18:37	11/12/21 22:06	1
13C3 PFBS	115		50 - 150	11/10/21 18:37	11/12/21 22:06	1
1802 PFHxS	97		50 - 150	11/10/21 18:37	11/12/21 22:06	1
13C4 PFOS	101		50 - 150	11/10/21 18:37	11/12/21 22:06	1
d3-NMeFOSAA	106		50 - 150	11/10/21 18:37	11/12/21 22:06	1
d5-NEtFOSAA	118		50 - 150	11/10/21 18:37	11/12/21 22:06	1
13C3 HFPO-DA	93		50 - 150	11/10/21 18:37	11/12/21 22:06	1

Lab Sample ID: LCS 320-541731/2-A

**Matrix: Solid** 

**Analysis Batch: 542335** 

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 541731

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorohexanoic acid (PFHxA)	2.00	1.67		ug/Kg		84	70 - 132	
Perfluoroheptanoic acid (PFHpA)	2.00	1.88		ug/Kg		94	71 - 131	
Perfluorooctanoic acid (PFOA)	2.00	1.95		ug/Kg		98	69 - 133	
Perfluorononanoic acid (PFNA)	2.00	1.98		ug/Kg		99	72 - 129	
Perfluorodecanoic acid (PFDA)	2.00	2.03		ug/Kg		102	69 - 133	
Perfluoroundecanoic acid	2.00	1.96		ug/Kg		98	64 - 136	
(PFUnA)								

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Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

### Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: LCS 320-541731/2-A **Client Sample ID: Lab Control Sample Matrix: Solid** Prep Type: Total/NA **Prep Batch: 541731** Analysis Batch: 542335

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit %Rec Limits Perfluorododecanoic acid 2.00 2.04 ug/Kg 102 69 - 135 (PFDoA) Perfluorotridecanoic acid 2.00 1.86 ug/Kg 93 66 - 139 (PFTriA) Perfluorotetradecanoic acid 2.00 1.67 ug/Kg 83 69 - 133 (PFTeA) Perfluorobutanesulfonic acid 1.77 1.54 ug/Kg 87 72 - 128 (PFBS) 1.66 91 Perfluorohexanesulfonic acid 1.82 ug/Kg 67 - 130(PFHxS) 1.65 89 Perfluorooctanesulfonic acid 1.86 ug/Kg 68 - 136 (PFOS) N-methylperfluorooctanesulfona 2.00 1.63 ug/Kg 81 63 - 144 midoacetic acid (NMeFOSAA) N-ethylperfluorooctanesulfonami 2.00 1.95 ug/Kg 98 61 - 139 doacetic acid (NEtFOSAA) 9-Chlorohexadecafluoro-3-oxan 1.86 1.63 ug/Kg 87 75 - 135 onane-1-sulfonic acid 77 - 137 Hexafluoropropylene Oxide 2.00 2.00 ug/Kg 100 Dimer Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaund 1.88 1.85 ug/Kg 98 76 - 136

1.88

1.77

ug/Kg

94

79 - 139

LCS LCS

	200	LUU	
Isotope Dilution	%Recovery	Qualifier	Limits
13C2 PFHxA	118		50 - 150
13C4 PFHpA	114		50 - 150
13C4 PFOA	106		50 - 150
13C5 PFNA	106		50 - 150
13C2 PFDA	107		50 - 150
13C2 PFUnA	110		50 - 150
13C2 PFDoA	100		50 - 150
13C2 PFTeDA	104		50 - 150
13C3 PFBS	124		50 - 150
1802 PFHxS	107		50 - 150
13C4 PFOS	115		50 - 150
d3-NMeFOSAA	125		50 - 150
d5-NEtFOSAA	119		50 - 150
13C3 HFPO-DA	100		50 <sub>-</sub> 150

Lab Sample ID: 320-81254-111 MS Client Sample ID: 21GST-MW16-02 **Matrix: Solid** 

Analysis Batch: 542335

ecane-1-sulfonic acid

acid (ADONA)

4,8-Dioxa-3H-perfluorononanoic

Sample Sample Spike MS MS %Rec. Result Qualifier Added Result Qualifier Unit D %Rec Limits Perfluorohexanoic acid (PFHxA) ND 2.04 1.84 ug/Kg ₩ 90 70 - 132 ND 2.04 93 Perfluoroheptanoic acid (PFHpA) 1.91 ug/Kg 71 - 131 Ö Perfluorooctanoic acid (PFOA) ND 2.04 2.01 ug/Kg 98 69 - 133 ₩

Perfluorononanoic acid (PFNA) 0.22 2.04 2.22 98 72 - 129 ug/Kg ₩ Perfluorodecanoic acid (PFDA) 0.16 J 2.04 2.07 ug/Kg 94 69 - 133

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Prep Type: Total/NA

**Prep Batch: 541731** 

Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: 320-81254-111 MS

**Matrix: Solid** 

**Analysis Batch: 542335** 

Client Sample ID: 21GST-MW16-02

**Prep Type: Total/NA** 

**Prep Batch: 541731** 

Analysis Buton: 042000	Sample	Sample	Spike	MS	MS				%Rec.
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Perfluoroundecanoic acid	0.20	J	2.04	2.17		ug/Kg	<del>*</del>	96	64 - 136
(PFUnA)									
Perfluorododecanoic acid (PFDoA)	ND		2.04	2.08		ug/Kg	₩	102	69 - 135
Perfluorotridecanoic acid (PFTriA)	ND		2.04	1.79		ug/Kg	≎	88	66 - 139
Perfluorotetradecanoic acid (PFTeA)	ND		2.04	1.80		ug/Kg	₽	88	69 - 133
Perfluorobutanesulfonic acid (PFBS)	ND		1.81	1.54		ug/Kg	₽	85	72 - 128
Perfluorohexanesulfonic acid (PFHxS)	0.033	J	1.86	1.85		ug/Kg	₽	98	67 - 130
Perfluorooctanesulfonic acid (PFOS)	0.39		1.90	2.15		ug/Kg	₽	93	68 - 136
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	ND		2.04	1.76		ug/Kg	₽	86	63 - 144
N-ethylperfluorooctanesulfonami doacetic acid (NEtFOSAA)	ND		2.04	1.94		ug/Kg	₽	95	61 - 139
9-Chlorohexadecafluoro-3-oxan onane-1-sulfonic acid	ND		1.91	1.79		ug/Kg	₽	94	75 - 135
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		2.04	1.76		ug/Kg	₽	86	77 - 137
11-Chloroeicosafluoro-3-oxaund ecane-1-sulfonic acid	ND		1.93	1.93		ug/Kg	₽	100	76 - 136
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.93	1.85		ug/Kg	₽	96	79 - 139

MS MS

	1110	11.0	
Isotope Dilution	%Recovery	Qualifier	Limits
13C2 PFHxA	101		50 - 150
13C4 PFHpA	96		50 - 150
13C4 PFOA	93		50 - 150
13C5 PFNA	93		50 <sub>-</sub> 150
13C2 PFDA	96		50 - 150
13C2 PFUnA	97		50 - 150
13C2 PFDoA	94		50 - 150
13C2 PFTeDA	93		50 - 150
13C3 PFBS	108		50 - 150
1802 PFHxS	86		50 - 150
13C4 PFOS	94		50 - 150
d3-NMeFOSAA	97		50 - 150
d5-NEtFOSAA	103		50 - 150
13C3 HFPO-DA	92		50 <sub>-</sub> 150

Lab Sample ID: 320-81254-111 MSD

**Matrix: Solid** 

Client Sample ID: 21GST-MW16-02

**Prep Type: Total/NA** 

Analysis Batch: 542335									Prep B	atcn: 54	41/31
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluorohexanoic acid (PFHxA)	ND		2.12	1.82		ug/Kg	<del>-</del>	86	70 - 132	1	30
Perfluoroheptanoic acid (PFHpA)	ND		2.12	2.11		ug/Kg	≎	99	71 - 131	10	30
Perfluorooctanoic acid (PFOA)	ND		2.12	2.03		ug/Kg	☼	95	69 - 133	1	30
Perfluorononanoic acid (PFNA)	0.22		2.12	2.30		ug/Kg	₽	98	72 - 129	3	30

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Client: Shannon & Wilson, Inc

Project/Site: SC Soils#3

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: 320-81254-111 MSD Client Sample ID: 21GST-MW16-02

**Matrix: Solid** 

**Analysis Batch: 542335** 

Prep Type: Total/NA **Prep Batch: 541731** 

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluorodecanoic acid (PFDA)	0.16	J	2.12	2.08		ug/Kg	<del>-</del>	90	69 - 133	0	30
Perfluoroundecanoic acid (PFUnA)	0.20	J	2.12	2.09		ug/Kg	₩	89	64 - 136	4	30
Perfluorododecanoic acid (PFDoA)	ND		2.12	2.02		ug/Kg	≎	95	69 - 135	3	30
Perfluorotridecanoic acid (PFTriA)	ND		2.12	1.82		ug/Kg	₩	86	66 - 139	2	30
Perfluorotetradecanoic acid (PFTeA)	ND		2.12	1.69		ug/Kg	₩	79	69 - 133	7	30
Perfluorobutanesulfonic acid (PFBS)	ND		1.88	1.58		ug/Kg	₩	84	72 - 128	3	30
Perfluorohexanesulfonic acid (PFHxS)	0.033	J	1.93	1.81		ug/Kg	₩	92	67 - 130	2	30
Perfluorooctanesulfonic acid (PFOS)	0.39		1.97	1.99		ug/Kg	₩	81	68 - 136	8	30
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	ND		2.12	1.92		ug/Kg	₩	90	63 - 144	9	30
N-ethylperfluorooctanesulfonami doacetic acid (NEtFOSAA)	ND		2.12	2.01		ug/Kg	₩	95	61 - 139	4	30
9-Chlorohexadecafluoro-3-oxan onane-1-sulfonic acid	ND		1.98	1.75		ug/Kg	₩	88	75 - 135	2	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		2.12	1.84		ug/Kg	☼	87	77 - 137	5	30
11-Chloroeicosafluoro-3-oxaund ecane-1-sulfonic acid	ND		2.00	1.82		ug/Kg	☼	91	76 - 136	6	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.00	1.87		ug/Kg	≎	93	79 - 139	1	30

MSD MSD Isotope Dilution %Recovery Qualifier Limits 13C2 PFHxA 108 50 - 150 13C4 PFHpA 105 50 - 150 13C4 PFOA 98 50 - 150 13C5 PFNA 101 50 - 150 108 50 - 150 13C2 PFDA 13C2 PFUnA 103 50 - 150 13C2 PFDoA 100 50 - 150

13C2 PFTeDA 103 50 - 150 13C3 PFBS 109 50 - 150 1802 PFHxS 97 50 - 150 13C4 PFOS 106 50 - 150 d3-NMeFOSAA 111 50 - 150 d5-NEtFOSAA 111 50 - 150

96

Method: D 2216 - Percent Moisture

Lab Sample ID: 320-81254-1 DU Client Sample ID: 21GST-SS-023 **Matrix: Solid Prep Type: Total/NA** 

50 - 150

**Analysis Batch: 540289** 

13C3 HFPO-DA

Sample Sample DU DU **RPD** Analyte Result Qualifier Result Qualifier Unit Limit 9.5 % Percent Moisture 9.1

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Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

Method: D 2216 - Percent Moisture (Continued)

Lab Sample ID: 320-81254-1 DU Client Sample ID: 21GST-SS-023

**Matrix: Solid** 

Prep Type: Total/NA Analysis Batch: 540289

DU DU **RPD** Sample Sample Result Qualifier Result Qualifier Unit Limit Percent Solids 90.5 90.9 % 0.5 20

Lab Sample ID: 320-81254-21 DU Client Sample ID: 21GST-SS-005

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

Analysis Batch: 540290

DU DU Sample Sample **RPD** Analyte Result Qualifier Result Qualifier Unit RPD Limit 7.9 8.3 % Percent Moisture 4 20 Percent Solids 92.1 91.7 %

Lab Sample ID: 320-81254-41 DU Client Sample ID: 21GST-MW15-14 **Matrix: Solid** Prep Type: Total/NA

Analysis Batch: 540311

DU DU **RPD** Sample Sample Analyte Result Qualifier Result Qualifier Unit **RPD** Limit Percent Moisture 18.1 18.0 % 0.7 20 Percent Solids 81.9 82.0 % 0.2 20

Lab Sample ID: 320-81254-61 DU Client Sample ID: 21GST-SB012-01 Prep Type: Total/NA

**Matrix: Solid** 

Analysis Batch: 540312

Alialysis Dalcil. 340312								
	Sample	Sample	DU	DU				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
Percent Moisture	14.4		13.2		%			20
Percent Solids	85.6		86.8		%		1	20

Lab Sample ID: 320-81254-83 DU Client Sample ID: 21GST-SB003-02 **Prep Type: Total/NA** 

**Matrix: Solid** 

**Analysis Batch: 540335** 

-	Sample	Sample	DU	DU				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
Percent Moisture	14.6		13.9		%		 5	20
Percent Solids	85.4		86.1		%		0.9	20

Lab Sample ID: 320-81254-101 DU Client Sample ID: 21GST-SB014-03 **Matrix: Solid** Prep Type: Total/NA

**Analysis Batch: 540353** 

DU DU RPD Sample Sample Analyte Result Qualifier Result Qualifier Unit D RPD Limit Percent Moisture 17.0 16.9 % 0.8 20 Percent Solids 83.0 83.1 % 0.2 20

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11/17/2021

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

LCMS

**Prep Batch: 540825** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81254-1	21GST-SS-023	Total/NA	Solid	SHAKE	
320-81254-2	21GST-SS-029	Total/NA	Solid	SHAKE	
320-81254-3	21GST-SS-028	Total/NA	Solid	SHAKE	
320-81254-4	21GST-SS-027	Total/NA	Solid	SHAKE	
320-81254-5	21GST-SS-026	Total/NA	Solid	SHAKE	
320-81254-6	21GST-SS-126	Total/NA	Solid	SHAKE	
320-81254-7	21GST-SS-025	Total/NA	Solid	SHAKE	
320-81254-8	21GST-SS-024	Total/NA	Solid	SHAKE	
320-81254-9	21GST-SS-022	Total/NA	Solid	SHAKE	
320-81254-9 - DL	21GST-SS-022	Total/NA	Solid	SHAKE	
320-81254-10	21GST-SS-021	Total/NA	Solid	SHAKE	
320-81254-10 - DL	21GST-SS-021	Total/NA	Solid	SHAKE	
320-81254-11	21GST-SS-020	Total/NA	Solid	SHAKE	
320-81254-11 - DL	21GST-SS-020	Total/NA	Solid	SHAKE	
320-81254-12	21GST-SS-019	Total/NA	Solid	SHAKE	
320-81254-13	21GST-SS-018	Total/NA	Solid	SHAKE	
320-81254-14	21GST-SS-014	Total/NA	Solid	SHAKE	
320-81254-15	21GST-SS-017	Total/NA	Solid	SHAKE	
320-81254-16	21GST-SS-016	Total/NA	Solid	SHAKE	
320-81254-17	21GST-SS-015	Total/NA	Solid	SHAKE	
320-81254-18	21GST-SS-008	Total/NA	Solid	SHAKE	
320-81254-18 - DL	21GST-SS-008	Total/NA	Solid	SHAKE	
320-81254-19	21GST-SS-006	Total/NA	Solid	SHAKE	
320-81254-20	21GST-SS-106	Total/NA	Solid	SHAKE	
320-81254-20 - DL	21GST-SS-106	Total/NA	Solid	SHAKE	
MB 320-540825/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-540825/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
320-81254-1 MS	21GST-SS-023	Total/NA	Solid	SHAKE	
320-81254-1 MSD	21GST-SS-023	Total/NA	Solid	SHAKE	

**Analysis Batch: 541064** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81254-1	21GST-SS-023	Total/NA	Solid	EPA 537(Mod)	540825
320-81254-2	21GST-SS-029	Total/NA	Solid	EPA 537(Mod)	540825
320-81254-3	21GST-SS-028	Total/NA	Solid	EPA 537(Mod)	540825
320-81254-4	21GST-SS-027	Total/NA	Solid	EPA 537(Mod)	540825
320-81254-5	21GST-SS-026	Total/NA	Solid	EPA 537(Mod)	540825
320-81254-6	21GST-SS-126	Total/NA	Solid	EPA 537(Mod)	540825
320-81254-7	21GST-SS-025	Total/NA	Solid	EPA 537(Mod)	540825
320-81254-8	21GST-SS-024	Total/NA	Solid	EPA 537(Mod)	540825
320-81254-9	21GST-SS-022	Total/NA	Solid	EPA 537(Mod)	540825
320-81254-10	21GST-SS-021	Total/NA	Solid	EPA 537(Mod)	540825
320-81254-11	21GST-SS-020	Total/NA	Solid	EPA 537(Mod)	540825
320-81254-12	21GST-SS-019	Total/NA	Solid	EPA 537(Mod)	540825
320-81254-13	21GST-SS-018	Total/NA	Solid	EPA 537(Mod)	540825
320-81254-14	21GST-SS-014	Total/NA	Solid	EPA 537(Mod)	540825
320-81254-15	21GST-SS-017	Total/NA	Solid	EPA 537(Mod)	540825
320-81254-16	21GST-SS-016	Total/NA	Solid	EPA 537(Mod)	540825
320-81254-17	21GST-SS-015	Total/NA	Solid	EPA 537(Mod)	540825
320-81254-18	21GST-SS-008	Total/NA	Solid	EPA 537(Mod)	540825
320-81254-19	21GST-SS-006	Total/NA	Solid	EPA 537(Mod)	540825

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Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

## **LCMS (Continued)**

### **Analysis Batch: 541064 (Continued)**

Lab Sample ID 320-81254-20	Client Sample ID 21GST-SS-106	Prep Type Total/NA	Matrix Solid	Method EPA 537(Mod)	Prep Batch 540825
MB 320-540825/1-A	Method Blank	Total/NA	Solid	EPA 537(Mod)	540825
LCS 320-540825/2-A	Lab Control Sample	Total/NA	Solid	EPA 537(Mod)	540825
320-81254-1 MS	21GST-SS-023	Total/NA	Solid	EPA 537(Mod)	540825
320-81254-1 MSD	21GST-SS-023	Total/NA	Solid	EPA 537(Mod)	540825

### **Prep Batch: 541157**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81254-21	21GST-SS-005	Total/NA	Solid	SHAKE	
320-81254-22	21GST-SS-007	Total/NA	Solid	SHAKE	
320-81254-23	21GST-MW14-01	Total/NA	Solid	SHAKE	
320-81254-24	21GST-MW14-10	Total/NA	Solid	SHAKE	
320-81254-25	21GST-MW14-02	Total/NA	Solid	SHAKE	
320-81254-26	21GST-MW14-03	Total/NA	Solid	SHAKE	
320-81254-27	21GST-MW14-04	Total/NA	Solid	SHAKE	
320-81254-28	21GST-MW14-05	Total/NA	Solid	SHAKE	
320-81254-29	21GST-MW14-06	Total/NA	Solid	SHAKE	
320-81254-30	21GST-MW18-01	Total/NA	Solid	SHAKE	
320-81254-31	21GST-MW18-02	Total/NA	Solid	SHAKE	
320-81254-32	21GST-MW18-12	Total/NA	Solid	SHAKE	
320-81254-33	21GST-MW18-03	Total/NA	Solid	SHAKE	
320-81254-34	21GST-MW18-04	Total/NA	Solid	SHAKE	
320-81254-35	21GST-MW18-05	Total/NA	Solid	SHAKE	
320-81254-36	21GST-MW18-06	Total/NA	Solid	SHAKE	
320-81254-37	21GST-MW15-01	Total/NA	Solid	SHAKE	
320-81254-38	21GST-MW15-02	Total/NA	Solid	SHAKE	
320-81254-39	21GST-MW15-03	Total/NA	Solid	SHAKE	
320-81254-40	21GST-MW15-04	Total/NA	Solid	SHAKE	
MB 320-541157/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-541157/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
320-81254-40 MS	21GST-MW15-04	Total/NA	Solid	SHAKE	

#### **Prep Batch: 541434**

21GST-MW15-04

320-81254-40 MSD

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81254-61	21GST-SB012-01	Total/NA	Solid	SHAKE	
320-81254-62	21GST-SB012-02	Total/NA	Solid	SHAKE	
320-81254-63	21GST-SB012-03	Total/NA	Solid	SHAKE	
320-81254-64	21GST-SB013-01	Total/NA	Solid	SHAKE	
320-81254-65	21GST-SB013-02	Total/NA	Solid	SHAKE	
320-81254-66	21GST-SB013-03	Total/NA	Solid	SHAKE	
320-81254-67	21GST-SB005-01	Total/NA	Solid	SHAKE	
320-81254-68	21GST-SB005-02	Total/NA	Solid	SHAKE	
320-81254-69	21GST-SB005-03	Total/NA	Solid	SHAKE	
320-81254-70	21GST-SB007-01	Total/NA	Solid	SHAKE	
320-81254-71	21GST-SB007-10	Total/NA	Solid	SHAKE	
320-81254-72	21GST-SB007-02	Total/NA	Solid	SHAKE	
320-81254-73	21GST-SB007-03	Total/NA	Solid	SHAKE	
320-81254-74	21GST-SS-030	Total/NA	Solid	SHAKE	
320-81254-75	21GST-SS-010	Total/NA	Solid	SHAKE	
320-81254-76	21GST-SS-031	Total/NA	Solid	SHAKE	

Total/NA

Solid

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SHAKE

Client: Shannon & Wilson, Inc Job ID: 320-81254-1 Project/Site: SC Soils#3

**LCMS (Continued)** 

### Prep Batch: 541434 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81254-77	21GST-SS-131	Total/NA	Solid	SHAKE	
320-81254-78 - DL	21GST-SS-009	Total/NA	Solid	SHAKE	
320-81254-78	21GST-SS-009	Total/NA	Solid	SHAKE	
320-81254-79	21GST-SS-012	Total/NA	Solid	SHAKE	
320-81254-80	21GST-SS-011	Total/NA	Solid	SHAKE	
MB 320-541434/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-541434/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
320-81254-80 MS	21GST-SS-011	Total/NA	Solid	SHAKE	
320-81254-80 MSD	21GST-SS-011	Total/NA	Solid	SHAKE	

#### **Prep Batch: 541446**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
320-81254-41	21GST-MW15-14	Total/NA	Solid	SHAKE	
320-81254-42	21GST-MW15-05	Total/NA	Solid	SHAKE	
320-81254-43	21GST-MW15-06	Total/NA	Solid	SHAKE	
320-81254-44	21GST-SB002-01	Total/NA	Solid	SHAKE	
320-81254-45	21GST-SB002-02	Total/NA	Solid	SHAKE	
320-81254-46	21GST-SB002-03	Total/NA	Solid	SHAKE	
320-81254-47	21GST-SB002-04	Total/NA	Solid	SHAKE	
320-81254-48	21GST-SB001-01	Total/NA	Solid	SHAKE	
320-81254-49	21GST-SB001-02	Total/NA	Solid	SHAKE	
320-81254-50	21GST-SB001-03	Total/NA	Solid	SHAKE	
320-81254-51	21GST-SB001-04	Total/NA	Solid	SHAKE	
320-81254-52	21GST-SB009-01	Total/NA	Solid	SHAKE	
320-81254-53	21GST-SB009-10	Total/NA	Solid	SHAKE	
320-81254-54	21GST-SB009-02	Total/NA	Solid	SHAKE	
320-81254-55	21GST-SB009-03	Total/NA	Solid	SHAKE	
320-81254-56	21GST-SB009-04	Total/NA	Solid	SHAKE	
320-81254-57	21GST-SB010-01	Total/NA	Solid	SHAKE	
320-81254-58	21GST-SB010-10	Total/NA	Solid	SHAKE	
320-81254-59	21GST-SB010-02	Total/NA	Solid	SHAKE	
320-81254-60	21GST-SB010-03	Total/NA	Solid	SHAKE	
MB 320-541446/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-541446/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
320-81254-60 MS	21GST-SB010-03	Total/NA	Solid	SHAKE	

#### Prep Batch: 541628

21GST-SB010-03

320-81254-60 MSD

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81254-81	21GST-SS-013	Total/NA	Solid	SHAKE	
320-81254-82	21GST-SB003-01	Total/NA	Solid	SHAKE	
320-81254-83	21GST-SB003-02	Total/NA	Solid	SHAKE	
320-81254-84	21GST-SB003-03	Total/NA	Solid	SHAKE	
320-81254-85	21GST-SB004-01	Total/NA	Solid	SHAKE	
320-81254-86	21GST-SB004-02	Total/NA	Solid	SHAKE	
320-81254-87	21GST-SB004-03	Total/NA	Solid	SHAKE	
320-81254-88	21GST-SB006-01	Total/NA	Solid	SHAKE	
320-81254-89	21GST-SB006-10	Total/NA	Solid	SHAKE	
320-81254-90	21GST-SB006-02	Total/NA	Solid	SHAKE	
MB 320-541628/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-541628/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	

Total/NA

Solid

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SHAKE

Client: Shannon & Wilson, Inc Job ID: 320-81254-1 Project/Site: SC Soils#3

## **LCMS (Continued)**

### Prep Batch: 541628 (Continued)

	Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
	320-81254-81 MS	21GST-SS-013	Total/NA	Solid	SHAKE	
L	320-81254-81 MSD	21GST-SS-013	Total/NA	Solid	SHAKE	

#### **Prep Batch: 541730**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81254-91	21GST-SB006-03	Total/NA	Solid	SHAKE	_
320-81254-92	21GST-SB008-01	Total/NA	Solid	SHAKE	
320-81254-93	21GST-SB008-02	Total/NA	Solid	SHAKE	
320-81254-94	21GST-SB008-03	Total/NA	Solid	SHAKE	
320-81254-95 - DL	21GST-SB011-01	Total/NA	Solid	SHAKE	
320-81254-95	21GST-SB011-01	Total/NA	Solid	SHAKE	
320-81254-96 - DL	21GST-SB011-12	Total/NA	Solid	SHAKE	
320-81254-96	21GST-SB011-12	Total/NA	Solid	SHAKE	
320-81254-97	21GST-SB011-02	Total/NA	Solid	SHAKE	
320-81254-97 - DL	21GST-SB011-02	Total/NA	Solid	SHAKE	
320-81254-98	21GST-SB011-03	Total/NA	Solid	SHAKE	
320-81254-99	21GST-SB014-01	Total/NA	Solid	SHAKE	
320-81254-100	21GST-SB014-02	Total/NA	Solid	SHAKE	
320-81254-101	21GST-SB014-03	Total/NA	Solid	SHAKE	
320-81254-102	21GST-SS-032	Total/NA	Solid	SHAKE	
320-81254-103	21GST-SS-033	Total/NA	Solid	SHAKE	
320-81254-104	21GST-SS-034	Total/NA	Solid	SHAKE	
320-81254-105	21GST-SS-004	Total/NA	Solid	SHAKE	
320-81254-106	21GST-SS-003	Total/NA	Solid	SHAKE	
320-81254-107	21GST-SS-103	Total/NA	Solid	SHAKE	
320-81254-108	21GST-SS-002	Total/NA	Solid	SHAKE	
320-81254-109	21GST-SS-001	Total/NA	Solid	SHAKE	
320-81254-110	21GST-MW16-01	Total/NA	Solid	SHAKE	
MB 320-541730/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-541730/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
320-81254-91 MS	21GST-SB006-03	Total/NA	Solid	SHAKE	
320-81254-91 MSD	21GST-SB006-03	Total/NA	Solid	SHAKE	

#### **Prep Batch: 541731**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81254-111	21GST-MW16-02	Total/NA	Solid	SHAKE	
320-81254-112	21GST-MW16-03	Total/NA	Solid	SHAKE	
320-81254-113	21GST-MW16-04	Total/NA	Solid	SHAKE	
320-81254-114	21GST-MW19-01	Total/NA	Solid	SHAKE	
320-81254-115	21GST-MW19-02	Total/NA	Solid	SHAKE	
320-81254-116	21GST-MW20-01	Total/NA	Solid	SHAKE	
320-81254-117	21GST-MW20-10	Total/NA	Solid	SHAKE	
320-81254-118	21GST-MW20-02	Total/NA	Solid	SHAKE	
MB 320-541731/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-541731/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
320-81254-111 MS	21GST-MW16-02	Total/NA	Solid	SHAKE	
320-81254-111 MSD	21GST-MW16-02	Total/NA	Solid	SHAKE	

### **Analysis Batch: 541977**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81254-81	21GST-SS-013	Total/NA	Solid	EPA 537(Mod)	541628

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Client: Shannon & Wilson, Inc Job ID: 320-81254-1 Project/Site: SC Soils#3

**LCMS (Continued)** 

### **Analysis Batch: 541977 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81254-82	21GST-SB003-01	Total/NA	Solid	EPA 537(Mod)	541628
320-81254-83	21GST-SB003-02	Total/NA	Solid	EPA 537(Mod)	541628
320-81254-84	21GST-SB003-03	Total/NA	Solid	EPA 537(Mod)	541628
320-81254-85	21GST-SB004-01	Total/NA	Solid	EPA 537(Mod)	541628
320-81254-86	21GST-SB004-02	Total/NA	Solid	EPA 537(Mod)	541628
320-81254-87	21GST-SB004-03	Total/NA	Solid	EPA 537(Mod)	541628
320-81254-88	21GST-SB006-01	Total/NA	Solid	EPA 537(Mod)	541628
320-81254-89	21GST-SB006-10	Total/NA	Solid	EPA 537(Mod)	541628
320-81254-90	21GST-SB006-02	Total/NA	Solid	EPA 537(Mod)	541628
MB 320-541628/1-A	Method Blank	Total/NA	Solid	EPA 537(Mod)	541628
LCS 320-541628/2-A	Lab Control Sample	Total/NA	Solid	EPA 537(Mod)	541628
320-81254-81 MS	21GST-SS-013	Total/NA	Solid	EPA 537(Mod)	541628
320-81254-81 MSD	21GST-SS-013	Total/NA	Solid	EPA 537(Mod)	541628

### Analysis Batch: 542324

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81254-21	21GST-SS-005	Total/NA	Solid	EPA 537(Mod)	541157
320-81254-22	21GST-SS-007	Total/NA	Solid	EPA 537(Mod)	541157
320-81254-23	21GST-MW14-01	Total/NA	Solid	EPA 537(Mod)	541157
320-81254-24	21GST-MW14-10	Total/NA	Solid	EPA 537(Mod)	541157
320-81254-25	21GST-MW14-02	Total/NA	Solid	EPA 537(Mod)	541157
320-81254-26	21GST-MW14-03	Total/NA	Solid	EPA 537(Mod)	541157
320-81254-27	21GST-MW14-04	Total/NA	Solid	EPA 537(Mod)	541157
320-81254-28	21GST-MW14-05	Total/NA	Solid	EPA 537(Mod)	541157
320-81254-29	21GST-MW14-06	Total/NA	Solid	EPA 537(Mod)	541157
320-81254-30	21GST-MW18-01	Total/NA	Solid	EPA 537(Mod)	541157
320-81254-31	21GST-MW18-02	Total/NA	Solid	EPA 537(Mod)	541157
320-81254-32	21GST-MW18-12	Total/NA	Solid	EPA 537(Mod)	541157
320-81254-33	21GST-MW18-03	Total/NA	Solid	EPA 537(Mod)	541157
320-81254-34	21GST-MW18-04	Total/NA	Solid	EPA 537(Mod)	541157
320-81254-35	21GST-MW18-05	Total/NA	Solid	EPA 537(Mod)	541157
320-81254-36	21GST-MW18-06	Total/NA	Solid	EPA 537(Mod)	541157
320-81254-37	21GST-MW15-01	Total/NA	Solid	EPA 537(Mod)	541157
320-81254-38	21GST-MW15-02	Total/NA	Solid	EPA 537(Mod)	541157
MB 320-541157/1-A	Method Blank	Total/NA	Solid	EPA 537(Mod)	541157
LCS 320-541157/2-A	Lab Control Sample	Total/NA	Solid	EPA 537(Mod)	541157

#### Analysis Batch: 542329

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81254-9 - DL	21GST-SS-022	Total/NA	Solid	EPA 537(Mod)	540825
320-81254-10 - DL	21GST-SS-021	Total/NA	Solid	EPA 537(Mod)	540825
320-81254-11 - DL	21GST-SS-020	Total/NA	Solid	EPA 537(Mod)	540825
320-81254-18 - DL	21GST-SS-008	Total/NA	Solid	EPA 537(Mod)	540825
320-81254-20 - DL	21GST-SS-106	Total/NA	Solid	EPA 537(Mod)	540825

### **Analysis Batch: 542335**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method P	rep Batch
320-81254-111	21GST-MW16-02	Total/NA	Solid	EPA 537(Mod)	541731
320-81254-112	21GST-MW16-03	Total/NA	Solid	EPA 537(Mod)	541731
320-81254-113	21GST-MW16-04	Total/NA	Solid	EPA 537(Mod)	541731
320-81254-114	21GST-MW19-01	Total/NA	Solid	EPA 537(Mod)	541731

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Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

## **LCMS (Continued)**

### **Analysis Batch: 542335 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81254-115	21GST-MW19-02	Total/NA	Solid	EPA 537(Mod)	541731
320-81254-116	21GST-MW20-01	Total/NA	Solid	EPA 537(Mod)	541731
320-81254-117	21GST-MW20-10	Total/NA	Solid	EPA 537(Mod)	541731
320-81254-118	21GST-MW20-02	Total/NA	Solid	EPA 537(Mod)	541731
MB 320-541731/1-A	Method Blank	Total/NA	Solid	EPA 537(Mod)	541731
LCS 320-541731/2-A	Lab Control Sample	Total/NA	Solid	EPA 537(Mod)	541731
320-81254-111 MS	21GST-MW16-02	Total/NA	Solid	EPA 537(Mod)	541731
320-81254-111 MSD	21GST-MW16-02	Total/NA	Solid	EPA 537(Mod)	541731

### **Analysis Batch: 542350**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81254-41	21GST-MW15-14	Total/NA	Solid	EPA 537(Mod)	541446
320-81254-42	21GST-MW15-05	Total/NA	Solid	EPA 537(Mod)	541446
320-81254-43	21GST-MW15-06	Total/NA	Solid	EPA 537(Mod)	541446
320-81254-44	21GST-SB002-01	Total/NA	Solid	EPA 537(Mod)	541446
320-81254-45	21GST-SB002-02	Total/NA	Solid	EPA 537(Mod)	541446
320-81254-46	21GST-SB002-03	Total/NA	Solid	EPA 537(Mod)	541446
320-81254-47	21GST-SB002-04	Total/NA	Solid	EPA 537(Mod)	541446
320-81254-48	21GST-SB001-01	Total/NA	Solid	EPA 537(Mod)	541446
320-81254-49	21GST-SB001-02	Total/NA	Solid	EPA 537(Mod)	541446
320-81254-50	21GST-SB001-03	Total/NA	Solid	EPA 537(Mod)	541446
320-81254-51	21GST-SB001-04	Total/NA	Solid	EPA 537(Mod)	541446
320-81254-52	21GST-SB009-01	Total/NA	Solid	EPA 537(Mod)	541446
320-81254-53	21GST-SB009-10	Total/NA	Solid	EPA 537(Mod)	541446
320-81254-54	21GST-SB009-02	Total/NA	Solid	EPA 537(Mod)	541446
320-81254-55	21GST-SB009-03	Total/NA	Solid	EPA 537(Mod)	541446
320-81254-56	21GST-SB009-04	Total/NA	Solid	EPA 537(Mod)	541446
320-81254-57	21GST-SB010-01	Total/NA	Solid	EPA 537(Mod)	541446
320-81254-58	21GST-SB010-10	Total/NA	Solid	EPA 537(Mod)	541446
320-81254-59	21GST-SB010-02	Total/NA	Solid	EPA 537(Mod)	541446
320-81254-60	21GST-SB010-03	Total/NA	Solid	EPA 537(Mod)	541446
MB 320-541446/1-A	Method Blank	Total/NA	Solid	EPA 537(Mod)	541446
LCS 320-541446/2-A	Lab Control Sample	Total/NA	Solid	EPA 537(Mod)	541446
320-81254-60 MS	21GST-SB010-03	Total/NA	Solid	EPA 537(Mod)	541446
320-81254-60 MSD	21GST-SB010-03	Total/NA	Solid	EPA 537(Mod)	541446

### **Analysis Batch: 542490**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81254-91	21GST-SB006-03	Total/NA	Solid	EPA 537(Mod)	541730
320-81254-92	21GST-SB008-01	Total/NA	Solid	EPA 537(Mod)	541730
320-81254-93	21GST-SB008-02	Total/NA	Solid	EPA 537(Mod)	541730
320-81254-94	21GST-SB008-03	Total/NA	Solid	EPA 537(Mod)	541730
320-81254-95	21GST-SB011-01	Total/NA	Solid	EPA 537(Mod)	541730
320-81254-96	21GST-SB011-12	Total/NA	Solid	EPA 537(Mod)	541730
320-81254-97	21GST-SB011-02	Total/NA	Solid	EPA 537(Mod)	541730
320-81254-98	21GST-SB011-03	Total/NA	Solid	EPA 537(Mod)	541730
320-81254-99	21GST-SB014-01	Total/NA	Solid	EPA 537(Mod)	541730
320-81254-100	21GST-SB014-02	Total/NA	Solid	EPA 537(Mod)	541730
320-81254-101	21GST-SB014-03	Total/NA	Solid	EPA 537(Mod)	541730
320-81254-102	21GST-SS-032	Total/NA	Solid	EPA 537(Mod)	541730
320-81254-103	21GST-SS-033	Total/NA	Solid	EPA 537(Mod)	541730

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Client: Shannon & Wilson, Inc Job ID: 320-81254-1 Project/Site: SC Soils#3

## **LCMS (Continued)**

### **Analysis Batch: 542490 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81254-104	21GST-SS-034	Total/NA	Solid	EPA 537(Mod)	541730
320-81254-105	21GST-SS-004	Total/NA	Solid	EPA 537(Mod)	541730
320-81254-106	21GST-SS-003	Total/NA	Solid	EPA 537(Mod)	541730
320-81254-107	21GST-SS-103	Total/NA	Solid	EPA 537(Mod)	541730
320-81254-108	21GST-SS-002	Total/NA	Solid	EPA 537(Mod)	541730
320-81254-109	21GST-SS-001	Total/NA	Solid	EPA 537(Mod)	541730
320-81254-110	21GST-MW16-01	Total/NA	Solid	EPA 537(Mod)	541730
MB 320-541730/1-A	Method Blank	Total/NA	Solid	EPA 537(Mod)	541730
LCS 320-541730/2-A	Lab Control Sample	Total/NA	Solid	EPA 537(Mod)	541730
320-81254-91 MS	21GST-SB006-03	Total/NA	Solid	EPA 537(Mod)	541730
320-81254-91 MSD	21GST-SB006-03	Total/NA	Solid	EPA 537(Mod)	541730

### **Analysis Batch: 542528**

Lab Sample ID 320-81254-39	Client Sample ID 21GST-MW15-03	Prep Type Total/NA	Matrix Solid	Method EPA 537(Mod)	Prep Batch 541157
320-81254-40	21GST-MW15-04	Total/NA	Solid	EPA 537(Mod)	541157
320-81254-40 MS	21GST-MW15-04	Total/NA	Solid	EPA 537(Mod)	541157
320-81254-40 MSD	21GST-MW15-04	Total/NA	Solid	EPA 537(Mod)	541157

### **Analysis Batch: 542653**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81254-62	21GST-SB012-02	Total/NA	Solid	EPA 537(Mod)	541434
320-81254-63	21GST-SB012-03	Total/NA	Solid	EPA 537(Mod)	541434
320-81254-64	21GST-SB013-01	Total/NA	Solid	EPA 537(Mod)	541434
320-81254-65	21GST-SB013-02	Total/NA	Solid	EPA 537(Mod)	541434
320-81254-66	21GST-SB013-03	Total/NA	Solid	EPA 537(Mod)	541434
320-81254-67	21GST-SB005-01	Total/NA	Solid	EPA 537(Mod)	541434
320-81254-68	21GST-SB005-02	Total/NA	Solid	EPA 537(Mod)	541434
320-81254-69	21GST-SB005-03	Total/NA	Solid	EPA 537(Mod)	541434
320-81254-70	21GST-SB007-01	Total/NA	Solid	EPA 537(Mod)	541434
320-81254-71	21GST-SB007-10	Total/NA	Solid	EPA 537(Mod)	541434
320-81254-72	21GST-SB007-02	Total/NA	Solid	EPA 537(Mod)	541434
320-81254-73	21GST-SB007-03	Total/NA	Solid	EPA 537(Mod)	541434
320-81254-74	21GST-SS-030	Total/NA	Solid	EPA 537(Mod)	541434
320-81254-75	21GST-SS-010	Total/NA	Solid	EPA 537(Mod)	541434
320-81254-76	21GST-SS-031	Total/NA	Solid	EPA 537(Mod)	541434
320-81254-77	21GST-SS-131	Total/NA	Solid	EPA 537(Mod)	541434
320-81254-78	21GST-SS-009	Total/NA	Solid	EPA 537(Mod)	541434
320-81254-79	21GST-SS-012	Total/NA	Solid	EPA 537(Mod)	541434
320-81254-80	21GST-SS-011	Total/NA	Solid	EPA 537(Mod)	541434
MB 320-541434/1-A	Method Blank	Total/NA	Solid	EPA 537(Mod)	541434
LCS 320-541434/2-A	Lab Control Sample	Total/NA	Solid	EPA 537(Mod)	541434
320-81254-80 MS	21GST-SS-011	Total/NA	Solid	EPA 537(Mod)	541434
320-81254-80 MSD	21GST-SS-011	Total/NA	Solid	EPA 537(Mod)	541434

### **Analysis Batch: 542864**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81254-78 - DL	21GST-SS-009	Total/NA	Solid	EPA 537(Mod)	541434
320-81254-95 - DL	21GST-SB011-01	Total/NA	Solid	EPA 537(Mod)	541730
320-81254-97 - DL	21GST-SB011-02	Total/NA	Solid	EPA 537(Mod)	541730

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Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

LCMS

Analysis Batch: 543244

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81254-61	21GST-SB012-01	Total/NA	Solid	EPA 537(Mod)	541434
320-81254-96 - DL	21GST-SB011-12	Total/NA	Solid	EPA 537(Mod)	541730

## **General Chemistry**

Analysis Batch: 540289

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81254-1	21GST-SS-023	Total/NA	Solid	D 2216	
320-81254-2	21GST-SS-029	Total/NA	Solid	D 2216	
320-81254-3	21GST-SS-028	Total/NA	Solid	D 2216	
320-81254-4	21GST-SS-027	Total/NA	Solid	D 2216	
320-81254-5	21GST-SS-026	Total/NA	Solid	D 2216	
320-81254-6	21GST-SS-126	Total/NA	Solid	D 2216	
320-81254-7	21GST-SS-025	Total/NA	Solid	D 2216	
320-81254-8	21GST-SS-024	Total/NA	Solid	D 2216	
320-81254-9	21GST-SS-022	Total/NA	Solid	D 2216	
320-81254-10	21GST-SS-021	Total/NA	Solid	D 2216	
320-81254-11	21GST-SS-020	Total/NA	Solid	D 2216	
320-81254-12	21GST-SS-019	Total/NA	Solid	D 2216	
320-81254-13	21GST-SS-018	Total/NA	Solid	D 2216	
320-81254-14	21GST-SS-014	Total/NA	Solid	D 2216	
320-81254-15	21GST-SS-017	Total/NA	Solid	D 2216	
320-81254-16	21GST-SS-016	Total/NA	Solid	D 2216	
320-81254-17	21GST-SS-015	Total/NA	Solid	D 2216	
320-81254-18	21GST-SS-008	Total/NA	Solid	D 2216	
320-81254-19	21GST-SS-006	Total/NA	Solid	D 2216	
320-81254-20	21GST-SS-106	Total/NA	Solid	D 2216	
320-81254-1 DU	21GST-SS-023	Total/NA	Solid	D 2216	

Analysis Batch: 540290

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
320-81254-21	21GST-SS-005	Total/NA	Solid	D 2216	
320-81254-22	21GST-SS-007	Total/NA	Solid	D 2216	
320-81254-23	21GST-MW14-01	Total/NA	Solid	D 2216	
320-81254-24	21GST-MW14-10	Total/NA	Solid	D 2216	
320-81254-25	21GST-MW14-02	Total/NA	Solid	D 2216	
320-81254-26	21GST-MW14-03	Total/NA	Solid	D 2216	
320-81254-27	21GST-MW14-04	Total/NA	Solid	D 2216	
320-81254-28	21GST-MW14-05	Total/NA	Solid	D 2216	
320-81254-29	21GST-MW14-06	Total/NA	Solid	D 2216	
320-81254-30	21GST-MW18-01	Total/NA	Solid	D 2216	
320-81254-31	21GST-MW18-02	Total/NA	Solid	D 2216	
320-81254-32	21GST-MW18-12	Total/NA	Solid	D 2216	
320-81254-33	21GST-MW18-03	Total/NA	Solid	D 2216	
320-81254-34	21GST-MW18-04	Total/NA	Solid	D 2216	
320-81254-35	21GST-MW18-05	Total/NA	Solid	D 2216	
320-81254-36	21GST-MW18-06	Total/NA	Solid	D 2216	
320-81254-37	21GST-MW15-01	Total/NA	Solid	D 2216	
320-81254-38	21GST-MW15-02	Total/NA	Solid	D 2216	
320-81254-39	21GST-MW15-03	Total/NA	Solid	D 2216	
320-81254-40	21GST-MW15-04	Total/NA	Solid	D 2216	

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Client: Shannon & Wilson, Inc Job ID: 320-81254-1 Project/Site: SC Soils#3

# **General Chemistry (Continued)**

### **Analysis Batch: 540290 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81254-21 DU	21GST-SS-005	Total/NA	Solid	D 2216	

### **Analysis Batch: 540311**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
320-81254-41	21GST-MW15-14	Total/NA	Solid	D 2216	
320-81254-42	21GST-MW15-05	Total/NA	Solid	D 2216	
320-81254-43	21GST-MW15-06	Total/NA	Solid	D 2216	
320-81254-44	21GST-SB002-01	Total/NA	Solid	D 2216	
320-81254-45	21GST-SB002-02	Total/NA	Solid	D 2216	
320-81254-46	21GST-SB002-03	Total/NA	Solid	D 2216	
320-81254-47	21GST-SB002-04	Total/NA	Solid	D 2216	
320-81254-48	21GST-SB001-01	Total/NA	Solid	D 2216	
320-81254-49	21GST-SB001-02	Total/NA	Solid	D 2216	
320-81254-50	21GST-SB001-03	Total/NA	Solid	D 2216	
320-81254-51	21GST-SB001-04	Total/NA	Solid	D 2216	
320-81254-52	21GST-SB009-01	Total/NA	Solid	D 2216	
320-81254-53	21GST-SB009-10	Total/NA	Solid	D 2216	
320-81254-54	21GST-SB009-02	Total/NA	Solid	D 2216	
320-81254-55	21GST-SB009-03	Total/NA	Solid	D 2216	
320-81254-56	21GST-SB009-04	Total/NA	Solid	D 2216	
320-81254-57	21GST-SB010-01	Total/NA	Solid	D 2216	
320-81254-58	21GST-SB010-10	Total/NA	Solid	D 2216	
320-81254-59	21GST-SB010-02	Total/NA	Solid	D 2216	
320-81254-60	21GST-SB010-03	Total/NA	Solid	D 2216	
320-81254-41 DU	21GST-MW15-14	Total/NA	Solid	D 2216	

### **Analysis Batch: 540312**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81254-61	21GST-SB012-01	Total/NA	Solid	D 2216	
320-81254-62	21GST-SB012-02	Total/NA	Solid	D 2216	
320-81254-63	21GST-SB012-03	Total/NA	Solid	D 2216	
320-81254-64	21GST-SB013-01	Total/NA	Solid	D 2216	
320-81254-65	21GST-SB013-02	Total/NA	Solid	D 2216	
320-81254-66	21GST-SB013-03	Total/NA	Solid	D 2216	
320-81254-67	21GST-SB005-01	Total/NA	Solid	D 2216	
320-81254-68	21GST-SB005-02	Total/NA	Solid	D 2216	
320-81254-69	21GST-SB005-03	Total/NA	Solid	D 2216	
320-81254-70	21GST-SB007-01	Total/NA	Solid	D 2216	
320-81254-71	21GST-SB007-10	Total/NA	Solid	D 2216	
20-81254-72	21GST-SB007-02	Total/NA	Solid	D 2216	
20-81254-73	21GST-SB007-03	Total/NA	Solid	D 2216	
20-81254-74	21GST-SS-030	Total/NA	Solid	D 2216	
20-81254-75	21GST-SS-010	Total/NA	Solid	D 2216	
320-81254-76	21GST-SS-031	Total/NA	Solid	D 2216	
320-81254-77	21GST-SS-131	Total/NA	Solid	D 2216	
320-81254-78	21GST-SS-009	Total/NA	Solid	D 2216	
320-81254-79	21GST-SS-012	Total/NA	Solid	D 2216	
320-81254-80	21GST-SS-011	Total/NA	Solid	D 2216	
320-81254-61 DU	21GST-SB012-01	Total/NA	Solid	D 2216	

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Client: Shannon & Wilson, Inc Job ID: 320-81254-1 Project/Site: SC Soils#3

**General Chemistry** 

### Analysis Batch: 540335

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
320-81254-81	21GST-SS-013	Total/NA	Solid	D 2216	
320-81254-82	21GST-SB003-01	Total/NA	Solid	D 2216	
320-81254-83	21GST-SB003-02	Total/NA	Solid	D 2216	
320-81254-84	21GST-SB003-03	Total/NA	Solid	D 2216	
320-81254-85	21GST-SB004-01	Total/NA	Solid	D 2216	
320-81254-86	21GST-SB004-02	Total/NA	Solid	D 2216	
320-81254-87	21GST-SB004-03	Total/NA	Solid	D 2216	
320-81254-88	21GST-SB006-01	Total/NA	Solid	D 2216	
320-81254-89	21GST-SB006-10	Total/NA	Solid	D 2216	
320-81254-90	21GST-SB006-02	Total/NA	Solid	D 2216	
320-81254-91	21GST-SB006-03	Total/NA	Solid	D 2216	
320-81254-92	21GST-SB008-01	Total/NA	Solid	D 2216	
320-81254-93	21GST-SB008-02	Total/NA	Solid	D 2216	
320-81254-94	21GST-SB008-03	Total/NA	Solid	D 2216	
320-81254-95	21GST-SB011-01	Total/NA	Solid	D 2216	
320-81254-96	21GST-SB011-12	Total/NA	Solid	D 2216	
320-81254-97	21GST-SB011-02	Total/NA	Solid	D 2216	
320-81254-98	21GST-SB011-03	Total/NA	Solid	D 2216	
320-81254-99	21GST-SB014-01	Total/NA	Solid	D 2216	
320-81254-100	21GST-SB014-02	Total/NA	Solid	D 2216	
320-81254-83 DU	21GST-SB003-02	Total/NA	Solid	D 2216	

#### **Analysis Batch: 540353**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
320-81254-101	21GST-SB014-03	Total/NA	Solid	D 2216	
320-81254-102	21GST-SS-032	Total/NA	Solid	D 2216	
320-81254-103	21GST-SS-033	Total/NA	Solid	D 2216	
320-81254-104	21GST-SS-034	Total/NA	Solid	D 2216	
320-81254-105	21GST-SS-004	Total/NA	Solid	D 2216	
320-81254-106	21GST-SS-003	Total/NA	Solid	D 2216	
320-81254-107	21GST-SS-103	Total/NA	Solid	D 2216	
320-81254-108	21GST-SS-002	Total/NA	Solid	D 2216	
320-81254-109	21GST-SS-001	Total/NA	Solid	D 2216	
320-81254-110	21GST-MW16-01	Total/NA	Solid	D 2216	
320-81254-111	21GST-MW16-02	Total/NA	Solid	D 2216	
320-81254-112	21GST-MW16-03	Total/NA	Solid	D 2216	
320-81254-113	21GST-MW16-04	Total/NA	Solid	D 2216	
320-81254-114	21GST-MW19-01	Total/NA	Solid	D 2216	
320-81254-115	21GST-MW19-02	Total/NA	Solid	D 2216	
320-81254-116	21GST-MW20-01	Total/NA	Solid	D 2216	
320-81254-117	21GST-MW20-10	Total/NA	Solid	D 2216	
320-81254-118	21GST-MW20-02	Total/NA	Solid	D 2216	
320-81254-101 DU	21GST-SB014-03	Total/NA	Solid	D 2216	

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Percent Solids: 90.5

TAL SAC

**Matrix: Solid** 

**Matrix: Solid** 

Client: Shannon & Wilson, Inc

Project/Site: SC Soils#3

Client Sample ID: 21GST-SS-023

Date Collected: 10/29/21 10:21 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-1

11/08/21 23:15 LT

Lab Sample ID: 320-81254-2

Lab Sample ID: 320-81254-2

Lab Sample ID: 320-81254-3

**Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540289	11/05/21 11:58	TCS	TAL SAC

Client Sample ID: 21GST-SS-023

Date Collected: 10/29/21 10:21 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-1 **Matrix: Solid** 

541064

Batch Batch Dil Initial Final Batch Prepared Prep Type Type Method Run Factor Amount Amount Number or Analyzed Analyst Lab Total/NA Prep SHAKE 5.18 g 10.0 mL 540825 11/07/21 18:20 AM TAL SAC

1

Client Sample ID: 21GST-SS-029

Analysis

EPA 537(Mod)

Date Collected: 10/29/21 10:47

Date Received: 11/03/21 14:01

Total/NA

_										
	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540289	11/05/21 11:58	TCS	TAL SAC

Client Sample ID: 21GST-SS-029

Date Collected: 10/29/21 10:47

**Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 91.6

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.29 g	10.0 mL	540825	11/07/21 18:20	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541064	11/08/21 23:46	LT	TAL SAC

Client Sample ID: 21GST-SS-028

Date Collected: 10/29/21 10:53

Date Received: 11/03/21 14:01

_										
	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540289	11/05/21 11:58	TCS	TAL SAC

Client Sample ID: 21GST-SS-028

Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-3 Date Collected: 10/29/21 10:53 **Matrix: Solid** Percent Solids: 95.0

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.11 g	10.0 mL	540825	11/07/21 18:20	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541064	11/08/21 23:56	LT	TAL SAC

Client Sample ID: 21GST-SS-027

Date Collected: 10/29/21 11:04

Date Received: 11/03/21 14:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540289	11/05/21 11:58	TCS	TAL SAC

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Lab Sample ID: 320-81254-4

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Client Sample ID: 21GST-SS-027

Date Collected: 10/29/21 11:04 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81254-4

Matrix: Solid

Percent Solids: 92.0

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.40 g	10.0 mL	540825	11/07/21 18:20	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541064	11/09/21 00:06	LT	TAL SAC

Client Sample ID: 21GST-SS-026

Date Collected: 10/29/21 11:10 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81254-5

Matrix: Solid

		Batch	Batch		Dil	Initial	Final	Batch	Prepared		
	Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
L	Total/NA	Analysis	D 2216		1			540289	11/05/21 11:58	TCS	TAL SAC

Client Sample ID: 21GST-SS-026

Date Collected: 10/29/21 11:10 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81254-5

Matrix: Solid Percent Solids: 76.2

Batch Batch Dil Initial Final Batch **Prepared Prep Type** Type Method Factor **Amount** Amount Number or Analyzed Run Analyst Lab Total/NA Prep SHAKE 540825 11/07/21 18:20 AM TAL SAC 5.08 g 10.0 mL Total/NA Analysis EPA 537(Mod) 1 541064 11/09/21 00:16 LT TAL SAC

Client Sample ID: 21GST-SS-126

Date Collected: 10/29/21 11:00

Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-6
Matrix: Solid

Dil Batch Initial Final Batch Prepared Batch **Prep Type** Type Method **Factor** Amount Amount Number or Analyzed Run Analyst Lab 540289 Total/NA Analysis D 2216 11/05/21 11:58 TCS TAL SAC

Client Sample ID: 21GST-SS-126

Date Collected: 10/29/21 11:00

Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-6
Matrix: Solid

Lab Sample ID: 320-81254-7

Percent Solids: 78.7

**Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.11 g	10.0 mL	540825	11/07/21 18:20	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541064	11/09/21 00:26	LT	TAL SAC

Client Sample ID: 21GST-SS-025

Date Collected: 10/29/21 11:35

Date Received: 11/03/21 14:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540289	11/05/21 11:58	TCS	TAL SAC

Eurofins TestAmerica, Sacramento

Client: Shannon & Wilson, Inc

Project/Site: SC Soils#3

Client Sample ID: 21GST-SS-025

Date Collected: 10/29/21 11:35 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-7

**Matrix: Solid** 

**Matrix: Solid** 

Percent Solids: 94.1

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.26 g	10.0 mL	540825	11/07/21 18:20	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541064	11/09/21 00:56	LT	TAL SAC

Client Sample ID: 21GST-SS-024 Lab Sample ID: 320-81254-8

Date Collected: 10/29/21 11:44 Date Received: 11/03/21 14:01

**Prep Type** 

Batch

Type

Batch

Method

**Matrix: Solid** 

Batch Prepared Number or Analyzed Analyst Lab 540289 11/05/21 11:58 TCS TAL SAC

Total/NA Analysis D 2216 Client Sample ID: 21GST-SS-024 Lab Sample ID: 320-81254-8

Dil

**Factor** 

Date Collected: 10/29/21 11:44 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 85.5

Initial

**Amount** 

Final

**Amount** 

Batch Batch Dil Initial Final Batch **Prepared** Method **Factor Amount** Amount Number or Analyzed **Prep Type** Type Run Analyst Lab Prep Total/NA SHAKE 540825 11/07/21 18:20 AM TAL SAC 5.29 g 10.0 mL Total/NA Analysis EPA 537(Mod) 541064 11/09/21 01:07 LT TAL SAC

Client Sample ID: 21GST-SS-022 Lab Sample ID: 320-81254-9

Date Collected: 10/29/21 12:04 Date Received: 11/03/21 14:01

Run

Dil Batch Initial Final Batch Prepared Batch

**Prep Type** Type Method **Factor** Amount Amount Number or Analyzed Run Analyst Lab Total/NA Analysis D 2216 540289 11/05/21 11:58 TCS TAL SAC

Client Sample ID: 21GST-SS-022 Lab Sample ID: 320-81254-9

Date Collected: 10/29/21 12:04 Matrix: Solid Date Received: 11/03/21 14:01 Percent Solids: 81.7

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.56 g	10.0 mL	540825	11/07/21 18:20	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541064	11/09/21 01:17	LT	TAL SAC
Total/NA	Prep	SHAKE	DL		5.56 g	10.0 mL	540825	11/07/21 18:20	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)	DL	100			542329	11/12/21 20:11	RS1	TAL SAC

Client Sample ID: 21GST-SS-021 Lab Sample ID: 320-81254-10

Date Collected: 10/29/21 12:14 Date Received: 11/03/21 14:01

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type Total/NA	Type Analysis	Method D 2216	Run	Factor 1	Amount	Amount	Number 540289	or Analyzed 11/05/21 11:58	Analyst TCS	TAL SAC

Eurofins TestAmerica, Sacramento

Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

Client Sample ID: 21GST-SS-021

Date Collected: 10/29/21 12:14 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-10

**Matrix: Solid** 

Percent Solids: 85.2

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.41 g	10.0 mL	540825	11/07/21 18:20	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541064	11/09/21 01:27	LT	TAL SAC
Total/NA	Prep	SHAKE	DL		5.41 g	10.0 mL	540825	11/07/21 18:20	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)	DL	10			542329	11/12/21 19:30	RS1	TAL SAC

Client Sample ID: 21GST-SS-020

Date Collected: 10/29/21 12:19 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-11

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540289	11/05/21 11:58	TCS	TAL SAC

Client Sample ID: 21GST-SS-020

Date Collected: 10/29/21 12:19 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-11 **Matrix: Solid** 

Lab Sample ID: 320-81254-12

Percent Solids: 90.3

**Matrix: Solid** 

Prep Type Total/NA Total/NA	Batch Type Prep Analysis	Batch Method SHAKE EPA 537(Mod)	Run	Factor	Amount 5.37 g	Final Amount 10.0 mL	Batch Number 540825 541064	Prepared or Analyzed 11/07/21 18:20 11/09/21 01:37		Lab TAL SAC TAL SAC
Total/NA	Prep	SHAKE	DL		5.37 g	10.0 mL	540825	11/07/21 18:20	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)	DL	10			542329	11/12/21 19:40	RS1	TAL SAC

Client Sample ID: 21GST-SS-019

Date Collected: 10/29/21 12:31

Date Received: 11/03/21 14:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared			
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab	
Total/NA	Analysis	D 2216		1			540289	11/05/21 11:58	TCS	TAL SAC	

Client Sample ID: 21GST-SS-019

Date Collected: 10/29/21 12:31

Lab Sample ID: 320-81254-12 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 87.1

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.46 g	10.0 mL	540825	11/07/21 18:20	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541064	11/09/21 01:47	LT	TAL SAC

Client Sample ID: 21GST-SS-018

Date Collected: 10/29/21 12:42

Date Received:	11/03/21 1	4:01									-
	Batch	Batch		Dil	Initial	Final	Batch	Prepared			
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab	
Total/NA	Analysis	D 2216		1			540289	11/05/21 11:58	TCS	TAL SAC	

Eurofins TestAmerica, Sacramento

Lab Sample ID: 320-81254-13

**Matrix: Solid** 

10

Client Sample ID: 21GST-SS-018

Date Collected: 10/29/21 12:42 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-13

**Matrix: Solid** 

**Percent Solids: 93.1** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.39 g	10.0 mL	540825	11/07/21 18:20	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541064	11/09/21 01:57	LT	TAL SAC

Client Sample ID: 21GST-SS-014

Date Collected: 10/29/21 12:56 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-14

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540289	11/05/21 11:58	TCS	TAL SAC

Client Sample ID: 21GST-SS-014

Date Collected: 10/29/21 12:56 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-14 **Matrix: Solid** 

Percent Solids: 73.4

Dil Batch Batch Batch Initial Final Prepared **Prep Type** Type Method Factor Amount Amount Number or Analyzed Analyst Run Lab Total/NA Prep SHAKE 540825 11/07/21 18:20 AM TAL SAC 5.10 g 10.0 mL Total/NA Analysis EPA 537(Mod) 541064 11/09/21 02:07 LT TAL SAC

Client Sample ID: 21GST-SS-017

Date Collected: 10/29/21 13:07 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-15

**Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540289	11/05/21 11:58	TCS	TAL SAC

Client Sample ID: 21GST-SS-017

Date Collected: 10/29/21 13:07

Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-15 **Matrix: Solid** 

Lab Cample ID: 200 040E4 40

Percent Solids: 90.8

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.22 g	10.0 mL	540825	11/07/21 18:20	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541064	11/09/21 02:17	LT	TAL SAC

liant Cample ID: 04CCT CC 04C

Client Sample ID: 21651-55-016	Lab Sample ID: 320-81254-16
Date Collected: 10/29/21 13:16	Matrix: Solid
Date Received: 11/03/21 14:01	

	Batch	Batch		Dil	Initial	Final	Batch	Prepared			
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab	
Total/NA	Analysis	D 2216		1			540289	11/05/21 11:58	TCS	TAL SAC	

Client Sample ID: 21GST-SS-016

Date Collected: 10/29/21 13:16 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-16

**Matrix: Solid** Percent Solids: 89.7

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.17 g	10.0 mL	540825	11/07/21 18:20	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541064	11/09/21 02:28	LT	TAL SAC

Client Sample ID: 21GST-SS-015

Date Collected: 10/29/21 13:19 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-17

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540289	11/05/21 11:58	TCS	TAL SAC

Client Sample ID: 21GST-SS-015

Date Collected: 10/29/21 13:19 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-17

**Matrix: Solid** Percent Solids: 93.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.29 g	10.0 mL	540825	11/07/21 18:20	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541064	11/09/21 02:58	LT	TAL SAC

Client Sample ID: 21GST-SS-008

Date Collected: 10/29/21 13:28 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-18

**Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540289	11/05/21 11:58	TCS	TAL SAC

Client Sample ID: 21GST-SS-008

Date Collected: 10/29/21 13:28

Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-18 Matrix: Solid

Percent Solids: 79.1

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.43 g	10.0 mL	540825	11/07/21 18:20	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541064	11/09/21 03:08	LT	TAL SAC
Total/NA	Prep	SHAKE	DL		5.43 g	10.0 mL	540825	11/07/21 18:20	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)	DL	10			542329	11/12/21 19:51	RS1	TAL SAC

Client Sample ID: 21GST-SS-006

Date Collected: 10/29/21 13:36

Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-19 **Matrix: Solid** 

Batch Dil Initial Final Batch Batch Prepared Method Run **Prep Type** Type **Factor** Amount Amount Number or Analyzed Analyst Lab D 2216 540289 11/05/21 11:58 TCS TAL SAC Total/NA Analysis

Eurofins TestAmerica, Sacramento

Job ID: 320-81254-1

Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

Client Sample ID: 21GST-SS-006

Date Collected: 10/29/21 13:36 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81254-19

Matrix: Solid

Percent Solids: 70.6

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.22 g	10.0 mL	540825	11/07/21 18:20	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541064	11/09/21 03:18	LT	TAL SAC

Client Sample ID: 21GST-SS-106

Date Collected: 10/29/21 13:26 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81254-20

**Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540289	11/05/21 11:58	TCS	TAL SAC

Client Sample ID: 21GST-SS-106

Date Collected: 10/29/21 13:26 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81254-20

Matrix: Solid Percent Solids: 72.7

Batch Batch Batch Dil Initial Final **Prepared Prep Type** Type Method **Factor Amount** Amount Number or Analyzed Lab Run Analyst Total/NA Prep SHAKE 540825 11/07/21 18:20 AM TAL SAC 5.39 g 10.0 mL Total/NA Analysis EPA 537(Mod) 541064 11/09/21 03:28 LT TAL SAC Total/NA 540825 TAL SAC Prep SHAKE DL 5.39 g 10.0 mL 11/07/21 18:20 AM Total/NA Analysis EPA 537(Mod) DL 10 542329 11/12/21 20:01 RS1 TAL SAC

Client Sample ID: 21GST-SS-005

Date Collected: 10/29/21 13:50 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81254-21

Matrix: Solid

Dil Initial Batch Batch Final Batch Prepared **Prep Type** Type Method Factor **Amount** Amount Number or Analyzed Run Analyst Lab 540290 11/05/21 11:58 TCS Total/NA Analysis D 2216 TAL SAC

Client Sample ID: 21GST-SS-005

Date Collected: 10/29/21 13:50

Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-21
Matrix: Solid

Percent Solids: 92.1

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.35 g	10.0 mL	541157	11/09/21 04:35	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542324	11/12/21 14:17	S1M	TAL SAC

Client Sample ID: 21GST-SS-007

Date Collected: 10/29/21 13:54

Date Received: 11/03/21 14:01

Lab	Sample	IU.	320-0125	4-22
			Matrix:	Solid

Lab Cample ID: 200 040E4 00

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540290	11/05/21 11:58	TCS	TAL SAC

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Job ID: 320-81254-1

Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

Client Sample ID: 21GST-SS-007

Date Collected: 10/29/21 13:54 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81254-22

Matrix: Solid

Percent Solids: 68.7

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.00 g	10.0 mL	541157	11/09/21 04:35	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542324	11/12/21 14:28	S1M	TAL SAC

Client Sample ID: 21GST-MW14-01

Date Collected: 10/27/21 14:00 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81254-23

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540290	11/05/21 11:58	TCS	TAL SAC

Client Sample ID: 21GST-MW14-01

Date Collected: 10/27/21 14:00 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81254-23

Matrix: Solid Percent Solids: 93.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.21 g	10.0 mL	541157	11/09/21 04:35	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542324	11/12/21 14:38	S1M	TAL SAC

Client Sample ID: 21GST-MW14-10

Date Collected: 10/27/21 13:50 Date Received: 11/03/21 14:01 **Lab Sample ID: 320-81254-24** 

Matrix: Solid

**Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540290	11/05/21 11:58	TCS	TAL SAC

Client Sample ID: 21GST-MW14-10

Date Collected: 10/27/21 13:50

Lab Sample ID: 320-81254-24 Matrix: Solid

Lab Sample ID: 320-81254-25

Date Received: 11/03/21 14:01 Percent Solids: 94.5

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.32 g	10.0 mL	541157	11/09/21 04:35	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542324	11/12/21 14:48	S1M	TAL SAC

Client Sample ID: 21GST-MW14-02

Date Collected: 10/27/21 14:10

Date Received: 11/03/21 14:01

_										
	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540290	11/05/21 11:58	TCS	TAL SAC

Eurofins TestAmerica, Sacramento

Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

Client Sample ID: 21GST-MW14-02

Date Collected: 10/27/21 14:10

Lab Sample ID: 320-81254-25

**Matrix: Solid** 

Percent Solids: 79.3

Date Received: 11/03/21 14:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.01 g	10.0 mL	541157	11/09/21 04:35	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542324	11/12/21 14:59	S1M	TAL SAC

Lab Sample ID: 320-81254-26 Client Sample ID: 21GST-MW14-03

Date Collected: 10/27/21 14:25 Date Received: 11/03/21 14:01

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540290	11/05/21 11:58	TCS	TAL SAC

Client Sample ID: 21GST-MW14-03 Date Collected: 10/27/21 14:25

Lab Sample ID: 320-81254-26

**Matrix: Solid** 

Date Received: 11/03/21 14:01

Percent Solids: 79.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.34 g	10.0 mL	541157	11/09/21 04:35	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542324	11/12/21 15:09	S1M	TAL SAC

Client Sample ID: 21GST-MW14-04

Lab Sample ID: 320-81254-27

**Matrix: Solid** 

TAL SAC

Date Collected: 10/27/21 14:30 Date Received: 11/03/21 14:01

Total/NA

Dil Initial Final Batch Batch Batch Prepared Method Prep Type Type **Factor** Amount Amount Number or Analyzed Analyst Run

Analysis Client Sample ID: 21GST-MW14-04

Lab Sample ID: 320-81254-27

11/05/21 11:58 TCS

540290

Matrix: Solid

Date Collected: 10/27/21 14:30 Date Received: 11/03/21 14:01 Percent Solids: 71.8

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.19 g	10.0 mL	541157	11/09/21 04:35	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542324	11/12/21 15:20	S1M	TAL SAC

Client Sample ID: 21GST-MW14-05

D 2216

Lab Sample ID: 320-81254-28

**Matrix: Solid** 

Date Collected: 10/27/21 15:00 Date Received: 11/03/21 14:01

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540290	11/05/21 11:58	TCS	TAL SAC

Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

Client Sample ID: 21GST-MW14-05

Date Collected: 10/27/21 15:00 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-28

**Matrix: Solid** 

Percent Solids: 77.7

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.31 g	10.0 mL	541157	11/09/21 04:35	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542324	11/12/21 15:30	S1M	TAL SAC

Client Sample ID: 21GST-MW14-06

Date Collected: 10/27/21 16:00 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-29

Matrix: Solid

		Batch	Batch		Dil	Initial	Final	Batch	Prepared		
	Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
l	Total/NA	Analysis	D 2216		1			540290	11/05/21 11:58	TCS	TAL SAC

Client Sample ID: 21GST-MW14-06

Date Collected: 10/27/21 16:00 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-29 **Matrix: Solid** 

Percent Solids: 78.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.16 g	10.0 mL	541157	11/09/21 04:35	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542324	11/12/21 16:01	S1M	TAL SAC

Client Sample ID: 21GST-MW18-01

Date Collected: 10/28/21 09:55

Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-30

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540290	11/05/21 11:58	TCS	TAL SAC

Client Sample ID: 21GST-MW18-01

Date Collected: 10/28/21 09:55

Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-30 Matrix: Solid

Lab Sample ID: 320-81254-31

Percent Solids: 92.3

**Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.34 g	10.0 mL	541157	11/09/21 04:35	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542324	11/12/21 16:12	S1M	TAL SAC

Client Sample ID: 21GST-MW18-02

Date Collected: 10/28/21 10:10

Date Received: 11/03/21 14:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540290	11/05/21 11:58	TCS	TAL SAC

Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

Client Sample ID: 21GST-MW18-02

Date Collected: 10/28/21 10:10
Date Received: 11/03/21 14:01

Matrix: Solid
Percent Solids: 80.3

Lab Sample ID: 320-81254-31

Dil Initial Batch Batch Batch Final Prepared Method Factor Number or Analyzed **Prep Type** Type Run **Amount** Amount Analyst Lab

 Total/NA
 Prep
 SHAKE
 5.39 g
 10.0 mL
 541157
 11/09/21 04:35 HK
 TAL SAC

 Total/NA
 Analysis
 EPA 537(Mod)
 1
 542324
 11/12/21 16:22 S1M
 TAL SAC

Client Sample ID: 21GST-MW18-12

Date Collected: 10/28/21 10:00

Lab Sample ID: 320-81254-32

Matrix: Solid

Date Collected: 10/28/21 10:00 Date Received: 11/03/21 14:01

Batch Batch Dil Initial Final Batch Prepared **Prep Type** Method **Amount Amount** Number or Analyzed Type Run **Factor** Analyst Lab Total/NA Analysis D 2216 540290 11/05/21 11:58 TCS TAL SAC

Client Sample ID: 21GST-MW18-12 Lab Sample ID: 320-81254-32

Date Collected: 10/28/21 10:00 Matrix: Solid
Date Received: 11/03/21 14:01 Percent Solids: 80.6

Batch Batch Dil Initial Final **Batch Prepared** Method **Factor Amount** Number or Analyzed **Prep Type** Type Run Amount Analyst Lab Total/NA Prep SHAKE 541157 11/09/21 04:35 HK TAL SAC 5.35 g 10.0 mL Total/NA Analysis EPA 537(Mod) 1 542324 11/12/21 16:33 S1M TAL SAC

Client Sample ID: 21GST-MW18-03

Date Collected: 10/28/21 10:20

Lab Sample ID: 320-81254-33

Matrix: Solid

Date Collected: 10/28/21 10:20 Date Received: 11/03/21 14:01

Dil Initial Final Batch **Prepared** Batch Batch Prep Type Type Method Factor Amount Amount Number or Analyzed Run Analyst Lab Total/NA Analysis D 2216 540290 11/05/21 11:58 TCS TAL SAC 1

Client Sample ID: 21GST-MW18-03 Lab Sample ID: 320-81254-33

Date Collected: 10/28/21 10:20 Matrix: Solid
Date Received: 11/03/21 14:01 Percent Solids: 76.0

Batch Batch Dil Initial Final **Batch** Prepared **Prep Type** Type Method Run Factor Amount Amount Number or Analyzed Analyst Lab Total/NA SHAKE 541157 11/09/21 04:35 HK TAL SAC Prep 5.15 g 10.0 mL Total/NA 542324 11/12/21 16:43 S1M TAL SAC Analysis EPA 537(Mod) 1

Client Sample ID: 21GST-MW18-04 Lab Sample ID: 320-81254-34

Date Collected: 10/28/21 11:10
Date Received: 11/03/21 14:01

Dil Batch Batch Initial Final Batch **Prepared** Method Factor Amount Amount Number or Analyzed Prep Type Type Run Analyst Lab D 2216 540290 11/05/21 11:58 TCS TAL SAC Total/NA Analysis

Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

Client Sample ID: 21GST-MW18-04

Date Collected: 10/28/21 11:10 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-34

**Matrix: Solid** Percent Solids: 81.8

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.10 g	10.0 mL	541157	11/09/21 04:35	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542324	11/12/21 16:53	S1M	TAL SAC

Client Sample ID: 21GST-MW18-05

Date Collected: 10/28/21 11:25 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-35

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540290	11/05/21 11:58	TCS	TAL SAC

Client Sample ID: 21GST-MW18-05

Date Collected: 10/28/21 11:25 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-35

**Matrix: Solid** Percent Solids: 74.2

	_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
	Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
	Total/NA	Prep	SHAKE			5.34 g	10.0 mL	541157	11/09/21 04:35	HK	TAL SAC
Į	Total/NA	Analysis	EPA 537(Mod)		1			542324	11/12/21 17:04	S1M	TAL SAC

Client Sample ID: 21GST-MW18-06

Date Collected: 10/28/21 12:10 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-36

Lab Sample ID: 320-81254-36

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540290	11/05/21 11:58	TCS	TAL SAC

Client Sample ID: 21GST-MW18-06

Date Collected: 10/28/21 12:10

Matrix: Solid Date Received: 11/03/21 14:01 Percent Solids: 79.7

Γ	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.49 g	10.0 mL	541157	11/09/21 04:35	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542324	11/12/21 17:14	S1M	TAL SAC

Client Sample ID: 21GST-MW15-01

Date Collected: 10/29/21 13:00 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-37 **Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared			
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab	
Total/NA	Analysis	D 2216		1			540290	11/05/21 11:58	TCS	TAL SAC	

Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

Client Sample ID: 21GST-MW15-01

Date Collected: 10/29/21 13:00 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-37

**Matrix: Solid** Percent Solids: 93.2

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.02 g	10.0 mL	541157	11/09/21 04:35	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542324	11/12/21 17:25	S1M	TAL SAC

Client Sample ID: 21GST-MW15-02

Date Collected: 10/29/21 13:05 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-38

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540290	11/05/21 11:58	TCS	TAL SAC

Client Sample ID: 21GST-MW15-02

Date Collected: 10/29/21 13:05 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-38

**Matrix: Solid** Percent Solids: 85.7

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.16 g	10.0 mL	541157	11/09/21 04:35	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542324	11/12/21 17:35	S1M	TAL SAC

Client Sample ID: 21GST-MW15-03

Date Collected: 10/29/21 13:55 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-39

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540290	11/05/21 11:58	TCS	TAL SAC

Client Sample ID: 21GST-MW15-03

Date Collected: 10/29/21 13:55

Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-39 Matrix: Solid

Lab Sample ID: 320-81254-40

Percent Solids: 86.5

**Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.36 g	10.0 mL	541157	11/09/21 04:35	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542528	11/14/21 03:26	K1S	TAL SAC

Client Sample ID: 21GST-MW15-04

Date Collected: 10/29/21 14:10

Date Received: 11/03/21 14:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540290	11/05/21 11:58	TCS	TAL SAC

Eurofins TestAmerica, Sacramento

Job ID: 320-81254-1

Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

Project/Site. SC Solis#3

Client Sample ID: 21GST-MW15-04

Date Collected: 10/29/21 14:10 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81254-40
Matrix: Solid

Percent Solids: 81.3

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.15 g	10.0 mL	541157	11/09/21 04:35	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542528	11/14/21 03:37	K1S	TAL SAC

Client Sample ID: 21GST-MW15-14

Date Collected: 10/29/21 14:00 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81254-41

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540311	11/05/21 12:52	TCS	TAL SAC

Client Sample ID: 21GST-MW15-14

Date Collected: 10/29/21 14:00 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81254-41

Matrix: Solid Percent Solids: 81.9

_	Batch	Batch	_	Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.38 g	10.0 mL	541446	11/09/21 18:26	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542350	11/13/21 09:23	RS1	TAL SAC

Client Sample ID: 21GST-MW15-05

Date Collected: 10/29/21 14:35

Date Received: 11/03/21 14:01

Lab	Sample	ID:	320	-81	25	4-4	2
			_		-		

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540311	11/05/21 12:52	TCS	TAL SAC

Client Sample ID: 21GST-MW15-05

Date Collected: 10/29/21 14:35

Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-42 Matrix: Solid

Percent Solids: 80.8

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.40 g	10.0 mL	541446	11/09/21 18:26	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542350	11/13/21 09:33	RS1	TAL SAC

Client Sample ID: 21GST-MW15-06

Date Collected: 10/29/21 15:30 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81254-43

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540311	11/05/21 12:52	TCS	TAL SAC

Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

Client Sample ID: 21GST-MW15-06

Date Collected: 10/29/21 15:30 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-43

**Matrix: Solid** Percent Solids: 81.3

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.20 g	10.0 mL	541446	11/09/21 18:26	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542350	11/13/21 09:43	RS1	TAL SAC

Client Sample ID: 21GST-SB002-01

Date Collected: 10/30/21 09:35 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-44

Matrix: Solid

		Batch	Batch		Dil	Initial	Final	Batch	Prepared		
	Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
l	Total/NA	Analysis	D 2216		1			540311	11/05/21 12:52	TCS	TAL SAC

Client Sample ID: 21GST-SB002-01

Date Collected: 10/30/21 09:35 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-44 **Matrix: Solid** 

Percent Solids: 91.2

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.38 g	10.0 mL	541446	11/09/21 18:26	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542350	11/13/21 09:54	RS1	TAL SAC

Client Sample ID: 21GST-SB002-02

Date Collected: 10/30/21 09:50

Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-45

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540311	11/05/21 12:52	TCS	TAL SAC

Client Sample ID: 21GST-SB002-02

Date Collected: 10/30/21 09:50

Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-45 Matrix: Solid

Percent Solids: 82.3

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.47 g	10.0 mL	541446	11/09/21 18:26	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542350	11/13/21 10:04	RS1	TAL SAC

Client Sample ID: 21GST-SB002-03

Date Collected: 10/30/21 10:00

Lab Sample ID: 320-81254-46 **Matrix: Solid** Date Received: 11/03/21 14:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared			
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab	
Total/NA	Analysis	D 2216		1			540311	11/05/21 12:52	TCS	TAL SAC	

Client Sample ID: 21GST-SB002-03

Date Collected: 10/30/21 10:00 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-46

**Matrix: Solid** 

Percent Solids: 84.7

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.09 g	10.0 mL	541446	11/09/21 18:26	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542350	11/13/21 10:15	RS1	TAL SAC

Client Sample ID: 21GST-SB002-04

Date Collected: 10/30/21 10:10 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-47

**Matrix: Solid** 

		Batch	Batch		Dil	Initial	Final	Batch	Prepared		
	Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
l	Total/NA	Analysis	D 2216		1			540311	11/05/21 12:52	TCS	TAL SAC

Client Sample ID: 21GST-SB002-04

Date Collected: 10/30/21 10:10 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-47

**Matrix: Solid** Percent Solids: 76.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.34 g	10.0 mL	541446	11/09/21 18:26	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542350	11/13/21 10:25	RS1	TAL SAC

Client Sample ID: 21GST-SB001-01

Date Collected: 10/30/21 10:30 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-48

**Matrix: Solid** 

Dil Batch Initial Final Batch Prepared Batch **Prep Type** Type Method **Factor** Amount Amount Number or Analyzed Run Analyst Lab D 2216 540311 Total/NA Analysis 11/05/21 12:52 TCS TAL SAC

Client Sample ID: 21GST-SB001-01

Date Collected: 10/30/21 10:30 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-48 Matrix: Solid

Percent Solids: 94.3

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.30 g	10.0 mL	541446	11/09/21 18:26	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542350	11/13/21 10:35	RS1	TAL SAC

Client Sample ID: 21GST-SB001-02

Date Collected: 10/30/21 10:40 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-49 **Matrix: Solid** 

Batch Dil Initial Final Batch Batch Prepared Method **Prep Type** Type Factor Amount Amount Number or Analyzed Run Analyst Lab D 2216 11/05/21 12:52 TCS TAL SAC 540311 Total/NA Analysis

Eurofins TestAmerica, Sacramento

Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

Client Sample ID: 21GST-SB001-02

Date Collected: 10/30/21 10:40 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-49

**Matrix: Solid** Percent Solids: 85.8

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.25 g	10.0 mL	541446	11/09/21 18:26	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542350	11/13/21 11:07	RS1	TAL SAC

Client Sample ID: 21GST-SB001-03

Date Collected: 10/30/21 10:50 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-50

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540311	11/05/21 12:52	TCS	TAL SAC

Client Sample ID: 21GST-SB001-03

Date Collected: 10/30/21 10:50 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-50

**Matrix: Solid** Percent Solids: 82.8

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.23 g	10.0 mL	541446	11/09/21 18:26	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542350	11/13/21 11:17	RS1	TAL SAC

Client Sample ID: 21GST-SB001-04

Date Collected: 10/30/21 11:00

Date Received: 11/03/21 14:01

Matrix: Solid

Lab Sample ID: 320-81254-51

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540311	11/05/21 12:52	TCS	TAL SAC

Client Sample ID: 21GST-SB001-04

Date Collected: 10/30/21 11:00

Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-51 Matrix: Solid Percent Solids: 82.3

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.36 g	10.0 mL	541446	11/09/21 18:26	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542350	11/13/21 11:28	RS1	TAL SAC

Client Sample ID: 21GST-SB009-01

Date Collected: 10/30/21 11:35

Lab Sample ID: 320-81254-52 **Matrix: Solid** Date Received: 11/03/21 14:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared			
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab	
Total/NA	Analysis	D 2216		1			540311	11/05/21 12:52	TCS	TAL SAC	

11/17/2021

Client Sample ID: 21GST-SB009-01

Date Collected: 10/30/21 11:35 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-52

**Matrix: Solid** 

Percent Solids: 94.1

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.22 g	10.0 mL	541446	11/09/21 18:26	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542350	11/13/21 11:38	RS1	TAL SAC

Client Sample ID: 21GST-SB009-10

Date Collected: 10/30/21 11:25 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-53 Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540311	11/05/21 12:52	TCS	TAL SAC

Client Sample ID: 21GST-SB009-10

Date Collected: 10/30/21 11:25 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-53

Lab Sample ID: 320-81254-54

Lah Sample ID: 320-81254-54

Lab Sample ID: 320-81254-55

**Matrix: Solid** Percent Solids: 93.5

**Matrix: Solid** 

**Matrix: Solid** 

<del>_</del>	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.29 g	10.0 mL	541446	11/09/21 18:26	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542350	11/13/21 11:48	RS1	TAL SAC

Client Sample ID: 21GST-SB009-02

Date Collected: 10/30/21 11:50

Date Received: 11/03/21 14:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared			
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab	
Total/NA	Analysis	D 2216					540311	11/05/21 12:52	TCS	TAL SAC	

Client Sample ID: 21GST-SB009-02

Cheff Cample ID: 21001-0B003-02	Eab Gample 15. 020-01204-04
Date Collected: 10/30/21 11:50	Matrix: Solid
Date Received: 11/03/21 14:01	Percent Solids: 92.5

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.21 g	10.0 mL	541446	11/09/21 18:26	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542350	11/13/21 11:59	RS1	TAL SAC

Client Sample ID: 21GST-SB009-03

Date Collected: 10/30/21 12:00 Date Received: 11/03/21 14:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared			
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab	
Total/NA	Analysis	D 2216		1			540311	11/05/21 12:52	TCS	TAL SAC	

Job ID: 320-81254-1

Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

Client Sample ID: 21GST-SB009-03

Date Collected: 10/30/21 12:00 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81254-55

Matrix: Solid

Percent Solids: 83.4

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.19 g	10.0 mL	541446	11/09/21 18:26	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542350	11/13/21 12:09	RS1	TAL SAC

Client Sample ID: 21GST-SB009-04

Date Collected: 10/30/21 12:05 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81254-56

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540311	11/05/21 12:52	TCS	TAL SAC

Client Sample ID: 21GST-SB009-04

Date Collected: 10/30/21 12:05 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81254-56

Matrix: Solid Percent Solids: 79.5

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.38 g	10.0 mL	541446	11/09/21 18:26	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542350	11/13/21 12:20	RS1	TAL SAC

Client Sample ID: 21GST-SB010-01

Date Collected: 10/30/21 12:35

Date Received: 11/03/21 14:01

Lab Sample	ID:	320-81254-57

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540311	11/05/21 12:52	TCS	TAL SAC

Client Sample ID: 21GST-SB010-01

Date Collected: 10/30/21 12:35

Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-57
Matrix: Solid

Percent Solids: 92.3

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.03 g	10.0 mL	541446	11/09/21 18:26	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542350	11/13/21 12:30	RS1	TAL SAC

Client Sample ID: 21GST-SB010-10

Date Collected: 10/30/21 12:25 Date Received: 11/03/21 14:01

21GST-SB010-10 Lab Sample ID: 320-81254-58 21 12:25 Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared			
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab	
Total/NA	Analysis	D 2216					540311	11/05/21 12:52	TCS	TAL SAC	

Client Sample ID: 21GST-SB010-10

Date Collected: 10/30/21 12:25 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-58

**Matrix: Solid** Percent Solids: 92.1

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.28 g	10.0 mL	541446	11/09/21 18:26	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542350	11/13/21 12:40	RS1	TAL SAC

Client Sample ID: 21GST-SB010-02

Date Collected: 10/30/21 12:40 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-59

**Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540311	11/05/21 12:52	TCS	TAL SAC

Client Sample ID: 21GST-SB010-02

Date Collected: 10/30/21 12:40 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-59

**Matrix: Solid** Percent Solids: 91.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.00 g	10.0 mL	541446	11/09/21 18:26	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542350	11/13/21 13:12	RS1	TAL SAC

Client Sample ID: 21GST-SB010-03

Date Collected: 10/30/21 12:45

Date Received: 11/03/21 14:01

Lab Sample ID:	320-81254-60
	Matrix: Solid

Lab Sample ID: 320-81254-60

**Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540311	11/05/21 12:52	TCS	TAL SAC

Client Sample ID: 21GST-SB010-03

Date Collected: 10/30/21 12:45

Date Received: 11/03/21 14:01 Percent Solids: 91.6

Batch Batch Dil Initial Final **Batch Prepared Prep Type** Type Method Run Factor Amount Amount Number or Analyzed Analyst Lab Total/NA Prep SHAKE 541446 11/09/21 18:26 FX TAL SAC 5.13 g 10.0 mL Total/NA Analysis 542350 11/13/21 13:22 RS1 TAL SAC EPA 537(Mod) 1

Client Sample ID: 21GST-SB012-01

Date Collected: 10/30/21 13:25 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-61 **Matrix: Solid** 

Batch Dil Initial Final Batch Batch Prepared Method **Prep Type** Type **Factor** Amount Amount Number or Analyzed Run Analyst Lab D 2216 11/05/21 12:51 TCS TAL SAC 540312 Total/NA Analysis

Eurofins TestAmerica, Sacramento

Job ID: 320-81254-1

Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

Client Sample ID: 21GST-SB012-01

Date Collected: 10/30/21 13:25 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-61

**Matrix: Solid** Percent Solids: 85.6

Batch Dil Initial Batch Batch Final Prepared Method Number or Analyzed **Prep Type** Type Run **Factor Amount** Amount Analyst Lab Total/NA SHAKE 541434 11/09/21 18:26 TAL SAC Prep 5.37 g 10.0 mL Total/NA 11/16/21 15:07 RS1 Analysis EPA 537(Mod) 543244 TAL SAC 1

Client Sample ID: 21GST-SB012-02

Date Collected: 10/30/21 13:30 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-62

**Matrix: Solid** 

Batch Batch Dil Initial Final Batch Prepared Method Number **Prep Type Amount Amount** or Analyzed Type Run **Factor** Analyst Lab Total/NA Analysis D 2216 540312 11/05/21 12:51 TCS TAL SAC

Client Sample ID: 21GST-SB012-02

Date Collected: 10/30/21 13:30 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-62

**Matrix: Solid** Percent Solids: 85.6

Batch Batch Dil Initial Final **Batch Prepared** Method **Factor Amount** Number or Analyzed **Prep Type** Type Run Amount **Analyst** Lab Total/NA Prep SHAKE 541434 11/09/21 18:26 TAL SAC 5.65 g 10.0 mL AM Total/NA Analysis EPA 537(Mod) 1 542653 11/14/21 22:00 S1M TAL SAC

Client Sample ID: 21GST-SB012-03

Date Collected: 10/30/21 13:40

Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-63 **Matrix: Solid** 

Dil Batch Initial Final Batch Prepared Batch **Prep Type** Type Method **Factor** Amount Amount Number or Analyzed Run Analyst Lab Total/NA Analysis D 2216 540312 11/05/21 12:51 TCS TAL SAC 1

Client Sample ID: 21GST-SB012-03

Date Collected: 10/30/21 13:40

Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-63 Matrix: Solid

Percent Solids: 79.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.47 g	10.0 mL	541434	11/09/21 18:26	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542653	11/14/21 22:11	S1M	TAL SAC

Client Sample ID: 21GST-SB013-01

Lab Sample ID: 320-81254-64 Date Collected: 10/30/21 14:30 **Matrix: Solid** Date Received: 11/03/21 14:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared			
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab	
Total/NA	Analysis	D 2216					540312	11/05/21 12:51	TCS	TAL SAC	

Job ID: 320-81254-1

Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

Client Sample ID: 21GST-SB013-01

Date Collected: 10/30/21 14:30 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-64

**Matrix: Solid** Percent Solids: 86.7

Batch Dil Initial Batch Batch Final Prepared Method Number or Analyzed **Prep Type** Type Run **Factor Amount** Amount Analyst Lab Total/NA SHAKE 10.0 mL 541434 11/09/21 18:26 TAL SAC Prep 5.23 g 542653 Total/NA Analysis EPA 537(Mod) 11/14/21 22:21 S1M TAL SAC 1

Client Sample ID: 21GST-SB013-02 Lab Sample ID: 320-81254-65

Date Collected: 10/30/21 14:35 Date Received: 11/03/21 14:01

Matrix: Solid

Batch Batch Dil Initial Final Batch Prepared Method Number **Prep Type Amount Amount** or Analyzed Type Run **Factor** Analyst Lab Total/NA Analysis D 2216 540312 11/05/21 12:51 TCS TAL SAC

Client Sample ID: 21GST-SB013-02 Lab Sample ID: 320-81254-65

Date Collected: 10/30/21 14:35 Date Received: 11/03/21 14:01

**Matrix: Solid** Percent Solids: 84.0

Dil Batch Batch Initial Final Batch **Prepared** Method **Factor Amount** Number or Analyzed **Prep Type** Type Run Amount **Analyst** Lab Total/NA Prep SHAKE 541434 11/09/21 18:26 AM TAL SAC 5.18 g 10.0 mL Total/NA Analysis EPA 537(Mod) 1 542653 11/14/21 22:32 S1M TAL SAC

Client Sample ID: 21GST-SB013-03 Lab Sample ID: 320-81254-66

Date Collected: 10/30/21 14:45

**Matrix: Solid** 

Date Received: 11/03/21 14:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540312	11/05/21 12:51	TCS	TAL SAC

Client Sample ID: 21GST-SB013-03 Lab Sample ID: 320-81254-66

Date Collected: 10/30/21 14:45

Matrix: Solid

Date Received: 11/03/21 14:01 Percent Solids: 79.9

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.19 g	10.0 mL	541434	11/09/21 18:26	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542653	11/14/21 22:42	S1M	TAL SAC

Lab Sample ID: 320-81254-67 Client Sample ID: 21GST-SB005-01 Date Collected: 10/30/21 15:10 **Matrix: Solid** 

Date Received: 11/03/21 14:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared			
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab	
Total/NA	Analysis	D 2216					540312	11/05/21 12:51	TCS	TAL SAC	

Job ID: 320-81254-1

Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

Client Sample ID: 21GST-SB005-01

Date Collected: 10/30/21 15:10 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-67

**Matrix: Solid** 

**Matrix: Solid** 

**Matrix: Solid** 

Percent Solids: 93.5

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.29 g	10.0 mL	541434	11/09/21 18:26	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542653	11/14/21 22:53	S1M	TAL SAC

Client Sample ID: 21GST-SB005-02 Lab Sample ID: 320-81254-68 Matrix: Solid

Date Collected: 10/30/21 15:15 Date Received: 11/03/21 14:01

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540312	11/05/21 12:51	TCS	TAL SAC

Lab Sample ID: 320-81254-68 Client Sample ID: 21GST-SB005-02

Date Collected: 10/30/21 15:15 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 86.8

Dil Batch Batch Batch Initial Final **Prepared** Method **Factor Amount** Number or Analyzed **Prep Type** Type Run Amount **Analyst** Lab Total/NA Prep SHAKE 541434 11/09/21 18:26 TAL SAC 5.14 g 10.0 mL AM Total/NA Analysis EPA 537(Mod) 1 542653 11/14/21 23:03 S1M TAL SAC

Client Sample ID: 21GST-SB005-03 Lab Sample ID: 320-81254-69

Date Collected: 10/30/21 15:30 Date Received: 11/03/21 14:01

Dil Batch Initial Final Batch Prepared Batch **Prep Type** Type Method **Factor** Amount Amount Number or Analyzed Run Analyst Lab Total/NA Analysis D 2216 540312 11/05/21 12:51 TCS TAL SAC

Client Sample ID: 21GST-SB005-03 Lab Sample ID: 320-81254-69

Date Collected: 10/30/21 15:30 Matrix: Solid Date Received: 11/03/21 14:01 Percent Solids: 79.4

Batch Batch Dil Initial Final Batch Prepared **Prep Type** Type Method Run Factor Amount Amount Number or Analyzed **Analyst** Lab Total/NA Prep SHAKE 541434 11/09/21 18:26 AM TAL SAC 5.45 g 10.0 mL Total/NA Analysis 542653 11/14/21 23:34 S1M TAL SAC EPA 537(Mod) 1

Client Sample ID: 21GST-SB007-01 Lab Sample ID: 320-81254-70

Date Collected: 10/30/21 16:00 Date Received: 11/03/21 14:01

Dil Final Batch Batch Initial Batch Prepared Type Method Factor Amount Amount Number or Analyzed Prep Type Run Analyst Lab D 2216 540312 11/05/21 12:51 TCS TAL SAC Total/NA Analysis

10

Job ID: 320-81254-1

Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

Client Sample ID: 21GST-SB007-01

Date Collected: 10/30/21 16:00 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81254-70

Matrix: Solid Percent Solids: 89.5

Dil Initial Batch Batch Batch Final Prepared Method Factor Number or Analyzed **Prep Type** Type Run **Amount** Amount Analyst Lab Total/NA SHAKE 541434 11/09/21 18:26 TAL SAC Prep 5.42 g 10.0 mL Total/NA Analysis EPA 537(Mod) 542653 11/14/21 23:45 S1M TAL SAC 1

Client Sample ID: 21GST-SB007-10

Date Collected: 10/30/21 15:50 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81254-71

Matrix: Solid

Batch Batch Dil Initial Final Batch Prepared **Prep Type** Method **Amount Amount** Number or Analyzed Type Run **Factor** Analyst Lab Total/NA Analysis D 2216 540312 11/05/21 12:51 TCS TAL SAC

Client Sample ID: 21GST-SB007-10

Date Collected: 10/30/21 15:50 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81254-71

Matrix: Solid Percent Solids: 91.3

Batch Batch Dil Initial Final Batch **Prepared** Method **Factor** Number or Analyzed **Prep Type** Type Run **Amount** Amount Analyst Lab Prep SHAKE 541434 11/09/21 18:26 TAL SAC Total/NA 5.25 g 10.0 mL AM Total/NA Analysis EPA 537(Mod) 1 542653 11/14/21 23:55 S1M TAL SAC

Client Sample ID: 21GST-SB007-02

Date Collected: 10/30/21 16:05

Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-72

Matrix: Solid

Dil Batch Initial Final Batch **Prepared** Batch Prep Type Type Method **Factor** Amount Amount Number or Analyzed Run Analyst Lab Total/NA Analysis D 2216 540312 11/05/21 12:51 TCS TAL SAC 1

Client Sample ID: 21GST-SB007-02

Date Collected: 10/30/21 16:05

Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-72
Matrix: Solid

Percent Solids: 85.4

Batch Batch Dil Initial Final Batch Prepared **Prep Type** Type Method Run Factor Amount Amount Number or Analyzed Analyst Lab Total/NA SHAKE 541434 11/09/21 18:26 AM TAL SAC Prep 5.25 g 10.0 mL Total/NA 542653 11/15/21 00:05 S1M TAL SAC Analysis EPA 537(Mod) 1

Client Sample ID: 21GST-SB007-03

Date Collected: 10/30/21 16:15 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81254-73

**Matrix: Solid** 

Dil Batch Batch Initial Final Batch **Prepared** Method **Factor** Amount Amount Number or Analyzed Prep Type Type Run Analyst Lab D 2216 540312 11/05/21 12:51 TCS TAL SAC Total/NA Analysis

Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

Client Sample ID: 21GST-SB007-03

Date Collected: 10/30/21 16:15

Lab Sample ID: 320-81254-73

**Matrix: Solid** 

Date Received: 11/03/21 14:01 Percent Solids: 81.6

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.24 g	10.0 mL	541434	11/09/21 18:26	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542653	11/15/21 00:16	S1M	TAL SAC

Lab Sample ID: 320-81254-74 Client Sample ID: 21GST-SS-030

Date Collected: 10/31/21 13:49

Matrix: Solid

Date Received: 11/03/21 14:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540312	11/05/21 12:51	TCS	TAL SAC

Lab Sample ID: 320-81254-74 Client Sample ID: 21GST-SS-030

Date Collected: 10/31/21 13:49

**Matrix: Solid** 

Date Received: 11/03/21 14:01 Percent Solids: 65.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.25 g	10.0 mL	541434	11/09/21 18:26	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542653	11/15/21 00:26	S1M	TAL SAC

Client Sample ID: 21GST-SS-010 Lab Sample ID: 320-81254-75

Date Collected: 10/31/21 13:54

**Matrix: Solid** 

Date Received: 11/03/21 14:01

Dil Initial Batch Final Batch Prepared Batch **Prep Type** Type Method Run **Factor** Amount Amount Number or Analyzed Analyst Lab D 2216 540312 Total/NA Analysis 11/05/21 12:51 TCS TAL SAC

Client Sample ID: 21GST-SS-010 Lab Sample ID: 320-81254-75

Date Collected: 10/31/21 13:54

Matrix: Solid

Date Received: 11/03/21 14:01 Percent Solids: 88.0

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.35 g	10.0 mL	541434	11/09/21 18:26	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542653	11/15/21 00:37	S1M	TAL SAC

Lab Sample ID: 320-81254-76 Client Sample ID: 21GST-SS-031

Date Collected: 10/31/21 13:59 Date Received: 11/03/21 14:01

Analysis

Total/NA

D 2216

Batch Dil Initial Final Batch Batch Prepared Method **Prep Type** Type Factor Amount Amount Number or Analyzed Run Analyst Lab

Eurofins TestAmerica, Sacramento

11/05/21 12:51 TCS

540312

**Matrix: Solid** 

TAL SAC

Client Sample ID: 21GST-SS-031

Date Collected: 10/31/21 13:59 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81254-76

Matrix: Solid

Percent Solids: 83.6

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.36 g	10.0 mL	541434	11/09/21 18:26	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542653	11/15/21 00:47	S1M	TAL SAC

Client Sample ID: 21GST-SS-131

Date Collected: 10/31/21 13:49 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81254-77

Matrix: Solid

		Batch	Batch		Dil	Initial	Final	Batch	Prepared		
ı	Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Ŀ	Total/NA	Analysis	D 2216		1			540312	11/05/21 12:51	TCS	TAL SAC

Client Sample ID: 21GST-SS-131

Date Collected: 10/31/21 13:49 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81254-77
Matrix: Solid

Percent Solids: 80.5

Dil Batch Batch Batch Initial Final Prepared **Prep Type** Type Method Factor **Amount** Amount Number or Analyzed Analyst Lab Run Total/NA Prep SHAKE 10.0 mL 541434 11/09/21 18:26 AM TAL SAC 5.03 g Total/NA Analysis EPA 537(Mod) 542653 11/15/21 00:58 S1M TAL SAC

Client Sample ID: 21GST-SS-009

Date Collected: 10/31/21 14:13 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81254-78

Lab Sample ID: 320-81254-78

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540312	11/05/21 12:51	TCS	TAL SAC

Client Sample ID: 21GST-SS-009

Date Collected: 10/31/21 14:13

Date Received: 11/03/21 14:01

Matrix: Solid
Percent Solids: 87.4

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.24 g	10.0 mL	541434	11/09/21 18:26	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542653	11/15/21 01:08	S1M	TAL SAC
Total/NA	Prep	SHAKE	DL		5.24 g	10.0 mL	541434	11/09/21 18:26	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)	DL	10			542864	11/15/21 12:25	SK	TAL SAC

Client Sample ID: 21GST-SS-012

Date Collected: 10/31/21 14:19

Date Received: 11/03/21 14:01

Lab Sample	ID:	320-81254-79
		Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540312	11/05/21 12:51	TCS	TAL SAC

10

Job ID: 320-81254-1

Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

Client Sample ID: 21GST-SS-012

Date Collected: 10/31/21 14:19 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81254-79

Matrix: Solid Percent Solids: 94.0

Batch Dil Initial Batch Batch Final Prepared Method Number or Analyzed **Prep Type** Type Run **Factor Amount** Amount Analyst Lab Total/NA SHAKE 541434 11/09/21 18:26 TAL SAC Prep 5.51 g 10.0 mL 542653 Total/NA 11/15/21 01:39 S1M Analysis EPA 537(Mod) TAL SAC 1

Client Sample ID: 21GST-SS-011

Date Collected: 10/31/21 14:27 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-80

Matrix: Solid

Batch Batch Dil Initial Final Batch Prepared Method Number **Prep Type Amount Amount** or Analyzed Type Run **Factor** Analyst Lab Total/NA Analysis D 2216 540312 11/05/21 12:51 TCS TAL SAC

Client Sample ID: 21GST-SS-011

Date Collected: 10/31/21 14:27 Date Received: 11/03/21 14:01 **Lab Sample ID: 320-81254-80** 

Matrix: Solid Percent Solids: 93.1

Batch Batch Dil Initial Final **Batch Prepared** Method **Factor Amount** Number or Analyzed **Prep Type** Type Run Amount **Analyst** Lab Total/NA Prep SHAKE 541434 11/09/21 18:26 TAL SAC 5.01 g 10.0 mL AM Total/NA Analysis EPA 537(Mod) 1 542653 11/15/21 01:50 S1M TAL SAC

Client Sample ID: 21GST-SS-013

Date Collected: 10/31/21 14:31 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81254-81

Matrix: Solid

Dil Batch Initial Final Batch Prepared Batch **Prep Type** Type Method **Factor** Amount Amount Number or Analyzed Run Analyst Lab Total/NA Analysis D 2216 540335 11/05/21 14:24 KDB TAL SAC 1

Client Sample ID: 21GST-SS-013

Date Collected: 10/31/21 14:31

Lab Sample ID: 320-81254-81 Matrix: Solid

Date Received: 11/03/21 14:01 Percent Solids: 86.2

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.45 g	10.0 mL	541628	11/10/21 13:52	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541977	11/12/21 03:56	LT	TAL SAC

Client Sample ID: 21GST-SB003-01

Date Collected: 10/31/21 11:35 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81254-82

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540335	11/05/21 14:24	KDB	TAL SAC

Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

Client Sample ID: 21GST-SB003-01

Date Collected: 10/31/21 11:35 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-82

**Matrix: Solid** Percent Solids: 64.2

Dil Initial Batch Batch Batch Final Prepared Method Number or Analyzed **Prep Type** Type Run **Factor Amount** Amount Analyst Lab Total/NA SHAKE 541628 11/10/21 13:52 TAL SAC Prep 5.59 g 10.0 mL Total/NA 541977 11/12/21 04:28 LT Analysis EPA 537(Mod) TAL SAC 1

Client Sample ID: 21GST-SB003-02

Date Collected: 10/31/21 11:40 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-83

Matrix: Solid

Batch Batch Dil Initial Final Batch Prepared Method Number **Prep Type Amount Amount** or Analyzed Type Run **Factor** Analyst Lab Total/NA Analysis D 2216 540335 11/05/21 14:24 KDB TAL SAC

Client Sample ID: 21GST-SB003-02

Date Collected: 10/31/21 11:40

Lab Sample ID: 320-81254-83

**Matrix: Solid** Percent Solids: 85.4

Batch Batch Dil Initial Final **Batch Prepared** Method Factor **Amount** Number or Analyzed **Prep Type** Type Run Amount Analyst Lab Total/NA Prep SHAKE 541628 11/10/21 13:52 OP TAL SAC 5.46 g 10.0 mL Total/NA Analysis EPA 537(Mod) 1 541977 11/12/21 04:38 LT TAL SAC

Client Sample ID: 21GST-SB003-03

Date Collected: 10/31/21 11:50 Date Received: 11/03/21 14:01

Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-84

**Matrix: Solid** 

Dil Batch Initial Final Batch Prepared Batch **Prep Type** Type Method **Factor** Amount Amount Number or Analyzed Run Analyst Lab Total/NA Analysis D 2216 540335 11/05/21 14:24 KDB TAL SAC

Client Sample ID: 21GST-SB003-03

Date Collected: 10/31/21 11:50

Lab Sample ID: 320-81254-84 Matrix: Solid

Date Received: 11/03/21 14:01 Percent Solids: 84.7

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.38 g	10.0 mL	541628	11/10/21 13:52	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541977	11/12/21 04:48	LT	TAL SAC

Client Sample ID: 21GST-SB004-01

Date Collected: 10/31/21 11:05 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-85

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540335	11/05/21 14:24	KDB	TAL SAC

Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

Client Sample ID: 21GST-SB004-01

Date Collected: 10/31/21 11:05 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-85 **Matrix: Solid** 

Percent Solids: 86.1

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.20 g	10.0 mL	541628	11/10/21 13:52	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541977	11/12/21 04:59	LT	TAL SAC

Client Sample ID: 21GST-SB004-02

Date Collected: 10/31/21 11:10 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-86

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540335	11/05/21 14:24	KDB	TAL SAC

Client Sample ID: 21GST-SB004-02

Date Collected: 10/31/21 11:10 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-86

Lab Sample ID: 320-81254-87

Lab Sample ID: 320-81254-87

**Matrix: Solid** Percent Solids: 84.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.15 g	10.0 mL	541628	11/10/21 13:52	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541977	11/12/21 05:09	LT	TAL SAC

Client Sample ID: 21GST-SB004-03

Date Collected: 10/31/21 11:20

Date Received: 11/03/21 14:01

**Matrix: Solid** 

Dil Batch Initial Final Batch Prepared Batch **Prep Type** Type Method **Factor** Amount Amount Number or Analyzed Run Analyst Lab 540335 Total/NA Analysis D 2216 11/05/21 14:24 KDB TAL SAC

Client Sample ID: 21GST-SB004-03

Date Collected: 10/31/21 11:20

**Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 79.1

Batch Batch Dil Initial Final **Batch Prepared Prep Type** Type Method Run Factor Amount Amount Number or Analyzed Analyst Lab Total/NA Prep SHAKE 541628 11/10/21 13:52 OP TAL SAC 5.19 g 10.0 mL Total/NA Analysis 541977 11/12/21 05:40 LT TAL SAC EPA 537(Mod) 1

Client Sample ID: 21GST-SB006-01

Date Collected: 10/31/21 12:30 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-88 **Matrix: Solid** 

Dil Initial Final Batch Batch Batch Prepared **Prep Type** Method Type Factor Amount Amount Number or Analyzed Run Analyst Lab TAL SAC D 2216 11/05/21 14:24 KDB 540335 Total/NA Analysis

Client Sample ID: 21GST-SB006-01

Date Collected: 10/31/21 12:30 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-88

**Matrix: Solid** Percent Solids: 92.2

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.52 g	10.0 mL	541628	11/10/21 13:52	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541977	11/12/21 05:51	LT	TAL SAC

Client Sample ID: 21GST-SB006-10

Date Collected: 10/31/21 12:20 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-89

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540335	11/05/21 14:24	KDB	TAL SAC

Client Sample ID: 21GST-SB006-10

Date Collected: 10/31/21 12:20 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-89

Lab Sample ID: 320-81254-90

Lab Sample ID: 320-81254-91

**Matrix: Solid** Percent Solids: 90.4

**Matrix: Solid** 

**Matrix: Solid** 

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.02 g	10.0 mL	541628	11/10/21 13:52	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541977	11/12/21 06:01	LT	TAL SAC

Client Sample ID: 21GST-SB006-02

Date Collected: 10/31/21 12:40

Date Received: 11/03/21 14:01

_										
	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540335	11/05/21 14:24	KDB	TAL SAC

Client Sample ID: 21GST-SB006-02

Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-90 Date Collected: 10/31/21 12:40 Matrix: Solid Percent Solids: 87.6

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.52 g	10.0 mL	541628	11/10/21 13:52	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541977	11/12/21 06:12	LT	TAL SAC

Client Sample ID: 21GST-SB006-03

Date Collected: 10/31/21 12:45

Date Received: 11/03/21 14:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared			
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab	
Total/NA	Analysis	D 2216					540335	11/05/21 14:24	KDB	TAL SAC	

Job ID: 320-81254-1

Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

Client Sample ID: 21GST-SB006-03

Date Collected: 10/31/21 12:45 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-91

Matrix: Solid Percent Solids: 84.7

Batch Dil Initial Batch Batch Final Prepared Method Number or Analyzed **Prep Type** Type Run **Factor Amount** Amount Analyst Lab Total/NA SHAKE 541730 11/10/21 18:34 TAL SAC Prep 5.36 g 10.0 mL Total/NA 542490 Analysis EPA 537(Mod) 11/13/21 14:45 RS1 TAL SAC 1

Client Sample ID: 21GST-SB008-01

Date Collected: 10/31/21 13:05 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-92 Matrix: Solid

Batch Batch Dil Initial Final Batch Prepared Method Number **Prep Type Amount Amount** or Analyzed Type Run **Factor** Analyst Lab Total/NA Analysis D 2216 540335 11/05/21 14:24 KDB TAL SAC

Client Sample ID: 21GST-SB008-01

Date Collected: 10/31/21 13:05 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-92

Lab Sample ID: 320-81254-93

**Matrix: Solid** Percent Solids: 84.8

**Matrix: Solid** 

**Matrix: Solid** 

Batch Batch Dil Initial Final **Batch Prepared** Method Factor **Amount** Number or Analyzed **Prep Type** Type Run Amount **Analyst** Lab Total/NA Prep SHAKE 541730 11/10/21 18:34 TAL SAC 5.19 g 10.0 mL AM Total/NA Analysis EPA 537(Mod) 1 542490 11/13/21 15:17 RS1 TAL SAC

Client Sample ID: 21GST-SB008-02

Date Collected: 10/31/21 13:10

Date Received: 11/03/21 14:01

Total/NA

Dil Batch Initial Final Batch Prepared Batch **Prep Type** Type Method **Factor** Amount Amount Number or Analyzed Run Analyst Lab

Analysis Client Sample ID: 21GST-SB008-02

D 2216

540335 11/05/21 14:24 KDB TAL SAC Lab Sample ID: 320-81254-93

Lab Sample ID: 320-81254-94

Date Collected: 10/31/21 13:10 **Matrix: Solid** Date Received: 11/03/21 14:01 Percent Solids: 87.6

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.49 g	10.0 mL	541730	11/10/21 18:34	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542490	11/13/21 15:27	RS1	TAL SAC

Client Sample ID: 21GST-SB008-03

Date Collected: 10/31/21 13:15

Date Received: 11/03/21 14:01

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540335	11/05/21 14:24	KDB	TAL SAC

Eurofins TestAmerica, Sacramento

Client Sample ID: 21GST-SB008-03

Date Collected: 10/31/21 13:15 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81254-94

Matrix: Solid Percent Solids: 84.7

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.41 g	10.0 mL	541730	11/10/21 18:34	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542490	11/13/21 15:38	RS1	TAL SAC

Client Sample ID: 21GST-SB011-01

Date Collected: 10/31/21 14:15 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81254-95

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540335	11/05/21 14:24	KDB	TAL SAC

Client Sample ID: 21GST-SB011-01

Date Collected: 10/31/21 14:15 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81254-95 Matrix: Solid

Percent Solids: 91.2

Prep Type Total/NA	Batch Type Prep	Batch Method SHAKE	Run	Dil Factor	Initial Amount 5.22 q	Final Amount 10.0 mL	Batch Number 541730	Prepared or Analyzed 11/10/21 18:34	Analyst	Lab TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1	5.22 g	10.0 ML	542490	11/10/21 16:34		TAL SAC
Total/NA Total/NA	Prep Analysis	SHAKE EPA 537(Mod)	DL DL	10	5.22 g	10.0 mL	541730 542864	11/10/21 18:34 11/15/21 12:56	AM SK	TAL SAC TAL SAC

Client Sample ID: 21GST-SB011-12

Date Collected: 10/31/21 14:25 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81254-96
Matrix: Solid

Lab Sample ID: 320-81254-96

Lab Sample ID: 320-81254-97

		Batch	Batch		Dil	Initial	Final	Batch	Prepared		
	Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Į	Total/NA	Analysis	D 2216		1			540335	11/05/21 14:24	KDB	TAL SAC

Client Sample ID: 21GST-SB011-12

Date Collected: 10/31/21 14:25 Date Received: 11/03/21 14:01

 31/21 14:25
 Matrix: Solid

 03/21 14:01
 Percent Solids: 93.2

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.31 g	10.0 mL	541730	11/10/21 18:34	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542490	11/13/21 15:58	RS1	TAL SAC
Total/NA	Prep	SHAKE	DL		5.31 g	10.0 mL	541730	11/10/21 18:34	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)	DL	5			543244	11/16/21 14:57	RS1	TAL SAC

Client Sample ID: 21GST-SB011-02

Date Collected: 10/31/21 14:35

Date Received: 11/03/21 14:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540335	11/05/21 14:24	KDB	TAL SAC

Job ID: 320-81254-1

Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

Client Sample ID: 21GST-SB011-02

Date Collected: 10/31/21 14:35 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-97

**Matrix: Solid** Percent Solids: 89.1

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.22 g	10.0 mL	541730	11/10/21 18:34	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542490	11/13/21 16:30	RS1	TAL SAC
Total/NA	Prep	SHAKE	DL		5.22 g	10.0 mL	541730	11/10/21 18:34	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)	DL	5			542864	11/15/21 12:46	SK	TAL SAC

Client Sample ID: 21GST-SB011-03

Date Collected: 10/31/21 14:45 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-98

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540335	11/05/21 14:24	KDB	TAL SAC

Client Sample ID: 21GST-SB011-03

Date Collected: 10/31/21 14:45 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-98 Matrix: Solid

Percent Solids: 81.7

Batch Batch Dil Initial Final Batch Prepared Prep Type Method Amount Amount Number or Analyzed Analyst Type Run **Factor** Lab Total/NA Prep SHAKE 5.36 g 10.0 mL 541730 11/10/21 18:34 AM TAL SAC Total/NA Analysis EPA 537(Mod) 542490 11/13/21 16:40 RS1 TAL SAC

Client Sample ID: 21GST-SB014-01	Lab Sample ID: 320-81254-99
Date Collected: 10/31/21 15:00	Matrix: Solid
Date Received: 11/03/21 14:01	

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540335	11/05/21 14:24	KDB	TAL SAC

Lab Sample ID: 320-81254-99
Matrix: Solid
Percent Solids: 88.7

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.48 g	10.0 mL	541730	11/10/21 18:34	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542490	11/13/21 16:51	RS1	TAL SAC

Client Sample ID: 21GST-SB014-02

Date Collected: 10/31/21 15:05

Date Received: 11/03/21 14:01

_											
	Batch	Batch		Dil	Initial	Final	Batch	Prepared			
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab	
Total/NA	Analysis	D 2216					540335	11/05/21 14:24	KDB	TAL SAC	

Eurofins TestAmerica, Sacramento

Lab Sample ID: 320-81254-100

Client Sample ID: 21GST-SB014-02

Date Collected: 10/31/21 15:05 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-100

**Matrix: Solid** 

Percent Solids: 83.5

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.59 g	10.0 mL	541730	11/10/21 18:34	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542490	11/13/21 17:01	RS1	TAL SAC

Client Sample ID: 21GST-SB014-03

Date Collected: 10/31/21 15:10 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-101

Matrix: Solid

		Batch	Batch		Dil	Initial	Final	Batch	Prepared		
	Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
l	Total/NA	Analysis	D 2216		1			540353	11/05/21 14:24	KDB	TAL SAC

Client Sample ID: 21GST-SB014-03

Date Collected: 10/31/21 15:10 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-101 **Matrix: Solid** 

Percent Solids: 83.0

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.35 g	10.0 mL	541730	11/10/21 18:34	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542490	11/13/21 17:11	RS1	TAL SAC

Client Sample ID: 21GST-SS-032

Date Collected: 11/01/21 09:48 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-102

**Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540353	11/05/21 14:24	KDB	TAL SAC

Client Sample ID: 21GST-SS-032

Date Collected: 11/01/21 09:48

Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-102 Matrix: Solid

Percent Solids: 93.9

	Bat	tch I	Batch		Dil	Initial	Final	Batch	Prepared		
Prep T	уре Тур	e l	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/N	A Pre	p S	SHAKE			5.12 g	10.0 mL	541730	11/10/21 18:34	AM	TAL SAC
Total/N	A Ana	alysis I	EPA 537(Mod)		1			542490	11/13/21 17:22	RS1	TAL SAC

**Client S** 

**Date Co** 

Date Received: 11/03/21 14:01

t Sample ID: 21GS1-SS-033	Lab Sample ID: 320-81254-103
Collected: 11/01/21 09:56	Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540353	11/05/21 14:24	KDB	TAL SAC

Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

Client Sample ID: 21GST-SS-033

Date Collected: 11/01/21 09:56 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-103

**Matrix: Solid** 

Percent Solids: 95.4

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.33 g	10.0 mL	541730	11/10/21 18:34	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542490	11/13/21 17:32	RS1	TAL SAC

Client Sample ID: 21GST-SS-034

Date Collected: 11/01/21 09:59 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-104

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540353	11/05/21 14:24	KDB	TAL SAC

Client Sample ID: 21GST-SS-034

Date Collected: 11/01/21 09:59 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-104

**Matrix: Solid** Percent Solids: 94.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.37 g	10.0 mL	541730	11/10/21 18:34	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542490	11/13/21 17:43	RS1	TAL SAC

Client Sample ID: 21GST-SS-004

Date Collected: 11/01/21 10:16 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-105

**Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540353	11/05/21 14:24	KDB	TAL SAC

Client Sample ID: 21GST-SS-004

Date Collected: 11/01/21 10:16 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-105 Matrix: Solid

Lab Cample ID: 200 040E4 400

Percent Solids: 89.2

Prep Type	Batch	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Prep Type	Туре	Welliou	Kuii	ractor	Amount	Amount	Number	or Analyzeu	AllalySt	Lau
Total/NA	Prep	SHAKE			5.27 g	10.0 mL	541730	11/10/21 18:34	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542490	11/13/21 17:53	RS1	TAL SAC

Client Sample ID: 21GST\_SS\_003

Date Received: 11/03/21 14:01

Chent Sample ID: 21651-55-003	Lab Sample ID: 320-81254-106
Date Collected: 11/01/21 10:19	Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540353	11/05/21 14:24	KDB	TAL SAC

Client Sample ID: 21GST-SS-003

Date Collected: 11/01/21 10:19 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-106

**Matrix: Solid** 

Percent Solids: 87.8

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.23 g	10.0 mL	541730	11/10/21 18:34	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542490	11/13/21 18:04	RS1	TAL SAC

Client Sample ID: 21GST-SS-103

Date Collected: 11/01/21 10:09 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-107

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540353	11/05/21 14:24	KDB	TAL SAC

Client Sample ID: 21GST-SS-103

Date Collected: 11/01/21 10:09 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-107

**Matrix: Solid** Percent Solids: 89.9

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.32 g	10.0 mL	541730	11/10/21 18:34	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542490	11/13/21 18:35	RS1	TAL SAC

Client Sample ID: 21GST-SS-002

Date Collected: 11/01/21 10:36 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-108

**Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540353	11/05/21 14:24	KDB	TAL SAC

Client Sample ID: 21GST-SS-002

Date Collected: 11/01/21 10:36

Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-108 Matrix: Solid

Percent Solids: 89.9

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.11 g	10.0 mL	541730	11/10/21 18:34	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542490	11/13/21 18:45	RS1	TAL SAC

Client Sample ID: 21GST-SS-001

Date Collected: 11/01/21 10:28

Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-109

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540353	11/05/21 14:24	KDB	TAL SAC

Job ID: 320-81254-1

Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

Client Sample ID: 21GST-SS-001

Date Collected: 11/01/21 10:28 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-109

**Matrix: Solid** 

Percent Solids: 92.3

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.57 g	10.0 mL	541730	11/10/21 18:34	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542490	11/13/21 18:56	RS1	TAL SAC

Client Sample ID: 21GST-MW16-01

Date Collected: 10/31/21 09:55 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-110

Matrix: Solid

		Batch	Batch		Dil	Initial	Final	Batch	Prepared		
	Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Į	Total/NA	Analysis	D 2216		1			540353	11/05/21 14:24	KDB	TAL SAC

Client Sample ID: 21GST-MW16-01

Date Collected: 10/31/21 09:55 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-110

**Matrix: Solid** Percent Solids: 90.5

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.20 g	10.0 mL	541730	11/10/21 18:34	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542490	11/13/21 19:06	RS1	TAL SAC

Client Sample ID: 21GST-MW16-02

Date Collected: 10/31/21 10:00 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-111

**Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540353	11/05/21 14:24	KDB	TAL SAC

Client Sample ID: 21GST-MW16-02

Date Collected: 10/31/21 10:00

Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-111 Matrix: Solid

Lah Sample ID: 320-81254-112

Percent Solids: 92.1

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.05 g	10.0 mL	541731	11/10/21 18:37	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542335	11/12/21 22:27	S1M	TAL SAC

Client Sample ID: 21GST-MW16-03

Cheff Cample IB. 21001-WW 10-00	Lab Gample 15: 020-01204-112
Date Collected: 10/31/21 10:05	Matrix: Solid
Date Received: 11/03/21 14:01	

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540353	11/05/21 14:24	KDB	TAL SAC

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Job ID: 320-81254-1

Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

Client Sample ID: 21GST-MW16-03

Date Collected: 10/31/21 10:05 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81254-112

Matrix: Solid

Percent Solids: 79.4

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.14 g	10.0 mL	541731	11/10/21 18:37	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542335	11/12/21 22:58	S1M	TAL SAC

Client Sample ID: 21GST-MW16-04

Date Collected: 10/31/21 10:15 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81254-113

Matrix: Solid

		Batch	Batch		Dil	Initial	Final	Batch	Prepared		
	Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
l	Total/NA	Analysis	D 2216		1			540353	11/05/21 14:24	KDB	TAL SAC

Client Sample ID: 21GST-MW16-04

Date Collected: 10/31/21 10:15 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81254-113

Matrix: Solid Percent Solids: 79.3

Dil Batch Batch Batch Initial Final Prepared **Prep Type** Type Method Factor **Amount** Amount Number or Analyzed Analyst Lab Run Total/NA Prep SHAKE 10.0 mL 541731 11/10/21 18:37 AM TAL SAC 5.02 g Total/NA Analysis EPA 537(Mod) 1 542335 11/12/21 23:08 S1M TAL SAC

Client Sample ID: 21GST-MW19-01

Date Collected: 10/31/21 16:05 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81254-114

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540353	11/05/21 14:24	KDB	TAL SAC

Client Sample ID: 21GST-MW19-01

Date Collected: 10/31/21 16:05 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81254-114

Matrix: Solid

Percent Solids: 76.8

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.07 g	10.0 mL	541731	11/10/21 18:37	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542335	11/12/21 23:19	S1M	TAL SAC

Client Sample ID: 21GST-MW19-02

Date Collected: 11/01/21 10:30 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-115

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared			
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab	
Total/NA	Analysis	D 2216					540353	11/05/21 14:24	KDB	TAL SAC	

Job ID: 320-81254-1

Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

Client Sample ID: 21GST-MW19-02

Date Collected: 11/01/21 10:30 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-115

**Matrix: Solid** 

Percent Solids: 83.9

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.38 g	10.0 mL	541731	11/10/21 18:37	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542335	11/12/21 23:29	S1M	TAL SAC

Client Sample ID: 21GST-MW20-01

Date Collected: 11/01/21 13:45 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-116

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540353	11/05/21 14:24	KDB	TAL SAC

Client Sample ID: 21GST-MW20-01

Date Collected: 11/01/21 13:45 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-116

**Matrix: Solid** Percent Solids: 90.8

	_	Batch	Batch	_	Dil	Initial	Final	Batch	Prepared		
	Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
	Total/NA	Prep	SHAKE			5.47 g	10.0 mL	541731	11/10/21 18:37	AM	TAL SAC
l	Total/NA	Analysis	EPA 537(Mod)		1			542335	11/12/21 23:40	S1M	TAL SAC

Client Sample ID: 21GST-MW20-10

Date Collected: 11/01/21 13:35

Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-117

**Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540353	11/05/21 14:24	KDB	TAL SAC

Client Sample ID: 21GST-MW20-10

Date Collected: 11/01/21 13:35

Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-117 Matrix: Solid

Percent Solids: 91.6

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.29 g	10.0 mL	541731	11/10/21 18:37	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542335	11/13/21 00:11	S1M	TAL SAC

Client Sample ID: 21GST-MW20-02

Date Collected: 11/01/21 16:10 Date Received: 11/03/21 14:01

Lab Sample ID: 320-81254-118

**Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			540353	11/05/21 14:24	KDB	TAL SAC

#### **Lab Chronicle**

Client: Shannon & Wilson, Inc Job ID: 320-81254-1

Project/Site: SC Soils#3

Date Collected: 11/01/21 16:10

Matrix: Solid
Date Received: 11/03/21 14:01

Matrix: Solid
Percent Solids: 75.7

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.24 g	10.0 mL	541731	11/10/21 18:37	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542335	11/13/21 00:21	S1M	TAL SAC

#### **Laboratory References:**

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

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# **Accreditation/Certification Summary**

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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# Laboratory: Eurofins TestAmerica, Sacramento

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

Authority	Pr	ogram	Identification Number	Expiration Date
Alaska (UST)	St	ate	17-020	02-20-24
The following englytes	a ara inaludad in thia rana	art but the leberatory is r	and an existing of the existence of the	The Control of the Co
the agency does not o	offer certification.	•	not certified by the governing authority.	I his list may include analytes for v
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the agency does not o	offer certification.	•		This list may include analytes for v

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# **Method Summary**

Client: Shannon & Wilson, Inc Project/Site: SC Soils#3 Job ID: 320-81254-1

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.3, Table B-15	EPA	TAL SAC
D 2216	Percent Moisture	ASTM	TAL SAC
SHAKE	Shake Extraction with Ultrasonic Bath Extraction	SW846	TAL SAC

#### **Protocol References:**

ASTM = ASTM International

EPA = US Environmental Protection Agency

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

#### **Laboratory References:**

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

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# Sample Summary

Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

Lab Sample ID Client Sample ID Matrix Collected Received 320-81254-1 21GST-SS-023 Solid 10/29/21 10:21 11/03/21 14:01 Solid 11/03/21 14:01 320-81254-2 21GST-SS-029 10/29/21 10:47 Solid 320-81254-3 21GST-SS-028 10/29/21 10:53 11/03/21 14:01 21GST-SS-027 Solid 320-81254-4 10/29/21 11:04 11/03/21 14:01 21GST-SS-026 320-81254-5 Solid 10/29/21 11:10 11/03/21 14:01 Solid 320-81254-6 21GST-SS-126 10/29/21 11:00 11/03/21 14:01 320-81254-7 21GST-SS-025 Solid 10/29/21 11:35 11/03/21 14:01 320-81254-8 21GST-SS-024 Solid 10/29/21 11:44 11/03/21 14:01 320-81254-9 21GST-SS-022 Solid 10/29/21 12:04 11/03/21 14:01 320-81254-10 21GST-SS-021 Solid 10/29/21 12:14 11/03/21 14:01 320-81254-11 21GST-SS-020 Solid 10/29/21 12:19 11/03/21 14:01 320-81254-12 21GST-SS-019 Solid 10/29/21 12:31 11/03/21 14:01 Solid 11/03/21 14:01 320-81254-13 21GST-SS-018 10/29/21 12:42 Solid 320-81254-14 21GST-SS-014 10/29/21 12:56 11/03/21 14:01 21GST-SS-017 Solid 10/29/21 13:07 11/03/21 14:01 320-81254-15 21GST-SS-016 Solid 11/03/21 14:01 320-81254-16 10/29/21 13:16 Solid 320-81254-17 21GST-SS-015 10/29/21 13:19 11/03/21 14:01 320-81254-18 21GST-SS-008 Solid 10/29/21 13:28 11/03/21 14:01 21GST-SS-006 Solid 320-81254-19 10/29/21 13:36 11/03/21 14:01 320-81254-20 21GST-SS-106 Solid 10/29/21 13:26 11/03/21 14:01 21GST-SS-005 Solid 11/03/21 14:01 320-81254-21 10/29/21 13:50 320-81254-22 21GST-SS-007 Solid 10/29/21 13:54 11/03/21 14:01 320-81254-23 21GST-MW14-01 Solid 10/27/21 14:00 11/03/21 14:01 Solid 320-81254-24 21GST-MW14-10 10/27/21 13:50 11/03/21 14:01 320-81254-25 21GST-MW14-02 Solid 10/27/21 14:10 11/03/21 14:01 320-81254-26 21GST-MW14-03 Solid 11/03/21 14:01 10/27/21 14:25 320-81254-27 21GST-MW14-04 Solid 10/27/21 14:30 11/03/21 14:01 Solid 320-81254-28 21GST-MW14-05 10/27/21 15:00 11/03/21 14:01 320-81254-29 21GST-MW14-06 Solid 10/27/21 16:00 11/03/21 14:01 21GST-MW18-01 Solid 11/03/21 14:01 320-81254-30 10/28/21 09:55 320-81254-31 21GST-MW18-02 Solid 10/28/21 10:10 11/03/21 14:01 Solid 320-81254-32 21GST-MW18-12 10/28/21 10:00 11/03/21 14:01 320-81254-33 21GST-MW18-03 Solid 10/28/21 10:20 11/03/21 14:01 320-81254-34 21GST-MW18-04 Solid 11/03/21 14:01 10/28/21 11:10 320-81254-35 21GST-MW18-05 Solid 10/28/21 11:25 11/03/21 14:01 320-81254-36 21GST-MW18-06 Solid 10/28/21 12:10 11/03/21 14:01 Solid 320-81254-37 21GST-MW15-01 10/29/21 13:00 11/03/21 14:01 320-81254-38 21GST-MW15-02 Solid 10/29/21 13:05 11/03/21 14:01 Solid 320-81254-39 21GST-MW15-03 10/29/21 13:55 11/03/21 14:01 Solid 320-81254-40 21GST-MW15-04 10/29/21 14:10 11/03/21 14:01 Solid 320-81254-41 21GST-MW15-14 10/29/21 14:00 11/03/21 14:01 Solid 320-81254-42 21GST-MW15-05 10/29/21 14:35 11/03/21 14:01 320-81254-43 21GST-MW15-06 Solid 10/29/21 15:30 11/03/21 14:01 320-81254-44 21GST-SB002-01 Solid 10/30/21 09:35 11/03/21 14:01 Solid 21GST-SB002-02 10/30/21 09:50 11/03/21 14:01 320-81254-45 320-81254-46 21GST-SB002-03 Solid 10/30/21 10:00 11/03/21 14:01 21GST-SB002-04 Solid 10/30/21 10:10 11/03/21 14:01 320-81254-47 320-81254-48 21GST-SB001-01 Solid 10/30/21 10:30 11/03/21 14:01 21GST-SB001-02 Solid 10/30/21 10:40 11/03/21 14:01 320-81254-49 320-81254-50 21GST-SB001-03 Solid 10/30/21 10:50 11/03/21 14:01 320-81254-51 21GST-SB001-04 Solid 10/30/21 11:00 11/03/21 14:01 Solid 320-81254-52 21GST-SB009-01 10/30/21 11:35 11/03/21 14:01 Solid 320-81254-53 21GST-SB009-10 10/30/21 11:25 11/03/21 14:01 Solid 320-81254-54 21GST-SB009-02 10/30/21 11:50 11/03/21 14:01 320-81254-55 21GST-SB009-03 Solid 11/03/21 14:01

Job ID: 320-81254-1

10/30/21 12:00

# **Sample Summary**

Client: Shannon & Wilson, Inc Project/Site: SC Soils#3

Lab Sample ID Client Sample ID Matrix Collected Received 320-81254-56 21GST-SB009-04 Solid 10/30/21 12:05 11/03/21 14:01 Solid 11/03/21 14:01 320-81254-57 21GST-SB010-01 10/30/21 12:35 Solid 320-81254-58 21GST-SB010-10 10/30/21 12:25 11/03/21 14:01 11/03/21 14:01 320-81254-59 21GST-SB010-02 Solid 10/30/21 12:40 21GST-SB010-03 Solid 10/30/21 12:45 11/03/21 14:01 320-81254-60 21GST-SB012-01 Solid 11/03/21 14:01 320-81254-61 10/30/21 13:25 320-81254-62 21GST-SB012-02 Solid 10/30/21 13:30 11/03/21 14:01 320-81254-63 21GST-SB012-03 Solid 10/30/21 13:40 11/03/21 14:01 320-81254-64 21GST-SB013-01 Solid 10/30/21 14:30 11/03/21 14:01 320-81254-65 21GST-SB013-02 Solid 10/30/21 14:35 11/03/21 14:01 320-81254-66 21GST-SB013-03 Solid 10/30/21 14:45 11/03/21 14:01 320-81254-67 21GST-SB005-01 Solid 10/30/21 15:10 11/03/21 14:01 Solid 11/03/21 14:01 320-81254-68 21GST-SB005-02 10/30/21 15:15 Solid 320-81254-69 21GST-SB005-03 10/30/21 15:30 11/03/21 14:01 21GST-SB007-01 Solid 10/30/21 16:00 11/03/21 14:01 320-81254-70 21GST-SB007-10 Solid 11/03/21 14:01 320-81254-71 10/30/21 15:50 Solid 320-81254-72 21GST-SB007-02 10/30/21 16:05 11/03/21 14:01 320-81254-73 21GST-SB007-03 Solid 10/30/21 16:15 11/03/21 14:01 21GST-SS-030 Solid 320-81254-74 10/31/21 13:49 11/03/21 14:01 320-81254-75 21GST-SS-010 Solid 10/31/21 13:54 11/03/21 14:01 320-81254-76 21GST-SS-031 Solid 10/31/21 13:59 11/03/21 14:01 320-81254-77 21GST-SS-131 Solid 10/31/21 13:49 11/03/21 14:01 320-81254-78 21GST-SS-009 Solid 10/31/21 14:13 11/03/21 14:01 Solid 320-81254-79 21GST-SS-012 10/31/21 14:19 11/03/21 14:01 320-81254-80 21GST-SS-011 Solid 10/31/21 14:27 11/03/21 14:01 320-81254-81 21GST-SS-013 Solid 11/03/21 14:01 10/31/21 14:31 320-81254-82 21GST-SB003-01 Solid 10/31/21 11:35 11/03/21 14:01 Solid 320-81254-83 21GST-SB003-02 10/31/21 11:40 11/03/21 14:01 320-81254-84 21GST-SB003-03 Solid 10/31/21 11:50 11/03/21 14:01 21GST-SB004-01 Solid 11/03/21 14:01 320-81254-85 10/31/21 11:05 320-81254-86 21GST-SB004-02 Solid 10/31/21 11:10 11/03/21 14:01 Solid 320-81254-87 21GST-SB004-03 10/31/21 11:20 11/03/21 14:01 320-81254-88 21GST-SB006-01 Solid 10/31/21 12:30 11/03/21 14:01 320-81254-89 21GST-SB006-10 Solid 11/03/21 14:01 10/31/21 12:20 320-81254-90 21GST-SB006-02 Solid 10/31/21 12:40 11/03/21 14:01 320-81254-91 21GST-SB006-03 Solid 10/31/21 12:45 11/03/21 14:01 Solid 320-81254-92 21GST-SB008-01 10/31/21 13:05 11/03/21 14:01 320-81254-93 21GST-SB008-02 Solid 10/31/21 13:10 11/03/21 14:01 320-81254-94 21GST-SB008-03 Solid 10/31/21 13:15 11/03/21 14:01 Solid 320-81254-95 21GST-SB011-01 10/31/21 14:15 11/03/21 14:01 Solid 320-81254-96 21GST-SB011-12 10/31/21 14:25 11/03/21 14:01 Solid 320-81254-97 21GST-SB011-02 10/31/21 14:35 11/03/21 14:01 320-81254-98 21GST-SB011-03 Solid 10/31/21 14:45 11/03/21 14:01 320-81254-99 21GST-SB014-01 Solid 10/31/21 15:00 11/03/21 14:01 Solid 320-81254-100 21GST-SB014-02 10/31/21 15:05 11/03/21 14:01 320-81254-101 21GST-SB014-03 Solid 10/31/21 15:10 11/03/21 14:01 21GST-SS-032 Solid 11/03/21 14:01 320-81254-102 11/01/21 09:48 320-81254-103 21GST-SS-033 Solid 11/01/21 09:56 11/03/21 14:01 21GST-SS-034 Solid 11/01/21 09:59 11/03/21 14:01 320-81254-104 320-81254-105 21GST-SS-004 Solid 11/01/21 10:16 11/03/21 14:01 320-81254-106 21GST-SS-003 Solid 11/01/21 10:19 11/03/21 14:01 Solid 320-81254-107 21GST-SS-103 11/01/21 10:09 11/03/21 14:01 Solid 320-81254-108 21GST-SS-002 11/01/21 10:36 11/03/21 14:01 Solid 320-81254-109 21GST-SS-001 11/01/21 10:28 11/03/21 14:01 Solid 11/03/21 14:01 320-81254-110 21GST-MW16-01 10/31/21 09:55

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Job ID: 320-81254-1

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# **Sample Summary**

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-81254-111	21GST-MW16-02	Solid	10/31/21 10:00	11/03/21 14:01
320-81254-112	21GST-MW16-03	Solid	10/31/21 10:05	11/03/21 14:01
320-81254-113	21GST-MW16-04	Solid	10/31/21 10:15	11/03/21 14:01
320-81254-114	21GST-MW19-01	Solid	10/31/21 16:05	11/03/21 14:01
320-81254-115	21GST-MW19-02	Solid	11/01/21 10:30	11/03/21 14:01
320-81254-116	21GST-MW20-01	Solid	11/01/21 13:45	11/03/21 14:01
320-81254-117	21GST-MW20-10	Solid	11/01/21 13:35	11/03/21 14:01

11/01/21 16:10 11/03/21 14:01

Solid

21GST-MW20-02

320-81254-118

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SHANNON & WILSO GEOTECHNICAL AND ENVIRONMENTAL 2355 HIII ROAD Fairbanks, AK 99709 (907) 479-0600	ON, INC.	CHAIN	-OF-C	USTO			ORD ethods (include	Attn:	David Allt	1 of 1 Nevica
www.shannonwilson.com	m			_	oY /	rialytical ivie	Include (include		/ /	7
Turn Around Time:	Quote No:			do order		//			Total Municipal of Contained of Composition Composition Sample	
A Normal Linear	J-Flags: Ye	s No	,	563		/			inter of	
Please Specify			A	6. 9	/ ,	/ /		/ /	Remar	ks/Matrix
Sample Identity	Lab No.	Dat Time Samp	/	/ /					Composi Sample	ition/Grab? Containers
-21GST-MW18-02	Ic	10 10/28	12) X						Soil	
-21GST-MW18-12	10	000	X					1		
-21GST-MW18-03	10	20	X							
- 21GST-MW18-04	1	IID	X.					1		
- 21GST-MW18-05	1)	25	X					1		
- ZIGST-MW18-06	1	210 1	X							
-21GST-MW5-01	13	30010/29	121 1							
-21GST-MW15-02	13	305	X					Ì		
-21GST-MW15-03	13	355	$\sim$					1		
-21GST-MW15-04	1	110	X					I		
Project Information	Sample Rec	eipt	Reliqui	shed By:	1.	Reliqu	uished By:	2.	Reliquished	Ву: 3.
Number:   62599-008	Total No. of Containers:		Signature:	Time	730	Signature:	Tin	ne:	Signature:	Time:
Name: SC 50118#3	COC Seals/Intact? Y/N/N		11		11 2 21					
Contact: (1) Ster	Received Good Cond./Co	d	Printed Name:	Date	11-2-21	Printed Name:	Da	ite:	Printed Name:	Date:
Ongoing Project? Yes No Sampler: VP F (1)	Temp:		Company:	17) Class	10	Company:			Company:	
Sampler: KKE/HPW	Delivery Method:		Stu	)						
No	tes:		Recei	ved By: 1		Rec	eived By:	2.	Received I	Ву: 3.
			Signature:	Time	1401	Signature:	Tin	ne:	Signature:	Time:
			Printed Name:	Date	7	Printed Name:	Da	ite:	Printed Name:	Date:
Distribution: White - w/shipment - returned Yellow - w/shipment - for con Pink - Shannon & Wilson - jo	signee files	boratory report	Company:	386		Company:			Company:	

No. 36471











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Received

11-2-21 730

Date/Time:

Date/Time:

Company

Company

Relinquished by:

Relinquished by:



Received in Laboratory by:









Company:

Company:

Company:

Date/Time:

Address:				Ch	nain (	of Cus	tody	Recor	d 5	753	57 :	🔅 eu	rofins	Environment Testing
Address.														TestAmerica
	Regu	latory Prog	gram:	DW	NPDES	RCRA	Other			Yay6	26	ot	11	TAL-8210
Client Contact						Site Contac			Date:				COC No:	TALVETO
Company Name: Showen & WISON	Tel/Emai		WY ICK	24/11	-UV	ab Contac			Carrier:				of	COCs
Address:		Analysis Tu	ırnaround	1 Time		K						S-1	Sampler:	
City/State/Zip:	-	NDAR DAYS		RKING DAY	S	SS							For Lab Use Or	nly:
Phone:		AT if different fro				Z						1 1	Walk-in Client: Lab Sampling:	
Fax: Project Name: SC Solls # 3			weeks week			SD (Y/N)							_ab Samping.	
Site:	1 5		days			MS/MSD (Y/							Job / SDG No.:	
P O #	7 -		day			MS/MSD WS/MSD ~   & &								
			Sample			N E								
Sample Identification	Sample Date	Sample Time	Type (C=Comp. G=Grab)	Matrix	# of Cont.	Perform							Sample	Specific Notes:
			G=Grab)		Cont.					-			Sample	Specific Notes.
21G5T-5B009-10	030/2	11125	6	Soil		L X								
216ST-SB009-02		1150	11	1		X								
21GST-5B009-03		1200			1	X								
21 GST-SB009-04		1205			1	X								
2165T-SB010-01		1235			1	X								
2165T-SB010-10		1225			)	X								
21G5T-SB010-02		1240	-4			X								
2/65T-SB010-03		1245				X								
2165T-5B012-01		1325	174		1	X								
21GST-SB012-02		1330			1	X								
21GST-SB012-03		1340			1	X								
21GST-SB013-01	1	1430	V	V	(	X								
Preservation Used: 1= Ice, 2= HCI; 3= H2SO4; 4=HNO3	3; 5=NaOH;	6= Other												
Possible Hazard Identification:  Are any samples from a listed EPA Hazardous Waste? Ple	ase List any	EPA Waste	Codes for	the samp	ole in the		Disposal	( A fee may	be assesse	d if samp	oles are r	etained	longer than 1 m	nontnj
Comments Section if the lab is to dispose of the sample.  Non-Hazard Flammable Skin Irritant	Poiso	n B	Unkn	юwп		Reti	ırn to Client		Disposal by La	ab	Archiv	ve for	Months	
Special Instructions/QC Requirements & Comments:							_							
Custody Seals Intact: Yes No	Custody	Seal No.: / 4	046	64	150	4665	Cooler	Temp. (°C):	Obs'd: 6	Ze Cor	r'd: 6.	70 1	herm ID No.:	1-07
Relinquished by:	Company	<i>r</i> :		Date/Ti	me:	Received	бу:						Date/Time:	
Ciston treibuye	1 >	اللاق			2) 73	1/	1			1830	800			1461
Relinquished by:	Company	<i>r</i> :		Date/Ti	me:	Received	DY		C	Company:			Date/Time:	
Relinquished by:	Company	<i>r</i> :		Date/Ti	me:	Received	in Labora	atory by:	C	Company:			Date/Time:	
<u> </u>														











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Address:		Chain	of Custody Reco	ord 575359	Ellanoullicut 103
				D	age 7 of TestAmerica
		rogram: DW NPDES		4	age / OT   TAL-8
Client Contact	Project Manager	auld Alltore	Site Contact:	Date:	COC No:
Company Name: Shon On Euris		700 10 11.1	Lab Contact:	Carrier:	of COCs
Address:		Turnaround Time	3		Sampler:
City/State/Zip:	CALENDAR DAYS	WORKING DAYS			For Lab Use Only:
Phone: Fax:	TAT if differen		(VIN)		Walk-in Client: Lab Sampling:
Project Name: SC Soils #3		2 weeks 1 week	Z > g		Lab Sampling.
Site:		2 days	MSD (V		Job / SDG No.:
0#		1 day	S/MSI		
		Sample	SS		
Sample Identification	Sample Sample Date Time	Type  (C=Comp, G=Grab) Matrix Cont.	Perform		Sample Specific Notes:
2165T-5B013-02	10/30/21 1436		X		
2165T-5B013-03	1445		X		
aigst-sboos-ol	15/0		X		
21GST-SB005-02	1515		I X		
21GST-SBOOS-03	1530		I X		
2165T-SB005-03 2165T-SB007-01 2165T-SB007-10	1600		I X		
2165T-SB067-10	1550				
21GST-SB007-02			T X		
2) GST-SB007-0:	3 1/6/5		X		
11 GST - SS - 030	10/31/21 1349		X		
21 GST-SS-010	1354				
21GST-SS-031	V 135°				
reservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=H	INO3; 5=NaOH; 6= Other		Sample Dianagel / A fee m	ay be especial if somples	are retained longer than 1 month)
ossible Hazard Identification: re any samples from a listed EPA Hazardous Waste? omments Section if the lab is to dispose of the sample		te Codes for the sample in the		ay be assessed it samples	are retained longer triair i month)
Non-Hazard Flammable Skin Irri	tant Poison B	Unknown	Return to Client	Disposal by Lab	Archive for Months
pecial Instructions/QC Requirements & Comments	:				
Custody Seals Intact: Yes No	Custody Seal No.:	1504664, 150		C): Obs'd: Loile Corr'd:	6-16 Therm ID No.: 6-05
elinquished by: Krister Fredery	Company:	Date/fime:	Received by:	Company:	Date/Timer.
elimquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time;
elinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:













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Address:				Ch	nain	of C	ust	ody	Rec	ord	5	75	36	4	· e	urofi	ns	Enviro	nment Tes
Address.												5			_	7		TestAn	
	Regul	latory Pro	gram:	DW [	NPDES	R	CRA	Other:				7	ra	90	- 7	0	1-1		TAL-8
Client Contact		anager:			_	Site Co					Date:					COC N	0:	-	
Company Name: Shann & Wilson	Tel/Email:					Lab Co	ntact				Carrier	:					_ of _	C	COCs
Address		Analysis T	urnaround	d Time		1	1									Sample			
City/State/Zip:	CALEN	DAR DAYS	☐ wo	RKING DAY	S		25										Use O	nly:	
Phone:	TA	T if different fro					S									Walk-in			
Fax: Project Name: SC 52:15 # 3			weeks		- 1	Sample (Y/N) MS/MSD (Y/	- 1 8 anountes									Lab Sar	npiing.		
Site:	1 1		week		- 1	<u> </u>	0									Job / St	OG No		
PO#	1 5		days			ed V	ō									000 / 01	70 110		
			Sample			San	7												
	Sample	Sample	Type	1 1		B E	3												
Sample Identification	Date	Time	(C=Comp, G=Grab)	Matrix	# of Cont.	Filtered S Perform	7										Sample	Specific	Notes:
01657-55-131	10/1/21	1349	G	Seil	1		1												
01/55 55-000	10,3/2,	1413		2011		<del>  K</del>	Y		+	+						1			
21921-22 009	+ + -		6				7	++	++	+			++	-		1			
21921-22-019		1419	9		1		<b>N</b>	$\rightarrow$				$\vdash$	+	-		-			
21657-55-011		1427	G		1		N _		$\perp$							ļ			
21G5T-55-013	V	1431	G	V	1		4												
2165T-SS-01	-																		
216ST-SS-02						-	-												
71651-88-03													-						
2165T-5B003-01	10/31/21	1135	1-	Soil	1		7						+	_					
-110101	1912	11.00	9	20.1	1	1			++	+			++	+					
21G5T-5B003-02		1140	G		1	1	<u> </u>		+				H						
21687-SB003-03		1150	G	1	1	1	<b>\</b> _		$\dashv$	+	-		$\square$	-		-			
21GST-5B004-01	V	1102	G	V	1														
Preservation Used: 1= Ice, 2= HCI; 3= H2SO4; 4=HNO3	5=NaOH;	6= Other _				Carr	mla D	222221	Aána				2001			d longer	than 4		
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Plea	se List any I	EPA Waste	Codes for	the same	ole in the		ipie D	isposai (	A lee II	nay be	455622	eu II s	ampie	s are r	etairie	id longer	uran i i	monun	
Comments Section if the lab is to dispose of the sample.																			
Non-Hazard Flammable Skin Irritant	Poison	n B	Unkr	nown			Retur	n to Client		_ Dis	sposal by	Lab		Arch	ve for_		Months		
Special Instructions/QC Requirements & Comments:						-													
Custody Seals Intact: Yes No	Custody S	Seal No.: /	5046	641	504	166		Cooler 1	emp. (°	C): Obs	d:6.			6.	10	Therm II	) No.:_	60	<u></u>
Relinquished by:	Custody S Company:	. `		Date/Ti	me:	Rec	eived	DY2				Comp		5_		Date/Ti	he:/	,	0
Whister Freibye	128	de			173		N.	11						32		/	3/2	14	coi
Relinquished by:	Company			Date/Ti	me:	Ribe	Devie	JY.				Comp	any:			Date/Ti	ne:		
Relinquished by:	Company:	:		Date/Ti	me:	Rec	eived	n Labora	itory by:			Comp	any:			Date/Ti	me:		











		Chair	of Custody Reco	rd 575366 &	eurofins
Address:					Environment Testir TestAmerica
				Daus	9 of 11 TAL-8210
		rogram: Dw NPDE			
Client Contact		David Alltoda		Date:	COC No:
Company Name: Shanon & wils and	Tel/Email:	- Turners and Time	Lab Contact:	Carrier:	of COCs
Address: City/State/Zip:	CALENDAR DAYS	s Turnaround Time working Days	- 8		Sampler: For Lab Use Only:
Phone:		nt from Below			Walk-in Client:
Fax:		2 weeks			Lab Sampling:
Project Name: 55 5515#3		1 week			
Site:		2 days	MSD MSD		Job / SDG No.:
PO#		1 day	Samp NS /		
		Туре	P E S		
Sample Identification	Sample Samp	(0.00)	Perform PFAS		Sample Specific Notes:
21GST-5B004-02	10/31/21/11				
21GST-SB004-03	1120	O G Soil 1			
21G5T-5B006-01	123	0 9 11			
216ST-SB006-10	122		8		
21957-53006-02	124		X		
2165T-SB006-03					
	124		+G		
A 1010 1 82000 0 .	130				
21651-58008-02	131		N		
21957-53008-03	1318		X		
21GST-SB011-01	1141	5 6 1	X		
21GST-5B011 -12	142	5 6 11	X		
21GST-SB011 -02	V 143		X		a la
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3;					
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Plea	so List any EDA Wa	ete Codes for the sample in t		y be assessed if samples are reta	ined longer than 1 month)
Comments Section if the lab is to dispose of the sample.	se List ally LFA VVa	iste codes for the sample in			
Non-Hazard Flammable Skin Irritant	Poison B	Unknown	Return to Client	Disposal by Lab Archive f	for Months
Special Instructions/QC Requirements & Comments:					
Custody Seals Intact: Yes No	Custody Seal No.	1504664 1	504665 Cooler Temp. (°C)	: Obs'd: 6.7 _ Corr'd: 6./e	
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time.
by Kisten Freibiger		) 11-2-217	30 Partinochar		118/m 1401
Relinquished by:	Company:	Date/Time:	Received by	Company:	Date/Time.
Selinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:
202	1 '				
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575367 \* eurofins **Chain of Custody Record Environment Testing** Address: **TestAmerica** Regulatory Program: DW NPDES RCRA TAL-8210 Project Manager: Day All to Site Contact: Date: **Client Contact** COCs Company Name: Shannan & W Lab Contact: Carrier: of Tel/Email: **Analysis Turnaround Time** Sampler: Address: For Lab Use Only: City/State/Zip: CALENDAR DAYS WORKING DAYS Walk-in Client: Phone: TAT if different from Below Lab Sampling: Fax: 2 weeks Project Name 1 week Job / SDG No. Site: 2 days PO# 1 day Sample Type Sample Sample # of Date Time G=Grab) Matrix Cont. Sample Specific Notes: Sample Identification 10-31-21 1445 67 1500 1505 1510 11-1-21948 956 959 10:16 10:09 -001 Preservation Used: 1= Ice, 2= HCI; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample Skin Irritant Poison B Unknown Return to Client Disposal by Lab Archive for Months Non-Hazard Flammable Special Instructions/QC Requirements & Comments: Custody Seal No.: 1504664 1504665 Cooler Temp. (°C): Obs'd: Therm ID No.: L= Custody Seals Intact: Date/Time: Relinquished by: Received by 11-2-21 730 Rélinquished by: Date/Time: Company Relinquished by: Date/Time: Received in Laboratory by Date/Time: Company: Company









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**Chain of Custody Record Environment Testing** Address: TestAmerica Regulatory Program: DW NPDES RCRA TAL-8210 COC No: Project Manager: Day & All todo Site Contact: **Client Contact** Company Name: Shannon & Wilson Lab Contact: of COCs Tel/Email: Carrier: **Analysis Turnaround Time** Sampler: Address: For Lab Use Only: City/State/Zip: CALENDAR DAYS WORKING DAYS -18 cod/yes Walk-in Client: Phone: TAT if different from Below Z Lab Sampling: Fax: 2 weeks Project Name: 1 week Site Job / SDG No. 2 days PO# 1 day Sample PFAS Type Sample Sample # of Date Time G=Grab) Matrix Cont. Sample Specific Notes: Sample Identification 955 16-31-21 6 1000 1005 LOIS 1605 H-11 1030 1335 GST-MW20 Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample Non-Hazard Flammable Skin Irritant Poison B Unknown Return to Client Disposal by Lab Archive for Special Instructions/QC Requirements & Comments: Therm ID No. Corr'd: Cooler Temp. (°C): Obs'd: **Custody Seals Intact:** Yes Custody Seal No.: 1504664 1504665 Date/Time: Relinquished by: Company: Received by Company: 11-2-21 730 Date/Time: Relinquished by: Company: Company: Relinquished by: Date/Time: Company: Date/Time: Company Received in Laboratory by:













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يا ا Client: Shannon & Wilson, Inc

Job Number: 320-81254-1

Login Number: 81254

List Number: 1

Creator: Cahill, Nicholas P

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	1504665/1504664
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	False	Cooler temperature outside required temperature criteria.
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
ls the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

# **Laboratory Data Review Checklist**

Completed By:
Justin Risley
Title:
Engineering Staff
Date:
December 3, 2021
Consultant Firm:
Shannon & Wilson, Inc.
Laboratory Name:
Eurofins / TestAmerica Laboratories, Inc. (TestAmerica)
Laboratory Report Number:
320-81254-1
Laboratory Report Date:
11/17/2021
CS Site Name:
DOT&PF Gustavus Airport Statewide PFAS
ADEC File Number:
2569.38.033
Hazard Identification Number:
26981

May 2020 Page 1

Laboratory Report Date:	
Note: Any N/A or No box checked must l. Laboratory	st have an explanation in the comments box.
1. <u>Laboratory</u>	
a. Did an ADEC CS approved laborate	ory receive and <u>perform</u> all the submitted sample analyses?
	omments:
perfluorooctanesulfonic acid (PFOS) a	est Sacramento, CA is CS certified for the analysis of nd perfluorooctanoic acid (PFOA) by method 537. The epartment of Defense Environmental Laboratory Accreditation d analyses.
*	nother "network" laboratory or sub-contracted to an alternate orming the analyses ADEC CS approved?
Yes□ No□ N/A⊠ Co	omments:
The samples were not transferred to a r	network laboratory or subcontracted out.
2. Chain of Custody (CoC)	
CoC information completed signs	d and dated (in aboding nalesced/necessived bas)?
	d, and dated (including released/received by)?
$Yes \boxtimes No \square N/A \square Co$	omments:
h Compat analyses requested?	
b. Correct analyses requested?	
Yes⊠ No□ N/A□ Co	omments:
3. <u>Laboratory Sample Receipt Documentation</u>	<u>on</u>
a. Sample/cooler temperature docume	ented and within range at receipt (0° to 6° C)?
Yes $\square$ No $\boxtimes$ N/A $\square$ Co	omments:
The cooler temperatures were recorded	at 6.7° and 8° C upon receipt at the laboratory.
b. Sample preservation acceptable – a Volatile Chlorinated Solvents, etc.)	cidified waters, Methanol preserved VOC soil (GRO, BTEX, ?
Yes□ No□ N/A⊠ Co	emments:
Samples analyzed for PFAS do not req	uire chemical preservation.
c. Sample condition documented – br	oken, leaking (Methanol), zero headspace (VOC vials)?
Yes⊠ No□ N/A□ Co	omments:
The sample receipt form noted the sam	ples arrived in good condition.

320-81254-1	

#### Laboratory Report Date:

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

Yes  $\boxtimes$  No  $\square$  N/A  $\square$  Comments:

No discrepancies were documented by the laboratory.

e. Data quality or usability affected?

#### Comments:

Temperature exceedances are typically assumed to confer a low analytical bias. However, due to the chemical stability of PFAS, the data is considered unaffected by the minor temperature exceedance. We also note that the samples were refrigerated prior to shipment. The samples were shipped on 11/2/2021 and received by the laboratory on 11/3/2021. This implies that the samples spent less than 24 hours outside of the required temperature range.

#### 4. Case Narrative

a. Present and understandable?

Yes  $\boxtimes$  No  $\square$  N/A  $\square$  Comments:

Method EPA 537(Mod): The "I" qualifier means the transition mass ratio for the indicated analytes were below the established ratio limits. The qualitative identification of the analytes has some degree of uncertainty. However, analyst judgment was used to positively identify the analytes.

Method EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the continuing calibration blank (CCB) 320-542058/1 was below the method recommended limit. Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the samples.

Method EPA 537(Mod): Results for samples 21GST-SS-022, 21GST-SS-021, 21GST-SS-020, 21GST-SS-008 and 21GST-SS-106 were reported from the analysis of a diluted extracts due to high concentrations of the target analyte in the analysis of the undiluted extracts. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits.

Method EPA 537(Mod): Results for samples 21GST-SS-009, 21GST-SB011-01, and 21GST-SB011-02 were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits.

May 2020 Page 3

Laboratory Report Date:
b. Discrepancies, errors, or QC failures identified by the lab?
Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:
Method EPA 537(Mod): Results for sample 21GST-SB011-12 was reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits.
Method EPA 537(Mod): The matrix spike duplicate (MSD) recovery for Perfluoro (2-propoxypropanoic) acid of preparation batch 320-541157 and analytical batch 320-542528 was outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.
Method SHAKE: The following samples exhibited a yellow hue after extraction/final volume: 21GST-SS-022, 21GST-SS-021, 21GST-SS-020, 21GST-SS-018, 21GST-SS-006, and 21GST-SS-106 preparation batch 320-540825
Method SHAKE: The following samples exhibited a yellow hue after extraction/final volume: 21GST-SB011-01, 21GST-SS-004, 21GST-SS-003, 21GST-SS-103, 21GST-SS-002, 21GST-SS-001, and 21GST-MW16-01 preparation batch 320-541730
c. Were all corrective actions documented?
Yes $\square$ No $\square$ N/A $\boxtimes$ Comments:
No corrective actions were documented in the case narrative.
d. What is the effect on data quality/usability according to the case narrative?
Comments:
The case narrative does not specify an effect on the data. See section 6 for further assessment.
5. <u>Samples Results</u>
a. Correct analyses performed/reported as requested on COC?
Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:
b. All applicable holding times met?
Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:
c. All soils reported on a dry weight basis?
Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:

Laboratory Report Date:	
d. Are the reported LOQs less than the Cleanup Level or the mining the project?	num required detection level for
$Yes \boxtimes No \square N/A \square$ Comments:	
e. Data quality or usability affected?	
The data quality/usability is not affected.	
6. QC Samples	
a. Method Blank	
i. One method blank reported per matrix, analysis and 20 san	nples?
Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:	
ii. All method blank results less than limit of quantitation (LC Yes⊠ No□ N/A□ Comments:	Q) or project specified objectives?
iii. If above LOQ or project specified objectives, what samples Comments:	s are affected?
None; target PFAS were not detected in the method blank samples.	
iv. Do the affected sample(s) have data flags? If so, are the data Yes□ No□ N/A⊠ Comments:	a flags clearly defined?
Qualification was not required; see above.	
v. Data quality or usability affected?  Comments:	
The data quality/usability is not affected.	
b. Laboratory Control Sample/Duplicate (LCS/LCSD)	
<ul> <li>i. Organics – One LCS/LCSD reported per matrix, analysis a required per AK methods, LCS required per SW846)</li> </ul>	nd 20 samples? (LCS/LCSD
Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:	
An LCS was reported for each preparation batch. See MS/MSD disprecision.	cussion for assessment of method

or	ratory Report Date:
	ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 2 samples?
	$Yes \square$ $No \boxtimes N/A \boxtimes$ Comments:
	Metals/Inorganics analyses were not requested for this work order.
	iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits ar project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)
	$Yes \boxtimes No \square N/A \square$ Comments:
	iv. Precision – All relative percent differences (RPD) reported and less than method or laborat limits and project specified objectives, if applicable? RPD reported from LCS/LCSD, and sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laborator QC pages)
	Yes $\square$ No $\square$ N/A $\boxtimes$ Comments:
	LCSDs were not reported with this work order. However, the laboratory analyzed MS/MSD sample to assess method precision.
	v. If %R or RPD is outside of acceptable limits, what samples are affected?  Comments:
	None; method accuracy was demonstrated to be within acceptable limits.
	vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
	$Yes \square No \square N/A \boxtimes Comments:$
	Qualification of the data was not required; see above.
	vii. Data quality or usability affected? (Use comment box to explain.)  Comments:
	The data quality/usability is not affected.
	c. Matrix Spike/Matrix Spike Duplicate (MS/MSD)
	Note: Leave blank if not required for project

ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samp Yes□ No□ N/A⊠ Comments:  Metals/Inorganics analyses were not requested for this work order.  iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory lin project specified objectives, if applicable?  Yes□ No☒ N/A□ Comments:  The percent recovery for HFPO-DA was below the laboratory's lower control limit in the MS associated with preparatory batch 541157.  iv. Precision – All relative percent differences (RPD) reported and less than method or limits and project specified objectives, if applicable? RPD reported from MS/MSD, a sample/sample duplicate.  Yes☒ No□ N/A□ Comments:  v. If %R or RPD is outside of acceptable limits, what samples are affected?  Comments:  Project sample GST21-MW15-04 is the parent sample from which the MSD was spiked. HFP was not detected in the parent sample; therefore, the parent sample result is considered estimate to the low MSD recovery.  vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?  Yes☒ No□ N/A□ Comments:  The non-detect HFPO-DA result of sample GST21-MW15-04 is considered estimated and has flagged 'UJ' in the analytical database.  vii. Data quality or usability affected? (Use comment box to explain.)  Comments:  The data quality is affected; see above for applied qualifiers.	
Yes□ No□ N/A⊠ Comments:  Metals/Inorganics analyses were not requested for this work order.  iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory ling project specified objectives, if applicable?  Yes□ No☒ N/A□ Comments:  The percent recovery for HFPO-DA was below the laboratory's lower control limit in the MS associated with preparatory batch 541157.  iv. Precision – All relative percent differences (RPD) reported and less than method or limits and project specified objectives, if applicable? RPD reported from MS/MSD, a sample/sample duplicate.  Yes□ No□ N/A□ Comments:  v. If %R or RPD is outside of acceptable limits, what samples are affected?  Comments:  Project sample GST21-MW15-04 is the parent sample from which the MSD was spiked. HFP was not detected in the parent sample; therefore, the parent sample result is considered estimate to the low MSD recovery.  vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?  Yes□ No□ N/A□ Comments:  The non-detect HFPO-DA result of sample GST21-MW15-04 is considered estimated and has flagged 'UJ' in the analytical database.  vii. Data quality or usability affected? (Use comment box to explain.)  Comments:  The data quality is affected; see above for applied qualifiers.	
Metals/Inorganics analyses were not requested for this work order.  iii. Accuracy − All percent recoveries (%R) reported and within method or laboratory ling project specified objectives, if applicable?  Yes□ No☑ N/A□ Comments:  The percent recovery for HFPO-DA was below the laboratory's lower control limit in the MS associated with preparatory batch 541157.  iv. Precision − All relative percent differences (RPD) reported and less than method or limits and project specified objectives, if applicable? RPD reported from MS/MSD, a sample/sample duplicate.  Yes☒ No□ N/A□ Comments:  v. If %R or RPD is outside of acceptable limits, what samples are affected?  Comments:  Project sample GST21-MW15-04 is the parent sample from which the MSD was spiked. HFP was not detected in the parent sample; therefore, the parent sample result is considered estimated to the low MSD recovery.  vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?  Yes☒ No□ N/A□ Comments:  The non-detect HFPO-DA result of sample GST21-MW15-04 is considered estimated and has flagged 'UJ' in the analytical database.  vii. Data quality or usability affected? (Use comment box to explain.)  Comments:  The data quality is affected; see above for applied qualifiers.	oles?
iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory lir project specified objectives, if applicable?  Yes□ No□ N/A□ Comments:  The percent recovery for HFPO-DA was below the laboratory's lower control limit in the MS associated with preparatory batch 541157.  iv. Precision – All relative percent differences (RPD) reported and less than method or limits and project specified objectives, if applicable? RPD reported from MS/MSD, a sample/sample duplicate.  Yes□ No□ N/A□ Comments:  v. If %R or RPD is outside of acceptable limits, what samples are affected?  Comments:  Project sample GST21-MW15-04 is the parent sample from which the MSD was spiked. HFP was not detected in the parent sample; therefore, the parent sample result is considered estimate to the low MSD recovery.  vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?  Yes□ No□ N/A□ Comments:  The non-detect HFPO-DA result of sample GST21-MW15-04 is considered estimated and has flagged 'UJ' in the analytical database.  vii. Data quality or usability affected? (Use comment box to explain.)  Comments:  The data quality is affected; see above for applied qualifiers.	
project specified objectives, if applicable?  Yes□ No☒ N/A□ Comments:  The percent recovery for HFPO-DA was below the laboratory's lower control limit in the MS associated with preparatory batch 541157.  iv. Precision – All relative percent differences (RPD) reported and less than method or limits and project specified objectives, if applicable? RPD reported from MS/MSD, a sample/sample duplicate.  Yes☒ No□ N/A□ Comments:  v. If %R or RPD is outside of acceptable limits, what samples are affected?  Comments:  Project sample GST21-MW15-04 is the parent sample from which the MSD was spiked. HFP was not detected in the parent sample; therefore, the parent sample result is considered estimated to the low MSD recovery.  vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?  Yes☒ No□ N/A□ Comments:  The non-detect HFPO-DA result of sample GST21-MW15-04 is considered estimated and has flagged 'UJ' in the analytical database.  vii. Data quality or usability affected? (Use comment box to explain.)  Comments:  The data quality is affected; see above for applied qualifiers.	
The percent recovery for HFPO-DA was below the laboratory's lower control limit in the MS associated with preparatory batch 541157.  iv. Precision − All relative percent differences (RPD) reported and less than method or leading to the limits and project specified objectives, if applicable? RPD reported from MS/MSD, a sample/sample duplicate.  Yes No□ N/A□ Comments:  v. If %R or RPD is outside of acceptable limits, what samples are affected?  Comments:  Project sample GST21-MW15-04 is the parent sample from which the MSD was spiked. HFP was not detected in the parent sample; therefore, the parent sample result is considered estimated to the low MSD recovery.  vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?  Yes No□ N/A□ Comments:  The non-detect HFPO-DA result of sample GST21-MW15-04 is considered estimated and has flagged 'UJ' in the analytical database.  vii. Data quality or usability affected? (Use comment box to explain.)  Comments:  The data quality is affected; see above for applied qualifiers.	nits ar
iv. Precision – All relative percent differences (RPD) reported and less than method or la limits and project specified objectives, if applicable? RPD reported from MS/MSD, a sample/sample duplicate.  Yes⊠ No□ N/A□ Comments:  v. If %R or RPD is outside of acceptable limits, what samples are affected?  Comments:  Project sample GST21-MW15-04 is the parent sample from which the MSD was spiked. HFP was not detected in the parent sample; therefore, the parent sample result is considered estimate to the low MSD recovery.  vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?  Yes⊠ No□ N/A□ Comments:  The non-detect HFPO-DA result of sample GST21-MW15-04 is considered estimated and has flagged 'UJ' in the analytical database.  vii. Data quality or usability affected? (Use comment box to explain.)  Comments:  The data quality is affected; see above for applied qualifiers.	
limits and project specified objectives, if applicable? RPD reported from MS/MSD, a sample/sample duplicate.  Yes⊠ No□ N/A□ Comments:  v. If %R or RPD is outside of acceptable limits, what samples are affected?  Comments:  Project sample GST21-MW15-04 is the parent sample from which the MSD was spiked. HFP was not detected in the parent sample; therefore, the parent sample result is considered estimate to the low MSD recovery.  vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?  Yes⊠ No□ N/A□ Comments:  The non-detect HFPO-DA result of sample GST21-MW15-04 is considered estimated and has flagged 'UJ' in the analytical database.  vii. Data quality or usability affected? (Use comment box to explain.)  Comments:  The data quality is affected; see above for applied qualifiers.	SD
v. If %R or RPD is outside of acceptable limits, what samples are affected?  Comments:  Project sample GST21-MW15-04 is the parent sample from which the MSD was spiked. HFP was not detected in the parent sample; therefore, the parent sample result is considered estimate to the low MSD recovery.  vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?  Yes ⋈ No ⋈ N/A ⋈ Comments:  The non-detect HFPO-DA result of sample GST21-MW15-04 is considered estimated and has flagged 'UJ' in the analytical database.  vii. Data quality or usability affected? (Use comment box to explain.)  Comments:  The data quality is affected; see above for applied qualifiers.	
Comments:  Project sample <i>GST21-MW15-04</i> is the parent sample from which the MSD was spiked. HFP was not detected in the parent sample; therefore, the parent sample result is considered estimate to the low MSD recovery.  vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?  Yes No N/A Comments:  The non-detect HFPO-DA result of sample <i>GST21-MW15-04</i> is considered estimated and has flagged 'UJ' in the analytical database.  vii. Data quality or usability affected? (Use comment box to explain.)  Comments:  The data quality is affected; see above for applied qualifiers.	
Comments:  Project sample <i>GST21-MW15-04</i> is the parent sample from which the MSD was spiked. HFP was not detected in the parent sample; therefore, the parent sample result is considered estimate to the low MSD recovery.  vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?  Yes No N/A Comments:  The non-detect HFPO-DA result of sample <i>GST21-MW15-04</i> is considered estimated and has flagged 'UJ' in the analytical database.  vii. Data quality or usability affected? (Use comment box to explain.)  Comments:  The data quality is affected; see above for applied qualifiers.	
was not detected in the parent sample; therefore, the parent sample result is considered estimated to the low MSD recovery.  vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?  Yes No N/A Comments:  The non-detect HFPO-DA result of sample GST21-MW15-04 is considered estimated and has flagged 'UJ' in the analytical database.  vii. Data quality or usability affected? (Use comment box to explain.)  Comments:  The data quality is affected; see above for applied qualifiers.	
Yes No N/A Comments:  The non-detect HFPO-DA result of sample <i>GST21-MW15-04</i> is considered estimated and has flagged 'UJ' in the analytical database.  vii. Data quality or usability affected? (Use comment box to explain.)  Comments:  The data quality is affected; see above for applied qualifiers.	
The non-detect HFPO-DA result of sample <i>GST21-MW15-04</i> is considered estimated and has flagged 'UJ' in the analytical database.  vii. Data quality or usability affected? (Use comment box to explain.)  Comments:  The data quality is affected; see above for applied qualifiers.	
flagged 'UJ' in the analytical database.  vii. Data quality or usability affected? (Use comment box to explain.)  Comments:  The data quality is affected; see above for applied qualifiers.	
Comments:  The data quality is affected; see above for applied qualifiers.	s been
d. Surrogates - Organics Only or Isotope Dilution Analytes (IDA) - Isotope Dilution Metho	ds Or
<ul> <li>i. Are surrogate/IDA recoveries reported for organic analyses – field, QC and laborator samples?</li> </ul>	y
Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:	
ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory lir project specified objectives, if applicable? (AK Petroleum methods 50-150 %R for fi samples and 60-120 %R for QC samples; all other analyses see the laboratory report	ield
Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:	Pusci

ratory Report Date:
iii. Do the sample results with failed surrogate/IDA recoveries have data flags? If so, are the data flags clearly defined?
$Yes \square No \square N/A \boxtimes Comments:$
There were no IDA recovery failures associated with this work order.
iv. Data quality or usability affected?  Comments:
The data quality/usability is not affected.
e. Trip Blanks
<ul> <li>i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples?</li> <li>(If not, enter explanation below.)</li> </ul>
$Yes \square No \square N/A \boxtimes Comments:$
PFAS are not volatile compounds. A trip blank is not required for the requested analysis.
ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)
$Yes \square No \square N/A \boxtimes Comments:$
A trip blank is not required for the requested analysis.
iii. All results less than LOQ and project specified objectives?
Yes $\square$ No $\square$ N/A $\boxtimes$ Comments:
See above.
iv. If above LOQ or project specified objectives, what samples are affected?  Comments:
N/A; see above
v. Data quality or usability affected?  Comments:
The data quality/usability is not affected.
f. Field Duplicate
i. One field duplicate submitted per matrix, analysis and 10 project samples?
Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:

#### Laboratory Report Date:

ii. Submitted blind to lab?

Yes  $\boxtimes$  No  $\square$  N/A  $\square$  Comments:

The field duplicate pairs 21GST-SS-026 / 21GST-SS-126, 21GST-SS-006 / 21GST-SS-106, 21GST-MW14-01 / 21GST-MW14-10, 21GST-MW18-02 / 21GST-MW18-12, 21GST-MW15-04 / 21GST-MW15-14, 21GST-SB009-01 / 21GST-SB009-10, 21GST-SB010-01 / 21GST-SB010-10, 21GST-SB007-01 / 21GST-SB007-10, 21GST-SS-031 / 21GST-SS-131, 21GST-SB006-01 / 21GST-SB006-10, 21GST-SB011-02 / 21GST-SB011-12, 21GST-SS-003 / 21GST-SS-103, and 21GST-MW20-01 / 21GST-MW20-10 were submitted with this work order.

iii. Precision – All relative percent differences (RPD) less than specified project objectives? (Recommended: 30% water, 50% soil)

RPD (%) = Absolute value of: 
$$\frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$$

Where  $R_1$  = Sample Concentration  $R_2$  = Field Duplicate Concentration

Yes  $\square$  No  $\boxtimes$  N/A  $\square$  Comments:

#### 21GST-SS-026 / 21GST-SS-126

• RPDs for PFTriA and PFOS were above QC limits. These results were affected by a transition mass ratio failure; see 7.a.

21GST-SS-006 / 21GST-SS-106

• RPD for PFHxA, PFHpA, PFOA, PFTriA, PFTeA, PFBS, PFHxS, NMeFOSAA, and PFOS were above QC limits. These results are considered estimated with no direction of bias and have been flagged 'J' in the analytical table.

21GST-MW15-04 / 21GST-MW15-14

• RPD for PFOS was above QC limits. These results are considered estimated with no direction of bias and have been flagged 'J' in the analytical table.

21GST-SB006-01 / 21GST-SB006-10

• RPD for PFOS was above QC limits. These results are considered estimated with no direction of bias and have been flagged 'J' in the analytical table.

21GST-SB007-01 / 21GST-SB007-10

• RPD for PFHpA and PFOS were above QC limits. PFHpA results are considered estimated with no direction of bias and have been flagged 'J' in the analytical table. The PFOS results were affected by a transition mass ratio failure; see 7.a.

21GST-SB009-01 / 21GST-SB009-10

• RPD for PFOS was above QC limits. These results are considered estimated with no direction of bias and have been flagged 'J' in the analytical table.

21GST-SB011-02 / 21GST-SB011-12

- RPD for PFOS was above QC limits. These results are considered estimated with no direction of bias and have been flagged 'J' in the analytical table.
- iv. Data quality or usability affected? (Use the comment box to explain why or why not.) Comments:

The data quality was not affected; see above for applied qualifiers.

May 2020 Page 9

Laboratory Report Date:
g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below)?
Yes $\square$ No $\square$ N/A $\boxtimes$ Comments:
Project samples were not collected with reusable equipment, so the prospect of foreign contaminants being introduced through equipment contamination is not plausible.
i. All results less than LOQ and project specified objectives?
Yes $\square$ No $\square$ N/A $\boxtimes$ Comments:
See above.
ii. If above LOQ or project specified objectives, what samples are affected?  Comments:
N/A; see above.
iii. Data quality or usability affected?  Comments:
The data quality/usability is not affected.
7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)
a. Defined and appropriate?
Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:
The laboratory assigned the 'I' qualifier to results were affected by the transition mass ratio failures but states that the data are not typically affected. We consider these results estimated, with no direction of bias, and have applied the 'J' qualifier in the analytical tables.



# **Environment Testing America**

# **ANALYTICAL REPORT**

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

Laboratory Job ID: 320-81258-1 Client Project/Site: SC Waters#3

For:

Shannon & Wilson, Inc 2355 Hill Rd. Fairbanks, Alaska 99709-5244

Attn: Kristen Freiburger

Jamil Oltima

Authorized for release by: 11/16/2021 1:15:03 PM

David Alltucker, Project Manager I (916)374-4383

David.Alltucker@Eurofinset.com

·····LINKS ······

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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Client: Shannon & Wilson, Inc Project/Site: SC Waters#3 Laboratory Job ID: 320-81258-1

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# **Definitions/Glossary**

Client: Shannon & Wilson, Inc Job ID: 320-81258-1

Project/Site: SC Waters#3

#### **Qualifiers**

LCMS	
O	

Qualifier	Qualifier Description
-	VII : EMBO / #: /

Value is EMPC (estimated maximum possible concentration).

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

#### **Glossary**

Abbreviation	These commonly used abbreviations may or may not be present in this report.
--------------	---

Example 2 Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery
CFL Contains Free Liquid
CFU Colony Forming Unit
CNF Contains No Free Liquid

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL Detection Limit (DoD/DOE)

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision Level Concentration (Radiochemistry)

EDL Estimated Detection Limit (Dioxin)

LOD Limit of Detection (DoD/DOE)

LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level"

MDA Minimum Detectable Activity (Radiochemistry)

MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit
ML Minimum Level (Dioxin)
MPN Most Probable Number
MQL Method Quantitation Limit

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent POS Positive / Present

PQL Practical Quantitation Limit

PRES Presumptive
QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

TNTC Too Numerous To Count

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#### **Case Narrative**

Client: Shannon & Wilson, Inc Job ID: 320-81258-1
Project/Site: SC Waters#3

Job ID: 320-81258-1

Laboratory: Eurofins TestAmerica, Sacramento

**Narrative** 

Job Narrative 320-81258-1

#### Receipt

The samples were received on 11/3/2021 2:01 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 4.1° C and 4.7° C.

#### **LCMS**

Method EPA 537(Mod): The "I" qualifier means the transition mass ratio for the indicated analyte was above the established ratio limits. The qualitative identification of the analyte has some degree of uncertainty, and the reported value may have some high bias. However, analyst judgment was used to positively identify the analyte.

Method EPA 537(Mod): Results for sample 21GST-TWP-4 (320-81258-11) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits.

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

#### **Organic Prep**

Method 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-540159.

Method 3535: The following samples are yellow and contain a thin layer of sediment at the bottom of the bottle prior to extraction: 21GST-TWP-1 (320-81258-3), MW-13-20 (320-81258-6), MW-13-45 (320-81258-7), MW-113-45 (320-81258-8), 21GST-TWP-8 (320-81258-9), 21GST-TWP-5 (320-81258-10), 21GST-TWP-4 (320-81258-11), 21GST-TWP-3 (320-81258-12), 21GST-TWP-103 (320-81258-13), MW-25-15 (320-81258-14), MW-24-30 (320-81258-15), MW-22-15 (320-81258-19) and MW-22-40 (320-81258-20).

Method 3535: The following samples are yellow and contain floating particulate at the bottom of the bottle prior to extraction: 21GST-TWP-15 (320-81258-1) and 21GST-TWP-115 (320-81258-2).

Method 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-540161.

Method 3535: The following samples are yellow and contain a thin layer of sediment at the bottom of the bottle prior to extraction: 21GST-TWP-11 (320-81258-22), 21GST-TWP-111 (320-81258-23), 21GST-TWP-9 (320-81258-24), 21GST-SW-031 (320-81258-27), 21GST-SW-131 (320-81258-28) and MW-21-45 (320-81258-30).

Method 3535: The following samples are yellow after final voluming: MW-13-20 (320-81258-6), MW-13-45 (320-81258-7), MW-113-45 (320-81258-8) and 21GST-TWP-4 (320-81258-11).

Method 3535: The following sample is yellow after final voluming: MW-21-45 (320-81258-30).

Method 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-541439.

Method 3535: The following samples are yellow and contain a thin layer of sediment at the bottom of the bottle prior to extraction: MW-121-45 (320-81258-31) and MW-14-31 (320-81258-32).

Method 3535: The following samples are yellow after final voluming: MW-121-45 (320-81258-31) and MW-14-31 (320-81258-32).

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

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Client: Shannon & Wilson, Inc Job ID: 320-81258-1

Project/Site: SC Waters#3

# Client Sample ID: 21GST-TWP-15

# Lab Sample ID: 320-81258-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	6.3		1.7	0.49	ng/L	1	_	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	3.0		1.7	0.21	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	1.4	J	1.7	0.72	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.53	J	1.7	0.17	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	11		1.7	0.48	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	80		1.7	0.46	ng/L	1		EPA 537(Mod)	Total/NA

#### Client Sample ID: 21GST-TWP-115

# Lab Sample ID: 320-81258-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	6.8		1.8	0.54	ng/L	1	_	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	3.1		1.8	0.23	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	1.3	J	1.8	0.79	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.30	J	1.8	0.25	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.51	J	1.8	0.18	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	11		1.8	0.53	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	84		1.8	0.50	ng/L	1		EPA 537(Mod)	Total/NA

#### Client Sample ID: 21GST-TWP-1

# Lab Sample ID: 320-81258-3

No Detections.

# Client Sample ID: 21GST-TWP-2

# Lab Sample ID: 320-81258-4

Analyte	Result Qualifier	RL	MDL	Unit	Dil Fac [	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	7.7	1.7	0.50	ng/L		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.8	1.7	0.21	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	1.4 J	1.7	0.73	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.7	1.7	0.17	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	12	1.7	0.49	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	44	1.7	0.46	ng/L	1	EPA 537(Mod)	Total/NA

# Client Sample ID: 21GST-TWP-10

# Lab Sample ID: 320-81258-5

Analyte	Result Qual	lifier RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	12	1.8	0.51	ng/L	1	_	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	4.3	1.8	0.22	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	3.0	1.8	0.75	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.6	1.8	0.18	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	54	1.8	0.50	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	63	1.8	0.48	ng/L	1		EPA 537(Mod)	Total/NA

#### Client Sample ID: MW-13-20

# Lab Sample ID: 320-81258-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D Metho	d	Prep Type
Perfluorohexanoic acid (PFHxA)	4.2		1.7	0.50	ng/L	1	EPA 5	37(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.4	J	1.7	0.21	ng/L	1	EPA 5	37(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	1.4	J	1.7	0.73	ng/L	1	EPA 5	37(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.70	J	1.7	0.17	ng/L	1	EPA 5	37(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	7.6		1.7	0.49	ng/L	1	EPA 5	37(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	6.2		1.7	0.46	ng/L	1	EPA 5	37(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

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Client: Shannon & Wilson, Inc

Project/Site: SC Waters#3

Job ID: 320-81258-1

Client Sample ID: MW-13-45 Lab Sample ID: 320-81258-7

No Detections.

Client Sample ID: MW-113-45 Lab Sample ID: 320-81258-8

No Detections.

Client Sample ID: 21GST-TWP-8 Lab Sample ID: 320-81258-9

Analyte	Result Qualifier	RL	MDL	Unit	Dil Fac I	) Method	Prep Type
Perfluorohexanoic acid (PFHxA)	8.6	1.8	0.51	ng/L		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	8.4	1.8	0.22	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	2.9	1.8	0.75	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	6.9	1.8	0.50	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	150	1.8	0.47	ng/L	1	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-TWP-5

Analyte	Result Qualifier	RL	MDL	Unit	Dil Fac I	D Method	Prep Type
Perfluorohexanoic acid (PFHxA)	26	1.7	0.49	ng/L		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	16	1.7	0.21	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	11	1.7	0.72	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	2.4	1.7	0.23	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	2.9	1.7	0.26	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.6 J	1.7	0.17	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	53	1.7	0.48	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	170	1.7	0.46	ng/L	1	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-TWP-4

Analyte	Result Qualifier	RL	MDL	Unit	Dil Fac I	) Method	Prep Type
Perfluorohexanoic acid (PFHxA)	45	1.7	0.51	ng/L		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	17	1.7	0.22	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	17	1.7	0.74	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	1.5 J	1.7	0.24	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	10	1.7	0.17	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	100	1.7	0.50	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	340	8.7	2.4	ng/L	5	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-TWP-3

Client Sample ID: 21GST-TWP-103 Lab Sample ID: 320-81258-13

No Detections.

No Detections.

Client Sample ID: MW-25-15 Lab Sample ID: 320-81258-14

Analyte	Result Qualifier	RL	MDL Unit	Dil Fac D Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.56 J	1.8	0.50 ng/L	1 EPA 537(Mod)	Total/NA

Client Sample ID: MW-24-30 Lab Sample ID: 320-81258-15

No Detections.

This Detection Summary does not include radiochemical test results.

11/16/2021

Lab Sample ID: 320-81258-10

Lab Sample ID: 320-81258-11

Lab Sample ID: 320-81258-12

Client: Shannon & Wilson, Inc Job ID: 320-81258-1

Project/Site: SC Waters#3

Client Sample ID: MW-24-10 Lab Sample ID: 320-81258-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.54	J	1.7	0.48	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.4	J	1.7	0.45	ng/L	1		EPA 537(Mod)	Total/NA

Client Sample ID: MW-25-47 Lab Sample ID: 320-81258-17

No Detections.

Client Sample ID: MW-125-47 Lab Sample ID: 320-81258-18

No Detections.

Client Sample ID: MW-22-15 Lab Sample ID: 320-81258-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	3.0		1.8	0.53	ng/L	1	_	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.1	J	1.8	0.23	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	1.0	J	1.8	0.78	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.39	JI	1.8	0.18	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	4.5		1.8	0.52	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	22		1.8	0.50	ng/L	1		EPA 537(Mod)	Total/NA

Client Sample ID: MW-22-40 Lab Sample ID: 320-81258-20

Analyte	Result Qualifi	er RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	6.8	1.8	0.52	ng/L	1	_	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.2 J	1.8	0.22	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	3.2	1.8	0.76	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	4.0	1.8	0.18	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	27	1.8	0.51	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	7.2	1.8	0.48	ng/L	1		EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-TWP-12

Analyte Result Qualifier RL MDL Unit Dil Fac D Method Prep Type
Perfluorohexanesulfonic acid (PFHxS) 0.57 J 1.7 0.49 ng/L 1 EPA 537(Mod) Total/NA

Client Sample ID: 21GST-TWP-11 Lab Sample ID: 320-81258-22

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	1.1	J	1.7	0.50	ng/L	1	_	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.1	J	1.7	0.22	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	1.3	J	1.7	0.74	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.26	J	1.7	0.17	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	6.4		1.7	0.49	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	29		1.7	0.47	ng/L	1		EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-TWP-111 Lab Sample ID: 320-81258-23

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	1.4	J	1.8	0.52	ng/L	1	_	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.1	J	1.8	0.23	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	1.0	J	1.8	0.77	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.29	J	1.8	0.24	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.21	J	1.8	0.18	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	5.9		1.8	0.51	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

Lab Sample ID: 320-81258-21

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Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

Client Sample ID: 21GST-TWP-111 (0	Continued)
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#### Lab Sample ID: 320-81258-23

Analyte	Result Qualifier	RL	MDL Unit	Dil Fac D Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	28	1.8	0.49 ng/L	1 EPA 537(Mod)	Total/NA

#### Client Sample ID: 21GST-TWP-9

### Lab Sample ID: 320-81258-24

Analyte	Result Qu	ualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	9.9		1.7	0.50	ng/L	1	_	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.2		1.7	0.22	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	2.7		1.7	0.74	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.98 J		1.7	0.17	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	22		1.7	0.49	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	74		1.7	0.47	ng/L	1		EPA 537(Mod)	Total/NA

### Client Sample ID: 21GST-TWP-7

#### **Lab Sample ID: 320-81258-25**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	1.1	J	1.7	0.50	ng/L	1	_	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.2	J	1.7	0.22	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	2.7		1.7	0.74	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.52	J	1.7	0.23	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.0	J	1.7	0.49	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	19		1.7	0.47	ng/L	1		EPA 537(Mod)	Total/NA

#### Client Sample ID: 21GST-TWP-6

#### Lab Sample ID: 320-81258-26

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	1.0	J	1.7	0.50	ng/L	1	_	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.61	J	1.7	0.21	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.50	J	1.7	0.17	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	8.4		1.7	0.49	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	8.0		1.7	0.46	ng/L	1		EPA 537(Mod)	Total/NA

### Client Sample ID: 21GST-SW-031

#### Lab Sample ID: 320-81258-27

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluoroheptanoic acid (PFHpA)	0.25	J	1.9	0.23	ng/L	1	_	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.63	J	1.9	0.54	ng/L	1		EPA 537(Mod)	Total/NA

#### Client Sample ID: 21GST-SW-131

#### Lab Sample ID: 320-81258-28

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.64	J	1.9	0.53	ng/L	1		EPA 537(Mod)	Total/NA

### Client Sample ID: MW-21-15

#### Lab Sample ID: 320-81258-29

Analyte	Result Qualifier	RL	MDL	Unit	Dil Fac	) Method	Prep Type
Perfluorohexanoic acid (PFHxA)	3.9	1.8	0.51	ng/L		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.9	1.8	0.22	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	1.2 J	1.8	0.75	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.72 J	1.8	0.18	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	6.1	1.8	0.50	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	49	1.8	0.48	ng/L	1	EPA 537(Mod)	Total/NA

#### Client Sample ID: MW-21-45

#### Lab Sample ID: 320-81258-30

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

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## **Detection Summary**

Client: Shannon & Wilson, Inc Job ID: 320-81258-1

Project/Site: SC Waters#3

Client Sample ID: MW-121-45

Lab Sample ID: 320-81258-31

No Detections.

Client Sample ID: MW-14-31

Lab Sample ID: 320-81258-32

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	8.6		1.7	0.50	ng/L	1	_	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.3		1.7	0.22	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	1.3	J	1.7	0.74	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.25	J	1.7	0.23	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.74	J	1.7	0.17	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	6.2		1.7	0.49	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	38		1.7	0.47	ng/L	1		EPA 537(Mod)	Total/NA

**Client Sample ID: MW-14-15** 

Lab Sample ID	: 320-81258-33
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Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	1.0	J	1.8	0.52	ng/L	1	_	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.1	J	1.8	0.22	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.24	J	1.8	0.18	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.8		1.8	0.51	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	5.3		1.8	0.48	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

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Client: Shannon & Wilson, Inc Job ID: 320-81258-1 Project/Site: SC Waters#3

Client Sample ID: 21GST-TWP-15

Date Received: 11/03/21 14:01

d5-NEtFOSAA

13C3 HFPO-DA

Lab Sample ID: 320-81258-1 Date Collected: 10/27/21 10:10

**Matrix: Water** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	6.3		1.7	0.49	ng/L		11/04/21 19:30	11/11/21 02:39	1
Perfluoroheptanoic acid (PFHpA)	3.0		1.7	0.21	ng/L		11/04/21 19:30	11/11/21 02:39	1
Perfluorooctanoic acid (PFOA)	1.4	J	1.7	0.72	ng/L		11/04/21 19:30	11/11/21 02:39	1
Perfluorononanoic acid (PFNA)	ND		1.7	0.23	ng/L		11/04/21 19:30	11/11/21 02:39	1
Perfluorodecanoic acid (PFDA)	ND		1.7	0.26	ng/L		11/04/21 19:30	11/11/21 02:39	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.93	ng/L		11/04/21 19:30	11/11/21 02:39	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.47	ng/L		11/04/21 19:30	11/11/21 02:39	1
Perfluorotridecanoic acid (PFTriA)	ND		1.7	1.1	ng/L		11/04/21 19:30	11/11/21 02:39	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.62	ng/L		11/04/21 19:30	11/11/21 02:39	1
Perfluorobutanesulfonic acid (PFBS)	0.53	J	1.7	0.17	ng/L		11/04/21 19:30	11/11/21 02:39	1
Perfluorohexanesulfonic acid (PFHxS)	11		1.7	0.48	ng/L		11/04/21 19:30	11/11/21 02:39	1
Perfluorooctanesulfonic acid (PFOS)	80		1.7	0.46	ng/L		11/04/21 19:30	11/11/21 02:39	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.2	1.0	ng/L		11/04/21 19:30	11/11/21 02:39	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.2	1.1	ng/L		11/04/21 19:30	11/11/21 02:39	1
9-Chlorohexadecafluoro-3-oxanonan	ND		1.7	0.20	ng/L		11/04/21 19:30	11/11/21 02:39	1
e-1-sulfonic acid Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.4	1.3	ng/L		11/04/21 19:30	11/11/21 02:39	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.7	0.27	ng/L		11/04/21 19:30	11/11/21 02:39	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.7	0.34	ng/L		11/04/21 19:30	11/11/21 02:39	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	101		50 - 150				11/04/21 19:30	11/11/21 02:39	1
13C4 PFHpA	99		50 - 150				11/04/21 19:30	11/11/21 02:39	1
13C4 PFOA	102		50 - 150				11/04/21 19:30	11/11/21 02:39	1
13C5 PFNA	111		50 - 150				11/04/21 19:30	11/11/21 02:39	1
13C2 PFDA	107		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 02:39	1
13C2 PFUnA	107		50 - 150				11/04/21 19:30	11/11/21 02:39	1
13C2 PFDoA	100		50 - 150				11/04/21 19:30	11/11/21 02:39	1
13C2 PFTeDA	89		50 - 150				11/04/21 19:30	11/11/21 02:39	1
13C3 PFBS	109		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 02:39	1
1802 PFHxS	100		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 02:39	1
13C4 PFOS	103		50 - 150				11/04/21 19:30	11/11/21 02:39	1

11/04/21 19:30 11/11/21 02:39

11/04/21 19:30 11/11/21 02:39

50 - 150

50 - 150

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Client: Shannon & Wilson, Inc Job ID: 320-81258-1 Project/Site: SC Waters#3

Client Sample ID: 21GST-TWP-115

Lab Sample ID: 320-81258-2 Date Collected: 10/27/21 10:00 Date Received: 11/03/21 14:01

**Matrix: Water** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	6.8		1.8	0.54	ng/L		11/04/21 19:30	11/11/21 02:49	1
Perfluoroheptanoic acid (PFHpA)	3.1		1.8	0.23	ng/L		11/04/21 19:30	11/11/21 02:49	1
Perfluorooctanoic acid (PFOA)	1.3	J	1.8	0.79	ng/L		11/04/21 19:30	11/11/21 02:49	1
Perfluorononanoic acid (PFNA)	0.30	J	1.8	0.25	ng/L		11/04/21 19:30	11/11/21 02:49	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.29	ng/L		11/04/21 19:30	11/11/21 02:49	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	1.0	ng/L		11/04/21 19:30	11/11/21 02:49	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.51	ng/L		11/04/21 19:30	11/11/21 02:49	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		11/04/21 19:30	11/11/21 02:49	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.67	ng/L		11/04/21 19:30	11/11/21 02:49	1
Perfluorobutanesulfonic acid (PFBS)	0.51	J	1.8	0.18	ng/L		11/04/21 19:30	11/11/21 02:49	1
Perfluorohexanesulfonic acid (PFHxS)	11		1.8	0.53	ng/L		11/04/21 19:30	11/11/21 02:49	1
Perfluorooctanesulfonic acid (PFOS)	84		1.8	0.50	ng/L		11/04/21 19:30	11/11/21 02:49	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.6	1.1	ng/L		11/04/21 19:30	11/11/21 02:49	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.6	1.2	ng/L		11/04/21 19:30	11/11/21 02:49	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.8	0.22	ng/L		11/04/21 19:30	11/11/21 02:49	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.7	1.4	ng/L		11/04/21 19:30	11/11/21 02:49	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.8	0.30	ng/L		11/04/21 19:30	11/11/21 02:49	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.8	0.37	ng/L		11/04/21 19:30	11/11/21 02:49	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	102		50 - 150				11/04/21 19:30	11/11/21 02:49	

(ADONA)					
Isotope Dilution	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	102	50 - 150	11/04/21 19:30	11/11/21 02:49	1
13C4 PFHpA	96	50 - 150	11/04/21 19:30	11/11/21 02:49	1
13C4 PFOA	101	50 - 150	11/04/21 19:30	11/11/21 02:49	1
13C5 PFNA	104	50 - 150	11/04/21 19:30	11/11/21 02:49	1
13C2 PFDA	102	50 - 150	11/04/21 19:30	11/11/21 02:49	1
13C2 PFUnA	100	50 - 150	11/04/21 19:30	11/11/21 02:49	1
13C2 PFDoA	90	50 - 150	11/04/21 19:30	11/11/21 02:49	1
13C2 PFTeDA	82	50 - 150	11/04/21 19:30	11/11/21 02:49	1
13C3 PFBS	107	50 - 150	11/04/21 19:30	11/11/21 02:49	1
1802 PFHxS	99	50 - 150	11/04/21 19:30	11/11/21 02:49	1
13C4 PFOS	101	50 - 150	11/04/21 19:30	11/11/21 02:49	1
d3-NMeFOSAA	104	50 - 150	11/04/21 19:30	11/11/21 02:49	1
d5-NEtFOSAA	114	50 - 150	11/04/21 19:30	11/11/21 02:49	1
13C3 HFPO-DA	89	50 <sub>-</sub> 150	11/04/21 19:30	11/11/21 02:49	1

Client: Shannon & Wilson, Inc Job ID: 320-81258-1 Project/Site: SC Waters#3

Client Sample ID: 21GST-TWP-1

Lab Sample ID: 320-81258-3 Date Collected: 10/27/21 11:47

**Matrix: Water** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.8	0.53	ng/L		11/04/21 19:30	11/11/21 03:00	1
Perfluoroheptanoic acid (PFHpA)	ND		1.8	0.23	ng/L		11/04/21 19:30	11/11/21 03:00	1
Perfluorooctanoic acid (PFOA)	ND		1.8	0.77	ng/L		11/04/21 19:30	11/11/21 03:00	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.25	ng/L		11/04/21 19:30	11/11/21 03:00	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.28	ng/L		11/04/21 19:30	11/11/21 03:00	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	1.0	ng/L		11/04/21 19:30	11/11/21 03:00	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.50	ng/L		11/04/21 19:30	11/11/21 03:00	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		11/04/21 19:30	11/11/21 03:00	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.67	ng/L		11/04/21 19:30	11/11/21 03:00	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.8	0.18	ng/L		11/04/21 19:30	11/11/21 03:00	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.8	0.52	ng/L		11/04/21 19:30	11/11/21 03:00	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.8	0.49	ng/L		11/04/21 19:30	11/11/21 03:00	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.6	1.1	ng/L		11/04/21 19:30	11/11/21 03:00	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.6	1.2	ng/L		11/04/21 19:30	11/11/21 03:00	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.8	0.22	ng/L		11/04/21 19:30	11/11/21 03:00	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.6	1.4	ng/L		11/04/21 19:30	11/11/21 03:00	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.8	0.29	ng/L		11/04/21 19:30	11/11/21 03:00	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.8	0.36	ng/L		11/04/21 19:30	11/11/21 03:00	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	102		50 - 150				11/04/21 19:30	11/11/21 03:00	1
13C4 PFHpA	101		50 - 150				11/04/21 19:30	11/11/21 03:00	1
13C4 PFOA	110		50 - 150				11/04/21 19:30	11/11/21 03:00	1
13C5 PFNA	102		50 - 150				11/04/21 19:30	11/11/21 03:00	1
13C2 PFDA	94		50 - 150				11/04/21 19:30	11/11/21 03:00	1

1002111101	102	00 - 100	11/04/21 10:00 11/11/21 00:00	,
13C4 PFHpA	101	50 - 150	11/04/21 19:30 11/11/21 03:00	1
13C4 PFOA	110	50 <sub>-</sub> 150	11/04/21 19:30 11/11/21 03:00	1
13C5 PFNA	102	50 - 150	11/04/21 19:30 11/11/21 03:00	1
13C2 PFDA	94	50 - 150	11/04/21 19:30 11/11/21 03:00	1
13C2 PFUnA	86	50 <sub>-</sub> 150	11/04/21 19:30 11/11/21 03:00	1
13C2 PFDoA	76	50 - 150	11/04/21 19:30 11/11/21 03:00	1
13C2 PFTeDA	75	50 - 150	11/04/21 19:30 11/11/21 03:00	1
13C3 PFBS	117	50 - 150	11/04/21 19:30 11/11/21 03:00	1
18O2 PFHxS	105	50 - 150	11/04/21 19:30 11/11/21 03:00	1
13C4 PFOS	101	50 - 150	11/04/21 19:30 11/11/21 03:00	1
d3-NMeFOSAA	93	50 - 150	11/04/21 19:30 11/11/21 03:00	1
d5-NEtFOSAA	91	50 - 150	11/04/21 19:30 11/11/21 03:00	1
13C3 HFPO-DA	99	50 - 150	11/04/21 19:30 11/11/21 03:00	1
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Client: Shannon & Wilson, Inc Job ID: 320-81258-1 Project/Site: SC Waters#3

Client Sample ID: 21GST-TWP-2

Date Received: 11/03/21 14:01

13C2 PFUnA

13C2 PFDoA

13C2 PFTeDA

13C3 PFBS

1802 PFHxS

13C4 PFOS

d3-NMeFOSAA

d5-NEtFOSAA

13C3 HFPO-DA

Lab Sample ID: 320-81258-4 Date Collected: 10/27/21 13:45

**Matrix: Water** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	7.7		1.7	0.50	ng/L		11/04/21 19:30	11/11/21 03:10	1
Perfluoroheptanoic acid (PFHpA)	1.8		1.7	0.21	ng/L		11/04/21 19:30	11/11/21 03:10	1
Perfluorooctanoic acid (PFOA)	1.4	J	1.7	0.73	ng/L		11/04/21 19:30	11/11/21 03:10	1
Perfluorononanoic acid (PFNA)	ND		1.7	0.23	ng/L		11/04/21 19:30	11/11/21 03:10	1
Perfluorodecanoic acid (PFDA)	ND		1.7	0.27	ng/L		11/04/21 19:30	11/11/21 03:10	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.94	ng/L		11/04/21 19:30	11/11/21 03:10	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.47	ng/L		11/04/21 19:30	11/11/21 03:10	1
Perfluorotridecanoic acid (PFTriA)	ND		1.7	1.1	ng/L		11/04/21 19:30	11/11/21 03:10	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.63	ng/L		11/04/21 19:30	11/11/21 03:10	1
Perfluorobutanesulfonic acid (PFBS)	2.7		1.7	0.17	ng/L		11/04/21 19:30	11/11/21 03:10	1
Perfluorohexanesulfonic acid (PFHxS)	12		1.7	0.49	ng/L		11/04/21 19:30	11/11/21 03:10	1
Perfluorooctanesulfonic acid (PFOS)	44		1.7	0.46	ng/L		11/04/21 19:30	11/11/21 03:10	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.3	1.0	ng/L		11/04/21 19:30	11/11/21 03:10	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.3	1.1	ng/L		11/04/21 19:30	11/11/21 03:10	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.7	0.21	ng/L		11/04/21 19:30	11/11/21 03:10	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.4	1.3	ng/L		11/04/21 19:30	11/11/21 03:10	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.7	0.27	ng/L		11/04/21 19:30	11/11/21 03:10	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.7	0.34	ng/L		11/04/21 19:30	11/11/21 03:10	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	104		50 - 150				11/04/21 19:30	11/11/21 03:10	1
13C4 PFHpA	101		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 03:10	1
13C4 PFOA	105		50 - 150				11/04/21 19:30	11/11/21 03:10	1
13C5 PFNA	103		50 - 150				11/04/21 19:30	11/11/21 03:10	1
13C2 PFDA	101		50 <sub>-</sub> 150				11/04/21 10:30	11/11/21 03:10	1

50 - 150

50 - 150

50 - 150

50 - 150

50 - 150

50 - 150

50 - 150

50 - 150

50 - 150

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94

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116

99

106

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108

97

11/04/21 19:30 11/11/21 03:10

11/04/21 19:30 11/11/21 03:10

11/04/21 19:30 11/11/21 03:10

11/04/21 19:30 11/11/21 03:10

11/04/21 19:30 11/11/21 03:10

11/04/21 19:30 11/11/21 03:10

11/04/21 19:30 11/11/21 03:10

11/04/21 19:30 11/11/21 03:10

11/04/21 19:30 11/11/21 03:10

Client: Shannon & Wilson, Inc Job ID: 320-81258-1 Project/Site: SC Waters#3

Client Sample ID: 21GST-TWP-10

Date Collected: 10/27/21 16:54

13C3 HFPO-DA

**Matrix: Water** Date Received: 11/03/21 14:01

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	12		1.8	0.51	ng/L		11/04/21 19:30	11/11/21 03:21	1
Perfluoroheptanoic acid (PFHpA)	4.3		1.8	0.22	ng/L		11/04/21 19:30	11/11/21 03:21	1
Perfluorooctanoic acid (PFOA)	3.0		1.8	0.75	ng/L		11/04/21 19:30	11/11/21 03:21	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.24	ng/L		11/04/21 19:30	11/11/21 03:21	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.27	ng/L		11/04/21 19:30	11/11/21 03:21	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.97	ng/L		11/04/21 19:30	11/11/21 03:21	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.49	ng/L		11/04/21 19:30	11/11/21 03:21	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.1	ng/L		11/04/21 19:30	11/11/21 03:21	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.64	ng/L		11/04/21 19:30	11/11/21 03:21	1
Perfluorobutanesulfonic acid (PFBS)	2.6		1.8	0.18	ng/L		11/04/21 19:30	11/11/21 03:21	1
Perfluorohexanesulfonic acid (PFHxS)	54		1.8		ng/L		11/04/21 19:30	11/11/21 03:21	1
Perfluorooctanesulfonic acid (PFOS)	63		1.8	0.48	ng/L		11/04/21 19:30	11/11/21 03:21	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.4		ng/L		11/04/21 19:30	11/11/21 03:21	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.4	1.1	ng/L		11/04/21 19:30	11/11/21 03:21	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.8	0.21	ng/L		11/04/21 19:30	11/11/21 03:21	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.5	1.3	ng/L		11/04/21 19:30	11/11/21 03:21	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.8	0.28	ng/L		11/04/21 19:30	11/11/21 03:21	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.8	0.35	ng/L		11/04/21 19:30	11/11/21 03:21	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	93		50 - 150				11/04/21 19:30	11/11/21 03:21	1
13C4 PFHpA	95		50 - 150				11/04/21 19:30	11/11/21 03:21	1
13C4 PFOA	98		50 - 150				11/04/21 19:30	11/11/21 03:21	1
13C5 PFNA	101		50 - 150				11/04/21 19:30	11/11/21 03:21	1
13C2 PFDA	100		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 03:21	1
13C2 PFUnA	101		50 - 150				11/04/21 19:30	11/11/21 03:21	1
13C2 PFDoA	96		50 - 150				11/04/21 19:30	11/11/21 03:21	1
13C2 PFTeDA	90		50 - 150				11/04/21 19:30	11/11/21 03:21	1
13C3 PFBS	107		50 - 150				11/04/21 19:30	11/11/21 03:21	1
1802 PFHxS	88		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 03:21	1
13C4 PFOS	98		50 - 150				11/04/21 19:30	11/11/21 03:21	1
d3-NMeFOSAA	106		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 03:21	1
d5-NEtFOSAA	119		50 - 150				11/04/21 19:30	11/11/21 03:21	1

11/04/21 19:30 11/11/21 03:21

50 - 150

100

Lab Sample ID: 320-81258-5

Client: Shannon & Wilson, Inc Job ID: 320-81258-1 Project/Site: SC Waters#3

Client Sample ID: MW-13-20

Lab Sample ID: 320-81258-6

Date Collected: 10/27/21 12:26 **Matrix: Water** Date Received: 11/03/21 14:01

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	4.2		1.7	0.50	ng/L		11/04/21 19:30	11/11/21 03:31	1
Perfluoroheptanoic acid (PFHpA)	1.4	J	1.7	0.21	ng/L		11/04/21 19:30	11/11/21 03:31	1
Perfluorooctanoic acid (PFOA)	1.4	J	1.7	0.73	ng/L		11/04/21 19:30	11/11/21 03:31	1
Perfluorononanoic acid (PFNA)	ND		1.7	0.23	ng/L		11/04/21 19:30	11/11/21 03:31	1
Perfluorodecanoic acid (PFDA)	ND		1.7	0.27	ng/L		11/04/21 19:30	11/11/21 03:31	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.94	ng/L		11/04/21 19:30	11/11/21 03:31	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.47	ng/L		11/04/21 19:30	11/11/21 03:31	1
Perfluorotridecanoic acid (PFTriA)	ND		1.7	1.1	ng/L		11/04/21 19:30	11/11/21 03:31	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.63	ng/L		11/04/21 19:30	11/11/21 03:31	1
Perfluorobutanesulfonic acid (PFBS)	0.70	J	1.7	0.17	ng/L		11/04/21 19:30	11/11/21 03:31	1
Perfluorohexanesulfonic acid (PFHxS)	7.6		1.7	0.49	ng/L		11/04/21 19:30	11/11/21 03:31	1
Perfluorooctanesulfonic acid (PFOS)	6.2		1.7		ng/L		11/04/21 19:30	11/11/21 03:31	
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.3	1.0	ng/L		11/04/21 19:30	11/11/21 03:31	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.3		ng/L		11/04/21 19:30	11/11/21 03:31	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.7	0.21	ng/L		11/04/21 19:30	11/11/21 03:31	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.4	1.3	ng/L		11/04/21 19:30	11/11/21 03:31	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.7	0.27	ng/L		11/04/21 19:30	11/11/21 03:31	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.7	0.34	ng/L		11/04/21 19:30	11/11/21 03:31	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	102		50 - 150				11/04/21 19:30	11/11/21 03:31	1
13C4 PFHpA	99		50 - 150				11/04/21 19:30	11/11/21 03:31	1
13C4 PFOA	95		50 - 150				11/04/21 19:30	11/11/21 03:31	1
13C5 PFNA	94		50 - 150				11/04/21 19:30	11/11/21 03:31	1
13C2 PFDA	88		50 - 150				11/04/21 19:30	11/11/21 03:31	1
13C2 PFUnA	79		50 - 150				11/04/21 19:30	11/11/21 03:31	1
13C2 PFDoA	76		50 - 150				11/04/21 19:30	11/11/21 03:31	1
13C2 PFTeDA	72		50 - 150				11/04/21 19:30	11/11/21 03:31	1
13C3 PFBS	102		50 - 150				11/04/21 19:30	11/11/21 03:31	1
1802 PFHxS	88		50 - 150				11/04/21 19:30	11/11/21 03:31	1
13C4 PFOS	88		50 - 150				11/04/21 19:30	11/11/21 03:31	1
d3-NMeFOSAA	92		50 - 150				11/04/21 19:30	11/11/21 03:31	1
d5-NEtFOSAA	94		50 - 150				11/04/21 19:30	11/11/21 03:31	1
13C3 HFPO-DA	85		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 03:31	1

Client: Shannon & Wilson, Inc Job ID: 320-81258-1

Project/Site: SC Waters#3

Lab Sample ID: 320-81258-7 Client Sample ID: MW-13-45

Date Collected: 10/27/21 17:31 **Matrix: Water** Date Received: 11/03/21 14:01

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.7	0.51	ng/L		11/04/21 19:30	11/11/21 03:42	1
Perfluoroheptanoic acid (PFHpA)	ND		1.7	0.22	ng/L		11/04/21 19:30	11/11/21 03:42	1
Perfluorooctanoic acid (PFOA)	ND		1.7	0.74	ng/L		11/04/21 19:30	11/11/21 03:42	1
Perfluorononanoic acid (PFNA)	ND		1.7	0.24	ng/L		11/04/21 19:30	11/11/21 03:42	1
Perfluorodecanoic acid (PFDA)	ND		1.7	0.27	ng/L		11/04/21 19:30	11/11/21 03:42	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.96	ng/L		11/04/21 19:30	11/11/21 03:42	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.48	ng/L		11/04/21 19:30	11/11/21 03:42	1
Perfluorotridecanoic acid (PFTriA)	ND		1.7	1.1	ng/L		11/04/21 19:30	11/11/21 03:42	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.64	ng/L		11/04/21 19:30	11/11/21 03:42	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.7	0.17	ng/L		11/04/21 19:30	11/11/21 03:42	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.7	0.50	ng/L		11/04/21 19:30	11/11/21 03:42	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.7	0.47	ng/L		11/04/21 19:30	11/11/21 03:42	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.4	1.0	ng/L		11/04/21 19:30	11/11/21 03:42	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.4	1.1	ng/L		11/04/21 19:30	11/11/21 03:42	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.7	0.21	ng/L		11/04/21 19:30	11/11/21 03:42	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.5	1.3	ng/L		11/04/21 19:30	11/11/21 03:42	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.7	0.28	ng/L		11/04/21 19:30	11/11/21 03:42	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.7	0.35	ng/L		11/04/21 19:30	11/11/21 03:42	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	90		50 - 150				11/04/21 19:30	11/11/21 03:42	1
13C4 PFHpA	89		50 - 150				11/04/21 19:30	11/11/21 03:42	1
13C4 PFOA	95		50 - 150				11/04/21 19:30	11/11/21 03:42	1
13C5 PFNA	93		50 - 150				11/04/21 19:30	11/11/21 03:42	1
13C2 PFDA	95		50 - 150				11/04/21 19:30	11/11/21 03:42	1
13C2 PFUnA	91		50 - 150				11/04/21 19:30	11/11/21 03:42	1
13C2 PFDoA	83		50 - 150				11/04/21 19:30	11/11/21 03:42	1
13C2 PFTeDA	79		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 03:42	1
13C3 PFBS	106		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 03:42	1
1802 PFHxS	90		50 - 150				11/04/21 19:30	11/11/21 03:42	1
13C4 PFOS	102		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 03:42	1
d3-NMeFOSAA	80		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 03:42	1
d5-NEtFOSAA	81		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 03:42	1
13C3 HFPO-DA	77		50 <sub>-</sub> 150					11/11/21 03:42	1

Client: Shannon & Wilson, Inc Job ID: 320-81258-1 Project/Site: SC Waters#3

Date Received: 11/03/21 14:01

13C4 PFOS

d3-NMeFOSAA

d5-NEtFOSAA

13C3 HFPO-DA

Lab Sample ID: 320-81258-8 Client Sample ID: MW-113-45 Date Collected: 10/27/21 17:21

**Matrix: Water** 

Perfluoroheptanoic acid (PFHpA)   ND   1.8   0.22   ng/L   11/04/21 19:30   11/11/21 04:02   1	Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA) ND 1.8 0.75 ng/L 11/04/21 19:30 11/11/21 04:02 1 Perfluorononanoic acid (PFNA) ND 1.8 0.24 ng/L 11/04/21 19:30 11/11/21 04:02 1 Perfluorodecanoic acid (PFDA) ND 1.8 0.27 ng/L 11/04/21 19:30 11/11/21 04:02 1 Perfluoroundecanoic acid (PFDA) ND 1.8 0.27 ng/L 11/04/21 19:30 11/11/21 04:02 1 Perfluoroundecanoic acid (PFDA) ND 1.8 0.48 ng/L 11/04/21 19:30 11/11/21 04:02 1 Perfluoroundecanoic acid (PFDA) ND 1.8 0.48 ng/L 11/04/21 19:30 11/11/21 04:02 1 Perfluorotidecanoic acid (PFDA) ND 1.8 0.48 ng/L 11/04/21 19:30 11/11/21 04:02 1 Perfluorotidecanoic acid (PFTA) ND 1.8 0.48 ng/L 11/04/21 19:30 11/11/21 04:02 1 Perfluorotidecanoic acid (PFTA) ND 1.8 0.48 ng/L 11/04/21 19:30 11/11/21 04:02 1 Perfluorotothacanoic acid (PFTA) ND 1.8 0.49 ng/L 11/04/21 19:30 11/11/21 04:02 1 Perfluorotothacanoic acid (PFTA) ND 1.8 0.50 ng/L 11/04/21 19:30 11/11/21 04:02 1 Perfluorotothacanoic acid (PFTA) ND 1.8 0.50 ng/L 11/04/21 19:30 11/11/21 04:02 1 Perfluorotothacanoic acid (PFOS) ND 1.8 0.47 ng/L 11/04/21 19:30 11/11/21 04:02 1 Perfluoroctanosulfonic acid (PFOS) ND 1.8 0.47 ng/L 11/04/21 19:30 11/11/21 04:02 1 Perfluoroctanosulfonic acid (PFOS) ND 1.8 0.47 ng/L 11/04/21 19:30 11/11/21 04:02 1 Perfluoroctanosulfonic acid (NE(FOSA)) ND 1.8 0.47 ng/L 11/04/21 19:30 11/11/21 04:02 1 Perfluoroctanosulfonic acid (NE(FOSA)) ND 1.8 0.21 ng/L 11/04/21 19:30 11/11/21 04:02 1 Perfluoroctanosulfonic acid (NE(FOSA)) ND 1.8 0.21 ng/L 11/04/21 19:30 11/11/21 04:02 1 Perfluoroctanosulfonic acid (NE(FOSA)) ND 1.8 0.28 ng/L 11/04/21 19:30 11/11/21 04:02 1 Perfluoroctanosulfonic acid ND 1.8 0.28 ng/L 11/04/21 19:30 11/11/21 04:02 1 Perfluoroctanosulfonic acid ND 1.8 0.35 ng/L 11/04/21 19:30 11/11/21 04:02 1 Perfluorononanoic acid ND 1.8 0.35 ng/L 11/04/21 19:30 11/11/21 04:02 1 Perfluorononanoic acid ND 1.8 0.35 ng/L 11/04/21 19:30 11/11/21 04:02 1 Perfluorononanoic acid ND 1.8 0.35 ng/L 11/04/21 19:30 11/11/21 04:02 1 Perfluorononanoic acid ND 1.8 0.35 ng/L 11/04/21 19:30 11/11/21 04:02 1 Perfluorononanoic acid ND 1.8 0.3	Perfluorohexanoic acid (PFHxA)	ND	1.8	0.51	ng/L		11/04/21 19:30	11/11/21 04:02	1
Perfluoronananic acid (PFNA)   ND   1.8   0.24   ng/L   11/04/21   19:30   11/11/21   04:02   12   12   12   13   14   14   14   15   14   14   14   14	Perfluoroheptanoic acid (PFHpA)	ND	1.8	0.22	ng/L		11/04/21 19:30	11/11/21 04:02	1
Perfluorodecanoic acid (PFDA)   ND   1.8   0.27   ng/L   11/04/21   19:30   11/11/21   04:02   17   04:02	Perfluorooctanoic acid (PFOA)	ND	1.8	0.75	ng/L		11/04/21 19:30	11/11/21 04:02	1
Perfluoroundecanoic acid (PFUnA)   ND   1.8   0.97   ng/L   11/04/21 19:30   11/11/21 04:02   12   12   13   14   14   14   14   15   14   14   15   14   14	Perfluorononanoic acid (PFNA)	ND	1.8	0.24	ng/L		11/04/21 19:30	11/11/21 04:02	1
Perfluorododecanoic acid (PFDA)   ND   1.8   0.48   ng/L   11/04/21 19:30   11/11/21 04:02   12/04/21 19:3	Perfluorodecanoic acid (PFDA)	ND	1.8	0.27	ng/L		11/04/21 19:30	11/11/21 04:02	1
Perfluorotridecanoic acid (PFTriA)	Perfluoroundecanoic acid (PFUnA)	ND	1.8	0.97	ng/L		11/04/21 19:30	11/11/21 04:02	1
Perfluorotetradecanoic acid (PFTeA)   ND   1.8   0.64   ng/L   11/04/21   19:30   11/11/21   04:02   1	Perfluorododecanoic acid (PFDoA)	ND	1.8	0.48	ng/L		11/04/21 19:30	11/11/21 04:02	1
Perfluorobutanesulfonic acid (PFBS)   ND   1.8   0.18   ng/L   11/04/21   19:30   11/11/21   04:02   17/04	Perfluorotridecanoic acid (PFTriA)	ND	1.8	1.1	ng/L		11/04/21 19:30	11/11/21 04:02	1
Perfluorohexanesulfonic acid (PFHxS)   ND   1.8   0.50   ng/L   11/04/21 19:30   11/11/21 04:02   11/04/21	Perfluorotetradecanoic acid (PFTeA)	ND	1.8	0.64	ng/L		11/04/21 19:30	11/11/21 04:02	1
Perfluorooctanesulfonic acid (PFOS) ND 1.8 0.47 ng/L 11/04/21 19:30 11/11/21 04:02 10 11/04/21 19:30 11/11/21 04:02 11/04/21 1	Perfluorobutanesulfonic acid (PFBS)	ND	1.8	0.18	ng/L		11/04/21 19:30	11/11/21 04:02	1
N-methylperfluorooctanesulfonamidoa ND 4.4 1.1 ng/L 11/04/21 19:30 11/11/21 04:02 10 11/04/21 19:30 11/11/21 04:02 10 11/04/21 19:30 11/11/21 04:02 11/04/21	Perfluorohexanesulfonic acid (PFHxS)	ND	1.8	0.50	ng/L		11/04/21 19:30	11/11/21 04:02	1
cetic acid (NMeFOSAA) N-ethylperfluorooctanesulfonamidoac	Perfluorooctanesulfonic acid (PFOS)	ND	1.8	0.47	ng/L		11/04/21 19:30	11/11/21 04:02	1
etic acid (NEtFOSAA) 9-Chlorohexadecafluoro-3-oxanonan 9-Chlorohexadecafluoro-3-oxanonan ND 1.8 0.21 ng/L 11/04/21 19:30 11/11/21 04:02 11-e-1-sulfonic acid Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaundecan ND 1.8 0.28 ng/L 11/04/21 19:30 11/11/21 04:02 11-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid ND 1.8 0.35 ng/L 11/04/21 19:30 11/11/21 04:02	N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND	4.4	1.1	ng/L		11/04/21 19:30	11/11/21 04:02	1
e-1-sulfonic acid Hexafluoropropylene Oxide Dimer ND 3.5 1.3 ng/L 11/04/21 19:30 11/11/21 04:02 11 Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaundecan ND 1.8 0.28 ng/L 11/04/21 19:30 11/11/21 04:02 11 A-B-ioxa-3H-perfluorononanoic acid ND 1.8 0.35 ng/L 11/04/21 19:30 11/11/21 04:02 11 (ADONA)  Isotope Dilution %Recovery Qualifier Limits Prepared Analyzed Dil Factor 11/04/21 19:30 11/11/21 04:02 11 A3C2 PFHxA 91 50 - 150 11/04/21 19:30 11/11/21 04:02 11 A3C4 PFHpA 95 50 - 150 11/04/21 19:30 11/11/21 04:02 11 A3C5 PFNA 101 50 - 150 11/04/21 19:30 11/11/21 04:02 11 A3C5 PFNA 101 50 - 150 11/04/21 19:30 11/11/21 04:02 11 A3C6 PFDA 102 50 - 150 11/04/21 19:30 11/11/21 04:02 11 A3C6 PFDA 102 50 - 150 11/04/21 19:30 11/11/21 04:02 11 A3C6 PFDA 102 50 - 150 11/04/21 19:30 11/11/21 04:02 11 A3C6 PFDA 102 50 - 150 11/04/21 19:30 11/11/21 04:02 11 A3C6 PFDA 102 50 - 150 11/04/21 19:30 11/11/21 04:02 11 A3C6 PFDA 102 50 - 150 11/04/21 19:30 11/11/21 04:02 11 A3C7 PFDA 89 50 - 150 11/04/21 19:30 11/11/21 04:02 11 A3C8 PFDA 89 50 - 150 11/04/21 19:30 11/11/21 04:02 11 A3C8 PFDA 11/04/21 19:30 11/11/	N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND	4.4	1.1	ng/L		11/04/21 19:30	11/11/21 04:02	1
Acid (HFPO-DA)  11-Chloroeicosafluoro-3-oxaundecan ND 1.8 0.28 ng/L 11/04/21 19:30 11/11/21 04:02 11 e-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid ND 1.8 0.35 ng/L 11/04/21 19:30 11/11/21 04:02 11 (ADONA)  Isotope Dilution %Recovery Qualifier Limits Prepared Analyzed Dil Factory 13/04/21 19:30 11/11/21 04:02 11 11/04/21	9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND	1.8	0.21	ng/L		11/04/21 19:30	11/11/21 04:02	1
e-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid (ADONA)    Sotope Dilution   %Recovery   Qualifier   Limits   Prepared   Analyzed   Dil Factor	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	3.5	1.3	ng/L		11/04/21 19:30	11/11/21 04:02	1
(ADONA)         Isotope Dilution         %Recovery         Qualifier         Limits         Prepared         Analyzed         Dil Factoria           13C2 PFHxA         91         50 - 150         11/04/21 19:30         11/11/21 04:02<	11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND	1.8	0.28	ng/L		11/04/21 19:30	11/11/21 04:02	1
13C2 PFHxA       91       50 - 150       11/04/21 19:30       11/11/21 04:02       1         13C4 PFHpA       95       50 - 150       11/04/21 19:30       11/11/21 04:02       1         13C4 PFOA       95       50 - 150       11/04/21 19:30       11/11/21 04:02       1         13C5 PFNA       101       50 - 150       11/04/21 19:30       11/11/21 04:02       1         13C2 PFDA       102       50 - 150       11/04/21 19:30       11/11/21 04:02       1         13C2 PFUnA       98       50 - 150       11/04/21 19:30       11/11/21 04:02       1         13C2 PFDoA       89       50 - 150       11/04/21 19:30       11/11/21 04:02       1         13C2 PFTeDA       89       50 - 150       11/04/21 19:30       11/11/21 04:02       1         13C3 PFBS       112       50 - 150       11/04/21 19:30       11/11/21 04:02       1	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.8	0.35	ng/L		11/04/21 19:30	11/11/21 04:02	1
13C4 PFHpA 95 50 - 150 11/04/21 19:30 11/11/21 04:02 11/04/21 PFNA 95 50 - 150 11/04/21 19:30 11/11/21 04:02 11/04/21 19:02 11/04/21 19:30 11/11/21 04:02 11/04/21 19:30 11/11/21 04:02 11	Isotope Dilution	%Recovery Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA       95       50 - 150       11/04/21 19:30       11/11/21 04:02       1         13C5 PFNA       101       50 - 150       11/04/21 19:30       11/11/21 04:02       1         13C2 PFDA       102       50 - 150       11/04/21 19:30       11/11/21 04:02       1         13C2 PFUnA       98       50 - 150       11/04/21 19:30       11/11/21 04:02       1         13C2 PFDoA       89       50 - 150       11/04/21 19:30       11/11/21 04:02       1         13C3 PFBS       112       50 - 150       11/04/21 19:30       11/11/21 04:02       1	13C2 PFHxA	91	50 - 150				11/04/21 19:30	11/11/21 04:02	1
13C5 PFNA       101       50 - 150       11/04/21 19:30       11/11/21 04:02       1         13C2 PFDA       102       50 - 150       11/04/21 19:30       11/11/21 04:02       1         13C2 PFUnA       98       50 - 150       11/04/21 19:30       11/11/21 04:02       1         13C2 PFDoA       89       50 - 150       11/04/21 19:30       11/11/21 04:02       1         13C2 PFTeDA       89       50 - 150       11/04/21 19:30       11/11/21 04:02       1         13C3 PFBS       112       50 - 150       11/04/21 19:30       11/11/21 04:02       1	13C4 PFHpA	95	50 - 150				11/04/21 19:30	11/11/21 04:02	1
13C2 PFDA       102       50 - 150       11/04/21 19:30 11/11/21 04:02       1         13C2 PFUnA       98       50 - 150       11/04/21 19:30 11/11/21 04:02       1         13C2 PFDoA       89       50 - 150       11/04/21 19:30 11/11/21 04:02       1         13C2 PFTeDA       89       50 - 150       11/04/21 19:30 11/11/21 04:02       1         13C3 PFBS       112       50 - 150       11/04/21 19:30 11/11/21 04:02       1	13C4 PFOA	95	50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 04:02	1
13C2 PFUnA     98     50 - 150     11/04/21 19:30     11/11/21 04:02     1       13C2 PFDoA     89     50 - 150     11/04/21 19:30     11/11/21 04:02     1       13C2 PFTeDA     89     50 - 150     11/04/21 19:30     11/11/21 04:02     1       13C3 PFBS     112     50 - 150     11/04/21 19:30     11/11/21 04:02     1	13C5 PFNA	101	50 - 150				11/04/21 19:30	11/11/21 04:02	1
13C2 PFDoA     89     50 - 150     11/04/21 19:30 11/11/21 04:02     1       13C2 PFTeDA     89     50 - 150     11/04/21 19:30 11/11/21 04:02     1       13C3 PFBS     112     50 - 150     11/04/21 19:30 11/11/21 04:02     1	13C2 PFDA	102	50 - 150				11/04/21 19:30	11/11/21 04:02	1
13C2 PFTeDA     89     50 - 150     11/04/21 19:30 11/11/21 04:02     1       13C3 PFBS     112     50 - 150     11/04/21 19:30 11/11/21 04:02     1	13C2 PFUnA	98	50 - 150				11/04/21 19:30	11/11/21 04:02	1
13C3 PFBS 112 50 - 150 11/04/21 19:30 11/11/21 04:02	13C2 PFDoA	89	50 - 150				11/04/21 19:30	11/11/21 04:02	1
	13C2 PFTeDA	89	50 - 150				11/04/21 19:30	11/11/21 04:02	1
18O2 PFHxS 100 50 - 150 11/04/21 19:30 11/11/21 04:02 1	13C3 PFBS	112	50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 04:02	1
	1802 PFHxS	100	50 - 150				11/04/21 19:30	11/11/21 04:02	1

11/04/21 19:30 11/11/21 04:02

11/04/21 19:30 11/11/21 04:02

11/04/21 19:30 11/11/21 04:02

11/04/21 19:30 11/11/21 04:02

50 - 150

50 - 150

50 - 150

50 - 150

107

87

85

Client: Shannon & Wilson, Inc Job ID: 320-81258-1 Project/Site: SC Waters#3

Date Received: 11/03/21 14:01

d3-NMeFOSAA

d5-NEtFOSAA

13C3 HFPO-DA

Lab Sample ID: 320-81258-9 **Client Sample ID: 21GST-TWP-8** Date Collected: 10/28/21 13:22

**Matrix: Water** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	8.6		1.8	0.51	ng/L		11/04/21 19:30	11/11/21 04:13	1
Perfluoroheptanoic acid (PFHpA)	8.4		1.8	0.22	ng/L		11/04/21 19:30	11/11/21 04:13	1
Perfluorooctanoic acid (PFOA)	2.9		1.8	0.75	ng/L		11/04/21 19:30	11/11/21 04:13	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.24	ng/L		11/04/21 19:30	11/11/21 04:13	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.27	ng/L		11/04/21 19:30	11/11/21 04:13	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.97	ng/L		11/04/21 19:30	11/11/21 04:13	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.48	ng/L		11/04/21 19:30	11/11/21 04:13	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.1	ng/L		11/04/21 19:30	11/11/21 04:13	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.64	ng/L		11/04/21 19:30	11/11/21 04:13	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.8	0.18	ng/L		11/04/21 19:30	11/11/21 04:13	1
Perfluorohexanesulfonic acid (PFHxS)	6.9		1.8	0.50	ng/L		11/04/21 19:30	11/11/21 04:13	1
Perfluorooctanesulfonic acid (PFOS)	150		1.8	0.47	ng/L		11/04/21 19:30	11/11/21 04:13	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.4	1.1	ng/L		11/04/21 19:30	11/11/21 04:13	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.4	1.1	ng/L		11/04/21 19:30	11/11/21 04:13	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.8	0.21	ng/L		11/04/21 19:30	11/11/21 04:13	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.5	1.3	ng/L		11/04/21 19:30	11/11/21 04:13	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.8	0.28	ng/L		11/04/21 19:30	11/11/21 04:13	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.8	0.35	ng/L		11/04/21 19:30	11/11/21 04:13	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	82		50 - 150				11/04/21 19:30	11/11/21 04:13	1
13C4 PFHpA	87		50 - 150				11/04/21 19:30	11/11/21 04:13	1
13C4 PFOA	95		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 04:13	1
13C5 PFNA	92		50 - 150				11/04/21 19:30	11/11/21 04:13	1
13C2 PFDA	90		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 04:13	1
13C2 PFUnA	82		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 04:13	1
13C2 PFDoA	81		50 - 150				11/04/21 19:30	11/11/21 04:13	1
13C2 PFTeDA	82		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 04:13	1
13C3 PFBS	101		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 04:13	1
1802 PFHxS	84		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 04:13	1
13C4 PFOS	92		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 04:13	1

11/04/21 19:30 11/11/21 04:13

11/04/21 19:30 11/11/21 04:13 11/04/21 19:30 11/11/21 04:13

50 - 150

50 - 150

50 - 150

86

82

Client: Shannon & Wilson, Inc Job ID: 320-81258-1 Project/Site: SC Waters#3

Client Sample ID: 21GST-TWP-5

Date Received: 11/03/21 14:01

Lab Sample ID: 320-81258-10 Date Collected: 10/28/21 12:12

**Matrix: Water** 

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	26	1.7	0.49	ng/L		11/04/21 19:30	11/11/21 04:23	1
Perfluoroheptanoic acid (PFHpA)	16	1.7	0.21	ng/L		11/04/21 19:30	11/11/21 04:23	1
Perfluorooctanoic acid (PFOA)	11	1.7	0.72	ng/L		11/04/21 19:30	11/11/21 04:23	1
Perfluorononanoic acid (PFNA)	2.4	1.7	0.23	ng/L		11/04/21 19:30	11/11/21 04:23	1
Perfluorodecanoic acid (PFDA)	2.9	1.7	0.26	ng/L		11/04/21 19:30	11/11/21 04:23	1
Perfluoroundecanoic acid (PFUnA)	ND	1.7	0.93	ng/L		11/04/21 19:30	11/11/21 04:23	1
Perfluorododecanoic acid (PFDoA)	ND	1.7	0.47	ng/L		11/04/21 19:30	11/11/21 04:23	1
Perfluorotridecanoic acid (PFTriA)	ND	1.7	1.1	ng/L		11/04/21 19:30	11/11/21 04:23	1
Perfluorotetradecanoic acid (PFTeA)	ND	1.7	0.62	ng/L		11/04/21 19:30	11/11/21 04:23	1
Perfluorobutanesulfonic acid (PFBS)	1.6 J	1.7	0.17	ng/L		11/04/21 19:30	11/11/21 04:23	1
Perfluorohexanesulfonic acid (PFHxS)	53	1.7	0.48	ng/L		11/04/21 19:30	11/11/21 04:23	1
Perfluorooctanesulfonic acid (PFOS)	170	1.7	0.46	ng/L		11/04/21 19:30	11/11/21 04:23	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND	4.2	1.0	ng/L		11/04/21 19:30	11/11/21 04:23	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND	4.2	1.1	ng/L		11/04/21 19:30	11/11/21 04:23	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND	1.7	0.20	ng/L		11/04/21 19:30	11/11/21 04:23	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	3.4	1.3	ng/L		11/04/21 19:30	11/11/21 04:23	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND	1.7	0.27	ng/L		11/04/21 19:30	11/11/21 04:23	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.7	0.34	ng/L		11/04/21 19:30	11/11/21 04:23	1
Isotope Dilution	%Recovery Qualifier	Limits				Prepared	Analyzed	Dil Fac

(ADONA)					
Isotope Dilution	%Recovery Qu	ualifier Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	98	50 - 150	11/04/21 19:30	11/11/21 04:23	1
13C4 PFHpA	102	50 - 150	11/04/21 19:30	11/11/21 04:23	1
13C4 PFOA	102	50 - 150	11/04/21 19:30	11/11/21 04:23	1
13C5 PFNA	105	50 - 150	11/04/21 19:30	11/11/21 04:23	1
13C2 PFDA	102	50 - 150	11/04/21 19:30	11/11/21 04:23	1
13C2 PFUnA	101	50 - 150	11/04/21 19:30	11/11/21 04:23	1
13C2 PFDoA	91	50 - 150	11/04/21 19:30	11/11/21 04:23	1
13C2 PFTeDA	88	50 - 150	11/04/21 19:30	11/11/21 04:23	1
13C3 PFBS	118	50 - 150	11/04/21 19:30	11/11/21 04:23	1
1802 PFHxS	99	50 - 150	11/04/21 19:30	11/11/21 04:23	1
13C4 PFOS	105	50 - 150	11/04/21 19:30	11/11/21 04:23	1
d3-NMeFOSAA	107	50 - 150	11/04/21 19:30	11/11/21 04:23	1
d5-NEtFOSAA	107	50 - 150	11/04/21 19:30	11/11/21 04:23	1
13C3 HEPO-DA	97	50 <sub>-</sub> 150	11/04/21 19:30	11/11/21 04:23	1

Job ID: 320-81258-1

Client: Shannon & Wilson, Inc Project/Site: SC Waters#3

13C4 PFOS

Client Sample ID: 21GST-TWP-4

Lab Sample ID: 320-81258-11

Date Collected: 10/28/21 11:30 **Matrix: Water** Date Received: 11/03/21 14:01

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	45		1.7	0.51	ng/L		11/04/21 19:30	11/11/21 04:34	1
Perfluoroheptanoic acid (PFHpA)	17		1.7	0.22	ng/L		11/04/21 19:30	11/11/21 04:34	1
Perfluorooctanoic acid (PFOA)	17		1.7	0.74	ng/L		11/04/21 19:30	11/11/21 04:34	1
Perfluorononanoic acid (PFNA)	1.5	J	1.7	0.24	ng/L		11/04/21 19:30	11/11/21 04:34	1
Perfluorodecanoic acid (PFDA)	ND		1.7	0.27	ng/L		11/04/21 19:30	11/11/21 04:34	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.96	ng/L		11/04/21 19:30	11/11/21 04:34	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.48			11/04/21 19:30	11/11/21 04:34	1
Perfluorotridecanoic acid (PFTriA)	ND		1.7		ng/L		11/04/21 19:30	11/11/21 04:34	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7		ng/L		11/04/21 19:30	11/11/21 04:34	1
Perfluorobutanesulfonic acid (PFBS)	10		1.7		ng/L		11/04/21 19:30	11/11/21 04:34	1
Perfluorohexanesulfonic acid (PFHxS)	100		1.7		ng/L		11/04/21 19:30	11/11/21 04:34	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.4		ng/L			11/11/21 04:34	
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.4		ng/L			11/11/21 04:34	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.7	0.21	-			11/11/21 04:34	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.5		ng/L			11/11/21 04:34	
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.7	0.28	_			11/11/21 04:34	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.7	0.35	ng/L		11/04/21 19:30	11/11/21 04:34	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	92		50 - 150				11/04/21 19:30	11/11/21 04:34	1
13C4 PFHpA	97		50 - 150				11/04/21 19:30	11/11/21 04:34	1
13C4 PFOA	99		50 - 150				11/04/21 19:30	11/11/21 04:34	1
13C5 PFNA	97		50 - 150				11/04/21 19:30	11/11/21 04:34	1
13C2 PFDA	99		50 - 150				11/04/21 19:30	11/11/21 04:34	1
13C2 PFUnA	105		50 - 150				11/04/21 19:30	11/11/21 04:34	1
13C2 PFDoA	89		50 - 150				11/04/21 19:30	11/11/21 04:34	1
13C2 PFTeDA	86		50 - 150				11/04/21 19:30	11/11/21 04:34	1
13C3 PFBS	103		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 04:34	1
1802 PFHxS	93		50 - 150				11/04/21 19:30	11/11/21 04:34	1
13C4 PFOS	98		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 04:34	1
d3-NMeFOSAA	100		50 - 150					11/11/21 04:34	. 1
d5-NEtFOSAA	102		50 - 150				11/04/21 19:30		
13C3 HFPO-DA	89		50 - 150					11/11/21 04:34	1
Method: EPA 537(Mod) - PFAS		•	-15 - DL						
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid	340		8.7	2.4	ng/L		11/04/21 19:30	11/12/21 09:26	5
(PFOS)									
(PFOS) Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac

11/04/21 19:30 11/12/21 09:26

50 - 150

Client: Shannon & Wilson, Inc Job ID: 320-81258-1 Project/Site: SC Waters#3

Client Sample ID: 21GST-TWP-3

Lab Sample ID: 320-81258-12

Date Collected: 10/28/21 10:27 **Matrix: Water** Date Received: 11/03/21 14:01

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.8	0.51	ng/L		11/04/21 19:30	11/11/21 04:44	
Perfluoroheptanoic acid (PFHpA)	ND		1.8	0.22	ng/L		11/04/21 19:30	11/11/21 04:44	•
Perfluorooctanoic acid (PFOA)	ND		1.8	0.75	ng/L		11/04/21 19:30	11/11/21 04:44	•
Perfluorononanoic acid (PFNA)	ND		1.8	0.24	ng/L		11/04/21 19:30	11/11/21 04:44	
Perfluorodecanoic acid (PFDA)	ND		1.8	0.27	ng/L		11/04/21 19:30	11/11/21 04:44	•
Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.97	ng/L		11/04/21 19:30	11/11/21 04:44	•
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.49	ng/L		11/04/21 19:30	11/11/21 04:44	
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		11/04/21 19:30	11/11/21 04:44	•
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.65	ng/L		11/04/21 19:30	11/11/21 04:44	
Perfluorobutanesulfonic acid (PFBS)	ND		1.8	0.18	ng/L		11/04/21 19:30	11/11/21 04:44	,
Perfluorohexanesulfonic acid (PFHxS)	ND		1.8	0.50	ng/L		11/04/21 19:30	11/11/21 04:44	
Perfluorooctanesulfonic acid (PFOS)	ND		1.8		ng/L		11/04/21 19:30	11/11/21 04:44	
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.4	1.1	ng/L		11/04/21 19:30	11/11/21 04:44	
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.4	1.2	ng/L		11/04/21 19:30	11/11/21 04:44	
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.8	0.21	ng/L		11/04/21 19:30	11/11/21 04:44	•
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.5	1.3	ng/L		11/04/21 19:30	11/11/21 04:44	,
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.8	0.28	ng/L		11/04/21 19:30	11/11/21 04:44	,
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.8	0.35	ng/L		11/04/21 19:30	11/11/21 04:44	•
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	92		50 - 150				11/04/21 19:30	11/11/21 04:44	
13C4 PFHpA	96		50 - 150				11/04/21 19:30	11/11/21 04:44	
13C4 PFOA	93		50 - 150				11/04/21 19:30	11/11/21 04:44	
13C5 PFNA	97		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 04:44	
13C2 PFDA	93		50 - 150				11/04/21 19:30	11/11/21 04:44	
13C2 PFUnA	84		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 04:44	
13C2 PFDoA	73		50 - 150				11/04/21 19:30	11/11/21 04:44	
13C2 PFTeDA	77		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 04:44	
13C3 PFBS	102		50 <sub>-</sub> 150					11/11/21 04:44	
1802 PFHxS	91		50 - 150					11/11/21 04:44	
13C4 PFOS	94		50 <sub>-</sub> 150					11/11/21 04:44	
d3-NMeFOSAA	79		50 <sub>-</sub> 150					11/11/21 04:44	
d5-NEtFOSAA	77		50 - 150					11/11/21 04:44	
13C3 HFPO-DA	88		50 <sub>-</sub> 150					11/11/21 04:44	

Client: Shannon & Wilson, Inc Job ID: 320-81258-1 Project/Site: SC Waters#3

Client Sample ID: 21GST-TWP-103

Lab Sample ID: 320-81258-13

Date Collected: 10/28/21 10:17 **Matrix: Water** Date Received: 11/03/21 14:01

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.8	0.52	ng/L		11/04/21 19:30	11/11/21 04:55	1
Perfluoroheptanoic acid (PFHpA)	ND		1.8	0.22	ng/L		11/04/21 19:30	11/11/21 04:55	1
Perfluorooctanoic acid (PFOA)	ND		1.8	0.76	ng/L		11/04/21 19:30	11/11/21 04:55	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.24	ng/L		11/04/21 19:30	11/11/21 04:55	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.28	ng/L		11/04/21 19:30	11/11/21 04:55	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.98	ng/L		11/04/21 19:30	11/11/21 04:55	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.49	ng/L		11/04/21 19:30	11/11/21 04:55	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		11/04/21 19:30	11/11/21 04:55	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.65	ng/L		11/04/21 19:30	11/11/21 04:55	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.8	0.18	ng/L		11/04/21 19:30	11/11/21 04:55	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.8	0.51	ng/L		11/04/21 19:30	11/11/21 04:55	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.8	0.48	ng/L		11/04/21 19:30	11/11/21 04:55	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.5	1.1	ng/L		11/04/21 19:30	11/11/21 04:55	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.5	1.2	ng/L		11/04/21 19:30	11/11/21 04:55	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.8	0.21	ng/L		11/04/21 19:30	11/11/21 04:55	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.6	1.3	ng/L		11/04/21 19:30	11/11/21 04:55	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.8	0.29	ng/L		11/04/21 19:30	11/11/21 04:55	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.8	0.36	ng/L		11/04/21 19:30	11/11/21 04:55	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	105		50 - 150				11/04/21 19:30	11/11/21 04:55	1
13C4 PFHpA	106		50 - 150				11/04/21 19:30	11/11/21 04:55	1
13C4 PFOA	108		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 04:55	1
13C5 PFNA	107		50 - 150				11/04/21 19:30	11/11/21 04:55	1
13C2 PFDA	101		50 - 150				11/04/21 19:30	11/11/21 04:55	1
13C2 PFUnA	95		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 04:55	1
13C2 PFDoA	85		50 - 150				11/04/21 19:30	11/11/21 04:55	1
13C2 PFTeDA	80		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 04:55	1
13C3 PFBS	118		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 04:55	1
1802 PFHxS	106		50 - 150				11/04/21 19:30	11/11/21 04:55	1
13C4 PFOS	108		50 <sub>-</sub> 150					11/11/21 04:55	1
d3-NMeFOSAA	94		50 - 150					11/11/21 04:55	1
d5-NEtFOSAA	96		50 - 150					11/11/21 04:55	
13C3 HFPO-DA	95		50 - 150					11/11/21 04:55	. 1

Client: Shannon & Wilson, Inc Job ID: 320-81258-1 Project/Site: SC Waters#3

Client Sample ID: MW-25-15

Lab Sample ID: 320-81258-14 Date Collected: 10/28/21 15:09

**Matrix: Water** 

Date Received: 11/03/21 14:01

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.8	0.51	ng/L		11/04/21 19:30	11/11/21 05:05	1
Perfluoroheptanoic acid (PFHpA)	ND		1.8	0.22	ng/L		11/04/21 19:30	11/11/21 05:05	1
Perfluorooctanoic acid (PFOA)	ND		1.8	0.75	ng/L		11/04/21 19:30	11/11/21 05:05	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.24	ng/L		11/04/21 19:30	11/11/21 05:05	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.27	ng/L		11/04/21 19:30	11/11/21 05:05	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.97	ng/L		11/04/21 19:30	11/11/21 05:05	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.49	ng/L		11/04/21 19:30	11/11/21 05:05	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		11/04/21 19:30	11/11/21 05:05	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.65	ng/L		11/04/21 19:30	11/11/21 05:05	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.8	0.18	ng/L		11/04/21 19:30	11/11/21 05:05	1
Perfluorohexanesulfonic acid (PFHxS)	0.56	J	1.8	0.50	ng/L		11/04/21 19:30	11/11/21 05:05	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.8	0.48	ng/L		11/04/21 19:30	11/11/21 05:05	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.4	1.1	ng/L		11/04/21 19:30	11/11/21 05:05	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.4	1.2	ng/L		11/04/21 19:30	11/11/21 05:05	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.8	0.21	ng/L		11/04/21 19:30	11/11/21 05:05	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.5	1.3	ng/L		11/04/21 19:30	11/11/21 05:05	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.8	0.28	ng/L		11/04/21 19:30	11/11/21 05:05	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.8	0.35	ng/L		11/04/21 19:30	11/11/21 05:05	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	99		50 - 150				11/04/21 19:30	11/11/21 05:05	1
13C4 PFHpA	99		50 - 150				11/04/21 19:30	11/11/21 05:05	1
13C4 PFOA	103		50 - 150				11/04/21 19:30	11/11/21 05:05	1
13C5 PFNA	97		50 - 150				11/04/21 19:30	11/11/21 05:05	1
13C2 PFDA	97		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 05:05	1
13C2 PFUnA	91		50 - 150				11/04/21 19:30	11/11/21 05:05	1
13C2 PFDoA	77		50 - 150				11/04/21 19:30	11/11/21 05:05	1
13C2 PFTeDA	82		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 05:05	1
13C3 PFBS	124		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 05:05	1
1802 PFHxS	99		50 - 150				11/04/21 19:30	11/11/21 05:05	1
13C4 PFOS	102		50 - 150					11/11/21 05:05	1
d3-NMeFOSAA	101		50 - 150					11/11/21 05:05	1
d5-NEtFOSAA	92		50 - 150					11/11/21 05:05	1
13C3 HFPO-DA	95		50 <sub>-</sub> 150					11/11/21 05:05	1

Client: Shannon & Wilson, Inc Job ID: 320-81258-1 Project/Site: SC Waters#3

13C3 HFPO-DA

Client Sample ID: MW-24-30 Lab Sample ID: 320-81258-15

**Matrix: Water** 

Date Collected: 10/29/21 15:39 Date Received: 11/03/21 14:01

Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.7	0.49	ng/L		11/04/21 19:30	11/11/21 05:15	1
Perfluoroheptanoic acid (PFHpA)	ND		1.7	0.21	ng/L		11/04/21 19:30	11/11/21 05:15	1
Perfluorooctanoic acid (PFOA)	ND		1.7	0.72	ng/L		11/04/21 19:30	11/11/21 05:15	1
Perfluorononanoic acid (PFNA)	ND		1.7	0.23	ng/L		11/04/21 19:30	11/11/21 05:15	1
Perfluorodecanoic acid (PFDA)	ND		1.7	0.26	ng/L		11/04/21 19:30	11/11/21 05:15	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.93	ng/L		11/04/21 19:30	11/11/21 05:15	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.47	ng/L		11/04/21 19:30	11/11/21 05:15	1
Perfluorotridecanoic acid (PFTriA)	ND		1.7	1.1	ng/L		11/04/21 19:30	11/11/21 05:15	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.62	ng/L		11/04/21 19:30	11/11/21 05:15	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.7	0.17	ng/L		11/04/21 19:30	11/11/21 05:15	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.7	0.48	ng/L		11/04/21 19:30	11/11/21 05:15	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.7	0.46	ng/L		11/04/21 19:30	11/11/21 05:15	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.2	1.0	ng/L		11/04/21 19:30	11/11/21 05:15	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.2		ng/L		11/04/21 19:30	11/11/21 05:15	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.7		ng/L			11/11/21 05:15	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.4		ng/L			11/11/21 05:15	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.7	0.27	ng/L			11/11/21 05:15	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.7	0.34	ng/L		11/04/21 19:30	11/11/21 05:15	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	99		50 - 150				11/04/21 19:30	11/11/21 05:15	1
13C4 PFHpA	92		50 - 150				11/04/21 19:30	11/11/21 05:15	1
13C4 PFOA	99		50 - 150				11/04/21 19:30	11/11/21 05:15	1
13C5 PFNA	101		50 - 150				11/04/21 19:30	11/11/21 05:15	1
13C2 PFDA	90		50 - 150				11/04/21 19:30	11/11/21 05:15	1
13C2 PFUnA	87		50 - 150				11/04/21 19:30	11/11/21 05:15	1
13C2 PFDoA	81		50 - 150				11/04/21 19:30	11/11/21 05:15	1
13C2 PFTeDA	73		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 05:15	1
13C3 PFBS	105		50 - 150				11/04/21 19:30	11/11/21 05:15	1
1802 PFHxS	96		50 - 150				11/04/21 19:30	11/11/21 05:15	1
13C4 PFOS	100		50 - 150				11/04/21 19:30	11/11/21 05:15	1
d3-NMeFOSAA	84		50 - 150				11/04/21 19:30	11/11/21 05:15	1

11/04/21 19:30 11/11/21 05:15

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Client: Shannon & Wilson, Inc Job ID: 320-81258-1 Project/Site: SC Waters#3

Client Sample ID: MW-24-10

Lab Sample ID: 320-81258-16

**Matrix: Water** 

Date Collected: 10/29/21 15:25 Date Received: 11/03/21 14:01

d5-NEtFOSAA

13C3 HFPO-DA

Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.7	0.49	ng/L		11/04/21 19:30	11/11/21 05:26	1
Perfluoroheptanoic acid (PFHpA)	ND		1.7	0.21	ng/L		11/04/21 19:30	11/11/21 05:26	1
Perfluorooctanoic acid (PFOA)	ND		1.7	0.71	ng/L		11/04/21 19:30	11/11/21 05:26	1
Perfluorononanoic acid (PFNA)	ND		1.7	0.23	ng/L		11/04/21 19:30	11/11/21 05:26	1
Perfluorodecanoic acid (PFDA)	ND		1.7	0.26	ng/L		11/04/21 19:30	11/11/21 05:26	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.92	ng/L		11/04/21 19:30	11/11/21 05:26	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.46	ng/L		11/04/21 19:30	11/11/21 05:26	1
Perfluorotridecanoic acid (PFTriA)	ND		1.7	1.1	ng/L		11/04/21 19:30	11/11/21 05:26	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.61	ng/L		11/04/21 19:30	11/11/21 05:26	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.7	0.17	ng/L		11/04/21 19:30	11/11/21 05:26	1
Perfluorohexanesulfonic acid (PFHxS)	0.54	J	1.7	0.48	ng/L		11/04/21 19:30	11/11/21 05:26	1
Perfluorooctanesulfonic acid (PFOS)	1.4	J	1.7	0.45	ng/L		11/04/21 19:30	11/11/21 05:26	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.2	1.0	ng/L		11/04/21 19:30	11/11/21 05:26	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.2	1.1	ng/L		11/04/21 19:30	11/11/21 05:26	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.7	0.20	ng/L		11/04/21 19:30	11/11/21 05:26	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.4	1.3	ng/L		11/04/21 19:30	11/11/21 05:26	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.7	0.27	ng/L		11/04/21 19:30	11/11/21 05:26	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.7	0.34	ng/L		11/04/21 19:30	11/11/21 05:26	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	98		50 - 150				11/04/21 19:30	11/11/21 05:26	1
13C4 PFHpA	97		50 - 150				11/04/21 19:30	11/11/21 05:26	1
13C4 PFOA	98		50 - 150				11/04/21 19:30	11/11/21 05:26	1
13C5 PFNA	97		50 - 150				11/04/21 19:30	11/11/21 05:26	1
13C2 PFDA	91		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 05:26	1
13C2 PFUnA	89		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 05:26	1
13C2 PFDoA	83		50 - 150				11/04/21 19:30	11/11/21 05:26	1
13C2 PFTeDA	81		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 05:26	1
13C3 PFBS	102		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 05:26	1
1802 PFHxS	95		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 05:26	1
13C4 PFOS	93		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 05:26	1
d3-NMeFOSAA	97		50 - 150				11/04/21 19:30	11/11/21 05:26	1

11/04/21 19:30 11/11/21 05:26

11/04/21 19:30 11/11/21 05:26

50 - 150

50 - 150

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Client: Shannon & Wilson, Inc Job ID: 320-81258-1

Project/Site: SC Waters#3

Date Received: 11/03/21 14:01

Client Sample ID: MW-25-47 Lab Sample ID: 320-81258-17 Date Collected: 10/29/21 11:01

**Matrix: Water** 

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.8	0.52	ng/L		11/04/21 19:30	11/11/21 05:36	1
Perfluoroheptanoic acid (PFHpA)	ND		1.8	0.22	ng/L		11/04/21 19:30	11/11/21 05:36	1
Perfluorooctanoic acid (PFOA)	ND		1.8	0.76	ng/L		11/04/21 19:30	11/11/21 05:36	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.24	ng/L		11/04/21 19:30	11/11/21 05:36	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.28	ng/L		11/04/21 19:30	11/11/21 05:36	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.98	ng/L		11/04/21 19:30	11/11/21 05:36	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.49	ng/L		11/04/21 19:30	11/11/21 05:36	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		11/04/21 19:30	11/11/21 05:36	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.65	ng/L		11/04/21 19:30	11/11/21 05:36	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.8	0.18	ng/L		11/04/21 19:30	11/11/21 05:36	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.8	0.51	ng/L		11/04/21 19:30	11/11/21 05:36	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.8	0.48	ng/L		11/04/21 19:30	11/11/21 05:36	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.5	1.1	ng/L		11/04/21 19:30	11/11/21 05:36	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.5	1.2	ng/L		11/04/21 19:30	11/11/21 05:36	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.8	0.21	ng/L		11/04/21 19:30	11/11/21 05:36	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.6	1.3	ng/L		11/04/21 19:30	11/11/21 05:36	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.8	0.29	ng/L		11/04/21 19:30	11/11/21 05:36	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.8	0.36	ng/L		11/04/21 19:30	11/11/21 05:36	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	93		50 - 150				11/04/21 19:30	11/11/21 05:36	1
13C4 PFHpA	93		50 - 150				11/04/21 19:30	11/11/21 05:36	1
13C4 PFOA	96		50 - 150				11/04/21 19:30	11/11/21 05:36	1
13C5 PFNA	94		50 - 150				11/04/21 19:30	11/11/21 05:36	1
13C2 PFDA	93		50 - 150				11/04/21 19:30	11/11/21 05:36	1
13C2 PFUnA	89		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 05:36	1
13C2 PFDoA	81		50 - 150				11/04/21 19:30	11/11/21 05:36	1
13C2 PFTeDA	82		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 05:36	1
13C3 PFBS	98		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 05:36	1
1802 PFHxS	86		50 <sub>-</sub> 150					11/11/21 05:36	1
13C4 PFOS	91		50 <sub>-</sub> 150					11/11/21 05:36	1
d3-NMeFOSAA	97		50 - 150					11/11/21 05:36	1
d5-NEtFOSAA	97		50 - 150					11/11/21 05:36	
13C3 HFPO-DA	85		50 <sub>-</sub> 150					11/11/21 05:36	1

Client: Shannon & Wilson, Inc Job ID: 320-81258-1 Project/Site: SC Waters#3

Client Sample ID: MW-125-47 Lab Sample ID: 320-81258-18 Date Collected: 10/29/21 10:51

**Matrix: Water** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.8	0.53	ng/L		11/04/21 19:30	11/11/21 05:57	1
Perfluoroheptanoic acid (PFHpA)	ND		1.8	0.23	ng/L		11/04/21 19:30	11/11/21 05:57	1
Perfluorooctanoic acid (PFOA)	ND		1.8	0.77	ng/L		11/04/21 19:30	11/11/21 05:57	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.25	ng/L		11/04/21 19:30	11/11/21 05:57	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.28	ng/L		11/04/21 19:30	11/11/21 05:57	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	1.0	ng/L		11/04/21 19:30	11/11/21 05:57	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.50	ng/L		11/04/21 19:30	11/11/21 05:57	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		11/04/21 19:30	11/11/21 05:57	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.66	ng/L		11/04/21 19:30	11/11/21 05:57	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.8	0.18	ng/L		11/04/21 19:30	11/11/21 05:57	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.8	0.52	ng/L		11/04/21 19:30	11/11/21 05:57	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.8	0.49	ng/L		11/04/21 19:30	11/11/21 05:57	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.6	1.1	ng/L		11/04/21 19:30	11/11/21 05:57	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.6	1.2	ng/L		11/04/21 19:30	11/11/21 05:57	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.8	0.22	ng/L		11/04/21 19:30	11/11/21 05:57	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.6	1.4	ng/L		11/04/21 19:30	11/11/21 05:57	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.8	0.29	ng/L		11/04/21 19:30	11/11/21 05:57	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.8	0.36	ng/L		11/04/21 19:30	11/11/21 05:57	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	109		50 - 150				11/04/21 19:30	11/11/21 05:57	1
13C4 PFHpA	106		50 - 150				11/04/21 19:30	11/11/21 05:57	1
13C4 PFOA	105		50 <sub>-</sub> 150				11/04/21 19:30	11/11/21 05:57	1

Isotope Dilution	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	109	50 - 150	11/04/21 19:30	11/11/21 05:57	1
13C4 PFHpA	106	50 - 150	11/04/21 19:30	11/11/21 05:57	1
13C4 PFOA	105	50 - 150	11/04/21 19:30	11/11/21 05:57	1
13C5 PFNA	108	50 - 150	11/04/21 19:30	11/11/21 05:57	1
13C2 PFDA	102	50 - 150	11/04/21 19:30	11/11/21 05:57	1
13C2 PFUnA	99	50 - 150	11/04/21 19:30	11/11/21 05:57	1
13C2 PFDoA	97	50 - 150	11/04/21 19:30	11/11/21 05:57	1
13C2 PFTeDA	92	50 - 150	11/04/21 19:30	11/11/21 05:57	1
13C3 PFBS	111	50 - 150	11/04/21 19:30	11/11/21 05:57	1
1802 PFHxS	98	50 - 150	11/04/21 19:30	11/11/21 05:57	1
13C4 PFOS	103	50 - 150	11/04/21 19:30	11/11/21 05:57	1
d3-NMeFOSAA	106	50 - 150	11/04/21 19:30	11/11/21 05:57	1
d5-NEtFOSAA	109	50 - 150	11/04/21 19:30	11/11/21 05:57	1
13C3 HFPO-DA	104	50 - 150	11/04/21 19:30	11/11/21 05:57	1

Client: Shannon & Wilson, Inc Job ID: 320-81258-1 Project/Site: SC Waters#3

Client Sample ID: MW-22-15

Date Received: 11/03/21 14:01

11-Chloroeicosafluoro-3-oxaundecan

4,8-Dioxa-3H-perfluorononanoic acid

e-1-sulfonic acid

Lab Sample ID: 320-81258-19 Date Collected: 10/30/21 15:30

**Matrix: Water** 

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 Analyte Result Qualifier **MDL** Unit Dil Fac RL Prepared Analyzed Perfluorohexanoic acid (PFHxA) 1.8 0.53 ng/L 11/04/21 19:30 11/11/21 06:07 3.0 11/04/21 19:30 11/11/21 06:07 Perfluoroheptanoic acid (PFHpA) 1.1 J 1.8 0.23 ng/L Perfluorooctanoic acid (PFOA) 1.0 J 1.8 0.78 ng/L 11/04/21 19:30 11/11/21 06:07 Perfluorononanoic acid (PFNA) ND 0.25 ng/L 11/04/21 19:30 11/11/21 06:07 1.8 Perfluorodecanoic acid (PFDA) ND 1.8 0.28 ng/L 11/04/21 19:30 11/11/21 06:07 ND Perfluoroundecanoic acid (PFUnA) 1.8 1.0 ng/L 11/04/21 19:30 11/11/21 06:07 Perfluorododecanoic acid (PFDoA) ND 1.8 0.50 ng/L 11/04/21 19:30 11/11/21 06:07 Perfluorotridecanoic acid (PFTriA) ND 1.8 11/04/21 19:30 11/11/21 06:07 1.2 ng/L Perfluorotetradecanoic acid (PFTeA) ND 1.8 0.67 ng/L 11/04/21 19:30 11/11/21 06:07 Perfluorobutanesulfonic acid 0.39 JI 1.8 0.18 ng/L 11/04/21 19:30 11/11/21 06:07 (PFBS) 1.8 0.52 ng/L 11/04/21 19:30 11/11/21 06:07 Perfluorohexanesulfonic acid 4.5 (PFHxS) Perfluorooctanesulfonic acid 22 1.8 0.50 ng/L 11/04/21 19:30 11/11/21 06:07 (PFOS) ND 1.1 ng/L 11/04/21 19:30 11/11/21 06:07 N-methylperfluorooctanesulfonamidoa 4.6 cetic acid (NMeFOSAA) N-ethylperfluorooctanesulfonamidoac ND 4.6 1.2 ng/L 11/04/21 19:30 11/11/21 06:07 etic acid (NEtFOSAA) 9-Chlorohexadecafluoro-3-oxanonan ND 0.22 ng/L 11/04/21 19:30 11/11/21 06:07 1.8 e-1-sulfonic acid Hexafluoropropylene Oxide Dimer ND 3.7 1.4 ng/L 11/04/21 19:30 11/11/21 06:07 Acid (HFPO-DA)

(ADONA)					
Isotope Dilution	%Recovery Quality	fier Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	103	50 - 150	11/04/21 19:30	11/11/21 06:07	1
13C4 PFHpA	101	50 - 150	11/04/21 19:30	11/11/21 06:07	1
13C4 PFOA	103	50 - 150	11/04/21 19:30	11/11/21 06:07	1
13C5 PFNA	96	50 - 150	11/04/21 19:30	11/11/21 06:07	1
13C2 PFDA	96	50 - 150	11/04/21 19:30	11/11/21 06:07	1
13C2 PFUnA	84	50 - 150	11/04/21 19:30	11/11/21 06:07	1
13C2 PFDoA	72	50 - 150	11/04/21 19:30	11/11/21 06:07	1
13C2 PFTeDA	73	50 - 150	11/04/21 19:30	11/11/21 06:07	1
13C3 PFBS	115	50 <sub>-</sub> 150	11/04/21 19:30	11/11/21 06:07	1
1802 PFHxS	96	50 - 150	11/04/21 19:30	11/11/21 06:07	1
13C4 PFOS	98	50 - 150	11/04/21 19:30	11/11/21 06:07	1
d3-NMeFOSAA	89	50 - 150	11/04/21 19:30	11/11/21 06:07	1
d5-NEtFOSAA	91	50 - 150	11/04/21 19:30	11/11/21 06:07	1
13C3 HFPO-DA	96	50 <sub>-</sub> 150	11/04/21 19:30	11/11/21 06:07	1

1.8

1.8

0.29 ng/L

0.37 ng/L

ND

ND

11/04/21 19:30 11/11/21 06:07

11/04/21 19:30 11/11/21 06:07

Client: Shannon & Wilson, Inc Job ID: 320-81258-1 Project/Site: SC Waters#3

Client Sample ID: MW-22-40

Date Received: 11/03/21 14:01

Lab Sample ID: 320-81258-20 Date Collected: 10/30/21 14:59

**Matrix: Water** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	6.8		1.8	0.52	ng/L		11/04/21 19:30	11/11/21 06:18	1
Perfluoroheptanoic acid (PFHpA)	1.2	J	1.8	0.22	ng/L		11/04/21 19:30	11/11/21 06:18	1
Perfluorooctanoic acid (PFOA)	3.2		1.8	0.76	ng/L		11/04/21 19:30	11/11/21 06:18	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.24	ng/L		11/04/21 19:30	11/11/21 06:18	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.28	ng/L		11/04/21 19:30	11/11/21 06:18	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.98	ng/L		11/04/21 19:30	11/11/21 06:18	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.49	ng/L		11/04/21 19:30	11/11/21 06:18	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		11/04/21 19:30	11/11/21 06:18	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.65	ng/L		11/04/21 19:30	11/11/21 06:18	1
Perfluorobutanesulfonic acid (PFBS)	4.0		1.8	0.18	ng/L		11/04/21 19:30	11/11/21 06:18	1
Perfluorohexanesulfonic acid (PFHxS)	27		1.8	0.51	ng/L		11/04/21 19:30	11/11/21 06:18	1
Perfluorooctanesulfonic acid (PFOS)	7.2		1.8	0.48	ng/L		11/04/21 19:30	11/11/21 06:18	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.5	1.1	ng/L		11/04/21 19:30	11/11/21 06:18	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.5	1.2	ng/L		11/04/21 19:30	11/11/21 06:18	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.8	0.21	ng/L		11/04/21 19:30	11/11/21 06:18	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.6	1.3	ng/L		11/04/21 19:30	11/11/21 06:18	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.8	0.29	ng/L		11/04/21 19:30	11/11/21 06:18	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.8	0.36	ng/L		11/04/21 19:30	11/11/21 06:18	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 DEHVA	101		50 150				11/04/21 10:30	11/11/21 06:18	

(ADONA)				
Isotope Dilution	%Recovery Qualifier	Limits	Prepared Analyzed	Dil Fac
13C2 PFHxA	101	50 - 150	11/04/21 19:30 11/11/21 06:1	8 1
13C4 PFHpA	97	50 - 150	11/04/21 19:30 11/11/21 06:1	8 1
13C4 PFOA	103	50 - 150	11/04/21 19:30 11/11/21 06:1	8 1
13C5 PFNA	98	50 - 150	11/04/21 19:30 11/11/21 06:1	8 1
13C2 PFDA	103	50 - 150	11/04/21 19:30 11/11/21 06:1	8 1
13C2 PFUnA	103	50 - 150	11/04/21 19:30 11/11/21 06:1	8 1
13C2 PFDoA	88	50 - 150	11/04/21 19:30 11/11/21 06:1	8 1
13C2 PFTeDA	87	50 - 150	11/04/21 19:30 11/11/21 06:1	8 1
13C3 PFBS	112	50 <sub>-</sub> 150	11/04/21 19:30 11/11/21 06:1	8 1
18O2 PFHxS	100	50 - 150	11/04/21 19:30 11/11/21 06:1	8 1
13C4 PFOS	97	50 - 150	11/04/21 19:30 11/11/21 06:1	8 1
d3-NMeFOSAA	105	50 <sub>-</sub> 150	11/04/21 19:30 11/11/21 06:1	8 1
d5-NEtFOSAA	106	50 - 150	11/04/21 19:30 11/11/21 06:1	8 1
13C3 HFPO-DA	98	50 - 150	11/04/21 19:30 11/11/21 06:1	8 1

Client: Shannon & Wilson, Inc Job ID: 320-81258-1 Project/Site: SC Waters#3

Client Sample ID: 21GST-TWP-12

13C2 PFDoA

13C2 PFTeDA

13C3 PFBS

1802 PFHxS

13C4 PFOS

d3-NMeFOSAA

d5-NEtFOSAA

13C3 HFPO-DA

Lab Sample ID: 320-81258-21 Date Collected: 10/30/21 13:43

**Matrix: Water** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.7	0.50	ng/L		11/04/21 19:36	11/13/21 06:26	1
Perfluoroheptanoic acid (PFHpA)	ND		1.7	0.22	ng/L		11/04/21 19:36	11/13/21 06:26	1
Perfluorooctanoic acid (PFOA)	ND		1.7	0.73	ng/L		11/04/21 19:36	11/13/21 06:26	1
Perfluorononanoic acid (PFNA)	ND		1.7	0.23	ng/L		11/04/21 19:36	11/13/21 06:26	1
Perfluorodecanoic acid (PFDA)	ND		1.7	0.27	ng/L		11/04/21 19:36	11/13/21 06:26	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.95	ng/L		11/04/21 19:36	11/13/21 06:26	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.47	ng/L		11/04/21 19:36	11/13/21 06:26	1
Perfluorotridecanoic acid (PFTriA)	ND		1.7	1.1	ng/L		11/04/21 19:36	11/13/21 06:26	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.63	ng/L		11/04/21 19:36	11/13/21 06:26	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.7	0.17	ng/L		11/04/21 19:36	11/13/21 06:26	1
Perfluorohexanesulfonic acid (PFHxS)	0.57	J	1.7	0.49	ng/L		11/04/21 19:36	11/13/21 06:26	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.7	0.47	ng/L		11/04/21 19:36	11/13/21 06:26	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.3	1.0	ng/L		11/04/21 19:36	11/13/21 06:26	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.3		ng/L		11/04/21 19:36	11/13/21 06:26	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.7	0.21			11/04/21 19:36	11/13/21 06:26	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.5	1.3	ng/L		11/04/21 19:36	11/13/21 06:26	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.7	0.28	ng/L		11/04/21 19:36	11/13/21 06:26	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.7	0.35	ng/L		11/04/21 19:36	11/13/21 06:26	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	109		50 - 150				11/04/21 19:36	11/13/21 06:26	1
13C4 PFHpA	108		50 - 150				11/04/21 19:36	11/13/21 06:26	1
13C4 PFOA	104		50 - 150				11/04/21 19:36	11/13/21 06:26	1
13C5 PFNA	106		50 - 150				11/04/21 19:36	11/13/21 06:26	1
13C2 PFDA	108		50 - 150				11/04/21 19:36	11/13/21 06:26	1
13C2 PFUnA	108		50 - 150				11/04/21 19:36	11/13/21 06:26	1

50 - 150

50 - 150

50 - 150

50 - 150

50 - 150

50 - 150

50 - 150

50 - 150

96

89

121

101

104

108

117

107

11/04/21 19:36 11/13/21 06:26

11/04/21 19:36 11/13/21 06:26

11/04/21 19:36 11/13/21 06:26

11/04/21 19:36 11/13/21 06:26

11/04/21 19:36 11/13/21 06:26

11/04/21 19:36 11/13/21 06:26

11/04/21 19:36 11/13/21 06:26

11/04/21 19:36 11/13/21 06:26

Client: Shannon & Wilson, Inc Job ID: 320-81258-1 Project/Site: SC Waters#3

Client Sample ID: 21GST-TWP-11

Lab Sample ID: 320-81258-22 Date Collected: 10/30/21 12:42

**Matrix: Water** 

Date Received: 11/03/21 14:01

13C3 HFPO-DA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	1.1	J	1.7	0.50	ng/L		11/04/21 19:36	11/13/21 06:36	1
Perfluoroheptanoic acid (PFHpA)	1.1	J	1.7	0.22	ng/L		11/04/21 19:36	11/13/21 06:36	1
Perfluorooctanoic acid (PFOA)	1.3	J	1.7	0.74	ng/L		11/04/21 19:36	11/13/21 06:36	1
Perfluorononanoic acid (PFNA)	ND		1.7	0.23	ng/L		11/04/21 19:36	11/13/21 06:36	1
Perfluorodecanoic acid (PFDA)	ND		1.7	0.27	ng/L		11/04/21 19:36	11/13/21 06:36	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.95	ng/L		11/04/21 19:36	11/13/21 06:36	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.48	ng/L		11/04/21 19:36	11/13/21 06:36	1
Perfluorotridecanoic acid (PFTriA)	ND		1.7	1.1	ng/L		11/04/21 19:36	11/13/21 06:36	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.63	ng/L		11/04/21 19:36	11/13/21 06:36	1
Perfluorobutanesulfonic acid (PFBS)	0.26	J	1.7	0.17	ng/L		11/04/21 19:36	11/13/21 06:36	1
Perfluorohexanesulfonic acid (PFHxS)	6.4		1.7	0.49	ng/L		11/04/21 19:36	11/13/21 06:36	1
Perfluorooctanesulfonic acid (PFOS)	29		1.7		ng/L		11/04/21 19:36	11/13/21 06:36	
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.3	1.0	ng/L		11/04/21 19:36	11/13/21 06:36	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.3	1.1	ng/L		11/04/21 19:36	11/13/21 06:36	,
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.7	0.21	ng/L		11/04/21 19:36	11/13/21 06:36	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.5	1.3	ng/L		11/04/21 19:36	11/13/21 06:36	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.7	0.28	ng/L		11/04/21 19:36	11/13/21 06:36	,
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.7	0.35	ng/L		11/04/21 19:36	11/13/21 06:36	•
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C2 PFHxA	113		50 - 150				11/04/21 19:36	11/13/21 06:36	
13C4 PFHpA	113		50 - 150				11/04/21 19:36	11/13/21 06:36	1
13C4 PFOA	103		50 - 150				11/04/21 19:36	11/13/21 06:36	1
13C5 PFNA	104		50 - 150				11/04/21 19:36	11/13/21 06:36	1
13C2 PFDA	101		50 - 150				11/04/21 19:36	11/13/21 06:36	1
13C2 PFUnA	102		50 - 150				11/04/21 19:36	11/13/21 06:36	1
13C2 PFDoA	86		50 - 150				11/04/21 19:36	11/13/21 06:36	
13C2 PFTeDA	82		50 - 150				11/04/21 19:36	11/13/21 06:36	
13C3 PFBS	114		50 - 150				11/04/21 19:36	11/13/21 06:36	
1802 PFHxS	104		50 - 150				11/04/21 19:36	11/13/21 06:36	
13C4 PFOS	101		50 - 150				11/04/21 19:36	11/13/21 06:36	
d3-NMeFOSAA	101		50 - 150				11/04/21 19:36	11/13/21 06:36	
d5-NEtFOSAA	107		50 - 150				11/04/21 19:36	11/13/21 06:36	

11/04/21 19:36 11/13/21 06:36

50 - 150

Client: Shannon & Wilson, Inc Job ID: 320-81258-1 Project/Site: SC Waters#3

Client Sample ID: 21GST-TWP-111

Date Received: 11/03/21 14:01

1802 PFHxS

13C4 PFOS

d3-NMeFOSAA

d5-NEtFOSAA

13C3 HFPO-DA

Lab Sample ID: 320-81258-23 Date Collected: 10/30/21 12:32

**Matrix: Water** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	1.4	J	1.8	0.52	ng/L		11/04/21 19:36	11/13/21 06:46	1
Perfluoroheptanoic acid (PFHpA)	1.1	J	1.8	0.23	ng/L		11/04/21 19:36	11/13/21 06:46	1
Perfluorooctanoic acid (PFOA)	1.0	J	1.8	0.77	ng/L		11/04/21 19:36	11/13/21 06:46	1
Perfluorononanoic acid (PFNA)	0.29	J	1.8	0.24	ng/L		11/04/21 19:36	11/13/21 06:46	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.28	ng/L		11/04/21 19:36	11/13/21 06:46	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.99	ng/L		11/04/21 19:36	11/13/21 06:46	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.50	ng/L		11/04/21 19:36	11/13/21 06:46	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		11/04/21 19:36	11/13/21 06:46	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.66	ng/L		11/04/21 19:36	11/13/21 06:46	1
Perfluorobutanesulfonic acid (PFBS)	0.21	J	1.8	0.18	ng/L		11/04/21 19:36	11/13/21 06:46	1
Perfluorohexanesulfonic acid (PFHxS)	5.9		1.8	0.51	ng/L		11/04/21 19:36	11/13/21 06:46	1
Perfluorooctanesulfonic acid (PFOS)	28		1.8	0.49	ng/L		11/04/21 19:36	11/13/21 06:46	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.5	1.1	ng/L		11/04/21 19:36	11/13/21 06:46	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.5	1.2	ng/L		11/04/21 19:36	11/13/21 06:46	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.8	0.22	ng/L		11/04/21 19:36	11/13/21 06:46	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.6	1.4	ng/L		11/04/21 19:36	11/13/21 06:46	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.8	0.29	ng/L		11/04/21 19:36	11/13/21 06:46	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.8	0.36	ng/L		11/04/21 19:36	11/13/21 06:46	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	108		50 - 150				11/04/21 19:36	11/13/21 06:46	1
13C4 PFHpA	101		50 - 150				11/04/21 19:36	11/13/21 06:46	1
13C4 PFOA	102		50 - 150				11/04/21 19:36	11/13/21 06:46	1
13C5 PFNA	95		50 - 150				11/04/21 19:36	11/13/21 06:46	1
13C2 PFDA	96		50 - 150				11/04/21 19:36	11/13/21 06:46	1
13C2 PFUnA	96		50 - 150				11/04/21 19:36	11/13/21 06:46	1
13C2 PFDoA	89		50 - 150				11/04/21 19:36	11/13/21 06:46	1
13C2 PFTeDA	83		50 - 150				11/04/21 19:36	11/13/21 06:46	1
13C3 PFBS	118		50 <sub>-</sub> 150				11/04/21 19:36	11/13/21 06:46	1

11/04/21 19:36 11/13/21 06:46

11/04/21 19:36 11/13/21 06:46

11/04/21 19:36 11/13/21 06:46

11/04/21 19:36 11/13/21 06:46

11/04/21 19:36 11/13/21 06:46

50 - 150

50 - 150

50 - 150

50 - 150

50 - 150

102

107

97

102

Client: Shannon & Wilson, Inc Job ID: 320-81258-1 Project/Site: SC Waters#3

**Client Sample ID: 21GST-TWP-9** 

Date Received: 11/03/21 14:01

13C3 PFBS

1802 PFHxS

13C4 PFOS

d3-NMeFOSAA

d5-NEtFOSAA

13C3 HFPO-DA

Lab Sample ID: 320-81258-24 Date Collected: 10/30/21 11:24

**Matrix: Water** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	9.9		1.7	0.50	ng/L		11/04/21 19:36	11/13/21 06:57	1
Perfluoroheptanoic acid (PFHpA)	2.2		1.7	0.22	ng/L		11/04/21 19:36	11/13/21 06:57	1
Perfluorooctanoic acid (PFOA)	2.7		1.7	0.74	ng/L		11/04/21 19:36	11/13/21 06:57	1
Perfluorononanoic acid (PFNA)	ND		1.7	0.23	ng/L		11/04/21 19:36	11/13/21 06:57	1
Perfluorodecanoic acid (PFDA)	ND		1.7	0.27	ng/L		11/04/21 19:36	11/13/21 06:57	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.95	ng/L		11/04/21 19:36	11/13/21 06:57	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.48	ng/L		11/04/21 19:36	11/13/21 06:57	1
Perfluorotridecanoic acid (PFTriA)	ND		1.7	1.1	ng/L		11/04/21 19:36	11/13/21 06:57	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.63	ng/L		11/04/21 19:36	11/13/21 06:57	1
Perfluorobutanesulfonic acid (PFBS)	0.98	J	1.7	0.17	ng/L		11/04/21 19:36	11/13/21 06:57	1
Perfluorohexanesulfonic acid (PFHxS)	22		1.7	0.49	ng/L		11/04/21 19:36	11/13/21 06:57	1
Perfluorooctanesulfonic acid (PFOS)	74		1.7	0.47	ng/L		11/04/21 19:36	11/13/21 06:57	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.3	1.0	ng/L		11/04/21 19:36	11/13/21 06:57	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.3	1.1	ng/L		11/04/21 19:36	11/13/21 06:57	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.7	0.21	ng/L		11/04/21 19:36	11/13/21 06:57	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.5	1.3	ng/L		11/04/21 19:36	11/13/21 06:57	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.7	0.28	ng/L		11/04/21 19:36	11/13/21 06:57	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.7	0.35	ng/L		11/04/21 19:36	11/13/21 06:57	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	113		50 - 150				11/04/21 19:36	11/13/21 06:57	1
13C4 PFHpA	112		50 - 150				11/04/21 19:36	11/13/21 06:57	1
13C4 PFOA	106		50 - 150				11/04/21 19:36	11/13/21 06:57	1
13C5 PFNA	102		50 - 150				11/04/21 19:36	11/13/21 06:57	1
13C2 PFDA	101		50 - 150				11/04/21 19:36	11/13/21 06:57	1
13C2 PFUnA	103		50 - 150				11/04/21 19:36	11/13/21 06:57	1
13C2 PFDoA	88		50 - 150				11/04/21 19:36	11/13/21 06:57	1
13C2 PFTeDA	81		50 <sub>-</sub> 150				11/04/21 10:26	11/13/21 06:57	1

11/04/21 19:36 11/13/21 06:57

11/04/21 19:36 11/13/21 06:57

11/04/21 19:36 11/13/21 06:57

11/04/21 19:36 11/13/21 06:57

11/04/21 19:36 11/13/21 06:57

11/04/21 19:36 11/13/21 06:57

50 - 150

50 - 150

50 - 150

50 - 150

50 - 150

50 - 150

127

108

106

107

113

Client: Shannon & Wilson, Inc Job ID: 320-81258-1 Project/Site: SC Waters#3

**Client Sample ID: 21GST-TWP-7** 

Date Received: 11/03/21 14:01

13C4 PFOS

d3-NMeFOSAA

d5-NEtFOSAA

13C3 HFPO-DA

Lab Sample ID: 320-81258-25 Date Collected: 10/30/21 10:38

**Matrix: Water** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	1.1	J	1.7	0.50	ng/L		11/04/21 19:36	11/13/21 07:07	1
Perfluoroheptanoic acid (PFHpA)	1.2	J	1.7	0.22	ng/L		11/04/21 19:36	11/13/21 07:07	1
Perfluorooctanoic acid (PFOA)	2.7		1.7	0.74	ng/L		11/04/21 19:36	11/13/21 07:07	1
Perfluorononanoic acid (PFNA)	0.52	J	1.7	0.23	ng/L		11/04/21 19:36	11/13/21 07:07	1
Perfluorodecanoic acid (PFDA)	ND		1.7	0.27	ng/L		11/04/21 19:36	11/13/21 07:07	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.95	ng/L		11/04/21 19:36	11/13/21 07:07	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.48	ng/L		11/04/21 19:36	11/13/21 07:07	1
Perfluorotridecanoic acid (PFTriA)	ND		1.7	1.1	ng/L		11/04/21 19:36	11/13/21 07:07	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.63	ng/L		11/04/21 19:36	11/13/21 07:07	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.7	0.17	ng/L		11/04/21 19:36	11/13/21 07:07	1
Perfluorohexanesulfonic acid (PFHxS)	1.0	J	1.7	0.49	ng/L		11/04/21 19:36	11/13/21 07:07	1
Perfluorooctanesulfonic acid (PFOS)	19		1.7	0.47	ng/L		11/04/21 19:36	11/13/21 07:07	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.3	1.0	ng/L		11/04/21 19:36	11/13/21 07:07	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.3	1.1	ng/L		11/04/21 19:36	11/13/21 07:07	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.7	0.21	ng/L		11/04/21 19:36	11/13/21 07:07	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.5	1.3	ng/L		11/04/21 19:36	11/13/21 07:07	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.7	0.28	ng/L		11/04/21 19:36	11/13/21 07:07	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.7	0.35	ng/L		11/04/21 19:36	11/13/21 07:07	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	102		50 - 150				11/04/21 19:36	11/13/21 07:07	1
13C4 PFHpA	101		50 - 150				11/04/21 19:36	11/13/21 07:07	1
13C4 PFOA	102		50 <sub>-</sub> 150				11/04/21 19:36	11/13/21 07:07	1
13C5 PFNA	103		50 - 150				11/04/21 19:36	11/13/21 07:07	1
13C2 PFDA	104		50 <sub>-</sub> 150				11/04/21 19:36	11/13/21 07:07	1
13C2 PFUnA	96		50 <sub>-</sub> 150				11/04/21 19:36	11/13/21 07:07	1
13C2 PFDoA	86		50 - 150				11/04/21 19:36	11/13/21 07:07	1
13C2 PFTeDA	78		50 - 150					11/13/21 07:07	1
13C3 PFBS	112		50 <sub>-</sub> 150				11/04/21 19:36	11/13/21 07:07	1
1802 PFHxS	97		50 <sub>-</sub> 150					11/13/21 07:07	1
							11/01/01 15 55	44400407	•

11/04/21 19:36 11/13/21 07:07

11/04/21 19:36 11/13/21 07:07

11/04/21 19:36 11/13/21 07:07

11/04/21 19:36 11/13/21 07:07

50 - 150

50 - 150

50 - 150

50 - 150

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96

103

Client: Shannon & Wilson, Inc Job ID: 320-81258-1 Project/Site: SC Waters#3

Client Sample ID: 21GST-TWP-6

Date Received: 11/03/21 14:01

Lab Sample ID: 320-81258-26 Date Collected: 10/30/21 09:57

**Matrix: Water** 

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 Analyte Result Qualifier RL **MDL** Unit Dil Fac Prepared Analyzed Perfluorohexanoic acid (PFHxA) 1.7 11/04/21 19:36 11/13/21 07:18 0.50 ng/L 1.0 J Perfluoroheptanoic acid (PFHpA) 0.61 J 1.7 0.21 ng/L 11/04/21 19:36 11/13/21 07:18 Perfluorooctanoic acid (PFOA) ND 1.7 0.73 ng/L 11/04/21 19:36 11/13/21 07:18 Perfluorononanoic acid (PFNA) ND 0.23 ng/L 11/04/21 19:36 11/13/21 07:18 1.7 Perfluorodecanoic acid (PFDA) ND 1.7 0.27 ng/L 11/04/21 19:36 11/13/21 07:18 Perfluoroundecanoic acid (PFUnA) ND 1.7 0.94 ng/L 11/04/21 19:36 11/13/21 07:18 Perfluorododecanoic acid (PFDoA) ND 1.7 0.47 ng/L 11/04/21 19:36 11/13/21 07:18 Perfluorotridecanoic acid (PFTriA) ND 1.7 11/04/21 19:36 11/13/21 07:18 1.1 ng/L Perfluorotetradecanoic acid (PFTeA) ND 1.7 0.63 ng/L 11/04/21 19:36 11/13/21 07:18 Perfluorobutanesulfonic acid 0.50 J 1.7 0.17 ng/L 11/04/21 19:36 11/13/21 07:18 (PFBS) 1.7 0.49 ng/L 11/04/21 19:36 11/13/21 07:18 Perfluorohexanesulfonic acid 8.4 (PFHxS) Perfluorooctanesulfonic acid 8.0 1.7 0.46 ng/L 11/04/21 19:36 11/13/21 07:18 (PFOS) ND 1.0 ng/L 11/04/21 19:36 11/13/21 07:18 N-methylperfluorooctanesulfonamidoa 4.3 cetic acid (NMeFOSAA) N-ethylperfluorooctanesulfonamidoac ND 4.3 1.1 ng/L 11/04/21 19:36 11/13/21 07:18 etic acid (NEtFOSAA) ND 1.7 11/04/21 19:36 11/13/21 07:18 9-Chlorohexadecafluoro-3-oxanonan 0.21 ng/L e-1-sulfonic acid Hexafluoropropylene Oxide Dimer ND 3.4 1.3 ng/L 11/04/21 19:36 11/13/21 07:18 Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaundecan ND 1.7 0.27 ng/L 11/04/21 19:36 11/13/21 07:18 e-1-sulfonic acid 4,8-Dioxa-3H-perfluorononanoic acid ND 1.7 0.34 ng/L 11/04/21 19:36 11/13/21 07:18 (ADONA)

(ADONA)					
Isotope Dilution	%Recovery Qua	lifier Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	98	50 - 150	11/04/21 19:36	11/13/21 07:18	1
13C4 PFHpA	95	50 <sub>-</sub> 150	11/04/21 19:36	11/13/21 07:18	1
13C4 PFOA	84	50 - 150	11/04/21 19:36	11/13/21 07:18	1
13C5 PFNA	90	50 - 150	11/04/21 19:36	11/13/21 07:18	1
13C2 PFDA	84	50 - 150	11/04/21 19:36	11/13/21 07:18	1
13C2 PFUnA	78	50 - 150	11/04/21 19:36	11/13/21 07:18	1
13C2 PFDoA	74	50 - 150	11/04/21 19:36	11/13/21 07:18	1
13C2 PFTeDA	66	50 - 150	11/04/21 19:36	11/13/21 07:18	1
13C3 PFBS	108	50 <sub>-</sub> 150	11/04/21 19:36	11/13/21 07:18	1
18O2 PFHxS	90	50 - 150	11/04/21 19:36	11/13/21 07:18	1
13C4 PFOS	90	50 - 150	11/04/21 19:36	11/13/21 07:18	1
d3-NMeFOSAA	83	50 <sub>-</sub> 150	11/04/21 19:36	11/13/21 07:18	1
d5-NEtFOSAA	84	50 - 150	11/04/21 19:36	11/13/21 07:18	1
13C3 HFPO-DA	79	50 - 150	11/04/21 19:36	11/13/21 07:18	1

Client: Shannon & Wilson, Inc Job ID: 320-81258-1 Project/Site: SC Waters#3

Client Sample ID: 21GST-SW-031

Date Received: 11/03/21 14:01

d3-NMeFOSAA

d5-NEtFOSAA

13C3 HFPO-DA

Lab Sample ID: 320-81258-27 Date Collected: 10/31/21 12:45

**Matrix: Water** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.55	ng/L		11/04/21 19:36	11/13/21 07:28	1
Perfluoroheptanoic acid (PFHpA)	0.25	J	1.9	0.23	ng/L		11/04/21 19:36	11/13/21 07:28	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.80	ng/L		11/04/21 19:36	11/13/21 07:28	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.25	ng/L		11/04/21 19:36	11/13/21 07:28	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.29	ng/L		11/04/21 19:36	11/13/21 07:28	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		11/04/21 19:36	11/13/21 07:28	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.52	ng/L		11/04/21 19:36	11/13/21 07:28	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		11/04/21 19:36	11/13/21 07:28	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.69	ng/L		11/04/21 19:36	11/13/21 07:28	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.19	ng/L		11/04/21 19:36	11/13/21 07:28	1
Perfluorohexanesulfonic acid (PFHxS)	0.63	J	1.9	0.54	ng/L		11/04/21 19:36	11/13/21 07:28	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	0.51	ng/L		11/04/21 19:36	11/13/21 07:28	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.7	1.1	ng/L		11/04/21 19:36	11/13/21 07:28	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.7	1.2	ng/L		11/04/21 19:36	11/13/21 07:28	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.9	0.23	ng/L		11/04/21 19:36	11/13/21 07:28	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.8	1.4	ng/L		11/04/21 19:36	11/13/21 07:28	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.9	0.30	ng/L		11/04/21 19:36	11/13/21 07:28	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.38	ng/L		11/04/21 19:36	11/13/21 07:28	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	91		50 - 150				11/04/21 19:36	11/13/21 07:28	1
13C4 PFHpA	89		50 - 150				11/04/21 19:36	11/13/21 07:28	1
13C4 PFOA	94		50 <sub>-</sub> 150				11/04/21 19:36	11/13/21 07:28	1
13C5 PFNA	93		50 - 150				11/04/21 19:36	11/13/21 07:28	1
13C2 PFDA	87		50 <sub>-</sub> 150				11/04/21 19:36	11/13/21 07:28	1
13C2 PFUnA	84		50 - 150				11/04/21 19:36	11/13/21 07:28	1
13C2 PFDoA	69		50 - 150				11/04/21 19:36	11/13/21 07:28	1
13C2 PFTeDA	63		50 <sub>-</sub> 150				11/04/21 19:36	11/13/21 07:28	1
13C3 PFBS	103		50 <sub>-</sub> 150				11/04/21 19:36	11/13/21 07:28	1
1802 PFHxS	92		50 <sub>-</sub> 150				11/04/21 19:36	11/13/21 07:28	1
13C4 PFOS	86		50 - 150				11/04/21 19:36	11/13/21 07:28	1
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11/16/2021

50 - 150

50 - 150

50 - 150

78

86

93

11/04/21 19:36 11/13/21 07:28

11/04/21 19:36 11/13/21 07:28

11/04/21 19:36 11/13/21 07:28

Client: Shannon & Wilson, Inc Job ID: 320-81258-1 Project/Site: SC Waters#3

Client Sample ID: 21GST-SW-131

Lab Sample ID: 320-81258-28 Date Collected: 10/31/21 12:35

**Matrix: Water** 

Date Received: 11/03/21 14:01 Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 Analyte Result Qualifier **MDL** Unit Dil Fac RL Prepared Analyzed Perfluorohexanoic acid (PFHxA) 11/04/21 19:36 11/13/21 07:49 ND 1.9 0.54 ng/L ND Perfluoroheptanoic acid (PFHpA) 1.9 0.23 ng/L 11/04/21 19:36 11/13/21 07:49 Perfluorooctanoic acid (PFOA) ND 1.9 0.79 ng/L 11/04/21 19:36 11/13/21 07:49 Perfluorononanoic acid (PFNA) ND 11/04/21 19:36 11/13/21 07:49 1.9 0.25 ng/L Perfluorodecanoic acid (PFDA) ND 1.9 0.29 ng/L 11/04/21 19:36 11/13/21 07:49 Perfluoroundecanoic acid (PFUnA) ND 1.9 1.0 ng/L 11/04/21 19:36 11/13/21 07:49 Perfluorododecanoic acid (PFDoA) ND 1.9 0.51 ng/L 11/04/21 19:36 11/13/21 07:49 Perfluorotridecanoic acid (PFTriA) ND 1.9 11/04/21 19:36 11/13/21 07:49 1.2 ng/L Perfluorotetradecanoic acid (PFTeA) ND 1.9 0.68 ng/L 11/04/21 19:36 11/13/21 07:49 Perfluorobutanesulfonic acid (PFBS) ND 1.9 0.19 ng/L 11/04/21 19:36 11/13/21 07:49 Perfluorohexanesulfonic acid 0.64 J 1.9 0.53 ng/L 11/04/21 19:36 11/13/21 07:49 (PFHxS) ND Perfluorooctanesulfonic acid (PFOS) 1.9 0.50 ng/L 11/04/21 19:36 11/13/21 07:49 N-methylperfluorooctanesulfonamidoa ND 11/04/21 19:36 11/13/21 07:49 4.7 1.1 ng/L cetic acid (NMeFOSAA) N-ethylperfluorooctanesulfonamidoac ND 4.7 1.2 ng/L 11/04/21 19:36 11/13/21 07:49 etic acid (NEtFOSAA) ND 11/04/21 19:36 11/13/21 07:49 9-Chlorohexadecafluoro-3-oxanonan 1.9 0.22 ng/L e-1-sulfonic acid ND 11/04/21 19:36 11/13/21 07:49 3.7 1.4 ng/L Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaundecan ND 1.9 0.30 ng/L 11/04/21 19:36 11/13/21 07:49 e-1-sulfonic acid ND 1.9 0.37 ng/L 11/04/21 19:36 11/13/21 07:49 4,8-Dioxa-3H-perfluorononanoic acid (ADONA)

Isotope Dilution	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	86	50 - 150	11/04/21 19:36	11/13/21 07:49	1
13C4 PFHpA	89	50 - 150	11/04/21 19:36	11/13/21 07:49	1
13C4 PFOA	87	50 - 150	11/04/21 19:36	11/13/21 07:49	1
13C5 PFNA	87	50 - 150	11/04/21 19:36	11/13/21 07:49	1
13C2 PFDA	87	50 - 150	11/04/21 19:36	11/13/21 07:49	1
13C2 PFUnA	87	50 - 150	11/04/21 19:36	11/13/21 07:49	1
13C2 PFDoA	69	50 - 150	11/04/21 19:36	11/13/21 07:49	1
13C2 PFTeDA	64	50 - 150	11/04/21 19:36	11/13/21 07:49	1
13C3 PFBS	98	50 - 150	11/04/21 19:36	11/13/21 07:49	1
1802 PFHxS	86	50 - 150	11/04/21 19:36	11/13/21 07:49	1
13C4 PFOS	88	50 - 150	11/04/21 19:36	11/13/21 07:49	1
d3-NMeFOSAA	83	50 - 150	11/04/21 19:36	11/13/21 07:49	1
d5-NEtFOSAA	92	50 - 150	11/04/21 19:36	11/13/21 07:49	1
13C3 HFPO-DA	72	50 - 150	11/04/21 19:36	11/13/21 07:49	1

Client: Shannon & Wilson, Inc Job ID: 320-81258-1 Project/Site: SC Waters#3

**Client Sample ID: MW-21-15** 

Date Received: 11/03/21 14:01

d5-NEtFOSAA

13C3 HFPO-DA

Lab Sample ID: 320-81258-29 Date Collected: 11/01/21 11:15

**Matrix: Water** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	3.9		1.8	0.51	ng/L		11/04/21 19:36	11/13/21 07:59	1
Perfluoroheptanoic acid (PFHpA)	1.9		1.8	0.22	ng/L		11/04/21 19:36	11/13/21 07:59	1
Perfluorooctanoic acid (PFOA)	1.2	J	1.8	0.75	ng/L		11/04/21 19:36	11/13/21 07:59	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.24	ng/L		11/04/21 19:36	11/13/21 07:59	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.27	ng/L		11/04/21 19:36	11/13/21 07:59	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.97	ng/L		11/04/21 19:36	11/13/21 07:59	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.49	ng/L		11/04/21 19:36	11/13/21 07:59	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.1	ng/L		11/04/21 19:36	11/13/21 07:59	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.64	ng/L		11/04/21 19:36	11/13/21 07:59	1
Perfluorobutanesulfonic acid (PFBS)	0.72	J	1.8	0.18	ng/L		11/04/21 19:36	11/13/21 07:59	1
Perfluorohexanesulfonic acid (PFHxS)	6.1		1.8	0.50	ng/L			11/13/21 07:59	1
Perfluorooctanesulfonic acid (PFOS)	49		1.8	0.48			11/04/21 19:36	11/13/21 07:59	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.4		ng/L		11/04/21 19:36	11/13/21 07:59	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.4	1.1	ng/L		11/04/21 19:36	11/13/21 07:59	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.8		ng/L		11/04/21 19:36	11/13/21 07:59	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.5	1.3	ng/L		11/04/21 19:36	11/13/21 07:59	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.8	0.28	ng/L		11/04/21 19:36	11/13/21 07:59	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.8	0.35	ng/L		11/04/21 19:36	11/13/21 07:59	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	98		50 - 150				11/04/21 19:36	11/13/21 07:59	1
13C4 PFHpA	98		50 <sub>-</sub> 150				11/04/21 19:36	11/13/21 07:59	1
13C4 PFOA	99		50 <sub>-</sub> 150				11/04/21 19:36	11/13/21 07:59	1
13C5 PFNA	100		50 <sub>-</sub> 150				11/04/21 19:36	11/13/21 07:59	1
13C2 PFDA	94		50 <sub>-</sub> 150				11/04/21 19:36	11/13/21 07:59	1
13C2 PFUnA	97		50 - 150				11/04/21 19:36	11/13/21 07:59	1
13C2 PFDoA	75		50 <sub>-</sub> 150					11/13/21 07:59	1
13C2 PFTeDA	75		50 <sub>-</sub> 150				11/04/21 19:36	11/13/21 07:59	1
13C3 PFBS	105		50 <sub>-</sub> 150				11/04/21 19:36	11/13/21 07:59	1
1802 PFHxS	94		50 <sub>-</sub> 150					11/13/21 07:59	1
	96		50 - 150				11/04/21 19:36		1
13C4 PFOS	30		30 - 130				11/07/21 13.30	11/13/21 01.33	,

11/04/21 19:36 11/13/21 07:59

11/04/21 19:36 11/13/21 07:59

50 - 150

50 - 150

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Client: Shannon & Wilson, Inc Job ID: 320-81258-1 Project/Site: SC Waters#3

Client Sample ID: MW-21-45

Lab Sample ID: 320-81258-30 Date Collected: 11/01/21 11:52

**Matrix: Water** 

Date Received: 11/03/21 14:01		
Method: EPA 537(Mod) - PFAS	for QSM 5.	3, Table
Analyte	Result	Qualifier
Dorfluoroboxanoia agid (DELIVA)	ND.	

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Perfluorohexanoic acid (PFHxA)	ND	1.8	0.52	ng/L		11/04/21 19:36	11/13/21 08:10	
Perfluoroheptanoic acid (PFHpA)	ND	1.8	0.22	ng/L		11/04/21 19:36	11/13/21 08:10	
Perfluorooctanoic acid (PFOA)	ND	1.8	0.76	ng/L		11/04/21 19:36	11/13/21 08:10	
Perfluorononanoic acid (PFNA)	ND	1.8	0.24	ng/L		11/04/21 19:36	11/13/21 08:10	
Perfluorodecanoic acid (PFDA)	ND	1.8	0.28	ng/L		11/04/21 19:36	11/13/21 08:10	
Perfluoroundecanoic acid (PFUnA)	ND	1.8	0.98	ng/L		11/04/21 19:36	11/13/21 08:10	
Perfluorododecanoic acid (PFDoA)	ND	1.8	0.49	ng/L		11/04/21 19:36	11/13/21 08:10	
Perfluorotridecanoic acid (PFTriA)	ND	1.8	1.2	ng/L		11/04/21 19:36	11/13/21 08:10	
Perfluorotetradecanoic acid (PFTeA)	ND	1.8	0.65	ng/L		11/04/21 19:36	11/13/21 08:10	
Perfluorobutanesulfonic acid (PFBS)	ND	1.8	0.18	ng/L		11/04/21 19:36	11/13/21 08:10	
Perfluorohexanesulfonic acid (PFHxS)	ND	1.8	0.51	ng/L		11/04/21 19:36	11/13/21 08:10	
Perfluorooctanesulfonic acid (PFOS)	ND	1.8	0.48	ng/L		11/04/21 19:36	11/13/21 08:10	
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND	4.5	1.1	ng/L		11/04/21 19:36	11/13/21 08:10	
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND	4.5	1.2	ng/L		11/04/21 19:36	11/13/21 08:10	
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND	1.8	0.21	ng/L		11/04/21 19:36	11/13/21 08:10	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	3.6	1.3	ng/L		11/04/21 19:36	11/13/21 08:10	
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND	1.8	0.29	ng/L		11/04/21 19:36	11/13/21 08:10	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.8	0.36	ng/L		11/04/21 19:36	11/13/21 08:10	

(ADONA)						
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	109		50 - 150	11/04/21 19:36	11/13/21 08:10	1
13C4 PFHpA	107		50 - 150	11/04/21 19:36	11/13/21 08:10	1
13C4 PFOA	104		50 - 150	11/04/21 19:36	11/13/21 08:10	1
13C5 PFNA	109		50 - 150	11/04/21 19:36	11/13/21 08:10	1
13C2 PFDA	107		50 - 150	11/04/21 19:36	11/13/21 08:10	1
13C2 PFUnA	101		50 - 150	11/04/21 19:36	11/13/21 08:10	1
13C2 PFDoA	91		50 - 150	11/04/21 19:36	11/13/21 08:10	1
13C2 PFTeDA	87		50 - 150	11/04/21 19:36	11/13/21 08:10	1
13C3 PFBS	118		50 - 150	11/04/21 19:36	11/13/21 08:10	1
1802 PFHxS	103		50 - 150	11/04/21 19:36	11/13/21 08:10	1
13C4 PFOS	107		50 - 150	11/04/21 19:36	11/13/21 08:10	1
d3-NMeFOSAA	101		50 - 150	11/04/21 19:36	11/13/21 08:10	1
d5-NEtFOSAA	101		50 - 150	11/04/21 19:36	11/13/21 08:10	1
13C3 HFPO-DA	98		50 - 150	11/04/21 19:36	11/13/21 08:10	1

Client: Shannon & Wilson, Inc Job ID: 320-81258-1 Project/Site: SC Waters#3

Client Sample ID: MW-121-45

13C3 HFPO-DA

Lab Sample ID: 320-81258-31

**Matrix: Water** 

Date Collected: 11/01/21 11:42 Date Received: 11/03/21 14:01

Analyte	Result Q	ualifier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND	1.8	0.51	ng/L		11/09/21 18:40	11/13/21 01:34	1
Perfluoroheptanoic acid (PFHpA)	ND	1.8	0.22	ng/L		11/09/21 18:40	11/13/21 01:34	1
Perfluorooctanoic acid (PFOA)	ND	1.8	0.75	ng/L		11/09/21 18:40	11/13/21 01:34	1
Perfluorononanoic acid (PFNA)	ND	1.8	0.24	ng/L		11/09/21 18:40	11/13/21 01:34	1
Perfluorodecanoic acid (PFDA)	ND	1.8	0.27	ng/L		11/09/21 18:40	11/13/21 01:34	1
Perfluoroundecanoic acid (PFUnA)	ND	1.8	0.97	ng/L		11/09/21 18:40	11/13/21 01:34	1
Perfluorododecanoic acid (PFDoA)	ND	1.8	0.49	ng/L		11/09/21 18:40	11/13/21 01:34	1
Perfluorotridecanoic acid (PFTriA)	ND	1.8	1.1	ng/L		11/09/21 18:40	11/13/21 01:34	1
Perfluorotetradecanoic acid (PFTeA)	ND	1.8	0.64	ng/L		11/09/21 18:40	11/13/21 01:34	1
Perfluorobutanesulfonic acid (PFBS)	ND	1.8	0.18	ng/L		11/09/21 18:40	11/13/21 01:34	1
Perfluorohexanesulfonic acid (PFHxS)	ND	1.8	0.50	ng/L		11/09/21 18:40	11/13/21 01:34	1
Perfluorooctanesulfonic acid (PFOS)	ND	1.8	0.48	ng/L		11/09/21 18:40	11/13/21 01:34	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND	4.4	1.1	ng/L		11/09/21 18:40	11/13/21 01:34	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND	4.4		ng/L		11/09/21 18:40	11/13/21 01:34	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND	1.8		ng/L		11/09/21 18:40	11/13/21 01:34	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	3.5	1.3	ng/L		11/09/21 18:40	11/13/21 01:34	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND	1.8		ng/L		11/09/21 18:40	11/13/21 01:34	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.8	0.35	ng/L		11/09/21 18:40	11/13/21 01:34	1
Isotope Dilution	%Recovery Q	ualifier Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	104	50 - 150				11/09/21 18:40	11/13/21 01:34	1
13C4 PFHpA	102	50 - 150				11/09/21 18:40	11/13/21 01:34	1
13C4 PFOA	97	50 - 150				11/09/21 18:40	11/13/21 01:34	1
13C5 PFNA	100	50 - 150				11/09/21 18:40	11/13/21 01:34	1
13C2 PFDA	104	50 - 150				11/09/21 18:40	11/13/21 01:34	1
13C2 PFUnA	103	50 - 150				11/09/21 18:40	11/13/21 01:34	1
13C2 PFDoA	92	50 - 150				11/09/21 18:40	11/13/21 01:34	1
13C2 PFTeDA	84	50 - 150				11/09/21 18:40	11/13/21 01:34	1
13C3 PFBS	122	50 - 150				11/09/21 18:40	11/13/21 01:34	1
1802 PFHxS	97	50 - 150				11/09/21 18:40	11/13/21 01:34	1
13C4 PFOS	101	50 <sub>-</sub> 150				11/09/21 18:40	11/13/21 01:34	1
d3-NMeFOSAA	96	50 <sub>-</sub> 150				11/09/21 18:40	11/13/21 01:34	1
d5-NEtFOSAA	103	50 - 150				44/00/04 40:40	11/13/21 01:34	1

11/09/21 18:40 11/13/21 01:34

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Client: Shannon & Wilson, Inc Job ID: 320-81258-1 Project/Site: SC Waters#3

Client Sample ID: MW-14-31

Lab Sample ID: 320-81258-32

**Matrix: Water** 

Date Collected: 11/01/21 16:20 Date Received: 11/03/21 14:01

d5-NEtFOSAA

13C3 HFPO-DA

Analyte	Result Q			Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	8.6	1.7		ng/L		11/09/21 18:40	11/13/21 01:44	1
Perfluoroheptanoic acid (PFHpA)	2.3	1.7	0.22	ng/L		11/09/21 18:40	11/13/21 01:44	1
Perfluorooctanoic acid (PFOA)	1.3 J	1.7	0.74	ng/L		11/09/21 18:40	11/13/21 01:44	1
Perfluorononanoic acid (PFNA)	0.25 J	1.7	0.23	ng/L		11/09/21 18:40	11/13/21 01:44	1
Perfluorodecanoic acid (PFDA)	ND	1.7	0.27	ng/L		11/09/21 18:40	11/13/21 01:44	1
Perfluoroundecanoic acid (PFUnA)	ND	1.7	0.95	ng/L		11/09/21 18:40	11/13/21 01:44	1
Perfluorododecanoic acid (PFDoA)	ND	1.7	0.48	ng/L		11/09/21 18:40	11/13/21 01:44	1
Perfluorotridecanoic acid (PFTriA)	ND	1.7	1.1	ng/L		11/09/21 18:40	11/13/21 01:44	1
Perfluorotetradecanoic acid (PFTeA)	ND	1.7	0.63	ng/L		11/09/21 18:40	11/13/21 01:44	1
Perfluorobutanesulfonic acid (PFBS)	0.74 J	1.7	0.17	ng/L		11/09/21 18:40	11/13/21 01:44	1
Perfluorohexanesulfonic acid (PFHxS)	6.2	1.7	0.49	ng/L		11/09/21 18:40	11/13/21 01:44	1
Perfluorooctanesulfonic acid (PFOS)	38	1.7	0.47	ng/L		11/09/21 18:40	11/13/21 01:44	
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND	4.3	1.0	ng/L		11/09/21 18:40	11/13/21 01:44	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND	4.3	1.1	ng/L		11/09/21 18:40	11/13/21 01:44	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND	1.7		ng/L			11/13/21 01:44	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	3.5		ng/L		11/09/21 18:40	11/13/21 01:44	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND	1.7		ng/L		11/09/21 18:40	11/13/21 01:44	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.7	0.35	ng/L		11/09/21 18:40	11/13/21 01:44	1
Isotope Dilution	%Recovery Q	ualifier Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	106	50 - 150				11/09/21 18:40	11/13/21 01:44	
13C4 PFHpA	102	50 - 150				11/09/21 18:40	11/13/21 01:44	1
13C4 PFOA	102	50 - 150				11/09/21 18:40	11/13/21 01:44	1
13C5 PFNA	93	50 - 150				11/09/21 18:40	11/13/21 01:44	
13C2 PFDA	96	50 <sub>-</sub> 150				11/09/21 18:40	11/13/21 01:44	1
13C2 PFUnA	94	50 - 150				11/09/21 18:40	11/13/21 01:44	1
13C2 PFDoA	88	50 - 150				11/09/21 18:40	11/13/21 01:44	
13C2 PFTeDA	80	50 <sub>-</sub> 150				11/09/21 18:40	11/13/21 01:44	1
13C3 PFBS	116	50 <sub>-</sub> 150					11/13/21 01:44	
18O2 PFHxS	100	50 - 150					11/13/21 01:44	
13C4 PFOS	107	50 - 150					11/13/21 01:44	
d3-NMeFOSAA	83	50 <sub>-</sub> 150					11/13/21 01:44	

11/09/21 18:40 11/13/21 01:44

11/09/21 18:40 11/13/21 01:44

50 - 150

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# **Client Sample Results**

Client: Shannon & Wilson, Inc Job ID: 320-81258-1 Project/Site: SC Waters#3

**Client Sample ID: MW-14-15** 

13C3 HFPO-DA

Lab Sample ID: 320-81258-33

Date Collected: 11/01/21 16:50 **Matrix: Water** Date Received: 11/03/21 14:01

Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	1.0	J	1.8	0.52	ng/L		11/09/21 18:40	11/13/21 01:55	1
Perfluoroheptanoic acid (PFHpA)	1.1	J	1.8	0.22	ng/L		11/09/21 18:40	11/13/21 01:55	1
Perfluorooctanoic acid (PFOA)	ND		1.8	0.76	ng/L		11/09/21 18:40	11/13/21 01:55	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.24	ng/L		11/09/21 18:40	11/13/21 01:55	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.28	ng/L		11/09/21 18:40	11/13/21 01:55	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.98	ng/L		11/09/21 18:40	11/13/21 01:55	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.49	ng/L		11/09/21 18:40	11/13/21 01:55	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		11/09/21 18:40	11/13/21 01:55	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.65	ng/L		11/09/21 18:40	11/13/21 01:55	1
Perfluorobutanesulfonic acid (PFBS)	0.24	J	1.8	0.18	ng/L		11/09/21 18:40	11/13/21 01:55	1
Perfluorohexanesulfonic acid (PFHxS)	1.8		1.8		ng/L		11/09/21 18:40	11/13/21 01:55	1
Perfluorooctanesulfonic acid (PFOS)	5.3		1.8	0.48	ng/L		11/09/21 18:40	11/13/21 01:55	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.5	1.1	ng/L		11/09/21 18:40	11/13/21 01:55	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.5	1.2	ng/L		11/09/21 18:40	11/13/21 01:55	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.8	0.21	ng/L		11/09/21 18:40	11/13/21 01:55	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.6	1.3	ng/L		11/09/21 18:40	11/13/21 01:55	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.8	0.29	ng/L		11/09/21 18:40	11/13/21 01:55	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.8	0.36	ng/L		11/09/21 18:40	11/13/21 01:55	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	116		50 - 150				11/09/21 18:40	11/13/21 01:55	1
13C4 PFHpA	106		50 - 150				11/09/21 18:40	11/13/21 01:55	1
13C4 PFOA	102		50 - 150				11/09/21 18:40	11/13/21 01:55	1
13C5 PFNA	101		50 - 150				11/09/21 18:40	11/13/21 01:55	1
13C2 PFDA	97		50 - 150				11/09/21 18:40	11/13/21 01:55	1
13C2 PFUnA	97		50 - 150				11/09/21 18:40	11/13/21 01:55	1
13C2 PFDoA	88		50 <sub>-</sub> 150				11/09/21 18:40	11/13/21 01:55	1
13C2 PFTeDA	88		50 - 150				11/09/21 18:40	11/13/21 01:55	1
13C3 PFBS	115		50 <sub>-</sub> 150				11/09/21 18:40	11/13/21 01:55	1
1802 PFHxS	104		50 <sub>-</sub> 150				11/09/21 18:40	11/13/21 01:55	1
13C4 PFOS	101		50 - 150				11/09/21 18:40	11/13/21 01:55	1
d3-NMeFOSAA	92		50 <sub>-</sub> 150					11/13/21 01:55	1
d5-NEtFOSAA	97		50 - 150				11/09/21 18:40	11/13/21 01:55	1
	• • • • • • • • • • • • • • • • • • • •								•

11/09/21 18:40 11/13/21 01:55

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# **Isotope Dilution Summary**

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15

Matrix: Water Prep Type: Total/NA

					Dilution Re				
		PFHxA	C4PFHA	PFOA	PFNA	PFDA	PFUnA	PFDoA	PFTD
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-15
320-81258-1	21GST-TWP-15	101	99	102	111	107	107	100	89
320-81258-2	21GST-TWP-115	102	96	101	104	102	100	90	82
320-81258-3	21GST-TWP-1	102	101	110	102	94	86	76	75
320-81258-4	21GST-TWP-2	104	101	105	103	101	88	94	96
320-81258-5	21GST-TWP-10	93	95	98	101	100	101	96	90
320-81258-6	MW-13-20	102	99	95	94	88	79	76	72
320-81258-7	MW-13-45	90	89	95	93	95	91	83	79
320-81258-8	MW-113-45	91	95	95	101	102	98	89	89
320-81258-9	21GST-TWP-8	82	87	95	92	90	82	81	82
320-81258-10	21GST-TWP-5	98	102	102	105	102	101	91	88
320-81258-11	21GST-TWP-4	92	97	99	97	99	105	89	86
320-81258-11 - DL	21GST-TWP-4								
320-81258-12	21GST-TWP-3	92	96	93	97	93	84	73	77
320-81258-13	21GST-TWP-103	105	106	108	107	101	95	85	80
320-81258-14	MW-25-15	99	99	103	97	97	91	77	82
320-81258-15	MW-24-30	99	92	99	101	90	87	81	73
320-81258-16	MW-24-10	98	97	98	97	91	89	83	81
320-81258-17	MW-25-47	93	93	96	94	93	89	81	82
320-81258-18	MW-125-47	109	106	105	108	102	99	97	92
320-81258-19	MW-22-15	103	101	103	96	96	84	72	73
320-81258-20	MW-22-40	101	97	103	98	103	103	88	87
320-81258-21	21GST-TWP-12	109	108	104	106	108	108	96	89
320-81258-22	21GST-TWP-12 21GST-TWP-11	113	113	103	104	100	100	86	82
320-81258-23	21GST-TWP-111	108	101	103	95	96	96	89	83
320-81258-24	21GST-TWP-111 21GST-TWP-9	113	112	102	102	101	103	88	81
320-81258-25	21GST-TWP-7	102	101	102	103	104	96	86	78 66
320-81258-26	21GST-TWP-6	98	95	84	90	84	78	74	66
320-81258-27	21GST-SW-031	91	89	94	93	87	84	69	63
320-81258-28	21GST-SW-131	86	89	87	87	87	87	69	64
320-81258-29	MW-21-15	98	98	99	100	94	97	75	75
320-81258-30	MW-21-45	109	107	104	109	107	101	91	87
320-81258-31	MW-121-45	104	102	97	100	104	103	92	84
320-81258-32	MW-14-31	106	102	102	93	96	94	88	80
320-81258-33	MW-14-15	116	106	102	101	97	97	88	88
_CS 320-540159/2-A	Lab Control Sample	98	97	101	103	98	101	101	92
CS 320-540161/2-A	Lab Control Sample	108	101	97	92	98	105	90	83
_CS 320-541439/2-A	Lab Control Sample	106	102	99	97	103	102	93	93
_CSD 320-540159/3-A	Lab Control Sample Dup	110	105	100	110	106	104	94	93
CSD 320-540161/3-A	Lab Control Sample Dup	109	105	96	100	98	103	95	89
_CSD 320-541439/3-A	Lab Control Sample Dup	116	116	104	104	104	102	95	93
MB 320-540159/1-A	Method Blank	104	105	102	101	102	101	97	92
MB 320-540161/1-A	Method Blank	109	98	100	96	96	99	88	82
MB 320-541439/1-A	Method Blank	111	102	103	98	105	100	95	90
				ent Isotone	Dilution Re	covery (Ac	ceptance I	imits)	
		C3PFBS	PFHxS	PFOS		d5NEFOS	-	,	
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)		
320-81258-1	21GST-TWP-15	109	100	103	105	117	99		
320-81258-2	21GST-TWP-115	109	99	103	103	117	89		
				101	104				

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## **Isotope Dilution Summary**

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Matrix: Water Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		C3PFBS	PFHxS	PFOS		d5NEFOS			
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)		
320-81258-4	21GST-TWP-2		99	106	115	108	97		
320-81258-5	21GST-TWP-10	107	88	98	106	119	100		
320-81258-6	MW-13-20	102	88	88	92	94	85		
320-81258-7	MW-13-45	106	90	102	80	81	77		
320-81258-8	MW-113-45	112	100	107	87	85	88		
320-81258-9	21GST-TWP-8	101	84	92	86	82	80		
320-81258-10	21GST-TWP-5	118	99	105	107	107	97		
320-81258-11	21GST-TWP-4	103	93	98	100	102	89		
320-81258-11 - DL	21GST-TWP-4			97					
320-81258-12	21GST-TWP-3	102	91	94	79	77	88		
320-81258-13	21GST-TWP-103	118	106	108	94	96	95		
320-81258-14	MW-25-15	124	99	102	101	92	95		
320-81258-15	MW-24-30	105	96	100	84	82	99		
320-81258-16	MW-24-10	102	95	93	97	97	95		
320-81258-17	MW-25-47	98	86	91	97	97	85		
320-81258-18	MW-125-47	111	98	103	106	109	104		
320-81258-19	MW-22-15	115	96	98	89	91	96		
320-81258-20	MW-22-40	112	100	97	105	106	98		
320-81258-21	21GST-TWP-12	121	101	104	108	117	107		
320-81258-22	21GST-TWP-11	114	104	101	101	107	106		
320-81258-23	21GST-TWP-111	118	102	107	97	102	92		
320-81258-24	21GST-TWP-9	127	108	106	107	113	108		
320-81258-25	21GST-TWP-7	112	97	106	96	103	91		
320-81258-26	21GST-TWP-6	108	90	90	83	84	79		
320-81258-27	21GST-SW-031	103	92	86	78	86	93		
320-81258-28	21GST-SW-131	98	86	88	83	92	72		
320-81258-29	MW-21-15	105	94	96	88	91	96		
320-81258-30	MW-21-45	118	103	107	101	101	98		
320-81258-31	MW-121-45	122	97	101	96	103	98		
320-81258-32	MW-14-31	116	100	107	83	91	89		
320-81258-33	MW-14-15	115	104	101	92	97	95		
LCS 320-540159/2-A	Lab Control Sample	104	94	102	117	109	100		
LCS 320-540161/2-A	Lab Control Sample	111	95	108	104	109	87		
LCS 320-541439/2-A	Lab Control Sample	116	100	105	111	104	92		
LCSD 320-540159/3-A	Lab Control Sample Dup	115	93	103	114	112	97		
LCSD 320-540161/3-A	Lab Control Sample Dup	110	96	101	110	108	96		
LCSD 320-541439/3-A	Lab Control Sample Dup	122	104	111	114	107	94		
MB 320-540159/1-A	Method Blank	119	97	101	109	107	95		
MB 320-540161/1-A	Method Blank	112	96	98	109	107	93		
MB 320-541439/1-A	Method Blank	115	101	103	104	113	93		

#### Surrogate Legend

PFHxA = 13C2 PFHxA

C4PFHA = 13C4 PFHpA

PFOA = 13C4 PFOA

PFNA = 13C5 PFNA

PFDA = 13C2 PFDA

PFUnA = 13C2 PFUnA

PFDoA = 13C2 PFDoA

PFTDA = 13C2 PFTeDA

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## **Isotope Dilution Summary**

Client: Shannon & Wilson, Inc Project/Site: SC Waters#3 C3PFBS = 13C3 PFBS PFHxS = 18O2 PFHxS PFOS = 13C4 PFOS

d3NMFOS = d3-NMeFOSAA d5NEFOS = d5-NEtFOSAA HFPODA = 13C3 HFPO-DA Job ID: 320-81258-1

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Client: Shannon & Wilson, Inc Job ID: 320-81258-1 Project/Site: SC Waters#3

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15

MB MB

Lab Sample ID: MB 320-540159/1-A

**Matrix: Water** 

**Analysis Batch: 541793** 

Client Sample ID: Method Blank

**Prep Type: Total/NA** 

**Prep Batch: 540159** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		11/04/21 19:30	11/11/21 02:08	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		11/04/21 19:30	11/11/21 02:08	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		11/04/21 19:30	11/11/21 02:08	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		11/04/21 19:30	11/11/21 02:08	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		11/04/21 19:30	11/11/21 02:08	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		11/04/21 19:30	11/11/21 02:08	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		11/04/21 19:30	11/11/21 02:08	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		11/04/21 19:30	11/11/21 02:08	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.73	ng/L		11/04/21 19:30	11/11/21 02:08	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		11/04/21 19:30	11/11/21 02:08	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.57	ng/L		11/04/21 19:30	11/11/21 02:08	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		11/04/21 19:30	11/11/21 02:08	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		5.0	1.2	ng/L		11/04/21 19:30	11/11/21 02:08	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		5.0	1.3	ng/L		11/04/21 19:30	11/11/21 02:08	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		2.0	0.24	ng/L		11/04/21 19:30	11/11/21 02:08	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		4.0	1.5	ng/L		11/04/21 19:30	11/11/21 02:08	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		2.0	0.32	ng/L		11/04/21 19:30	11/11/21 02:08	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	0.40	ng/L		11/04/21 19:30	11/11/21 02:08	1

MD MD

	IVIB I	MB				
Isotope Dilution	%Recovery	Qualifier Limit	s	Prepared	Analyzed	Dil Fac
13C2 PFHxA	104	50 - 1	50	11/04/21 19:30	11/11/21 02:08	1
13C4 PFHpA	105	50 - 1	50	11/04/21 19:30	11/11/21 02:08	1
13C4 PFOA	102	50 - 1	50	11/04/21 19:30	11/11/21 02:08	1
13C5 PFNA	101	50 - 1	50	11/04/21 19:30	11/11/21 02:08	1
13C2 PFDA	102	50 - 1	50	11/04/21 19:30	11/11/21 02:08	1
13C2 PFUnA	101	50 - 1	50	11/04/21 19:30	11/11/21 02:08	1
13C2 PFDoA	97	50 - 1	50	11/04/21 19:30	11/11/21 02:08	1
13C2 PFTeDA	92	50 - 1	50	11/04/21 19:30	11/11/21 02:08	1
13C3 PFBS	119	50 - 1	50	11/04/21 19:30	11/11/21 02:08	1
18O2 PFHxS	97	50 - 1	50	11/04/21 19:30	11/11/21 02:08	1
13C4 PFOS	101	50 - 1	50	11/04/21 19:30	11/11/21 02:08	1
d3-NMeFOSAA	109	50 - 1	50	11/04/21 19:30	11/11/21 02:08	1
d5-NEtFOSAA	107	50 - 1	50	11/04/21 19:30	11/11/21 02:08	1
13C3 HFPO-DA	95	50 - 1	50	11/04/21 19:30	11/11/21 02:08	1

Lab Sample ID: LCS 320-540159/2-A

**Matrix: Water** 

**Analysis Batch: 541793** 

Client Sample ID: Lab	Control Sample
Prep	Type: Total/NA
Prop	Ratch: 5/0150

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorohexanoic acid (PFHxA)	40.0	36.2		ng/L		91	72 - 129	
Perfluoroheptanoic acid (PFHpA)	40.0	39.0		ng/L		97	72 - 130	
Perfluorooctanoic acid (PFOA)	40.0	37.3		ng/L		93	71 - 133	
Perfluorononanoic acid (PFNA)	40.0	34.1		ng/L		85	69 - 130	

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Client: Shannon & Wilson, Inc Job ID: 320-81258-1 Project/Site: SC Waters#3

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: LCS 320-540159/2-A

**Matrix: Water** 

**Analysis Batch: 541793** 

**Client Sample ID: Lab Control Sample** 

**Prep Type: Total/NA Prep Batch: 540159** 

Analysis Baton: 041700	Spike	LCS LCS			%Rec.
Analyte	Added	Result Qualif	ier Unit	D %Rec	Limits
Perfluorodecanoic acid (PFDA)	40.0	41.1	ng/L		71 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	36.9	ng/L	92	69 - 133
Perfluorododecanoic acid (PFDoA)	40.0	40.7	ng/L	102	72 - 134
Perfluorotridecanoic acid (PFTriA)	40.0	36.1	ng/L	90	65 <sub>-</sub> 144
Perfluorotetradecanoic acid (PFTeA)	40.0	34.2	ng/L	86	71 - 132
Perfluorobutanesulfonic acid (PFBS)	35.4	30.5	ng/L	86	72 - 130
Perfluorohexanesulfonic acid (PFHxS)	36.4	33.9	ng/L	93	68 - 131
Perfluorooctanesulfonic acid (PFOS)	37.1	33.2	ng/L	90	65 - 140
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	40.0	35.7	ng/L	89	65 - 136
N-ethylperfluorooctanesulfonami doacetic acid (NEtFOSAA)	40.0	39.1	ng/L	98	61 - 135
9-Chlorohexadecafluoro-3-oxan onane-1-sulfonic acid	37.3	32.9	ng/L	88	77 - 137
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	40.0	34.8	ng/L	87	72 - 132
11-Chloroeicosafluoro-3-oxaund ecane-1-sulfonic acid	37.7	35.1	ng/L	93	76 - 136
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	37.7	34.4	ng/L	91	81 - 141
100	1.00				

LCS LCS

Isotope Dilution	%Recovery	Qualifier	Limits			
13C2 PFHxA	98		50 - 150			
13C4 PFHpA	97		50 <sub>-</sub> 150			
13C4 PFOA	101		50 - 150			
13C5 PFNA	103		50 - 150			
13C2 PFDA	98		50 - 150			
13C2 PFUnA	101		50 <sub>-</sub> 150			
13C2 PFDoA	101		50 - 150			
13C2 PFTeDA	92		50 <sub>-</sub> 150			
13C3 PFBS	104		50 - 150			
1802 PFHxS	94		50 - 150			
13C4 PFOS	102		50 <sub>-</sub> 150			
d3-NMeFOSAA	117		50 - 150			
d5-NEtFOSAA	109		50 - 150			
13C3 HFPO-DA	100		50 - 150			

Lab Sample ID: LCSD 320-540159/3-A

**Client Sample ID: Lab Control Sample Dup** 

Matrix: Water Analysis Batch: 541793							Prep Ty Prep Ba	•	
	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluorohexanoic acid (PFHxA)	40.0	34.4		ng/L		86	72 - 129	5	30
Perfluoroheptanoic acid (PFHpA)	40.0	36.2		ng/L		90	72 - 130	7	30
Perfluorooctanoic acid (PFOA)	40.0	40.9		na/L		102	71 - 133	9	30

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Job ID: 320-81258-1

Client: Shannon & Wilson, Inc Project/Site: SC Waters#3

### Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: LCSD 320-540159/3-A

**Matrix: Water** 

**Client Sample ID: Lab Control Sample Dup** 

Prep Type: Total/NA

Analysis Batch: 541793							Prep Ba	atch: 54	40159
	Spike	_	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluorononanoic acid (PFNA)	40.0	35.9		ng/L		90	69 - 130	5	30
Perfluorodecanoic acid (PFDA)	40.0	38.4		ng/L		96	71 - 129	7	30
Perfluoroundecanoic acid	40.0	38.9		ng/L		97	69 - 133	5	30
(PFUnA) Perfluorododecanoic acid (PFDoA)	40.0	42.6		ng/L		106	72 - 134	5	30
Perfluorotridecanoic acid (PFTriA)	40.0	40.4		ng/L		101	65 - 144	11	30
Perfluorotetradecanoic acid (PFTeA)	40.0	34.7		ng/L		87	71 - 132	1	30
Perfluorobutanesulfonic acid (PFBS)	35.4	28.1		ng/L		79	72 - 130	8	30
Perfluorohexanesulfonic acid (PFHxS)	36.4	33.6		ng/L		92	68 - 131	1	30
Perfluorooctanesulfonic acid (PFOS)	37.1	33.9		ng/L		91	65 - 140	2	30
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	40.0	35.8		ng/L		90	65 - 136	0	30
N-ethylperfluorooctanesulfonami doacetic acid (NEtFOSAA)	40.0	38.4		ng/L		96	61 - 135	2	30
9-Chlorohexadecafluoro-3-oxan onane-1-sulfonic acid	37.3	34.8		ng/L		93	77 - 137	6	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	40.0	43.4		ng/L		108	72 - 132	22	30
11-Chloroeicosafluoro-3-oxaund ecane-1-sulfonic acid	37.7	33.4		ng/L		89	76 - 136	5	30

37.7

35.1

ng/L

LCSD LCSD

MR MR

%Recovery	Qualifier	Limits
110		50 - 150
105		50 <sub>-</sub> 150
100		50 <sub>-</sub> 150
110		50 - 150
106		50 - 150
104		50 - 150
94		50 - 150
93		50 <sub>-</sub> 150
115		50 <sub>-</sub> 150
93		50 - 150
103		50 - 150
114		50 <sub>-</sub> 150
112		50 - 150
97		50 - 150
	110 105 100 110 106 104 94 93 115 93 103 114	105 100 110 106 104 94 93 115 93 103 114

Lab Sample ID: MB 320-540161/1-A

**Matrix: Water** 

**Analysis Batch: 542345** 

4,8-Dioxa-3H-perfluorononanoic

acid (ADONA)

**Client Sample ID: Method Blank Prep Type: Total/NA** 

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**Prep Batch: 540161** 

	IVID IVII	ь							
Analyte	Result Qu	ualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		11/04/21 19:36	11/13/21 05:54	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		11/04/21 19:36	11/13/21 05:54	1

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Project/Site: SC Waters#3

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab S	ample	ID: MB	320-5401	61/1-A
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**Matrix: Water** 

Analysis Batch: 542345

**Client Sample ID: Method Blank** 

**Prep Type: Total/NA** 

**Prep Batch: 540161** 

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	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		11/04/21 19:36	11/13/21 05:54	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		11/04/21 19:36	11/13/21 05:54	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		11/04/21 19:36	11/13/21 05:54	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		11/04/21 19:36	11/13/21 05:54	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		11/04/21 19:36	11/13/21 05:54	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		11/04/21 19:36	11/13/21 05:54	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.73	ng/L		11/04/21 19:36	11/13/21 05:54	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		11/04/21 19:36	11/13/21 05:54	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.57	ng/L		11/04/21 19:36	11/13/21 05:54	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		11/04/21 19:36	11/13/21 05:54	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		5.0	1.2	ng/L		11/04/21 19:36	11/13/21 05:54	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		5.0	1.3	ng/L		11/04/21 19:36	11/13/21 05:54	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		2.0	0.24	ng/L		11/04/21 19:36	11/13/21 05:54	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		4.0	1.5	ng/L		11/04/21 19:36	11/13/21 05:54	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		2.0	0.32	ng/L		11/04/21 19:36	11/13/21 05:54	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	0.40	ng/L		11/04/21 19:36	11/13/21 05:54	1
	MR	MB							

	IVID IVID				
Isotope Dilution	%Recovery Qua	lifier Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	109	50 - 150	11/04/21 19:36	11/13/21 05:54	1
13C4 PFHpA	98	50 - 150	11/04/21 19:36	11/13/21 05:54	1
13C4 PFOA	100	50 - 150	11/04/21 19:36	11/13/21 05:54	1
13C5 PFNA	96	50 - 150	11/04/21 19:36	11/13/21 05:54	1
13C2 PFDA	96	50 - 150	11/04/21 19:36	11/13/21 05:54	1
13C2 PFUnA	99	50 - 150	11/04/21 19:36	11/13/21 05:54	1
13C2 PFDoA	88	50 - 150	11/04/21 19:36	11/13/21 05:54	1
13C2 PFTeDA	82	50 - 150	11/04/21 19:36	11/13/21 05:54	1
13C3 PFBS	112	50 - 150	11/04/21 19:36	11/13/21 05:54	1
1802 PFHxS	96	50 - 150	11/04/21 19:36	11/13/21 05:54	1
13C4 PFOS	98	50 - 150	11/04/21 19:36	11/13/21 05:54	1
d3-NMeFOSAA	104	50 - 150	11/04/21 19:36	11/13/21 05:54	1
d5-NEtFOSAA	105	50 - 150	11/04/21 19:36	11/13/21 05:54	1
13C3 HFPO-DA	93	50 - 150	11/04/21 19:36	11/13/21 05:54	1

Lab Sample ID: LCS 320-540161/2-A

**Matrix: Water** 

Analysis Batch: 542345

Client Sample ID:	Lab Control Sample
	Prep Type: Total/NA
	Prop Ratch: 540161

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorohexanoic acid (PFHxA)	40.0	33.4		ng/L		84	72 - 129	
Perfluoroheptanoic acid (PFHpA)	40.0	38.2		ng/L		96	72 - 130	
Perfluorooctanoic acid (PFOA)	40.0	38.5		ng/L		96	71 - 133	
Perfluorononanoic acid (PFNA)	40.0	40.4		ng/L		101	69 - 130	
Perfluorodecanoic acid (PFDA)	40.0	40.0		ng/L		100	71 - 129	
Perfluoroundecanoic acid	40.0	37.3		ng/L		93	69 - 133	
(PFUnA)								

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Project/Site: SC Waters#3

### Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Matrix: Water

Analysis Batch: 542345

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA **Prep Batch: 540161** 

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorododecanoic acid	40.0	43.0		ng/L		108	72 - 134	
(PFDoA)								
Perfluorotridecanoic acid	40.0	38.5		ng/L		96	65 - 144	
(PFTriA)								
Perfluorotetradecanoic acid	40.0	36.5		ng/L		91	71 - 132	
(PFTeA)								
Perfluorobutanesulfonic acid	35.4	29.0		ng/L		82	72 - 130	
(PFBS)								
Perfluorohexanesulfonic acid	36.4	34.1		ng/L		94	68 - 131	
(PFHxS)								
Perfluorooctanesulfonic acid	37.1	32.3		ng/L		87	65 - 140	
(PFOS)								
N-methylperfluorooctanesulfona	40.0	38.4		ng/L		96	65 - 136	
midoacetic acid (NMeFOSAA)								
N-ethylperfluorooctanesulfonami	40.0	37.6		ng/L		94	61 - 135	
doacetic acid (NEtFOSAA)								
9-Chlorohexadecafluoro-3-oxan	37.3	30.0		ng/L		80	77 - 137	
onane-1-sulfonic acid								
Hexafluoropropylene Oxide	40.0	43.5		ng/L		109	72 - 132	
Dimer Acid (HFPO-DA)								
11-Chloroeicosafluoro-3-oxaund	37.7	33.5		ng/L		89	76 - 136	
ecane-1-sulfonic acid								
4,8-Dioxa-3H-perfluorononanoic	37.7	35.7		ng/L		95	81 - 141	
acid (ADONA)								

LCS LCS

Isotope Dilution	%Recovery	Qualifier	Limits
13C2 PFHxA	108		50 - 150
13C4 PFHpA	101		50 - 150
13C4 PFOA	97		50 - 150
13C5 PFNA	92		50 - 150
13C2 PFDA	98		50 - 150
13C2 PFUnA	105		50 - 150
13C2 PFDoA	90		50 - 150
13C2 PFTeDA	83		50 - 150
13C3 PFBS	111		50 - 150
1802 PFHxS	95		50 - 150
13C4 PFOS	108		50 - 150
d3-NMeFOSAA	104		50 - 150
d5-NEtFOSAA	109		50 - 150
13C3 HFPO-DA	87		50 - 150

**Client Sample ID: Lab Control Sample Dup** 

Analysis Batch: 542345

**Matrix: Water** 

Lab Sample ID: LCSD 320-540161/3-A

**Prep Batch: 540161** 

Prep Type: Total/NA

	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluorohexanoic acid (PFHxA)	40.0	34.8		ng/L		87	72 - 129	4	30
Perfluoroheptanoic acid (PFHpA)	40.0	38.1		ng/L		95	72 - 130	0	30
Perfluorooctanoic acid (PFOA)	40.0	43.4		ng/L		109	71 - 133	12	30
Perfluorononanoic acid (PFNA)	40.0	39.6		ng/L		99	69 - 130	2	30
Perfluorodecanoic acid (PFDA)	40.0	39.6		ng/L		99	71 - 129	1	30

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Project/Site: SC Waters#3

### Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample	ID: LCSD	320-540161/3-A
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**Matrix: Water** 

Analysis Batch: 542345

**Client Sample ID: Lab Control Sample Dup** 

**Prep Type: Total/NA Prep Batch: 540161** 

	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluoroundecanoic acid	40.0	39.0		ng/L		97	69 - 133	4	30
(PFUnA)									
Perfluorododecanoic acid	40.0	40.3		ng/L		101	72 - 134	7	30
(PFDoA)									
Perfluorotridecanoic acid	40.0	35.6		ng/L		89	65 - 144	8	30
(PFTriA)									
Perfluorotetradecanoic acid	40.0	35.2		ng/L		88	71 - 132	4	30
(PFTeA)									
Perfluorobutanesulfonic acid	35.4	31.0		ng/L		88	72 - 130	7	30
(PFBS)									
Perfluorohexanesulfonic acid	36.4	34.2		ng/L		94	68 - 131	0	30
(PFHxS)									
Perfluorooctanesulfonic acid	37.1	35.1		ng/L		95	65 - 140	8	30
(PFOS)									
N-methylperfluorooctanesulfona	40.0	37.0		ng/L		93	65 - 136	4	30
midoacetic acid (NMeFOSAA)									
N-ethylperfluorooctanesulfonami	40.0	40.2		ng/L		100	61 - 135	7	30
doacetic acid (NEtFOSAA)									
9-Chlorohexadecafluoro-3-oxan	37.3	34.7		ng/L		93	77 - 137	15	30
onane-1-sulfonic acid									
Hexafluoropropylene Oxide	40.0	37.4		ng/L		93	72 - 132	15	30
Dimer Acid (HFPO-DA)									
11-Chloroeicosafluoro-3-oxaund	37.7	37.6		ng/L		100	76 - 136	11	30
ecane-1-sulfonic acid									
4,8-Dioxa-3H-perfluorononanoic	37.7	36.0		ng/L		96	81 - 141	1	30
acid (ADONA)									

LCSD LCSD

	LOOD	LUUD	
Isotope Dilution	%Recovery	Qualifier	Limits
13C2 PFHxA	109		50 - 150
13C4 PFHpA	105		50 - 150
13C4 PFOA	96		50 - 150
13C5 PFNA	100		50 - 150
13C2 PFDA	98		50 - 150
13C2 PFUnA	103		50 - 150
13C2 PFDoA	95		50 - 150
13C2 PFTeDA	89		50 - 150
13C3 PFBS	110		50 - 150
1802 PFHxS	96		50 - 150
13C4 PFOS	101		50 - 150
d3-NMeFOSAA	110		50 - 150
d5-NEtFOSAA	108		50 - 150
13C3 HFPO-DA	96		50 - 150

Lab Sample ID: MB 320-541439/1-A

**Matrix: Water** 

**Analysis Batch: 542340** 

**Client Sample ID: Method Blank** 

Prep Type: Total/NA

**Prep Batch: 541439** 

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		11/09/21 18:40	11/13/21 01:03	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		11/09/21 18:40	11/13/21 01:03	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		11/09/21 18:40	11/13/21 01:03	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		11/09/21 18:40	11/13/21 01:03	1

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Project/Site: SC Waters#3

### Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: MB 320-541439/1-A

**Matrix: Water** 

Analysis Batch: 542340

**Prep Type: Total/NA** 

**Prep Batch: 541439** 

									• • • • • •
	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		11/09/21 18:40	11/13/21 01:03	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		11/09/21 18:40	11/13/21 01:03	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		11/09/21 18:40	11/13/21 01:03	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		11/09/21 18:40	11/13/21 01:03	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.73	ng/L		11/09/21 18:40	11/13/21 01:03	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		11/09/21 18:40	11/13/21 01:03	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.57	ng/L		11/09/21 18:40	11/13/21 01:03	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		11/09/21 18:40	11/13/21 01:03	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		5.0	1.2	ng/L		11/09/21 18:40	11/13/21 01:03	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		5.0	1.3	ng/L		11/09/21 18:40	11/13/21 01:03	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		2.0	0.24	ng/L		11/09/21 18:40	11/13/21 01:03	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		4.0	1.5	ng/L		11/09/21 18:40	11/13/21 01:03	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		2.0	0.32	ng/L		11/09/21 18:40	11/13/21 01:03	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	0.40	ng/L		11/09/21 18:40	11/13/21 01:03	1
	MB	MB							

	IVID IV	/ID			
Isotope Dilution	%Recovery G	Qualifier Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	111	50 - 150	11/09/21 18:40	11/13/21 01:03	1
13C4 PFHpA	102	50 - 150	11/09/21 18:40	11/13/21 01:03	1
13C4 PFOA	103	50 - 150	11/09/21 18:40	11/13/21 01:03	1
13C5 PFNA	98	50 - 150	11/09/21 18:40	11/13/21 01:03	1
13C2 PFDA	105	50 - 150	11/09/21 18:40	11/13/21 01:03	1
13C2 PFUnA	100	50 - 150	11/09/21 18:40	11/13/21 01:03	1
13C2 PFDoA	95	50 - 150	11/09/21 18:40	11/13/21 01:03	1
13C2 PFTeDA	90	50 - 150	11/09/21 18:40	11/13/21 01:03	1
13C3 PFBS	115	50 - 150	11/09/21 18:40	11/13/21 01:03	1
1802 PFHxS	101	50 - 150	11/09/21 18:40	11/13/21 01:03	1
13C4 PFOS	103	50 - 150	11/09/21 18:40	11/13/21 01:03	1
d3-NMeFOSAA	102	50 - 150	11/09/21 18:40	11/13/21 01:03	1
d5-NEtFOSAA	113	50 - 150	11/09/21 18:40	11/13/21 01:03	1
13C3 HFPO-DA	93	50 - 150	11/09/21 18:40	11/13/21 01:03	1

Lab Sample ID: LCS 320-541439/2-A

**Matrix: Water** 

**Analysis Batch: 542340** 

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

**Prep Batch: 541439** 

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorohexanoic acid (PFHxA)	40.0	35.1		ng/L		88	72 - 129	
Perfluoroheptanoic acid (PFHpA)	40.0	36.6		ng/L		92	72 - 130	
Perfluorooctanoic acid (PFOA)	40.0	38.1		ng/L		95	71 - 133	
Perfluorononanoic acid (PFNA)	40.0	37.6		ng/L		94	69 - 130	
Perfluorodecanoic acid (PFDA)	40.0	38.5		ng/L		96	71 - 129	
Perfluoroundecanoic acid (PFUnA)	40.0	34.1		ng/L		85	69 - 133	
Perfluorododecanoic acid (PFDoA)	40.0	39.2		ng/L		98	72 - 134	

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Project/Site: SC Waters#3

### Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

_ab Sampl	e ID: I	<b>_CS 320</b>	-541439/2-A
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**Matrix: Water** 

Analysis Batch: 542340

**Client Sample ID: Lab Control Sample** 

**Prep Type: Total/NA Prep Batch: 541439** 

	Spike	LCS LCS			%Rec.	
Analyte	Added	Result Qualifier	Unit	D %Rec	Limits	
Perfluorotridecanoic acid	40.0	35.4	ng/L		65 - 144	
(PFTriA)						
Perfluorotetradecanoic acid	40.0	33.9	ng/L	85	71 - 132	
(PFTeA)						
Perfluorobutanesulfonic acid	35.4	29.0	ng/L	82	72 - 130	
(PFBS)						
Perfluorohexanesulfonic acid	36.4	33.4	ng/L	92	68 - 131	
(PFHxS)						
Perfluorooctanesulfonic acid	37.1	32.4	ng/L	87	65 - 140	
(PFOS)						
N-methylperfluorooctanesulfona	40.0	35.0	ng/L	88	65 - 136	
midoacetic acid (NMeFOSAA)						
N-ethylperfluorooctanesulfonami	40.0	39.3	ng/L	98	61 - 135	
doacetic acid (NEtFOSAA)						
9-Chlorohexadecafluoro-3-oxan	37.3	32.0	ng/L	86	77 - 137	
onane-1-sulfonic acid						
Hexafluoropropylene Oxide	40.0	38.1	ng/L	95	72 - 132	
Dimer Acid (HFPO-DA)						
11-Chloroeicosafluoro-3-oxaund	37.7	33.8	ng/L	90	76 <sub>-</sub> 136	
ecane-1-sulfonic acid						
4,8-Dioxa-3H-perfluorononanoic	37.7	34.8	ng/L	92	81 <sub>-</sub> 141	
acid (ADONA)						

LCS LCS

Isotope Dilution	%Recovery Q	ualifier Limits
13C2 PFHxA	106	50 - 150
13C4 PFHpA	102	50 - 150
13C4 PFOA	99	50 - 150
13C5 PFNA	97	50 - 150
13C2 PFDA	103	50 <sub>-</sub> 150
13C2 PFUnA	102	50 - 150
13C2 PFDoA	93	50 - 150
13C2 PFTeDA	93	50 - 150
13C3 PFBS	116	50 - 150
1802 PFHxS	100	50 - 150
13C4 PFOS	105	50 - 150
d3-NMeFOSAA	111	50 - 150
d5-NEtFOSAA	104	50 - 150
13C3 HFPO-DA	92	50 - 150

Lab Sample ID: LCSD 320-541439/3-A

**Client Sample ID: Lab Control Sample Dup** 

**Matrix: Water** Prep Type: Total/NA Analysis Batch: 542340

**Prep Batch: 541439** 

	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluorohexanoic acid (PFHxA)	40.0	35.3		ng/L		88	72 - 129	1	30
Perfluoroheptanoic acid (PFHpA)	40.0	35.3		ng/L		88	72 - 130	4	30
Perfluorooctanoic acid (PFOA)	40.0	37.6		ng/L		94	71 - 133	1	30
Perfluorononanoic acid (PFNA)	40.0	38.7		ng/L		97	69 - 130	3	30
Perfluorodecanoic acid (PFDA)	40.0	40.2		ng/L		101	71 - 129	4	30
Perfluoroundecanoic acid	40.0	38.8		ng/L		97	69 - 133	13	30
(PFUnA)									

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## **QC Sample Results**

Client: Shannon & Wilson, Inc Job ID: 320-81258-1 Project/Site: SC Waters#3

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

**Client Sample ID: Lab Control Sample Dup** 

**Matrix: Water** 

Analysis Batch: 542340

Lab Sample ID: LCSD 320-541439/3-A

**Prep Type: Total/NA Prep Batch: 541439** 

Analysis Batom 6-120-16							i iop Bo		11-100
	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluorododecanoic acid	40.0	41.7		ng/L		104	72 - 134	6	30
(PFDoA)									
Perfluorotridecanoic acid	40.0	34.8		ng/L		87	65 - 144	2	30
(PFTriA)									
Perfluorotetradecanoic acid	40.0	36.9		ng/L		92	71 - 132	8	30
(PFTeA)									
Perfluorobutanesulfonic acid	35.4	29.6		ng/L		84	72 - 130	2	30
(PFBS)									
Perfluorohexanesulfonic acid	36.4	34.3		ng/L		94	68 - 131	3	30
(PFHxS)									
Perfluorooctanesulfonic acid	37.1	34.7		ng/L		94	65 - 140	7	30
(PFOS)									
N-methylperfluorooctanesulfona	40.0	35.9		ng/L		90	65 - 136	2	30
midoacetic acid (NMeFOSAA)									
N-ethylperfluorooctanesulfonami	40.0	39.1		ng/L		98	61 - 135	0	30
doacetic acid (NEtFOSAA)									
9-Chlorohexadecafluoro-3-oxan	37.3	31.1		ng/L		83	77 - 137	3	30
onane-1-sulfonic acid									
Hexafluoropropylene Oxide	40.0	40.2		ng/L		100	72 - 132	5	30
Dimer Acid (HFPO-DA)									
11-Chloroeicosafluoro-3-oxaund	37.7	35.2		ng/L		93	76 - 136	4	30
ecane-1-sulfonic acid									
4,8-Dioxa-3H-perfluorononanoic	37.7	36.6		ng/L		97	81 - 141	5	30
acid (ADONA)									

LCSD LCSD

	LUSD	LUSD	
Isotope Dilution	%Recovery	Qualifier	Limits
13C2 PFHxA	116		50 - 150
13C4 PFHpA	116		50 - 150
13C4 PFOA	104		50 - 150
13C5 PFNA	104		50 - 150
13C2 PFDA	104		50 - 150
13C2 PFUnA	102		50 - 150
13C2 PFDoA	95		50 - 150
13C2 PFTeDA	93		50 - 150
13C3 PFBS	122		50 - 150
1802 PFHxS	104		50 - 150
13C4 PFOS	111		50 - 150
d3-NMeFOSAA	114		50 - 150
d5-NEtFOSAA	107		50 - 150
13C3 HFPO-DA	94		50 - 150

# **QC Association Summary**

Client: Shannon & Wilson, Inc Job ID: 320-81258-1 Project/Site: SC Waters#3

## LCMS

### **Prep Batch: 540159**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81258-1	21GST-TWP-15	Total/NA	Water	3535	_
320-81258-2	21GST-TWP-115	Total/NA	Water	3535	
320-81258-3	21GST-TWP-1	Total/NA	Water	3535	
320-81258-4	21GST-TWP-2	Total/NA	Water	3535	
320-81258-5	21GST-TWP-10	Total/NA	Water	3535	
320-81258-6	MW-13-20	Total/NA	Water	3535	
320-81258-7	MW-13-45	Total/NA	Water	3535	
320-81258-8	MW-113-45	Total/NA	Water	3535	
320-81258-9	21GST-TWP-8	Total/NA	Water	3535	
320-81258-10	21GST-TWP-5	Total/NA	Water	3535	
320-81258-11	21GST-TWP-4	Total/NA	Water	3535	
320-81258-11 - DL	21GST-TWP-4	Total/NA	Water	3535	
320-81258-12	21GST-TWP-3	Total/NA	Water	3535	
320-81258-13	21GST-TWP-103	Total/NA	Water	3535	
320-81258-14	MW-25-15	Total/NA	Water	3535	
320-81258-15	MW-24-30	Total/NA	Water	3535	
320-81258-16	MW-24-10	Total/NA	Water	3535	
320-81258-17	MW-25-47	Total/NA	Water	3535	
320-81258-18	MW-125-47	Total/NA	Water	3535	
320-81258-19	MW-22-15	Total/NA	Water	3535	
320-81258-20	MW-22-40	Total/NA	Water	3535	
MB 320-540159/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-540159/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-540159/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

### **Prep Batch: 540161**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81258-21	21GST-TWP-12	Total/NA	Water	3535	_
320-81258-22	21GST-TWP-11	Total/NA	Water	3535	
320-81258-23	21GST-TWP-111	Total/NA	Water	3535	
320-81258-24	21GST-TWP-9	Total/NA	Water	3535	
320-81258-25	21GST-TWP-7	Total/NA	Water	3535	
320-81258-26	21GST-TWP-6	Total/NA	Water	3535	
320-81258-27	21GST-SW-031	Total/NA	Water	3535	
320-81258-28	21GST-SW-131	Total/NA	Water	3535	
320-81258-29	MW-21-15	Total/NA	Water	3535	
320-81258-30	MW-21-45	Total/NA	Water	3535	
MB 320-540161/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-540161/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-540161/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

#### **Prep Batch: 541439**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81258-31	MW-121-45	Total/NA	Water	3535	<u> </u>
320-81258-32	MW-14-31	Total/NA	Water	3535	
320-81258-33	MW-14-15	Total/NA	Water	3535	
MB 320-541439/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-541439/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-541439/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

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Client: Shannon & Wilson, Inc Job ID: 320-81258-1 Project/Site: SC Waters#3

## LCMS

### Analysis Batch: 541793

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81258-1	21GST-TWP-15	Total/NA	Water	EPA 537(Mod)	540159
320-81258-2	21GST-TWP-115	Total/NA	Water	EPA 537(Mod)	540159
320-81258-3	21GST-TWP-1	Total/NA	Water	EPA 537(Mod)	540159
320-81258-4	21GST-TWP-2	Total/NA	Water	EPA 537(Mod)	540159
320-81258-5	21GST-TWP-10	Total/NA	Water	EPA 537(Mod)	540159
320-81258-6	MW-13-20	Total/NA	Water	EPA 537(Mod)	540159
320-81258-7	MW-13-45	Total/NA	Water	EPA 537(Mod)	540159
320-81258-8	MW-113-45	Total/NA	Water	EPA 537(Mod)	540159
320-81258-9	21GST-TWP-8	Total/NA	Water	EPA 537(Mod)	540159
320-81258-10	21GST-TWP-5	Total/NA	Water	EPA 537(Mod)	540159
320-81258-11	21GST-TWP-4	Total/NA	Water	EPA 537(Mod)	540159
320-81258-12	21GST-TWP-3	Total/NA	Water	EPA 537(Mod)	540159
320-81258-13	21GST-TWP-103	Total/NA	Water	EPA 537(Mod)	540159
320-81258-14	MW-25-15	Total/NA	Water	EPA 537(Mod)	540159
320-81258-15	MW-24-30	Total/NA	Water	EPA 537(Mod)	540159
320-81258-16	MW-24-10	Total/NA	Water	EPA 537(Mod)	540159
320-81258-17	MW-25-47	Total/NA	Water	EPA 537(Mod)	540159
320-81258-18	MW-125-47	Total/NA	Water	EPA 537(Mod)	540159
320-81258-19	MW-22-15	Total/NA	Water	EPA 537(Mod)	540159
320-81258-20	MW-22-40	Total/NA	Water	EPA 537(Mod)	540159
MB 320-540159/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	540159
LCS 320-540159/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	540159
LCSD 320-540159/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	540159

### **Analysis Batch: 542097**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81258-11 - DL	21GST-TWP-4	Total/NA	Water	EPA 537(Mod)	540159

### Analysis Batch: 542340

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81258-31	MW-121-45	Total/NA	Water	EPA 537(Mod)	541439
320-81258-32	MW-14-31	Total/NA	Water	EPA 537(Mod)	541439
320-81258-33	MW-14-15	Total/NA	Water	EPA 537(Mod)	541439
MB 320-541439/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	541439
LCS 320-541439/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	541439
LCSD 320-541439/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	541439

### **Analysis Batch: 542345**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81258-21	21GST-TWP-12	Total/NA	Water	EPA 537(Mod)	540161
320-81258-22	21GST-TWP-11	Total/NA	Water	EPA 537(Mod)	540161
320-81258-23	21GST-TWP-111	Total/NA	Water	EPA 537(Mod)	540161
320-81258-24	21GST-TWP-9	Total/NA	Water	EPA 537(Mod)	540161
320-81258-25	21GST-TWP-7	Total/NA	Water	EPA 537(Mod)	540161
320-81258-26	21GST-TWP-6	Total/NA	Water	EPA 537(Mod)	540161
320-81258-27	21GST-SW-031	Total/NA	Water	EPA 537(Mod)	540161
320-81258-28	21GST-SW-131	Total/NA	Water	EPA 537(Mod)	540161
320-81258-29	MW-21-15	Total/NA	Water	EPA 537(Mod)	540161
320-81258-30	MW-21-45	Total/NA	Water	EPA 537(Mod)	540161
MB 320-540161/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	540161
LCS 320-540161/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	540161

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# **QC Association Summary**

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

**LCMS (Continued)** 

**Analysis Batch: 542345 (Continued)** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 320-540161/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	540161

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Client: Shannon & Wilson, Inc Project/Site: SC Waters#3

Client Sample ID: 21GST-TWP-15

Date Collected: 10/27/21 10:10 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81258-1

Lab Sample ID: 320-81258-4

Matrix: Water

**Matrix: Water** 

**Matrix: Water** 

**Matrix: Water** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			294.5 mL	10.0 mL	540159	11/04/21 19:30	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541793	11/11/21 02:39	K1S	TAL SAC

Client Sample ID: 21GST-TWP-115

Date Collected: 10/27/21 10:00

Lab Sample ID: 320-81258-2

Matrix: Water

Date Collected: 10/27/21 10:00 Date Received: 11/03/21 14:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			270.5 mL	10.0 mL	540159	11/04/21 19:30	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541793	11/11/21 02:49	K1S	TAL SAC

Client Sample ID: 21GST-TWP-1 Lab Sample ID: 320-81258-3

Date Collected: 10/27/21 11:47 Date Received: 11/03/21 14:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			274.4 mL	10.0 mL	540159	11/04/21 19:30	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541793	11/11/21 03:00	K1S	TAL SAC

Client Sample ID: 21GST-TWP-2

Date Collected: 10/27/21 13:45

Date Received: 11/03/21 14:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			291.1 mL	10.0 mL	540159	11/04/21 19:30	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541793	11/11/21 03:10	K1S	TAL SAC

Client Sample ID: 21GST-TWP-10 Lab Sample ID: 320-81258-5

Date Collected: 10/27/21 16:54 Date Received: 11/03/21 14:01

Dran Trina	Batch	Batch	Dum	Dil	Initial	Final	Batch	Prepared	Amalyzat	Lab
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			283.3 mL	10.0 mL	540159	11/04/21 19:30	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541793	11/11/21 03:21	K1S	TAL SAC

Client Sample ID: MW-13-20

Date Collected: 10/27/21 12:26

Lab Sample ID: 320-81258-6

Matrix: Water

Date Received: 11/03/21 14:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			291.5 mL	10.0 mL	540159	11/04/21 19:30	PV	TAL SAC
Total/NA	Analysis	FPA 537(Mod)		1			541793	11/11/21 03:31	K1S	TAL SAC

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Job ID: 320-81258-1

Client: Shannon & Wilson, Inc Project/Site: SC Waters#3

Client Sample ID: MW-13-45

Date Collected: 10/27/21 17:31 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81258-7

**Matrix: Water** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			287.1 mL	10.0 mL	540159	11/04/21 19:30	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541793	11/11/21 03:42	K1S	TAL SAC

**Client Sample ID: MW-113-45** 

Date Collected: 10/27/21 17:21 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81258-8

**Matrix: Water** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			284.5 mL	10.0 mL	540159	11/04/21 19:30	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541793	11/11/21 04:02	K1S	TAL SAC

Client Sample ID: 21GST-TWP-8

Date Collected: 10/28/21 13:22

Date Received: 11/03/21 14:01

Lab Sample ID: 320-81258-9

**Matrix: Water** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			284.4 mL	10.0 mL	540159	11/04/21 19:30	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541793	11/11/21 04:13	K1S	TAL SAC

Client Sample ID: 21GST-TWP-5

Date Collected: 10/28/21 12:12

Date Received: 11/03/21 14:01

Lab Sample ID: 320-81258-10

Lab Sample ID: 320-81258-11

Lab Sample ID: 320-81258-12

Matrix: Water

**Matrix: Water** 

**Matrix: Water** 

	Batch	Batch	_	Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			295.1 mL	10.0 mL	540159	11/04/21 19:30	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541793	11/11/21 04:23	K1S	TAL SAC

Client Sample ID: 21GST-TWP-4

Date Collected: 10/28/21 11:30

Date Received: 11/03/21 14:01

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA Total/NA	Prep Analysis	3535 EPA 537(Mod)		1	286.1 mL	10.0 mL	540159 541793	11/04/21 19:30 11/11/21 04:34		TAL SAC TAL SAC
Total/NA Total/NA	Prep Analysis	3535 EPA 537(Mod)	DL DL	5	286.1 mL	10.0 mL	540159 542097	11/04/21 19:30 11/12/21 09:26		TAL SAC TAL SAC

Client Sample ID: 21GST-TWP-3

Date Collected: 10/28/21 10:27

Date Received: 11/03/21 14:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			282.4 mL	10.0 mL	540159	11/04/21 19:30	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541793	11/11/21 04:44	K1S	TAL SAC

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Job ID: 320-81258-1

Client: Shannon & Wilson, Inc Project/Site: SC Waters#3

Client Sample ID: 21GST-TWP-103

Date Collected: 10/28/21 10:17 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81258-13

**Matrix: Water** 

**Matrix: Water** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			279.3 mL	10.0 mL	540159	11/04/21 19:30	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541793	11/11/21 04:55	K1S	TAL SAC

Client Sample ID: MW-25-15 Lab Sample ID: 320-81258-14

Date Collected: 10/28/21 15:09 Matrix: Water

Date Received: 11/03/21 14:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			282.6 mL	10.0 mL	540159	11/04/21 19:30	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541793	11/11/21 05:05	K1S	TAL SAC

Client Sample ID: MW-24-30 Lab Sample ID: 320-81258-15

Date Collected: 10/29/21 15:39

Date Received: 11/03/21 14:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			294.8 mL	10.0 mL	540159	11/04/21 19:30	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541793	11/11/21 05:15	K1S	TAL SAC

Client Sample ID: MW-24-10

Date Collected: 10/29/21 15:25

Lab Sample ID: 320-81258-16

Matrix: Water

Date Received: 11/03/21 14:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			297.3 mL	10.0 mL	540159	11/04/21 19:30	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541793	11/11/21 05:26	K1S	TAL SAC

Client Sample ID: MW-25-47

Date Collected: 10/29/21 11:01

Lab Sample ID: 320-81258-17

Matrix: Water

Date Collected: 10/29/21 11:01 Date Received: 11/03/21 14:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			280.6 mL	10.0 mL	540159	11/04/21 19:30	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541793	11/11/21 05:36	K1S	TAL SAC

Client Sample ID: MW-125-47

Date Collected: 10/29/21 10:51

Lab Sample ID: 320-81258-18

Matrix: Water

Date Received: 11/03/21 14:01

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			274.7 mL	10.0 mL	540159	11/04/21 19:30	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			5/1703	11/11/21 05:57	K1S	TAL SAC

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Client: Shannon & Wilson, Inc Project/Site: SC Waters#3

Client Sample ID: MW-22-15

Date Collected: 10/30/21 15:30 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81258-19

Matrix: Water

**Matrix: Water** 

**Matrix: Water** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			272.5 mL	10.0 mL	540159	11/04/21 19:30	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541793	11/11/21 06:07	K1S	TAL SAC

Client Sample ID: MW-22-40 Lab Sample ID: 320-81258-20

Date Collected: 10/30/21 14:59

Date Received: 11/03/21 14:01

Matrix: Water

Batch Batch Dil Initial Final Batch Prepared Method **Prep Type Factor Amount** Amount Number or Analyzed Type Run Analyst Lab Total/NA Prep 3535 279.2 mL 10.0 mL 540159 11/04/21 19:30 PV TAL SAC Total/NA 541793 11/11/21 06:18 K1S Analysis TAL SAC EPA 537(Mod) 1

Client Sample ID: 21GST-TWP-12 Lab Sample ID: 320-81258-21

Date Collected: 10/30/21 13:43 Matrix: Water

Date Received: 11/03/21 14:01

Batch Batch Dil Initial Final Batch **Prepared** Number Method Amount or Analyzed **Prep Type** Type Run **Factor** Amount Analyst Lab Total/NA Prep 3535 289.8 mL 10.0 mL 540161 11/04/21 19:36 PV TAL SAC Total/NA Analysis EPA 537(Mod) 542345 11/13/21 06:26 S1M TAL SAC 1

Client Sample ID: 21GST-TWP-11 Lab Sample ID: 320-81258-22

Date Collected: 10/30/21 12:42 Date Received: 11/03/21 14:01

Batch Batch Dil Initial Final **Batch** Prepared **Prep Type** Method Factor Amount Amount Number or Analyzed Type Run Analyst Lab Total/NA 3535 540161 PV Prep 288.7 mL 10.0 mL 11/04/21 19:36 TAL SAC Total/NA Analysis EPA 537(Mod) 1 542345 11/13/21 06:36 S1M TAL SAC

Client Sample ID: 21GST-TWP-111 Lab Sample ID: 320-81258-23

Date Collected: 10/30/21 12:32
Date Received: 11/03/21 14:01

Batch Batch Dil Initial Final Batch Prepared Method Factor Amount Amount Number or Analyzed **Prep Type** Type Run Analyst I ab Total/NA 11/04/21 19:36 PV TAL SAC Prep 3535 277.3 mL 10.0 mL 540161 Total/NA Analysis 542345 11/13/21 06:46 S1M EPA 537(Mod) 1 TAL SAC

Client Sample ID: 21GST-TWP-9 Lab Sample ID: 320-81258-24

Date Collected: 10/30/21 11:24 Matrix: Water Date Received: 11/03/21 14:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			288 mL	10.0 mL	540161	11/04/21 19:36	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542345	11/13/21 06:57	S1M	TAL SAC

Client: Shannon & Wilson, Inc Project/Site: SC Waters#3

Client Sample ID: 21GST-TWP-7

Date Collected: 10/30/21 10:38 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81258-25

**Matrix: Water** 

		Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Pr	ер Туре	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
То	tal/NA	Prep	3535			288 mL	10.0 mL	540161	11/04/21 19:36	PV	TAL SAC
То	tal/NA	Analysis	EPA 537(Mod)		1			542345	11/13/21 07:07	S1M	TAL SAC

Client Sample ID: 21GST-TWP-6

Date Collected: 10/30/21 09:57 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81258-26

Matrix: Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			291.2 mL	10.0 mL	540161	11/04/21 19:36	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542345	11/13/21 07:18	S1M	TAL SAC

Client Sample ID: 21GST-SW-031

Date Collected: 10/31/21 12:45 Date Received: 11/03/21 14:01 Lab Sample ID: 320-81258-27

**Matrix: Water** 

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535	_ Kuii	- actor	266 mL	10.0 mL	540161	11/04/21 19:36		TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542345	11/13/21 07:28	S1M	TAL SAC

Client Sample ID: 21GST-SW-131

Date Collected: 10/31/21 12:35

Date Received: 11/03/21 14:01

Lab Sample ID: 320-81258-28

Lab Sample ID: 320-81258-29

Lab Sample ID: 320-81258-30

Matrix: Water

**Matrix: Water** 

**Matrix: Water** 

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			268.2 mL	10.0 mL	540161	11/04/21 19:36	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542345	11/13/21 07:49	S1M	TAL SAC

Client Sample ID: MW-21-15

Date Collected: 11/01/21 11:15

Date Received: 11/03/21 14:01

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			283.3 mL	10.0 mL	540161	11/04/21 19:36	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542345	11/13/21 07:59	S1M	TAL SAC

Client Sample ID: MW-21-45

Date Collected: 11/01/21 11:52

Date Received: 11/03/21 14:01

	_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
١	Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
	Total/NA	Prep	3535			279.7 mL	10.0 mL	540161	11/04/21 19:36	PV	TAL SAC
	Total/NA	Analysis	EPA 537(Mod)		1			542345	11/13/21 08:10	S1M	TAL SAC

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### **Lab Chronicle**

Client: Shannon & Wilson, Inc Job ID: 320-81258-1

Project/Site: SC Waters#3

Client Sample ID: MW-121-45 Lab Sample ID: 320-81258-31

Date Collected: 11/01/21 11:42

Date Received: 11/03/21 14:01

Matrix: Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			283 mL	10.0 mL	541439	11/09/21 18:40	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542340	11/13/21 01:34	S1M	TAL SAC

Client Sample ID: MW-14-31 Lab Sample ID: 320-81258-32

Date Collected: 11/01/21 16:20 Matrix: Water Date Received: 11/03/21 14:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			288.4 mL	10.0 mL	541439	11/09/21 18:40	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542340	11/13/21 01:44	S1M	TAL SAC

Client Sample ID: MW-14-15 Lab Sample ID: 320-81258-33

Date Collected: 11/01/21 16:50 Matrix: Water

Date Received: 11/03/21 14:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			280.6 mL	10.0 mL	541439	11/09/21 18:40	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542340	11/13/21 01:55	S1M	TAL SAC

**Laboratory References:** 

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

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# **Accreditation/Certification Summary**

Client: Shannon & Wilson, Inc Job ID: 320-81258-1

Project/Site: SC Waters#3

## **Laboratory: Eurofins TestAmerica, Sacramento**

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	<b>Expiration Date</b>
Alaska (UST)	State	17-020	02-20-24

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## **Method Summary**

Client: Shannon & Wilson, Inc Project/Site: SC Waters#3

Job ID: 320-81258-1

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.3, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

#### **Protocol References:**

EPA = US Environmental Protection Agency

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

#### Laboratory References:

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

# **Sample Summary**

Client: Shannon & Wilson, Inc Project/Site: SC Waters#3

320-81258-32

320-81258-33

MW-14-31

MW-14-15

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	
320-81258-1	21GST-TWP-15	Water	10/27/21 10:10	11/03/21 14:01	
320-81258-2	21GST-TWP-115	Water	10/27/21 10:00	11/03/21 14:01	
320-81258-3	21GST-TWP-1	Water	10/27/21 11:47	11/03/21 14:01	
320-81258-4	21GST-TWP-2	Water	10/27/21 13:45	11/03/21 14:01	
320-81258-5	21GST-TWP-10	Water	10/27/21 16:54	11/03/21 14:01	
320-81258-6	MW-13-20	Water	10/27/21 12:26	11/03/21 14:01	
320-81258-7	MW-13-45	Water	10/27/21 17:31	11/03/21 14:01	
320-81258-8	MW-113-45	Water	10/27/21 17:21	11/03/21 14:01	
320-81258-9	21GST-TWP-8	Water	10/28/21 13:22	11/03/21 14:01	
320-81258-10	21GST-TWP-5	Water	10/28/21 12:12	11/03/21 14:01	
320-81258-11	21GST-TWP-4	Water	10/28/21 11:30	11/03/21 14:01	
320-81258-12	21GST-TWP-3	Water	10/28/21 10:27	11/03/21 14:01	
320-81258-13	21GST-TWP-103	Water	10/28/21 10:17	11/03/21 14:01	
320-81258-14	MW-25-15	Water	10/28/21 15:09	11/03/21 14:01	
320-81258-15	MW-24-30	Water	10/29/21 15:39	11/03/21 14:01	
320-81258-16	MW-24-10	Water	10/29/21 15:25	11/03/21 14:01	
320-81258-17	MW-25-47	Water	10/29/21 11:01	11/03/21 14:01	
320-81258-18	MW-125-47	Water	10/29/21 10:51	11/03/21 14:01	
320-81258-19	MW-22-15	Water	10/30/21 15:30	11/03/21 14:01	
320-81258-20	MW-22-40	Water	10/30/21 14:59	11/03/21 14:01	
320-81258-21	21GST-TWP-12	Water	10/30/21 13:43	11/03/21 14:01	
320-81258-22	21GST-TWP-11	Water	10/30/21 12:42	11/03/21 14:01	
320-81258-23	21GST-TWP-111	Water	10/30/21 12:32	11/03/21 14:01	
320-81258-24	21GST-TWP-9	Water	10/30/21 11:24	11/03/21 14:01	
320-81258-25	21GST-TWP-7	Water	10/30/21 10:38	11/03/21 14:01	
320-81258-26	21GST-TWP-6	Water	10/30/21 09:57	11/03/21 14:01	
320-81258-27	21GST-SW-031	Water	10/31/21 12:45	11/03/21 14:01	
320-81258-28	21GST-SW-131	Water	10/31/21 12:35	11/03/21 14:01	
320-81258-29	MW-21-15	Water	11/01/21 11:15	11/03/21 14:01	
320-81258-30	MW-21-45	Water	11/01/21 11:52	11/03/21 14:01	
320-81258-31	MW-121-45	Water	11/01/21 11:42	11/03/21 14:01	

Water

Water

11/01/21 16:20 11/03/21 14:01

11/01/21 16:50 11/03/21 14:01

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Job ID: 320-81258-1

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11/16/2021

11/16/2021

of 71

No. 36472

11/16/2021

No.

Client: Shannon & Wilson, Inc

Job Number: 320-81258-1

Login Number: 81258

List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Cahill, Nicholas P

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	1478338/1478339, Seal
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## **Laboratory Data Review Checklist**

Completed By:
Mason Craker
Title:
Geologist
Date:
November 17, 2021
Consultant Firm:
Shannon & Wilson, Inc.
aboratory Name:
Eurofins / TestAmerica Laboratories, Inc. (TestAmerica)
aboratory Report Number:
320-81258-1
aboratory Report Date:
11/16/2021
CS Site Name:
ADOT&PF Gustavus Airport Statewide PFAS
ADEC File Number:
1507.38.017
Iazard Identification Number:
26904

May 2020 Page 1

Laboratory Report Date:
Note: Any N/A or No box checked must have an explanation in the comments box.
1. <u>Laboratory</u>
a. Did an ADEC CS approved laboratory receive and <u>perform</u> all of the submitted sample analyses?
Yes⊠ No□ N/A□ Comments:
Analyses were performed by the Eurofins Laboratory in West Sacramento, CA. The laboratory is approved by the DEC CS program and certified under the Department of Defense Environmental Laboratory Accreditation Program (DoD ELAP) for the requested analyses.
b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?
$Yes \square No \square N/A \boxtimes Comments:$
The samples were not transferred to a network laboratory or subcontracted out.
2. Chain of Custody (CoC)
a. CoC information completed, signed, and dated (including released/received by)?
Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:
b. Correct analyses requested?
$Yes \boxtimes No \square N/A \square$ Comments:
3. <u>Laboratory Sample Receipt Documentation</u>
a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?
$Yes \boxtimes No \square N/A \square$ Comments:
b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?
$Yes \square No \square N/A \boxtimes Comments:$
Samples analyzed for PFAS do not require preservation other than temperature control.
c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?
$Yes \boxtimes No \square N/A \square$ Comments:
The sample receipt form notes that the samples arrived in good condition.

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20-81258-1
ratory Report Date:
d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?
Yes $\square$ No $\square$ N/A $\boxtimes$ Comments:
There were no discrepancies noted by the laboratory in the sample receipt documentation.
e. Data quality or usability affected?
Comments:
The data quality and/or usability was not affected; see above.
. <u>Case Narrative</u>
a. Present and understandable?
Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:

May 2020 Page 3

ora	atory Report Date:
016	mory Report Date.
	b. Discrepancies, errors, or QC failures identified by the lab?
	Yes⊠ No□ N/A□ Comments:
	Method EPA 537(Mod): The "I" qualifier means the transition mass ratio for the indicated analyte wa above the established ratio limits. The qualitative identification of the analyte has some degree of uncertainty, and the reported value may have some high bias. However, analyst judgment was used to positively identify the analyte.
	Method EPA 537(Mod): Results for sample 21GST-TWP-4 were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits.
	Method 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) in conjunction with preparation batches 320-540159, 320-540161, and 320-541439.
	Method 3535: The following samples exhibited a yellow hue and contained a thin layer of sediment a the bottom of the bottle prior to extraction: 21GST-TWP-1, MW-13-20, MW-13-45, MW-113-45, 21GST-TWP-8, 21GST-TWP-5, 21GST-TWP-4, 21GST-TWP-3, 21GST-TWP-103, MW-25-15, MW-24-30, MW-22-15, and MW-22-40.
	Method 3535: The samples 21GST-TWP-15 and 21GST-TWP-115 exhibited a yellow hue and contained floating particulate at the bottom of the bottle prior to extraction.
	Method 3535: The following samples exhibited a yellow hue and contained a thin layer of sediment a the bottom of the bottle prior to extraction: 21GST-TWP-11, 21GST-TWP-111, 21GST-TWP-9, 21GST-SW-031, 21GST-SW-131, MW-21-45, MW-14-31, and MW-121-45.
	Method 3535: The following samples exhibited a yellow hue after final voluming: <i>MW-13-20</i> , <i>MW-13-45</i> , <i>MW-113-45</i> , <i>MW-21-45</i> , <i>MW-14-31</i> , <i>MW-121-45</i> , and <i>21GST-TWP-4</i> .
	c. Were all corrective actions documented?
	Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:

that they may have some high bias.

The laboratory assigned the "I" qualifier to results affected by transition mass ratio failures and notes

d. What is the effect on data quality/usability according to the case narrative?

Comments:

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Samı	ples Results
a	. Correct analyses performed/reported as requested on COC?
	Yes⊠ No□ N/A□ Comments:
b	All applicable holding times met?
	Yes⊠ No□ N/A□ Comments:
c	. All soils reported on a dry weight basis?  Yes□ No□ N/A⊠ Comments:
S	soil samples were not submitted with this work order.
d	. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?
	Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:
Т	The reporting limits (RLs) are less than the applicable DEC regulatory limits for the target PFAS.
e	. Data quality or usability affected?
Т	The data quality/usability is not affected.
QC S	Samples
a	. Method Blank
	i. One method blank reported per matrix, analysis and 20 samples?
	Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:
	ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?
	Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:
	iii. If above LOQ or project specified objectives, what samples are affected?  Comments:
	None; target PFAS were not detected in the method blank samples.

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320-81238-1	

# Laboratory Report Date:

iv. Do the effected complete have deterforce? If so one the deterforce eleculy defined?	
iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?	
Yes□ No□ N/A⊠ Comments:  The samples were not affected by laboratory contamination; see above.	
The samples were not affected by laboratory contamination, see above.	
v. Data quality or usability affected?  Comments:	
The data quality/usability is not affected.	
b. Laboratory Control Sample/Duplicate (LCS/LCSD)	
<ul> <li>i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)</li> </ul>	
Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:	
ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?	
$Yes \square No \square N/A \boxtimes Comments:$	
Metals/Inorganics analyses were not requested for this work order.	
iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)	
Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:	
iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from LCS/LCSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)	
$Yes \boxtimes No \square N/A \square$ Comments:	
v. If %R or RPD is outside of acceptable limits, what samples are affected?  Comments:	
None; method accuracy and precision were demonstrated to be within acceptable limits.	
vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?	
Yes $\square$ No $\square$ N/A $\boxtimes$ Comments:	
Qualification was not required; see above.	

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Laboratory Report Date:	
vii. Data quality or usabili	ty affected? (Use comment box to explain.)
	Comments:
The data quality/usability is n	ot affected.
c. Matrix Spike/Matrix Spike  Note: Leave blank if not	- ,
i. Organics – One MS/N	MSD reported per matrix, analysis and 20 samples?
Yes□ No⊠ N/A□	Comments:
MS/MSD samples were not a LCSD samples to assess methods	nalyzed with this work order; however, the laboratory analyzed LCS and nod accuracy and precision.
ii. Metals/Inorganics – c	one MS and one MSD reported per matrix, analysis and 20 samples?
Yes□ No□ N/A⊠	Comments:
Metals/Inorganics analyses w	ere not requested for this work order.
iii. Accuracy – All perce project specified obje	nt recoveries (%R) reported and within method or laboratory limits and ectives, if applicable?
Yes□ No□ N/A⊠	Comments:
MS and MSD samples were n	not analyzed for this work order.
	we percent differences (RPD) reported and less than method or laboratory exified objectives, if applicable? RPD reported from MS/MSD, and or eate.
Yes□ No□ N/A∑	Comments:
MS and MSD samples were n	not analyzed for this work order.
v. If %R or RPD is outs	ide of acceptable limits, what samples are affected?  Comments:
N/A; MS and MSD samples v	were not analyzed for this work order.
	le(s) have data flags? If so, are the data flags clearly defined?
$Yes \square No \square N/A \boxtimes$	Comments:

**May 2020** Page 7

MS and MSD samples were not analyzed for this work order.

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320-81238-1	

#### Labor

ratory Report Date:
vii. Data quality or usability affected? (Use comment box to explain.)  Comments:
The data quality/usability is not affected.
d. Surrogates – Organics Only or Isotope Dilution Analytes (IDA) – Isotope Dilution Methods Only
<ul> <li>i. Are surrogate/IDA recoveries reported for organic analyses – field, QC and laboratory samples?</li> </ul>
Yes⊠ No□ N/A□ Comments:
<ul> <li>ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods 50-150 %R for field samples and 60-120 %R for QC samples; all other analyses see the laboratory report pages)</li> <li>Yes⊠ No□ N/A□ Comments:</li> </ul>
Tes No No N/A Comments.
<ul> <li>iii. Do the sample results with failed surrogate/IDA recoveries have data flags? If so, are the data flags clearly defined?</li> <li>Yes□ No□ N/A⊠ Comments:</li> </ul>
There were no IDA recovery failures for the reported results.
iv. Data quality or usability affected?  Comments:
The data quality/usability is not affected.
e. Trip Blanks
<ul> <li>i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples?</li> <li>(If not, enter explanation below.)</li> </ul>
$Yes \square No \square N/A \boxtimes Comments:$
PFAS are not volatile compounds. A trip blank is not required for the requested analysis.
ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)
Yes□ No□ N/A⊠ Comments:
A trip blank is not required for the requested analysis.
iii. All results less than LOQ and project specified objectives?
Yes $\square$ No $\square$ N/A $\boxtimes$ Comments:
A trip blank is not required for the requested analysis.

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320-81258-1
oratory Report Date:
iv. If above LOQ or project specified objectives, what samples are affected?  Comments:
N/A; a trip blank is not required for the requested analysis.
v. Data quality or usability affected?  Comments:
The data quality/usability is not affected.
f. Field Duplicate
i. One field duplicate submitted per matrix, analysis and 10 project samples?
$Yes \boxtimes No \square N/A \square$ Comments:
Yes No N/A Comments:  The field duplicate pairs $MW$ -13-45 / $MW$ -113-45, $MW$ -21-45 / $MW$ -121-45, $MW$ -25-47 / $MW$ -125-47, $21GST$ - $TWP$ -3 / $21GST$ - $TWP$ -103, $21GST$ - $TWP$ -11 / $21GST$ - $TWP$ -111, $21GST$ - $TWP$ -15 / $21GST$ - $TWP$ -115 and $21GST$ - $SW$ -031 / $21GST$ - $SW$ -131 were submitted with this work order.
iii. Precision – All relative percent differences (RPD) less than specified project objectives? (Recommended: 30% water, 50% soil)  RPD (%) = Absolute value of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$
Where $R_1$ = Sample Concentration $R_2$ = Field Duplicate Concentration
Yes⊠ No□ N/A□ Comments:
iv. Data quality or usability affected? (Use the comment box to explain why or why not.)  Comments:
The data quality/usability is not affected.
g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below)?

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Yes□ No□ N/A⊠

required.

Comments:

Reusable equipment was not used in the sampling procedure; therefore, an equipment blank is not

320-81258-1	
Laboratory Report Date:	
i. All results less than LOQ and project specified objectives?	
Yes $\square$ No $\square$ N/A $\boxtimes$ Comments:	
An equipment blank was not required; see above.	
ii. If above LOQ or project specified objectives, what samples are affected?  Comments:	
N/A; see above.	
iii. Data quality or usability affected?  Comments:	
The data quality/usability is not affected.	
7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)	
a. Defined and appropriate?	
Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:	
The perfluorobutanesulfonic acid (PFBS) result of sample <i>MW-22-15</i> was affected by a transition mass ratio failure and quantitated manually. We consider this result an estimate and have applied the 'J' qualifier.	

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# **Environment Testing America**

## **ANALYTICAL REPORT**

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

Laboratory Job ID: 320-81504-1 Client Project/Site: Gustavus PFAS

For:

Shannon & Wilson, Inc 2355 Hill Rd. Fairbanks, Alaska 99709-5244

Attn: Kristen Freiburger

Authorized for release by:

11/16/2021 1:29:48 PM

Vani altimo

David Alltucker, Project Manager I (916)374-4383

David.Alltucker@Eurofinset.com

·····LINKS ······

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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Client: Shannon & Wilson, Inc Project/Site: Gustavus PFAS Laboratory Job ID: 320-81504-1

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#### **Definitions/Glossary**

Client: Shannon & Wilson, Inc
Project/Site: Gustavus PFAS

Job ID: 320-81504-1

Qualifiers

**LCMS** 

Qualifier Qualifier Description

Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

**Glossary** 

Abbreviation These commonly used abbreviations may or may not be present in this report.

Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery
CFL Contains Free Liquid
CFU Colony Forming Unit
CNF Contains No Free Liquid

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL Detection Limit (DoD/DOE)

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision Level Concentration (Radiochemistry)

EDL Estimated Detection Limit (Dioxin)

LOD Limit of Detection (DoD/DOE)

LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level"

MDA Minimum Detectable Activity (Radiochemistry)

MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit
ML Minimum Level (Dioxin)
MPN Most Probable Number
MQL Method Quantitation Limit

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent
POS Positive / Present

PQL Practical Quantitation Limit

PRES Presumptive
QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

TNTC Too Numerous To Count

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#### **Case Narrative**

Client: Shannon & Wilson, Inc
Project/Site: Gustavus PFAS

Job ID: 320-81504-1

Job ID: 320-81504-1

Laboratory: Eurofins TestAmerica, Sacramento

**Narrative** 

Job Narrative 320-81504-1

#### Receipt

The samples were received on 11/9/2021 3:07 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 5.9° C.

#### **Receipt Exceptions**

The container label for the following sample(s) did not match the information listed on the Chain-of-Custody (COC): Sample 12, both containers have time 1222 but COC list time 1223. Sample was logged in and labeled according to time on COC. MW-19-50 (320-81504-12).

#### LCMS

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

#### **Organic Prep**

Method 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-541736.

Method 3535: The following samples were yellow and contain a thin layer of sediment at the bottom of the bottle prior to extraction: MW-15-45 (320-81504-3), MW-115-45 (320-81504-1), MW-19-15 (320-81504-11), MW-19-50 (320-81504-12) and MW-119-50 (320-81504-13).

Method 3535: The following samples were brown and contain a thin layer of sediment at the bottom of the bottle prior to extraction: MW-118-50 (320-81504-7) and MW-18-50 (320-81504-8).

Method 3535: The following samples were yellow prior to extraction: MW-20-40 (320-81504-6) and MW-19-15 (320-81504-11).

Method 3535: The following samples were yellow after final volume/extraction: MW-15-45 (320-81504-3) and MW-115-45 (320-81504-4).

Method 3535: The following samples were orange after final volume/extraction: MW-118-50 (320-81504-7) and MW-18-50 (320-81504-8).

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

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**Detection Summary** Client: Shannon & Wilson, Inc Job ID: 320-81504-1 Project/Site: Gustavus PFAS Lab Sample ID: 320-81504-1 Client Sample ID: MW-16 Analyte Result Qualifier Dil Fac D Method RL **MDL** Unit **Prep Type** Perfluorohexanoic acid (PFHxA) EPA 537(Mod) 56 1.7 0.50 ng/L Total/NA Perfluoroheptanoic acid (PFHpA) 25 1.7 0.22 ng/L 1 EPA 537(Mod) Total/NA Perfluorooctanoic acid (PFOA) 8.6 EPA 537(Mod) Total/NA 1.7 0.74 ng/L 1 EPA 537(Mod) Perfluorononanoic acid (PFNA) 4.0 1.7 0.23 ng/L 1 Total/NA Perfluorodecanoic acid (PFDA) EPA 537(Mod) Total/NA 13 1.7 0.27 ng/L 1 Perfluorohexanesulfonic acid (PFHxS) 14 1.7 0.49 ng/L EPA 537(Mod) Total/NA Perfluorooctanesulfonic acid (PFOS) 49 EPA 537(Mod) Total/NA 1.7 0.47 ng/L Client Sample ID: MW-15-15 Lab Sample ID: 320-81504-2 Analyte Result Qualifier RL **MDL** Unit Dil Fac D Method **Prep Type** Perfluorohexanoic acid (PFHxA) 2.6 1.7 0.50 ng/L EPA 537(Mod) Total/NA 1.3 J EPA 537(Mod) Perfluorooctanoic acid (PFOA) 1.7 0.73 ng/L 1 Total/NA Perfluorohexanesulfonic acid (PFHxS) EPA 537(Mod) Total/NA 10 1.7 0.49 ng/L 1 Perfluorooctanesulfonic acid (PFOS) 22 1.7 0.46 ng/L EPA 537(Mod) Total/NA Client Sample ID: MW-15-45 Lab Sample ID: 320-81504-3 No Detections. Client Sample ID: MW-115-45 Lab Sample ID: 320-81504-4 No Detections. Client Sample ID: MW-18-15 Lab Sample ID: 320-81504-5

Analyte **MDL** Unit Dil Fac D Method Result Qualifier RL **Prep Type** Perfluorohexanesulfonic acid (PFHxS) 21 1.8 0.51 ng/L EPA 537(Mod) Total/NA 1.8 Perfluorooctanesulfonic acid (PFOS) 51 EPA 537(Mod) Total/NA 0.48 ng/L

Client Sample ID: MW-20-40

No Detections.

Client Sample ID: MW-118-50

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	1.2	J	1.8	0.52	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.1		1.8	0.49	ng/L	1	EPA 537(Mod)	Total/NA

Client Sample ID: MW-18-50

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	1.3	J	1.8	0.52	ng/L	1	_	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.9		1.8	0.49	ng/L	1		EPA 537(Mod)	Total/NA

Client Sample ID: MW-20-15

Analyte	Result Qualifier	RL	MDL Unit	Dil Fac D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	1.5 J	1.7	0.49 ng/L	1	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	5.5	1.7	0.48 ng/L	1	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.6	1.7	0.46 ng/L	1	EPA 537(Mod)	Total/NA

**Client Sample ID: GAC** 

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

Lab Sample ID: 320-81504-6

Lab Sample ID: 320-81504-7

Lab Sample ID: 320-81504-8

Lab Sample ID: 320-81504-9

Lab Sample ID: 320-81504-10

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## **Detection Summary**

Client: Shannon & Wilson, Inc Job ID: 320-81504-1

Project/Site: Gustavus PFAS

Client Sample ID: MW-19-15	Lab Sample ID: 320-81504-11
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Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.84	J	1.8	0.51	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.4	J	1.8	0.48	ng/L	1	EPA 537(Mod)	Total/NA

#### Lab Sample ID: 320-81504-12 Client Sample ID: MW-19-50

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	1.5	J	1.8	0.52	ng/L	1	_	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.8		1.8	0.51	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.2	J	1.8	0.48	ng/L	1		EPA 537(Mod)	Total/NA

#### Client Sample ID: MW-119-50 Lab Sample ID: 320-81504-13

Analyte	Result Qualifier	RL	MDL	Unit	Dil Fac	D Method	Prep Type
Perfluorohexanoic acid (PFHxA)	1.8	1.8	0.52	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.8	1.8	0.51	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.3 J	1.8	0.49	ng/L	1	EPA 537(Mod)	Total/NA

Client: Shannon & Wilson, Inc Job ID: 320-81504-1 Project/Site: Gustavus PFAS

Date Received: 11/09/21 15:07

**Client Sample ID: MW-16** Lab Sample ID: 320-81504-1 Date Collected: 11/02/21 11:22

**Matrix: Water** 

Analyte	Result Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	56	1.7	0.50	ng/L		11/10/21 18:53	11/14/21 12:27	1
Perfluoroheptanoic acid (PFHpA)	25	1.7	0.22	ng/L		11/10/21 18:53	11/14/21 12:27	1
Perfluorooctanoic acid (PFOA)	8.6	1.7	0.74	ng/L		11/10/21 18:53	11/14/21 12:27	1
Perfluorononanoic acid (PFNA)	4.0	1.7	0.23	ng/L		11/10/21 18:53	11/14/21 12:27	1
Perfluorodecanoic acid (PFDA)	13	1.7	0.27	ng/L		11/10/21 18:53	11/14/21 12:27	1
Perfluoroundecanoic acid (PFUnA)	ND	1.7	0.95	ng/L		11/10/21 18:53	11/14/21 12:27	1
Perfluorododecanoic acid (PFDoA)	ND	1.7	0.48	ng/L		11/10/21 18:53	11/14/21 12:27	1
Perfluorotridecanoic acid (PFTriA)	ND	1.7	1.1	ng/L		11/10/21 18:53	11/14/21 12:27	1
Perfluorotetradecanoic acid (PFTeA)	ND	1.7	0.63	ng/L		11/10/21 18:53	11/14/21 12:27	1
Perfluorobutanesulfonic acid (PFBS)	ND	1.7	0.17	ng/L		11/10/21 18:53	11/14/21 12:27	1
Perfluorohexanesulfonic acid (PFHxS)	14	1.7	0.49	ng/L		11/10/21 18:53	11/14/21 12:27	1
Perfluorooctanesulfonic acid (PFOS)	49	1.7	0.47	ng/L		11/10/21 18:53	11/14/21 12:27	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND	4.3		ng/L		11/10/21 18:53	11/14/21 12:27	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND	4.3	1.1	ng/L		11/10/21 18:53	11/14/21 12:27	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND	1.7	0.21	ng/L		11/10/21 18:53	11/14/21 12:27	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	3.5	1.3	ng/L		11/10/21 18:53	11/14/21 12:27	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND	1.7	0.28	ng/L		11/10/21 18:53	11/14/21 12:27	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.7	0.35	ng/L		11/10/21 18:53	11/14/21 12:27	1
Isotope Dilution	%Recovery Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	93	50 - 150				11/10/21 18:53	11/14/21 12:27	1
13C4 PFHpA	82	50 - 150				11/10/21 18:53	11/14/21 12:27	1
13C4 PFOA	103	50 <sub>-</sub> 150				11/10/21 18:53	11/14/21 12:27	1
13C5 PFNA	87	50 - 150				11/10/21 18:53	11/14/21 12:27	1
13C2 PFDA	91	50 <sub>-</sub> 150				11/10/21 18:53	11/14/21 12:27	1
13C2 PFUnA	84	50 <sub>-</sub> 150				11/10/21 18:53	11/14/21 12:27	1
13C2 PFDoA	88	50 - 150				11/10/21 18:53	11/14/21 12:27	1
13C2 PFTeDA	91	50 <sub>-</sub> 150				11/10/21 18:53	11/14/21 12:27	1
13C3 PFBS	102	50 <sub>-</sub> 150				11/10/21 18:53	11/14/21 12:27	1
1802 PFHxS	95	50 - 150				11/10/21 18:53	11/14/21 12:27	1
13C4 PFOS	94	50 <sub>-</sub> 150				11/10/21 18:53	11/14/21 12:27	1
d3-NMeFOSAA	81	50 - 150				11/10/21 18:53	11/14/21 12:27	1
d5-NEtFOSAA	77	50 <sub>-</sub> 150				11/10/21 18:53	11/14/21 12:27	1
13C3 HFPO-DA	93	50 <sub>-</sub> 150					11/14/21 12:27	1

Client: Shannon & Wilson, Inc Job ID: 320-81504-1 Project/Site: Gustavus PFAS

Date Received: 11/09/21 15:07

13C2 PFTeDA

13C3 PFBS

1802 PFHxS

13C4 PFOS

d3-NMeFOSAA

d5-NEtFOSAA

13C3 HFPO-DA

**Client Sample ID: MW-15-15** Lab Sample ID: 320-81504-2 Date Collected: 11/03/21 16:11

**Matrix: Water** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	2.6		1.7	0.50	ng/L		11/10/21 18:53	11/14/21 12:38	1
Perfluoroheptanoic acid (PFHpA)	ND		1.7	0.21	ng/L		11/10/21 18:53	11/14/21 12:38	1
Perfluorooctanoic acid (PFOA)	1.3	J	1.7	0.73	ng/L		11/10/21 18:53	11/14/21 12:38	1
Perfluorononanoic acid (PFNA)	ND		1.7	0.23	ng/L		11/10/21 18:53	11/14/21 12:38	1
Perfluorodecanoic acid (PFDA)	ND		1.7	0.27	ng/L		11/10/21 18:53	11/14/21 12:38	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.95	ng/L		11/10/21 18:53	11/14/21 12:38	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.47	ng/L		11/10/21 18:53	11/14/21 12:38	1
Perfluorotridecanoic acid (PFTriA)	ND		1.7	1.1	ng/L		11/10/21 18:53	11/14/21 12:38	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.63	ng/L		11/10/21 18:53	11/14/21 12:38	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.7	0.17	ng/L		11/10/21 18:53	11/14/21 12:38	1
Perfluorohexanesulfonic acid (PFHxS)	10		1.7	0.49	ng/L		11/10/21 18:53	11/14/21 12:38	1
Perfluorooctanesulfonic acid (PFOS)	22		1.7	0.46	ng/L		11/10/21 18:53	11/14/21 12:38	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.3	1.0	ng/L		11/10/21 18:53	11/14/21 12:38	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.3	1.1	ng/L		11/10/21 18:53	11/14/21 12:38	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.7	0.21	ng/L		11/10/21 18:53	11/14/21 12:38	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.4	1.3	ng/L		11/10/21 18:53	11/14/21 12:38	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.7	0.28	ng/L		11/10/21 18:53	11/14/21 12:38	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.7	0.34	ng/L		11/10/21 18:53	11/14/21 12:38	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	84		50 - 150				11/10/21 18:53	11/14/21 12:38	1
13C4 PFHpA	81		50 - 150				11/10/21 18:53	11/14/21 12:38	1
13C4 PFOA	97		50 <sub>-</sub> 150				11/10/21 18:53	11/14/21 12:38	1
13C5 PFNA	80		50 - 150				11/10/21 18:53	11/14/21 12:38	1
13C2 PFDA	82		50 <sub>-</sub> 150				11/10/21 18:53	11/14/21 12:38	1
13C2 PFUnA	72		50 <sub>-</sub> 150				11/10/21 18:53	11/14/21 12:38	1
13C2 PFDoA	78		50 - 150				11/10/21 18:53	11/14/21 12:38	1

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11/10/21 18:53 11/14/21 12:38

11/10/21 18:53 11/14/21 12:38

11/10/21 18:53 11/14/21 12:38

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11/10/21 18:53 11/14/21 12:38

11/10/21 18:53 11/14/21 12:38

11/10/21 18:53 11/14/21 12:38

Client: Shannon & Wilson, Inc Job ID: 320-81504-1 Project/Site: Gustavus PFAS

Client Sample ID: MW-15-45

Lab Sample ID: 320-81504-3

Date Collected: 11/03/21 17:28 **Matrix: Water** Date Received: 11/09/21 15:07

Analyte	Result (	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.7	0.50	ng/L		11/10/21 18:53	11/14/21 12:48	1
Perfluoroheptanoic acid (PFHpA)	ND		1.7	0.22	ng/L		11/10/21 18:53	11/14/21 12:48	1
Perfluorooctanoic acid (PFOA)	ND		1.7	0.74	ng/L		11/10/21 18:53	11/14/21 12:48	1
Perfluorononanoic acid (PFNA)	ND		1.7	0.23	ng/L		11/10/21 18:53	11/14/21 12:48	1
Perfluorodecanoic acid (PFDA)	ND		1.7	0.27	ng/L		11/10/21 18:53	11/14/21 12:48	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.95	ng/L		11/10/21 18:53	11/14/21 12:48	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.48	ng/L		11/10/21 18:53	11/14/21 12:48	1
Perfluorotridecanoic acid (PFTriA)	ND		1.7	1.1	ng/L		11/10/21 18:53	11/14/21 12:48	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.63	ng/L		11/10/21 18:53	11/14/21 12:48	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.7	0.17	ng/L		11/10/21 18:53	11/14/21 12:48	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.7	0.49	ng/L		11/10/21 18:53	11/14/21 12:48	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.7	0.47	ng/L		11/10/21 18:53	11/14/21 12:48	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.3	1.0	ng/L		11/10/21 18:53	11/14/21 12:48	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.3	1.1	ng/L		11/10/21 18:53	11/14/21 12:48	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.7	0.21	ng/L		11/10/21 18:53	11/14/21 12:48	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.5	1.3	ng/L		11/10/21 18:53	11/14/21 12:48	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.7	0.28	ng/L		11/10/21 18:53	11/14/21 12:48	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.7	0.35	ng/L		11/10/21 18:53	11/14/21 12:48	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	71		50 - 150				11/10/21 18:53	11/14/21 12:48	1
13C4 PFHpA	62		50 - 150				11/10/21 18:53	11/14/21 12:48	1
13C4 PFOA	94		50 - 150				11/10/21 18:53	11/14/21 12:48	1
13C5 PFNA	63		50 - 150				11/10/21 18:53	11/14/21 12:48	1
13C2 PFDA	81		50 - 150				11/10/21 18:53	11/14/21 12:48	1
13C2 PFUnA	76		50 <sub>-</sub> 150				11/10/21 18:53	11/14/21 12:48	1
13C2 PFDoA	77		50 - 150				11/10/21 18:53	11/14/21 12:48	1
13C2 PFTeDA	97		50 <sub>-</sub> 150				11/10/21 18:53	11/14/21 12:48	1
13C3 PFBS	76		50 <sub>-</sub> 150				11/10/21 18:53	11/14/21 12:48	1
1802 PFHxS	86		50 - 150					11/14/21 12:48	1
13C4 PFOS	84		50 <sub>-</sub> 150					11/14/21 12:48	1
d3-NMeFOSAA	64		50 <sub>-</sub> 150					11/14/21 12:48	1
d5-NEtFOSAA	58		50 - 150					11/14/21 12:48	
13C3 HFPO-DA	66		50 - 150					11/14/21 12:48	1

Client: Shannon & Wilson, Inc Job ID: 320-81504-1 Project/Site: Gustavus PFAS

Client Sample ID: MW-115-45

Lab Sample ID: 320-81504-4

Date Collected: 11/03/21 17:18 **Matrix: Water** Date Received: 11/09/21 15:07

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.7	0.50	ng/L		11/10/21 18:53	11/14/21 12:59	1
Perfluoroheptanoic acid (PFHpA)	ND		1.7	0.22	ng/L		11/10/21 18:53	11/14/21 12:59	1
Perfluorooctanoic acid (PFOA)	ND		1.7	0.73	ng/L		11/10/21 18:53	11/14/21 12:59	1
Perfluorononanoic acid (PFNA)	ND		1.7	0.23	ng/L		11/10/21 18:53	11/14/21 12:59	1
Perfluorodecanoic acid (PFDA)	ND		1.7	0.27	ng/L		11/10/21 18:53	11/14/21 12:59	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.95	ng/L		11/10/21 18:53	11/14/21 12:59	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.47	ng/L		11/10/21 18:53	11/14/21 12:59	1
Perfluorotridecanoic acid (PFTriA)	ND		1.7	1.1	ng/L		11/10/21 18:53	11/14/21 12:59	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.63	ng/L		11/10/21 18:53	11/14/21 12:59	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.7	0.17	ng/L		11/10/21 18:53	11/14/21 12:59	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.7	0.49	ng/L		11/10/21 18:53	11/14/21 12:59	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.7	0.47	ng/L		11/10/21 18:53	11/14/21 12:59	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.3	1.0	ng/L		11/10/21 18:53	11/14/21 12:59	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.3	1.1	ng/L		11/10/21 18:53	11/14/21 12:59	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.7	0.21	ng/L		11/10/21 18:53	11/14/21 12:59	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.4	1.3	ng/L		11/10/21 18:53	11/14/21 12:59	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.7	0.28	ng/L		11/10/21 18:53	11/14/21 12:59	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.7	0.34	ng/L		11/10/21 18:53	11/14/21 12:59	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	64		50 - 150				11/10/21 18:53	11/14/21 12:59	1
13C4 PFHpA	61		50 - 150				11/10/21 18:53	11/14/21 12:59	1
13C4 PFOA	99		50 - 150				11/10/21 18:53	11/14/21 12:59	1
13C5 PFNA	63		50 - 150				11/10/21 18:53	11/14/21 12:59	1
13C2 PFDA	84		50 - 150				11/10/21 18:53	11/14/21 12:59	1
13C2 PFUnA	82		50 - 150				11/10/21 18:53	11/14/21 12:59	1
13C2 PFDoA	90		50 - 150				11/10/21 18:53	11/14/21 12:59	1
13C2 PFTeDA	107		50 <sub>-</sub> 150				11/10/21 18:53	11/14/21 12:59	1
13C3 PFBS	78		50 - 150				11/10/21 18:53	11/14/21 12:59	1
1802 PFHxS	92		50 - 150				11/10/21 18:53	11/14/21 12:59	1
13C4 PFOS	89		50 - 150				11/10/21 18:53	11/14/21 12:59	1
d3-NMeFOSAA	60		50 - 150				11/10/21 18:53	11/14/21 12:59	1
d5-NEtFOSAA	60		50 - 150				11/10/21 18:53	11/14/21 12:59	1
13C3 HFPO-DA	68		50 <sub>-</sub> 150				11/10/21 18:53	11/14/21 12:59	1

Client: Shannon & Wilson, Inc Job ID: 320-81504-1 Project/Site: Gustavus PFAS

**Client Sample ID: MW-18-15** 

Date Received: 11/09/21 15:07

d5-NEtFOSAA

13C3 HFPO-DA

Lab Sample ID: 320-81504-5 Date Collected: 11/04/21 10:14

**Matrix: Water** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.8	0.52	ng/L		11/10/21 18:53	11/14/21 13:09	1
Perfluoroheptanoic acid (PFHpA)	ND		1.8	0.22	ng/L		11/10/21 18:53	11/14/21 13:09	1
Perfluorooctanoic acid (PFOA)	ND		1.8	0.76	ng/L		11/10/21 18:53	11/14/21 13:09	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.24	ng/L		11/10/21 18:53	11/14/21 13:09	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.28	ng/L		11/10/21 18:53	11/14/21 13:09	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.99	ng/L		11/10/21 18:53	11/14/21 13:09	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.49	ng/L		11/10/21 18:53	11/14/21 13:09	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		11/10/21 18:53	11/14/21 13:09	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.65	ng/L		11/10/21 18:53	11/14/21 13:09	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.8	0.18	ng/L		11/10/21 18:53	11/14/21 13:09	1
Perfluorohexanesulfonic acid (PFHxS)	21		1.8	0.51	ng/L		11/10/21 18:53	11/14/21 13:09	1
Perfluorooctanesulfonic acid (PFOS)	51		1.8	0.48	ng/L		11/10/21 18:53	11/14/21 13:09	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.5	1.1	ng/L		11/10/21 18:53	11/14/21 13:09	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.5	1.2	ng/L		11/10/21 18:53	11/14/21 13:09	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.8	0.22	ng/L		11/10/21 18:53	11/14/21 13:09	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.6	1.3	ng/L		11/10/21 18:53	11/14/21 13:09	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.8	0.29	ng/L		11/10/21 18:53	11/14/21 13:09	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.8	0.36	ng/L		11/10/21 18:53	11/14/21 13:09	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	83		50 - 150				11/10/21 18:53	11/14/21 13:09	
13C4 PFHpA	77		50 - 150				11/10/21 18:53	11/14/21 13:09	1
13C4 PFOA	108		50 - 150				11/10/21 18:53	11/14/21 13:09	1
13C5 PFNA	81		50 - 150				11/10/21 18:53	11/14/21 13:09	1
13C2 PFDA	97		50 - 150				11/10/21 18:53	11/14/21 13:09	1
13C2 PFUnA	93		50 - 150				11/10/21 18:53	11/14/21 13:09	1
13C2 PFDoA	90		50 - 150				11/10/21 18:53	11/14/21 13:09	1
13C2 PFTeDA	97		50 - 150					11/14/21 13:09	1
13C3 PFBS	97		50 - 150					11/14/21 13:09	1
1802 PFHxS	101		50 - 150					11/14/21 13:09	1
13C4 PFOS	98		50 - 150					11/14/21 13:09	1
d3-NMeFOSAA	76		50 - 150					11/14/21 13:09	1

11/10/21 18:53 11/14/21 13:09

11/10/21 18:53 11/14/21 13:09

50 - 150

50 - 150

68

81

11/16/2021

Client: Shannon & Wilson, Inc Job ID: 320-81504-1

Project/Site: Gustavus PFAS

Lab Sample ID: 320-81504-6 Client Sample ID: MW-20-40 Date Collected: 11/04/21 15:39

**Matrix: Water** 

Date Received: 11/09/21 15:07 Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 Analyte Result Qualifier RL **MDL** Unit Dil Fac Prepared Analyzed Perfluorohexanoic acid (PFHxA) 1.7 11/10/21 18:53 11/14/21 13:19 ND 0.50 ng/L Perfluoroheptanoic acid (PFHpA) ND 1.7 0.22 ng/L 11/10/21 18:53 11/14/21 13:19 Perfluorooctanoic acid (PFOA) ND 1.7 0.74 ng/L 11/10/21 18:53 11/14/21 13:19 Perfluorononanoic acid (PFNA) ND 0.23 ng/L 11/10/21 18:53 11/14/21 13:19 1.7 Perfluorodecanoic acid (PFDA) ND 1.7 0.27 ng/L 11/10/21 18:53 11/14/21 13:19 Perfluoroundecanoic acid (PFUnA) ND 1.7 0.95 ng/L 11/10/21 18:53 11/14/21 13:19 Perfluorododecanoic acid (PFDoA) ND 1.7 0.48 ng/L 11/10/21 18:53 11/14/21 13:19 Perfluorotridecanoic acid (PFTriA) ND 1.7 11/10/21 18:53 11/14/21 13:19 1.1 ng/L Perfluorotetradecanoic acid (PFTeA) ND 1.7 0.63 ng/L 11/10/21 18:53 11/14/21 13:19 Perfluorobutanesulfonic acid (PFBS) ND 1.7 0.17 ng/L 11/10/21 18:53 11/14/21 13:19 Perfluorohexanesulfonic acid (PFHxS) ND 1.7 0.49 ng/L 11/10/21 18:53 11/14/21 13:19 Perfluorooctanesulfonic acid (PFOS) ND 1.7 0.47 ng/L 11/10/21 18:53 11/14/21 13:19 N-methylperfluorooctanesulfonamidoa ND 4.3 1.0 ng/L 11/10/21 18:53 11/14/21 13:19 cetic acid (NMeFOSAA) ND N-ethylperfluorooctanesulfonamidoac 4.3 1.1 ng/L 11/10/21 18:53 11/14/21 13:19 etic acid (NEtFOSAA) 9-Chlorohexadecafluoro-3-oxanonan ND 1.7 0.21 ng/L 11/10/21 18:53 11/14/21 13:19 e-1-sulfonic acid ND 3.5 1.3 ng/L 11/10/21 18:53 11/14/21 13:19 Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaundecan ND 1.7 0.28 ng/L 11/10/21 18:53 11/14/21 13:19 e-1-sulfonic acid ND 4,8-Dioxa-3H-perfluorononanoic acid 1.7 0.35 ng/L 11/10/21 18:53 11/14/21 13:19 (ADONA)

(ADONA)						
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	86		50 - 150	11/10/21 18:53	11/14/21 13:19	1
13C4 PFHpA	78		50 - 150	11/10/21 18:53	11/14/21 13:19	1
13C4 PFOA	113		50 - 150	11/10/21 18:53	11/14/21 13:19	1
13C5 PFNA	89		50 - 150	11/10/21 18:53	11/14/21 13:19	1
13C2 PFDA	95		50 - 150	11/10/21 18:53	11/14/21 13:19	1
13C2 PFUnA	82		50 - 150	11/10/21 18:53	11/14/21 13:19	1
13C2 PFDoA	78		50 - 150	11/10/21 18:53	11/14/21 13:19	1
13C2 PFTeDA	95		50 - 150	11/10/21 18:53	11/14/21 13:19	1
13C3 PFBS	99		50 - 150	11/10/21 18:53	11/14/21 13:19	1
1802 PFHxS	109		50 - 150	11/10/21 18:53	11/14/21 13:19	1
13C4 PFOS	94		50 - 150	11/10/21 18:53	11/14/21 13:19	1
d3-NMeFOSAA	64		50 - 150	11/10/21 18:53	11/14/21 13:19	1
d5-NEtFOSAA	58		50 - 150	11/10/21 18:53	11/14/21 13:19	1
13C3 HFPO-DA	92		50 - 150	11/10/21 18:53	11/14/21 13:19	1
	13C2 PFHxA 13C4 PFHpA 13C4 PFOA 13C5 PFNA 13C2 PFDA 13C2 PFUnA 13C2 PFDOA 13C2 PFTEDA 13C3 PFBS 18O2 PFHxS 13C4 PFOS d3-NMeFOSAA d5-NEtFOSAA	Isotope Dilution         %Recovery           13C2 PFHxA         86           13C4 PFHpA         78           13C4 PFOA         113           13C5 PFNA         89           13C2 PFDA         95           13C2 PFUnA         82           13C2 PFDOA         78           13C2 PFTeDA         95           13C3 PFBS         99           18O2 PFHxS         109           13C4 PFOS         94           d3-NMeFOSAA         64           d5-NEtFOSAA         58	Isotope Dilution         %Recovery         Qualifier           13C2 PFHxA         86           13C4 PFHpA         78           13C4 PFOA         113           13C5 PFNA         89           13C2 PFDA         95           13C2 PFUnA         82           13C2 PFDOA         78           13C2 PFTeDA         95           13C3 PFBS         99           18O2 PFHxS         109           13C4 PFOS         94           d3-NMeFOSAA         64           d5-NEtFOSAA         58	Isotope Dilution         %Recovery         Qualifier         Limits           13C2 PFHxA         86         50 - 150           13C4 PFHpA         78         50 - 150           13C4 PFOA         113         50 - 150           13C5 PFNA         89         50 - 150           13C2 PFDA         95         50 - 150           13C2 PFUnA         82         50 - 150           13C2 PFDOA         78         50 - 150           13C2 PFTeDA         95         50 - 150           13C3 PFBS         99         50 - 150           18O2 PFHxS         109         50 - 150           13C4 PFOS         94         50 - 150           d3-NMeFOSAA         64         50 - 150           d5-NEtFOSAA         58         50 - 150	Isotope Dilution         %Recovery         Qualifier         Limits         Prepared           13C2 PFHxA         86         50 - 150         11/10/21 18:53           13C4 PFHpA         78         50 - 150         11/10/21 18:53           13C4 PFOA         113         50 - 150         11/10/21 18:53           13C5 PFNA         89         50 - 150         11/10/21 18:53           13C2 PFDA         95         50 - 150         11/10/21 18:53           13C2 PFUnA         82         50 - 150         11/10/21 18:53           13C2 PFDOA         78         50 - 150         11/10/21 18:53           13C2 PFTeDA         95         50 - 150         11/10/21 18:53           13C3 PFBS         99         50 - 150         11/10/21 18:53           18O2 PFHxS         109         50 - 150         11/10/21 18:53           13C4 PFOS         94         50 - 150         11/10/21 18:53           d3-NMeFOSAA         64         50 - 150         11/10/21 18:53           d5-NEtFOSAA         58         50 - 150         11/10/21 18:53	Isotope Dilution         %Recovery         Qualifier         Limits         Prepared         Analyzed           13C2 PFHxA         86         50 - 150         11/10/21 18:53         11/14/21 13:19           13C4 PFHpA         78         50 - 150         11/10/21 18:53         11/14/21 13:19           13C4 PFOA         113         50 - 150         11/10/21 18:53         11/14/21 13:19           13C5 PFNA         89         50 - 150         11/10/21 18:53         11/14/21 13:19           13C2 PFDA         95         50 - 150         11/10/21 18:53         11/14/21 13:19           13C2 PFUnA         82         50 - 150         11/10/21 18:53         11/14/21 13:19           13C2 PFDA         78         50 - 150         11/10/21 18:53         11/14/21 13:19           13C2 PFDA         95         50 - 150         11/10/21 18:53         11/14/21 13:19           13C2 PFDA         95         50 - 150         11/10/21 18:53         11/14/21 13:19           13C3 PFBS         99         50 - 150         11/10/21 18:53         11/14/21 13:19           18O2 PFHxS         109         50 - 150         11/10/21 18:53         11/14/21 13:19           13C4 PFOS         94         50 - 150         11/10/21 18:53         11/14/21 13:1

Client: Shannon & Wilson, Inc Job ID: 320-81504-1 Project/Site: Gustavus PFAS

Client Sample ID: MW-118-50

Date Received: 11/09/21 15:07

13C4 PFOS

d3-NMeFOSAA

d5-NEtFOSAA

13C3 HFPO-DA

Lab Sample ID: 320-81504-7 Date Collected: 11/04/21 09:23

**Matrix: Water** 

Analyte	Result Qualifie	r RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND ND	1.8	0.53	ng/L		11/10/21 18:53	11/14/21 13:30	1
Perfluoroheptanoic acid (PFHpA)	ND	1.8	0.23	ng/L		11/10/21 18:53	11/14/21 13:30	1
Perfluorooctanoic acid (PFOA)	ND	1.8	0.78	ng/L		11/10/21 18:53	11/14/21 13:30	1
Perfluorononanoic acid (PFNA)	ND	1.8	0.25	ng/L		11/10/21 18:53	11/14/21 13:30	1
Perfluorodecanoic acid (PFDA)	ND	1.8	0.28	ng/L		11/10/21 18:53	11/14/21 13:30	1
Perfluoroundecanoic acid (PFUnA)	ND	1.8	1.0	ng/L		11/10/21 18:53	11/14/21 13:30	1
Perfluorododecanoic acid (PFDoA)	ND	1.8	0.50	ng/L		11/10/21 18:53	11/14/21 13:30	1
Perfluorotridecanoic acid (PFTriA)	ND	1.8	1.2	ng/L		11/10/21 18:53	11/14/21 13:30	1
Perfluorotetradecanoic acid (PFTeA)	ND	1.8	0.67	ng/L		11/10/21 18:53	11/14/21 13:30	1
Perfluorobutanesulfonic acid (PFBS)	ND	1.8	0.18	ng/L		11/10/21 18:53	11/14/21 13:30	1
Perfluorohexanesulfonic acid (PFHxS)	1.2 J	1.8	0.52	ng/L		11/10/21 18:53	11/14/21 13:30	1
Perfluorooctanesulfonic acid (PFOS)	2.1	1.8	0.49	ng/L		11/10/21 18:53	11/14/21 13:30	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND	4.6	1.1	ng/L		11/10/21 18:53	11/14/21 13:30	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND	4.6	1.2	ng/L		11/10/21 18:53	11/14/21 13:30	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND	1.8	0.22	ng/L		11/10/21 18:53	11/14/21 13:30	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	3.7	1.4	ng/L		11/10/21 18:53	11/14/21 13:30	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND	1.8	0.29	ng/L		11/10/21 18:53	11/14/21 13:30	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.8	0.37	ng/L		11/10/21 18:53	11/14/21 13:30	1
Isotope Dilution	%Recovery Qualifie	er Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	65	50 - 150				11/10/21 18:53	11/14/21 13:30	1
13C4 PFHpA	61	50 - 150				11/10/21 18:53	11/14/21 13:30	1
13C4 PFOA	93	50 - 150				11/10/21 18:53	11/14/21 13:30	1
13C5 PFNA	63	50 - 150				11/10/21 18:53	11/14/21 13:30	1
13C2 PFDA	85	50 - 150				11/10/21 18:53	11/14/21 13:30	1
13C2 PFUnA	76	50 - 150				11/10/21 18:53	11/14/21 13:30	1
13C2 PFDoA	80	50 - 150				11/10/21 18:53	11/14/21 13:30	1
13C2 PFTeDA	63	50 - 150				11/10/21 18:53	11/14/21 13:30	1
13C3 PFBS	75	50 <sub>-</sub> 150				11/10/21 18:53	11/14/21 13:30	1
1802 PFHxS	85	50 <sub>-</sub> 150					11/14/21 13:30	1

11/10/21 18:53 11/14/21 13:30

11/10/21 18:53 11/14/21 13:30

11/10/21 18:53 11/14/21 13:30

11/10/21 18:53 11/14/21 13:30

50 - 150

50 - 150

50 - 150

50 - 150

74

63

59

Client: Shannon & Wilson, Inc Job ID: 320-81504-1 Project/Site: Gustavus PFAS

Client Sample ID: MW-18-50

Lab Sample ID: 320-81504-8

Date Collected: 11/04/21 09:33 **Matrix: Water** Date Received: 11/09/21 15:07

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.8	0.53	ng/L		11/10/21 18:53	11/14/21 14:01	1
Perfluoroheptanoic acid (PFHpA)	ND		1.8	0.23	ng/L		11/10/21 18:53	11/14/21 14:01	1
Perfluorooctanoic acid (PFOA)	ND		1.8	0.78	ng/L		11/10/21 18:53	11/14/21 14:01	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.25	ng/L		11/10/21 18:53	11/14/21 14:01	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.28	ng/L		11/10/21 18:53	11/14/21 14:01	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	1.0	ng/L		11/10/21 18:53	11/14/21 14:01	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.50	ng/L		11/10/21 18:53	11/14/21 14:01	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		11/10/21 18:53	11/14/21 14:01	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.67	ng/L		11/10/21 18:53	11/14/21 14:01	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.8	0.18	ng/L		11/10/21 18:53	11/14/21 14:01	1
Perfluorohexanesulfonic acid (PFHxS)	1.3	J	1.8	0.52	ng/L		11/10/21 18:53	11/14/21 14:01	1
Perfluorooctanesulfonic acid (PFOS)	1.9		1.8	0.49	ng/L		11/10/21 18:53	11/14/21 14:01	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.6	1.1	ng/L		11/10/21 18:53	11/14/21 14:01	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.6	1.2	ng/L		11/10/21 18:53	11/14/21 14:01	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.8	0.22	ng/L		11/10/21 18:53	11/14/21 14:01	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.7	1.4	ng/L		11/10/21 18:53	11/14/21 14:01	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.8	0.29	ng/L		11/10/21 18:53	11/14/21 14:01	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.8	0.37	ng/L		11/10/21 18:53	11/14/21 14:01	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	81	-	50 - 150				11/10/21 18:53	11/14/21 14:01	1
13C4 PFHpA	62		50 - 150				11/10/21 18:53	11/14/21 14:01	1
13C4 PFOA	103		50 - 150				11/10/21 18:53	11/14/21 14:01	1
13C5 PFNA	68		50 - 150				11/10/21 18:53	11/14/21 14:01	1
13C2 PFDA	95		50 <sub>-</sub> 150				11/10/21 18:53	11/14/21 14:01	1
13C2 PFUnA	85		50 <sub>-</sub> 150				11/10/21 18:53	11/14/21 14:01	1
13C2 PFDoA	94		50 - 150				11/10/21 18:53	11/14/21 14:01	1
13C2 PFTeDA	77		50 <sub>-</sub> 150				11/10/21 18:53	11/14/21 14:01	1
13C3 PFBS	88		50 <sub>-</sub> 150				11/10/21 18:53	11/14/21 14:01	1
1802 PFHxS	100		50 <sub>-</sub> 150				11/10/21 18:53	11/14/21 14:01	1
13C4 PFOS	86		50 <sub>-</sub> 150					11/14/21 14:01	1
d3-NMeFOSAA	73		50 - 150					11/14/21 14:01	1
d5-NEtFOSAA	74		50 - 150					11/14/21 14:01	
13C3 HFPO-DA	74		50 - 150					11/14/21 14:01	1

Client: Shannon & Wilson, Inc Job ID: 320-81504-1

Project/Site: Gustavus PFAS

Client Sample ID: MW-20-15 Lab Sample ID: 320-81504-9

Date Collected: 11/04/21 16:18 **Matrix: Water** Date Received: 11/09/21 15:07

Analyte	Result	Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	1.5	J	1.7	0.49	ng/L		11/10/21 18:53	11/14/21 14:11	1
Perfluoroheptanoic acid (PFHpA)	ND		1.7	0.21	ng/L		11/10/21 18:53	11/14/21 14:11	1
Perfluorooctanoic acid (PFOA)	ND		1.7	0.72	ng/L		11/10/21 18:53	11/14/21 14:11	1
Perfluorononanoic acid (PFNA)	ND		1.7	0.23	ng/L		11/10/21 18:53	11/14/21 14:11	1
Perfluorodecanoic acid (PFDA)	ND		1.7	0.26	ng/L		11/10/21 18:53	11/14/21 14:11	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.93	ng/L		11/10/21 18:53	11/14/21 14:11	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.46	ng/L		11/10/21 18:53	11/14/21 14:11	1
Perfluorotridecanoic acid (PFTriA)	ND		1.7	1.1	ng/L		11/10/21 18:53	11/14/21 14:11	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.62	ng/L		11/10/21 18:53	11/14/21 14:11	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.7	0.17	ng/L		11/10/21 18:53	11/14/21 14:11	1
Perfluorohexanesulfonic acid (PFHxS)	5.5		1.7	0.48	ng/L		11/10/21 18:53	11/14/21 14:11	1
Perfluorooctanesulfonic acid (PFOS)	2.6		1.7	0.46	ng/L		11/10/21 18:53	11/14/21 14:11	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.2	1.0	ng/L		11/10/21 18:53	11/14/21 14:11	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.2	1.1	ng/L		11/10/21 18:53	11/14/21 14:11	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.7	0.20	ng/L		11/10/21 18:53	11/14/21 14:11	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.4	1.3	ng/L		11/10/21 18:53	11/14/21 14:11	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.7	0.27	ng/L		11/10/21 18:53	11/14/21 14:11	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.7	0.34	ng/L		11/10/21 18:53	11/14/21 14:11	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	68		50 - 150				11/10/21 18:53	11/14/21 14:11	1
13C4 PFHpA	66		50 - 150				11/10/21 18:53	11/14/21 14:11	1
13C4 PFOA	103		50 <sub>-</sub> 150				11/10/21 18:53	11/14/21 14:11	1
13C5 PFNA	75		50 <sub>-</sub> 150				11/10/21 18:53	11/14/21 14:11	1
13C2 PFDA	88		50 <sub>-</sub> 150				11/10/21 18:53	11/14/21 14:11	1
13C2 PFUnA	79		50 <sub>-</sub> 150				11/10/21 18:53	11/14/21 14:11	1
13C2 PFDoA	86		50 - 150				11/10/21 18:53	11/14/21 14:11	1
13C2 PFTeDA	100		50 <sub>-</sub> 150				11/10/21 18:53	11/14/21 14:11	1
13C3 PFBS	77		50 - 150					11/14/21 14:11	1
1802 PFHxS	92		50 - 150					11/14/21 14:11	1
13C4 PFOS	86		50 - 150 50 - 150					11/14/21 14:11	. 1
d3-NMeFOSAA	66		50 - 150 50 - 150					11/14/21 14:11	. 1
d5-NEtFOSAA	67		50 - 150 50 - 150					11/14/21 14:11	
13C3 HFPO-DA	71		50 - 150 50 - 150					11/14/21 14:11	1

Client: Shannon & Wilson, Inc Job ID: 320-81504-1

Project/Site: Gustavus PFAS

**Client Sample ID: GAC** Lab Sample ID: 320-81504-10 Date Collected: 11/05/21 14:40

MDL Unit

0.48 ng/L

**Matrix: Water** 

Analyzed

Prepared

11/10/21 18:53 11/14/21 14:22

Date Received: 11/09/21 15:07 Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 Analyte Result Qualifier RL Perfluorohexanoic acid (PFHxA) ND 1.7

Perfluoroheptanoic acid (PFHpA)	ND	1.7	0.21 ng/L	11/10/21 18:53 11/14/21 14:22	
Perfluorooctanoic acid (PFOA)	ND	1.7	0.70 ng/L	11/10/21 18:53 11/14/21 14:22	
Perfluorononanoic acid (PFNA)	ND	1.7	0.22 ng/L	11/10/21 18:53 11/14/21 14:22	
Perfluorodecanoic acid (PFDA)	ND	1.7	0.26 ng/L	11/10/21 18:53 11/14/21 14:22	
Perfluoroundecanoic acid (PFUnA)	ND	1.7	0.91 ng/L	11/10/21 18:53 11/14/21 14:22	
Perfluorododecanoic acid (PFDoA)	ND	1.7	0.46 ng/L	11/10/21 18:53 11/14/21 14:22	
Perfluorotridecanoic acid (PFTriA)	ND	1.7	1.1 ng/L	11/10/21 18:53 11/14/21 14:22	
Perfluorotetradecanoic acid (PFTeA)	ND	1.7	0.61 ng/L	11/10/21 18:53 11/14/21 14:22	
Perfluorobutanesulfonic acid (PFBS)	ND	1.7	0.17 ng/L	11/10/21 18:53 11/14/21 14:22	
Perfluorohexanesulfonic acid (PFHxS)	ND	1.7	0.47 ng/L	11/10/21 18:53 11/14/21 14:22	
Perfluorooctanesulfonic acid (PFOS)	ND	1.7	0.45 ng/L	11/10/21 18:53 11/14/21 14:22	
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND	4.1	1.0 ng/L	11/10/21 18:53 11/14/21 14:22	
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND	4.1	1.1 ng/L	11/10/21 18:53 11/14/21 14:22	

9-Chlorohexadecafluoro-3-oxanonan	ND	1.7	0.20 ng/L	11/10/21 18:53	11/14/21 14:22
e-1-sulfonic acid					
Hexafluoropropylene Oxide Dimer	ND	3.3	1.2 ng/L	11/10/21 18:53	11/14/21 14:22
Acid (HFPO-DA)	ND	4 7	0.07 "	4440/04 40 50	44444044400
11-Chloroeicosafluoro-3-oxaundecan	ND	1.7	0.27 ng/L	11/10/21 18:53	11/14/21 14:22
e-1-sulfonic acid	ND	1 7	0.33 ng/l	11/10/01 10:50	11/14/21 14·22

4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.7	0.33 ng/L	11/10/21 18:53	11/14/21 14:22	
Isotope Dilution	%Recovery Qualify	ier Limits		Prepared	Analyzed	
13C2 PFHxA	72	50 - 150		11/10/21 18:53	11/14/21 14:22	_

13C4 PFHpA	66	50 - 150	11/10/21 18:53	11/14/21 14:22	1
13C4 PFOA	87	50 - 150	11/10/21 18:53	11/14/21 14:22	1
13C5 PFNA	69	50 - 150	11/10/21 18:53	11/14/21 14:22	1
13C2 PFDA	70	50 - 150	11/10/21 18:53	11/14/21 14:22	1
13C2 PFUnA	65	50 - 150	11/10/21 18:53	11/14/21 14:22	1
13C2 PFDoA	67	50 - 150	11/10/21 18:53	11/14/21 14:22	1
13C2 PFTeDA	69	50 - 150	11/10/21 18:53	11/14/21 14:22	1
13C3 PFBS	83	50 - 150	11/10/21 18:53	11/14/21 14:22	1
1802 PFHxS	83	50 - 150	11/10/21 18:53	11/14/21 14:22	1
13C4 PFOS	71	50 - 150	11/10/21 18:53	11/14/21 14:22	1
d3-NMeFOSAA	59	50 - 150	11/10/21 18:53	11/14/21 14:22	1
d5-NEtFOSAA	58	50 - 150	11/10/21 18:53	11/14/21 14:22	1
13C3 HFPO-DA	76	50 - 150	11/10/21 18:53	11/14/21 14:22	1

Dil Fac

Dil Fac

Client: Shannon & Wilson, Inc Job ID: 320-81504-1 Project/Site: Gustavus PFAS

Client Sample ID: MW-19-15

Date Received: 11/09/21 15:07

Lab Sample ID: 320-81504-11 Date Collected: 11/05/21 12:58

**Matrix: Water** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.8	0.52	ng/L		11/10/21 18:53	11/14/21 14:32	1
Perfluoroheptanoic acid (PFHpA)	ND		1.8	0.22	ng/L		11/10/21 18:53	11/14/21 14:32	1
Perfluorooctanoic acid (PFOA)	ND		1.8	0.76	ng/L		11/10/21 18:53	11/14/21 14:32	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.24	ng/L		11/10/21 18:53	11/14/21 14:32	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.28	ng/L		11/10/21 18:53	11/14/21 14:32	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.99	ng/L		11/10/21 18:53	11/14/21 14:32	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.49	ng/L		11/10/21 18:53	11/14/21 14:32	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		11/10/21 18:53	11/14/21 14:32	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.65	ng/L		11/10/21 18:53	11/14/21 14:32	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.8	0.18	ng/L		11/10/21 18:53	11/14/21 14:32	1
Perfluorohexanesulfonic acid (PFHxS)	0.84	J	1.8	0.51	ng/L		11/10/21 18:53	11/14/21 14:32	1
Perfluorooctanesulfonic acid (PFOS)	1.4	J	1.8	0.48	ng/L		11/10/21 18:53	11/14/21 14:32	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.5	1.1	ng/L		11/10/21 18:53	11/14/21 14:32	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.5	1.2	ng/L		11/10/21 18:53	11/14/21 14:32	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.8	0.21	ng/L		11/10/21 18:53	11/14/21 14:32	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.6	1.3	ng/L		11/10/21 18:53	11/14/21 14:32	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.8	0.29	ng/L		11/10/21 18:53	11/14/21 14:32	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.8	0.36	ng/L		11/10/21 18:53	11/14/21 14:32	1

Isotope Dilution	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	72	50 - 150	11/10/21 18:53	11/14/21 14:32	1
13C4 PFHpA	73	50 - 150	11/10/21 18:53	11/14/21 14:32	1
13C4 PFOA	101	50 - 150	11/10/21 18:53	11/14/21 14:32	1
13C5 PFNA	72	50 - 150	11/10/21 18:53	11/14/21 14:32	1
13C2 PFDA	85	50 - 150	11/10/21 18:53	11/14/21 14:32	1
13C2 PFUnA	77	50 - 150	11/10/21 18:53	11/14/21 14:32	1
13C2 PFDoA	79	50 - 150	11/10/21 18:53	11/14/21 14:32	1
13C2 PFTeDA	85	50 - 150	11/10/21 18:53	11/14/21 14:32	1
13C3 PFBS	82	50 - 150	11/10/21 18:53	11/14/21 14:32	1
1802 PFHxS	89	50 - 150	11/10/21 18:53	11/14/21 14:32	1
13C4 PFOS	81	50 - 150	11/10/21 18:53	11/14/21 14:32	1
d3-NMeFOSAA	68	50 - 150	11/10/21 18:53	11/14/21 14:32	1
d5-NEtFOSAA	64	50 - 150	11/10/21 18:53	11/14/21 14:32	1
13C3 HFPO-DA	72	50 <sub>-</sub> 150	11/10/21 18:53	11/14/21 14:32	1

Client: Shannon & Wilson, Inc Job ID: 320-81504-1 Project/Site: Gustavus PFAS

Client Sample ID: MW-19-50 Lab Sample ID: 320-81504-12

Date Collected: 11/05/21 12:23 **Matrix: Water** Date Received: 11/09/21 15:07

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	1.5	J	1.8	0.52	ng/L		11/10/21 18:53	11/14/21 14:43	1
Perfluoroheptanoic acid (PFHpA)	ND		1.8	0.22	ng/L		11/10/21 18:53	11/14/21 14:43	1
Perfluorooctanoic acid (PFOA)	ND		1.8	0.76	ng/L		11/10/21 18:53	11/14/21 14:43	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.24	ng/L		11/10/21 18:53	11/14/21 14:43	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.28	ng/L		11/10/21 18:53	11/14/21 14:43	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.99	ng/L		11/10/21 18:53	11/14/21 14:43	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.49	ng/L		11/10/21 18:53	11/14/21 14:43	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		11/10/21 18:53	11/14/21 14:43	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.66	ng/L		11/10/21 18:53	11/14/21 14:43	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.8	0.18	ng/L		11/10/21 18:53	11/14/21 14:43	1
Perfluorohexanesulfonic acid (PFHxS)	1.8		1.8	0.51	ng/L		11/10/21 18:53	11/14/21 14:43	1
Perfluorooctanesulfonic acid (PFOS)	1.2	J	1.8	0.48	ng/L		11/10/21 18:53	11/14/21 14:43	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		4.5		ng/L		11/10/21 18:53	11/14/21 14:43	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		4.5	1.2	ng/L		11/10/21 18:53	11/14/21 14:43	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		1.8	0.22	ng/L		11/10/21 18:53	11/14/21 14:43	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.6		ng/L		11/10/21 18:53	11/14/21 14:43	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND		1.8	0.29	ng/L		11/10/21 18:53	11/14/21 14:43	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.8	0.36	ng/L		11/10/21 18:53	11/14/21 14:43	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	74		50 - 150				11/10/21 18:53	11/14/21 14:43	1
13C4 PFHpA	68		50 - 150				11/10/21 18:53	11/14/21 14:43	1
13C4 PFOA	96		50 - 150				11/10/21 18:53	11/14/21 14:43	1
13C5 PFNA	72		50 - 150				11/10/21 18:53	11/14/21 14:43	1
13C2 PFDA	87		50 - 150				11/10/21 18:53	11/14/21 14:43	1
13C2 PFUnA	75		50 - 150				11/10/21 18:53	11/14/21 14:43	1
13C2 PFDoA	79		50 - 150				11/10/21 18:53	11/14/21 14:43	1
13C2 PFTeDA	73		50 - 150				11/10/21 18:53	11/14/21 14:43	1
13C3 PFBS	81		50 - 150				11/10/21 18:53	11/14/21 14:43	1
1802 PFHxS	91		50 - 150				11/10/21 18:53	11/14/21 14:43	1
13C4 PFOS	87		50 - 150				11/10/21 18:53	11/14/21 14:43	1
d3-NMeFOSAA	69		50 - 150				11/10/21 18:53	11/14/21 14:43	1
d5-NEtFOSAA	67		50 - 150				11/10/21 18:53	11/14/21 14:43	1
13C3 HFPO-DA	73		50 <sub>-</sub> 150				11/10/21 18:53	11/14/21 14:43	1

Client: Shannon & Wilson, Inc Job ID: 320-81504-1 Project/Site: Gustavus PFAS

Client Sample ID: MW-119-50 Lab Sample ID: 320-81504-13 Date Collected: 11/05/21 12:12

**Matrix: Water** 

Date	Conected.	11/03/21 12.12
Date	Received:	11/09/21 15:07

Method: EPA 537(Mod) - PFAS Analyte	Result Qu		MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	1.8	1.8	0.52	ng/L		11/10/21 18:53	11/14/21 14:53	1
Perfluoroheptanoic acid (PFHpA)	ND	1.8	0.23	ng/L		11/10/21 18:53	11/14/21 14:53	1
Perfluorooctanoic acid (PFOA)	ND	1.8	0.77	ng/L		11/10/21 18:53	11/14/21 14:53	1
Perfluorononanoic acid (PFNA)	ND	1.8	0.24	ng/L		11/10/21 18:53	11/14/21 14:53	1
Perfluorodecanoic acid (PFDA)	ND	1.8	0.28	ng/L		11/10/21 18:53	11/14/21 14:53	1
Perfluoroundecanoic acid (PFUnA)	ND	1.8	0.99	ng/L		11/10/21 18:53	11/14/21 14:53	1
Perfluorododecanoic acid (PFDoA)	ND	1.8	0.50	ng/L		11/10/21 18:53	11/14/21 14:53	1
Perfluorotridecanoic acid (PFTriA)	ND	1.8	1.2	ng/L		11/10/21 18:53	11/14/21 14:53	1
Perfluorotetradecanoic acid (PFTeA)	ND	1.8	0.66	ng/L		11/10/21 18:53	11/14/21 14:53	1
Perfluorobutanesulfonic acid (PFBS)	ND	1.8	0.18	ng/L		11/10/21 18:53	11/14/21 14:53	1
Perfluorohexanesulfonic acid (PFHxS)	1.8	1.8	0.51	_		11/10/21 18:53	11/14/21 14:53	1
Perfluorooctanesulfonic acid (PFOS)	1.3 J	1.8	0.49	ng/L		11/10/21 18:53	11/14/21 14:53	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND	4.5	1.1	ng/L		11/10/21 18:53	11/14/21 14:53	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND	4.5		ng/L			11/14/21 14:53	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND	1.8	0.22				11/14/21 14:53	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	3.6	1.4	ng/L		11/10/21 18:53	11/14/21 14:53	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	ND	1.8	0.29	Ū		11/10/21 18:53	11/14/21 14:53	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.8	0.36	ng/L		11/10/21 18:53	11/14/21 14:53	1
Isotope Dilution	%Recovery Qu	ıalifier Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	70	50 - 150				11/10/21 18:53	11/14/21 14:53	1
13C4 PFHpA	75	50 - 150				11/10/21 18:53	11/14/21 14:53	1
13C4 PFOA	97	50 - 150				11/10/21 18:53	11/14/21 14:53	1
13C5 PFNA	75	50 - 150				11/10/21 18:53	11/14/21 14:53	1
13C2 PFDA	86	50 - 150				11/10/21 18:53	11/14/21 14:53	1
13C2 PFUnA	79	50 - 150				11/10/21 18:53	11/14/21 14:53	1
13C2 PFDoA	86	50 - 150				11/10/21 18:53	11/14/21 14:53	1
13C2 PFTeDA	78	50 <sub>-</sub> 150				11/10/21 18:53	11/14/21 14:53	1
13C3 PFBS	85	50 <sub>-</sub> 150				11/10/21 18:53	11/14/21 14:53	1
1802 PFHxS	82	50 <sub>-</sub> 150				11/10/21 18:53	11/14/21 14:53	1
13C4 PFOS	80	50 <sub>-</sub> 150					11/14/21 14:53	1
d3-NMeFOSAA	67	50 - 150					11/14/21 14:53	1
	67	50 <sub>-</sub> 150					11/14/21 14:53	
d5-NEtFOSAA	07	30 = 130						

Job ID: 320-81504-1

Client: Shannon & Wilson, Inc

Project/Site: Gustavus PFAS

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15

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

			Perce	ent Isotope	Dilution Re	covery (Ac	ceptance L	imits)	
		PFHxA	C4PFHA	PFOA	PFNA	PFDA	PFUnA	PFDoA	PFTD
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150
320-81504-1	MW-16	93	82	103	87	91	84	88	91
320-81504-2	MW-15-15	84	81	97	80	82	72	78	83
320-81504-3	MW-15-45	71	62	94	63	81	76	77	97
320-81504-4	MW-115-45	64	61	99	63	84	82	90	107
320-81504-5	MW-18-15	83	77	108	81	97	93	90	97
320-81504-6	MW-20-40	86	78	113	89	95	82	78	95
320-81504-7	MW-118-50	65	61	93	63	85	76	80	63
320-81504-8	MW-18-50	81	62	103	68	95	85	94	77
320-81504-9	MW-20-15	68	66	103	75	88	79	86	100
320-81504-10	GAC	72	66	87	69	70	65	67	69
320-81504-11	MW-19-15	72	73	101	72	85	77	79	85
320-81504-12	MW-19-50	74	68	96	72	87	75	79	73
320-81504-13	MW-119-50	70	75	97	75	86	79	86	78
LCS 320-541736/2-A	Lab Control Sample	95	94	107	94	98	99	94	104
LCSD 320-541736/3-A	Lab Control Sample Dup	88	88	102	100	90	91	85	87
MB 320-541736/1-A	Method Blank	103	98	110	100	98	98	104	99
			Perce	ent Isotone	Dilution Re	covery (Ac	centance I	imits)	
		C3PFBS	PFHxS	PFOS		d5NEFOS			

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		C3PFBS	PFHxS	PFOS	d3NMFOS	d5NEFOS	HFPODA		
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)		
320-81504-1	MW-16	102	95	94	81	77	93		
320-81504-2	MW-15-15	98	95	88	70	66	79		
320-81504-3	MW-15-45	76	86	84	64	58	66		
320-81504-4	MW-115-45	78	92	89	60	60	68		
320-81504-5	MW-18-15	97	101	98	76	68	81		
320-81504-6	MW-20-40	99	109	94	64	58	92		
320-81504-7	MW-118-50	75	85	74	63	59	63		
320-81504-8	MW-18-50	88	100	86	73	74	74		
320-81504-9	MW-20-15	77	92	86	66	67	71		
320-81504-10	GAC	83	83	71	59	58	76		
320-81504-11	MW-19-15	82	89	81	68	64	72		
320-81504-12	MW-19-50	81	91	87	69	67	73		
320-81504-13	MW-119-50	85	82	80	67	67	76		
LCS 320-541736/2-A	Lab Control Sample	104	99	97	95	85	100		
LCSD 320-541736/3-A	Lab Control Sample Dup	105	96	94	91	79	93		
MB 320-541736/1-A	Method Blank	117	103	102	95	87	97		

Surrogate Legend

PFHxA = 13C2 PFHxA

C4PFHA = 13C4 PFHpA

PFOA = 13C4 PFOA

PFNA = 13C5 PFNA

PFDA = 13C2 PFDA

PFUnA = 13C2 PFUnA

PFDoA = 13C2 PFDoA PFTDA = 13C2 PFTeDA

C3PFBS = 13C3 PFBS

PFHxS = 18O2 PFHxS

PFOS = 13C4 PFOS

d3NMFOS = d3-NMeFOSAA

d5NEFOS = d5-NEtFOSAA

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## **Isotope Dilution Summary**

Client: Shannon & Wilson, Inc Project/Site: Gustavus PFAS HFPODA = 13C3 HFPO-DA Job ID: 320-81504-1

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Client: Shannon & Wilson, Inc
Project/Site: Gustavus PFAS

Job ID: 320-81504-1

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15

Lab Sample ID: MB 320-541736/1-A

**Matrix: Water** 

**Analysis Batch: 542623** 

Client Sample ID: Method Blank

Prep Type: Total/NA Prep Batch: 541736

MB MB Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac Analyte Perfluorohexanoic acid (PFHxA) ND 2.0 0.58 ng/L 11/10/21 18:53 11/14/21 11:56 Perfluoroheptanoic acid (PFHpA) ND 2.0 0.25 ng/L 11/10/21 18:53 11/14/21 11:56 Perfluorooctanoic acid (PFOA) ND 2.0 0.85 ng/L 11/10/21 18:53 11/14/21 11:56 0.27 ng/L Perfluorononanoic acid (PFNA) ND 2.0 11/10/21 18:53 11/14/21 11:56 Perfluorodecanoic acid (PFDA) ND 2.0 0.31 ng/L 11/10/21 18:53 11/14/21 11:56 Perfluoroundecanoic acid (PFUnA) ND 2.0 11/10/21 18:53 11/14/21 11:56 1.1 ng/L Perfluorododecanoic acid (PFDoA) ND 2.0 11/10/21 18:53 11/14/21 11:56 0.55 ng/L Perfluorotridecanoic acid (PFTriA) ND 2.0 1.3 ng/L 11/10/21 18:53 11/14/21 11:56 Perfluorotetradecanoic acid (PFTeA) ND 20 0.73 ng/L 11/10/21 18:53 11/14/21 11:56 Perfluorobutanesulfonic acid (PFBS) ND 2.0 0.20 ng/L 11/10/21 18:53 11/14/21 11:56 11/10/21 18:53 11/14/21 11:56 Perfluorohexanesulfonic acid (PFHxS) ND 2.0 0.57 ng/L Perfluorooctanesulfonic acid (PFOS) ND 2.0 0.54 ng/L 11/10/21 18:53 11/14/21 11:56 N-methylperfluorooctanesulfonamidoa ND 5.0 1.2 ng/L 11/10/21 18:53 11/14/21 11:56 cetic acid (NMeFOSAA) ND 5.0 1.3 ng/L 11/10/21 18:53 11/14/21 11:56 N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA) 9-Chlorohexadecafluoro-3-oxanonan ND 2.0 0.24 ng/L 11/10/21 18:53 11/14/21 11:56 e-1-sulfonic acid ND 4.0 1.5 ng/L 11/10/21 18:53 11/14/21 11:56 Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) ND 2.0 0.32 ng/L 11/10/21 18:53 11/14/21 11:56 11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid 0.40 ng/L ND 2.0 11/10/21 18:53 11/14/21 11:56 4,8-Dioxa-3H-perfluorononanoic acid (ADONA)

MB MB

	IVIB IVIB				
Isotope Dilution	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	103	50 - 150	11/10/21 18:53	11/14/21 11:56	1
13C4 PFHpA	98	50 - 150	11/10/21 18:53	11/14/21 11:56	1
13C4 PFOA	110	50 - 150	11/10/21 18:53	11/14/21 11:56	1
13C5 PFNA	100	50 - 150	11/10/21 18:53	11/14/21 11:56	1
13C2 PFDA	98	50 - 150	11/10/21 18:53	11/14/21 11:56	1
13C2 PFUnA	98	50 - 150	11/10/21 18:53	11/14/21 11:56	1
13C2 PFDoA	104	50 - 150	11/10/21 18:53	11/14/21 11:56	1
13C2 PFTeDA	99	50 - 150	11/10/21 18:53	11/14/21 11:56	1
13C3 PFBS	117	50 - 150	11/10/21 18:53	11/14/21 11:56	1
1802 PFHxS	103	50 - 150	11/10/21 18:53	11/14/21 11:56	1
13C4 PFOS	102	50 - 150	11/10/21 18:53	11/14/21 11:56	1
d3-NMeFOSAA	95	50 - 150	11/10/21 18:53	11/14/21 11:56	1
d5-NEtFOSAA	87	50 - 150	11/10/21 18:53	11/14/21 11:56	1
13C3 HFPO-DA	97	50 - 150	11/10/21 18:53	11/14/21 11:56	1

Lab Sample ID: LCS 320-541736/2-A

**Matrix: Water** 

Analysis Batch: 542623

Client Sample ID: Lab Control Sampl	е
Prep Type: Total/N	4
Prep Batch: 54173	6

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorohexanoic acid (PFHxA)	40.0	39.8		ng/L		99	72 - 129	
Perfluoroheptanoic acid (PFHpA)	40.0	39.3		ng/L		98	72 - 130	
Perfluorooctanoic acid (PFOA)	40.0	34.1		ng/L		85	71 - 133	
Perfluorononanoic acid (PFNA)	40.0	40.1		ng/L		100	69 - 130	

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Job ID: 320-81504-1

Client: Shannon & Wilson, Inc Project/Site: Gustavus PFAS

#### Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: LCS 320-541736/2-A

**Matrix: Water** 

**Analysis Batch: 542623** 

**Client Sample ID: Lab Control Sample** 

**Prep Type: Total/NA** 

**Prep Batch: 541736** 

	Spike	LCS LCS			%Rec.	
Analyte	Added	Result Qual	ifier Unit	D %Rec	Limits	
Perfluorodecanoic acid (PFDA)	40.0	39.2	ng/L	98	71 - 129	
Perfluoroundecanoic acid	40.0	38.3	ng/L	96	69 - 133	
(PFUnA)						
Perfluorododecanoic acid	40.0	38.5	ng/L	96	72 - 134	
(PFDoA)						
Perfluorotridecanoic acid	40.0	40.2	ng/L	101	65 - 144	
(PFTriA)						
Perfluorotetradecanoic acid	40.0	35.3	ng/L	88	71 - 132	
(PFTeA)						
Perfluorobutanesulfonic acid	35.4	27.9	ng/L	79	72 - 130	
(PFBS)						
Perfluorohexanesulfonic acid	36.4	32.8	ng/L	90	68 - 131	
(PFHxS)						
Perfluorooctanesulfonic acid	37.1	36.7	ng/L	99	65 - 140	
(PFOS)			<u>.</u>			
N-methylperfluorooctanesulfona	40.0	34.3	ng/L	86	65 - 136	
midoacetic acid (NMeFOSAA)	40.0	20.5	,,	00	04 405	
N-ethylperfluorooctanesulfonami	40.0	39.5	ng/L	99	61 - 135	
doacetic acid (NEtFOSAA)	07.0	04.4		0.4	77 407	
9-Chlorohexadecafluoro-3-oxan	37.3	34.1	ng/L	91	77 - 137	
onane-1-sulfonic acid		25.0			70 400	
Hexafluoropropylene Oxide	40.0	35.6	ng/L	89	72 - 132	
Dimer Acid (HFPO-DA) 11-Chloroeicosafluoro-3-oxaund	37.7	34.5	n a /l	91	76 - 136	
ecane-1-sulfonic acid	37.7	34.5	ng/L	91	70 - 130	
	37.7	36.0	ng/l	95	81 - 141	
4,8-Dioxa-3H-perfluorononanoic	37.7	30.0	ng/L	95	01-141	
acid (ADONA)	109					

LCS LCS

	LUU	L00	
Isotope Dilution	%Recovery	Qualifier	Limits
13C2 PFHxA	95		50 - 150
13C4 PFHpA	94		50 - 150
13C4 PFOA	107		50 - 150
13C5 PFNA	94		50 - 150
13C2 PFDA	98		50 - 150
13C2 PFUnA	99		50 - 150
13C2 PFDoA	94		50 - 150
13C2 PFTeDA	104		50 - 150
13C3 PFBS	104		50 - 150
1802 PFHxS	99		50 - 150
13C4 PFOS	97		50 - 150
d3-NMeFOSAA	95		50 - 150
d5-NEtFOSAA	85		50 - 150
13C3 HFPO-DA	100		50 - 150
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Lab Sample ID: LCSD 320-541736/3-A

**Matrix: Water** 

**Client Sample ID: Lab Control Sample Dup** 

Prep Type: Total/NA

Analysis Batch: 542623							Prep Ba	itch: 54	11736
	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluorohexanoic acid (PFHxA)	40.0	40.1		ng/L		100	72 - 129	1	30
Perfluoroheptanoic acid (PFHpA)	40.0	38.7		ng/L		97	72 - 130	2	30
Perfluorooctanoic acid (PFOA)	40.0	36.9		ng/L		92	71 - 133	8	30

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## **QC Sample Results**

Client: Shannon & Wilson, Inc Job ID: 320-81504-1 Project/Site: Gustavus PFAS

#### Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: LCSD 320-541736/3-A	Cli
Lab Sample ID. LOSD 320-341730/3-A	Oli

**Matrix: Water** 

**Analysis Batch: 542623** 

lient Sample ID: Lab Control Sample Dup

**Prep Type: Total/NA Prep Batch: 541736** 

	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluorononanoic acid (PFNA)	40.0	37.1		ng/L		93	69 - 130	8	30
Perfluorodecanoic acid (PFDA)	40.0	40.3		ng/L		101	71 - 129	3	30
Perfluoroundecanoic acid (PFUnA)	40.0	36.9		ng/L		92	69 - 133	4	30
Perfluorododecanoic acid (PFDoA)	40.0	43.6		ng/L		109	72 - 134	13	30
Perfluorotridecanoic acid (PFTriA)	40.0	43.9		ng/L		110	65 - 144	9	30
Perfluorotetradecanoic acid (PFTeA)	40.0	39.0		ng/L		98	71 - 132	10	30
Perfluorobutanesulfonic acid (PFBS)	35.4	28.3		ng/L		80	72 - 130	2	30
Perfluorohexanesulfonic acid (PFHxS)	36.4	31.6		ng/L		87	68 - 131	4	30
Perfluorooctanesulfonic acid (PFOS)	37.1	34.4		ng/L		93	65 - 140	7	30
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	40.0	34.2		ng/L		86	65 - 136	0	30
N-ethylperfluorooctanesulfonami doacetic acid (NEtFOSAA)	40.0	38.9		ng/L		97	61 - 135	2	30
9-Chlorohexadecafluoro-3-oxan onane-1-sulfonic acid	37.3	34.9		ng/L		94	77 - 137	2	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	40.0	42.9		ng/L		107	72 - 132	18	30
11-Chloroeicosafluoro-3-oxaund ecane-1-sulfonic acid	37.7	34.1		ng/L		91	76 - 136	1	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	37.7	33.9		ng/L		90	81 - 141	6	30

LCSD LCSD

Limits           50 - 150           50 - 150
50 - 150
50 - 150
50 - 150
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50 - 150

## **QC Association Summary**

Client: Shannon & Wilson, Inc Job ID: 320-81504-1 Project/Site: Gustavus PFAS

#### LCMS

#### **Prep Batch: 541736**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81504-1	MW-16	Total/NA	Water	3535	
320-81504-2	MW-15-15	Total/NA	Water	3535	
320-81504-3	MW-15-45	Total/NA	Water	3535	
320-81504-4	MW-115-45	Total/NA	Water	3535	
320-81504-5	MW-18-15	Total/NA	Water	3535	
320-81504-6	MW-20-40	Total/NA	Water	3535	
320-81504-7	MW-118-50	Total/NA	Water	3535	
320-81504-8	MW-18-50	Total/NA	Water	3535	
320-81504-9	MW-20-15	Total/NA	Water	3535	
320-81504-10	GAC	Total/NA	Water	3535	
320-81504-11	MW-19-15	Total/NA	Water	3535	
320-81504-12	MW-19-50	Total/NA	Water	3535	
320-81504-13	MW-119-50	Total/NA	Water	3535	
MB 320-541736/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-541736/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-541736/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

#### **Analysis Batch: 542623**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81504-1	MW-16	Total/NA	Water	EPA 537(Mod)	541736
320-81504-2	MW-15-15	Total/NA	Water	EPA 537(Mod)	541736
320-81504-3	MW-15-45	Total/NA	Water	EPA 537(Mod)	541736
320-81504-4	MW-115-45	Total/NA	Water	EPA 537(Mod)	541736
320-81504-5	MW-18-15	Total/NA	Water	EPA 537(Mod)	541736
320-81504-6	MW-20-40	Total/NA	Water	EPA 537(Mod)	541736
320-81504-7	MW-118-50	Total/NA	Water	EPA 537(Mod)	541736
320-81504-8	MW-18-50	Total/NA	Water	EPA 537(Mod)	541736
320-81504-9	MW-20-15	Total/NA	Water	EPA 537(Mod)	541736
320-81504-10	GAC	Total/NA	Water	EPA 537(Mod)	541736
320-81504-11	MW-19-15	Total/NA	Water	EPA 537(Mod)	541736
320-81504-12	MW-19-50	Total/NA	Water	EPA 537(Mod)	541736
320-81504-13	MW-119-50	Total/NA	Water	EPA 537(Mod)	541736
MB 320-541736/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	541736
LCS 320-541736/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	541736
LCSD 320-541736/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	541736

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Job ID: 320-81504-1

Client: Shannon & Wilson, Inc Project/Site: Gustavus PFAS

**Client Sample ID: MW-16** 

Lab Sample ID: 320-81504-1 Date Collected: 11/02/21 11:22

**Matrix: Water** 

**Matrix: Water** 

**Matrix: Water** 

Date Received: 11/09/21 15:07

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			289 mL	10.0 mL	541736	11/10/21 18:53	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542623	11/14/21 12:27	D1R	TAL SAC

Lab Sample ID: 320-81504-2 Client Sample ID: MW-15-15

Date Collected: 11/03/21 16:11 **Matrix: Water** 

Date Received: 11/09/21 15:07

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			290.8 mL	10.0 mL	541736	11/10/21 18:53	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542623	11/14/21 12:38	D1R	TAL SAC

Client Sample ID: MW-15-45 Lab Sample ID: 320-81504-3

Date Collected: 11/03/21 17:28 Date Received: 11/09/21 15:07

Batch Batch Dil Initial Final Batch Prepared Method Amount Number or Analyzed Analyst **Prep Type** Type Run **Factor** Amount Lab Total/NA Prep 3535 288.1 mL 10.0 mL 541736 11/10/21 18:53 PV TAL SAC Total/NA Analysis EPA 537(Mod) 542623 11/14/21 12:48 D1R TAL SAC 1

Client Sample ID: MW-115-45 Lab Sample ID: 320-81504-4

Date Collected: 11/03/21 17:18 Date Received: 11/09/21 15:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			290 mL	10.0 mL	541736	11/10/21 18:53	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542623	11/14/21 12:59	D1R	TAL SAC

Client Sample ID: MW-18-15 Lab Sample ID: 320-81504-5 Date Collected: 11/04/21 10:14 **Matrix: Water** 

Date Received: 11/09/21 15:07

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			278.8 mL	10.0 mL	541736	11/10/21 18:53	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542623	11/14/21 13:09	D1R	TAL SAC

Client Sample ID: MW-20-40 Lab Sample ID: 320-81504-6 Date Collected: 11/04/21 15:39 **Matrix: Water** 

Date Received: 11/09/21 15:07

Pron Tuno	Batch	Batch Method	Dun	Dil	Initial Amount	Final	Batch Number	Prepared or Analyzed	Analyst	Lab
Prep Type	Туре		Run	Factor		Amount				
Total/NA	Prep	3535			288.4 mL	10.0 mL	541736	11/10/21 18:53	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542623	11/14/21 13:19	D1R	TAL SAC

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Client: Shannon & Wilson, Inc Project/Site: Gustavus PFAS

Client Sample ID: MW-118-50

Date Collected: 11/04/21 09:23 Date Received: 11/09/21 15:07 Lab Sample ID: 320-81504-7

Matrix: Water

**Matrix: Water** 

**Matrix: Water** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			273 mL	10.0 mL	541736	11/10/21 18:53	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542623	11/14/21 13:30	D1R	TAL SAC

Client Sample ID: MW-18-50

Date Collected: 11/04/21 09:33

Lab Sample ID: 320-81504-8

Matrix: Water

Date Collected: 11/04/21 09:33 Date Received: 11/09/21 15:07

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			273.4 mL	10.0 mL	541736	11/10/21 18:53	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542623	11/14/21 14:01	D1R	TAL SAC

Client Sample ID: MW-20-15 Lab Sample ID: 320-81504-9

Date Collected: 11/04/21 16:18 Date Received: 11/09/21 15:07

Batch Batch Dil Initial Final Batch Prepared Method Amount Number or Analyzed Analyst **Prep Type** Type Run **Factor** Amount Lab Total/NA Prep 3535 296.4 mL 10.0 mL 541736 11/10/21 18:53 PV TAL SAC Total/NA Analysis EPA 537(Mod) 542623 11/14/21 14:11 D1R TAL SAC 1

Client Sample ID: GAC Lab Sample ID: 320-81504-10

Date Collected: 11/05/21 14:40 Date Received: 11/09/21 15:07

_										
	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			301.5 mL	10.0 mL	541736	11/10/21 18:53	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542623	11/14/21 14:22	D1R	TAL SAC

Client Sample ID: MW-19-15

Date Collected: 11/05/21 12:58

Lab Sample ID: 320-81504-11

Matrix: Water

Date Received: 11/09/21 15:07

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			279.1 mL	10.0 mL	541736	11/10/21 18:53	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542623	11/14/21 14:32	D1R	TAL SAC

Client Sample ID: MW-19-50

Date Collected: 11/05/21 12:23

Lab Sample ID: 320-81504-12

Matrix: Water

Date Received: 11/09/21 15:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			278.6 mL	10.0 mL	541736	11/10/21 18:53	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542623	11/14/21 14:43	D1R	TAL SAC

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#### **Lab Chronicle**

Client: Shannon & Wilson, Inc Job ID: 320-81504-1

Project/Site: Gustavus PFAS

Client Sample ID: MW-119-50 Lab Sample ID: 320-81504-13

Date Collected: 11/05/21 12:12 Matrix: Water Date Received: 11/09/21 15:07

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			277.2 mL	10.0 mL	541736	11/10/21 18:53	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542623	11/14/21 14:53	D1R	TAL SAC

#### **Laboratory References:**

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

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## **Accreditation/Certification Summary**

Client: Shannon & Wilson, Inc Job ID: 320-81504-1

# Project/Site: Gustavus PFAS

#### **Laboratory: Eurofins TestAmerica, Sacramento**

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24

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#### **Method Summary**

Client: Shannon & Wilson, Inc Project/Site: Gustavus PFAS Job ID: 320-81504-1

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.3, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

**Protocol References:** 

EPA = US Environmental Protection Agency

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

Laboratory References:

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

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## **Sample Summary**

Client: Shannon & Wilson, Inc
Project/Site: Gustavus PFAS

Job ID: 320-81504-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-81504-1	MW-16	Water	11/02/21 11:22	11/09/21 15:07
320-81504-2	MW-15-15	Water	11/03/21 16:11	11/09/21 15:07
320-81504-3	MW-15-45	Water	11/03/21 17:28	11/09/21 15:07
320-81504-4	MW-115-45	Water	11/03/21 17:18	11/09/21 15:07
320-81504-5	MW-18-15	Water	11/04/21 10:14	11/09/21 15:07
320-81504-6	MW-20-40	Water	11/04/21 15:39	11/09/21 15:07
320-81504-7	MW-118-50	Water	11/04/21 09:23	11/09/21 15:07
320-81504-8	MW-18-50	Water	11/04/21 09:33	11/09/21 15:07
320-81504-9	MW-20-15	Water	11/04/21 16:18	11/09/21 15:07
320-81504-10	GAC	Water	11/05/21 14:40	11/09/21 15:07
320-81504-11	MW-19-15	Water	11/05/21 12:58	11/09/21 15:07
320-81504-12	MW-19-50	Water	11/05/21 12:23	11/09/21 15:07

11/05/21 12:12 11/09/21 15:07

Water

320-81504-13

MW-119-50

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SHANNON & WILSO GEOTECHNICAL AND ENVIRONMENTAL 2355 Hill Road Fairbanks, AK 99709 (907) 479-0600		N-OF-CUSTODY		Page 1 of 2 aboratory Test America tn: David All fucker ative if used)
Turn Around Time:  Normal Rush	Quote No:  J-Flags: Yes No	]		Remarks/Matrix Composition/Grab? Sample Containers
Please Specify Sample Identity		Date mpled		Remarks/Matrix Composition/Grab? Sample Containers
MW-16 MW-15-15 MW-15-45 MW-115-45 MW-18-15 MW-20-40 MW-118-50 MW-18-50 MW-20-15 GAC	11:22 1/-2 16:1/ 11-3 17:28 17:18 1014 1/-9 1539 0. 9:23 9:33 16:18 1440 11-	7-2/ 320-81504 Chain of C	ustody	2 Ground water
Project Information	Sample Receipt	Reliquished By: 1.	Reliquished By: 2.	Reliquished By: 3.
Number: 1025 99 - 008  Name: Gustavus PFA5  Contact: KRF  Ongoing Project? Yes No	Total No. of Containers:  COC Seals/Intact? Y/N/NA  Received Good Cond./Cold  Temp:	Justin Risley	Signature: Time:	Signature: Time: Printed Name: Date:
Sampler: JAR/MSC	Delivery Method:	Shannon + Wilson	Company:	Company:
No	tes:	Received By: 1.	Received By: 2.	Received By: 3.
		Signature: Name: Date: 11/7/07	Signature: Time: Printed Name: Date:	Signature: Printed Name:
Distribution: White - w/shipment - returne Yellow - w/shipment - for cor Pink - Shannon & Wilson - jo		Company	Company:	Company:

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SHANNON & WILSO GEOTECHNICAL AND ENVIRONMENTA 2355 Hill Road Fairbanks, AK 99709 (907) 479-0600 www.shannonwilson.co		IN-OF-CUSTODY	Attr nalytical Methods (include preserva	
Turn Around Time:  Normal Rush	Quote No:  J-Flags: Yes N			Remarks/Matrix Composition/Grab? Sample Containers
Please Specify Sample Identity	Lab No. Time	Date Sampled		Remarks/Matrix Composition/Grab? Sample Containers
MW-19-15 MW-19-50 MW-119-50		1-5-21		
Project Information	Sample Receipt	Reliquished By: 1.	Reliquished By: 2.	Reliquished By: 3.
Number:	Total No. of Containers:	Signature: Time: \$00	Signature: 24/90 Time:	Signature: Time:
Contact: Ongoing Project? Yes No	Receiver Good-Cond./Cold Temp:	Printed Name: Date: 11-6-21  Sustin Risley	Righted Name: Date:	Printed Name: Date:
Sampler:	Delivery Method:	Company: Shanon + Wilson	Company:	Company:
Ng	ftes:	Received By: 1.	Received By: 2.	Received By: 3.
		1/9/2 1507	Signature: Time:	Signature: Time:
		Printed Name: Date: 1/3 b	Printed Name: Date:	Printed Name: Date:
Distribution: White - w/shipment - returne Yellow - w/shipment - for co Pink - Shannon & Wilson - jo	nsignee files		Company:	Company:

-time or both 1222 Soll-9-4

5.9°C

No. 36469



















Client: Shannon & Wilson, Inc

Job Number: 320-81504-1

Login Number: 81504

List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Cahill, Nicholas P

orcator. Garnin, Microlada i		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	1698500, 1698501
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## **Laboratory Data Review Checklist**

Completed By:
Mason Craker
Title:
Geologist
Date:
November 16, 2021
Consultant Firm:
Shannon & Wilson, Inc.
Laboratory Name:
Eurofins / TestAmerica Laboratories, Inc. (TestAmerica)
aboratory Report Number:
320-81504-1
Laboratory Report Date:
11/16/2021
CS Site Name:
Gustavus PFAS
ADEC File Number:
1507.38.017
Iazard Identification Number:
26904

Laboratory Report Date:
Note: Any N/A or No box checked must have an explanation in the comments box.
1. <u>Laboratory</u>
<ul> <li>a. Did an ADEC CS approved laboratory receive and <u>perform</u> all of the submitted sample analyses?</li> <li>Yes⊠ No□ N/A□ Comments:</li> </ul>
TestAmerica/Eurofins Laboratories West Sacramento, CA is CS certified for the analysis of perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) by method 537. The laboratory is also certified under the Department of Defense Environmental Laboratory Accreditation Program (DoD ELAP) for the requested analyses.
b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?
Yes□ No□ N/A⊠ Comments:
The samples were not transferred to a network laboratory or subcontracted out.
2. Chain of Custody (CoC)
<ul> <li>a. CoC information completed, signed, and dated (including released/received by)?</li> <li>Yes⊠ No□ N/A□ Comments:</li> </ul>
b. Correct analyses requested?
$Yes \boxtimes No \square N/A \square$ Comments:
3. <u>Laboratory Sample Receipt Documentation</u>
a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?
$Yes \boxtimes No \square N/A \square$ Comments:
b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?
$Yes \square No \square N/A \boxtimes Comments:$
Samples analyzed for PFAS do not require preservation other than temperature control.
c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?
$Yes \boxtimes No \square N/A \square$ Comments:
The sample receipt form notes that the samples arrived in good condition.

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Laboratory Report Date:	
d. If there were any discrepancies, were they documented? For example, incorrect sam containers/preservation, sample temperature outside of acceptable range, insufficier samples, etc.?	
Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:	
The container labels for sample <i>MW-19-50</i> listed a sample time of 1222 while the COC sample time was 1223. The sample was logged in per the COC.	noted that the
e. Data quality or usability affected?	
Comments:	
The data quality/usability was not affected. A one-minute sample time discrepancy has method holding time.	no bearing on
4. <u>Case Narrative</u>	
a. Present and understandable?	
Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:	
b. Discrepancies, errors, or OC failures identified by the lab?	
b. Discrepancies, errors, or QC failures identified by the lab?	
$Yes \boxtimes No \square N/A \square$ Comments:	trix snike
	trix spike
Yes⊠ No□ N/A□ Comments:  Method 3535: Insufficient sample volume was available to perform a matrix spike/ma	er of sediment at
Yes⊠ No□ N/A□ Comments:  Method 3535: Insufficient sample volume was available to perform a matrix spike/mar duplicate (MS/MSD) associated with preparation batch 320-541736.  Method 3535: The following samples exhibited a yellow hue and contained a thin layer the bottom of the bottle prior to extraction: <i>MW-15-45</i> , <i>MW-115-45</i> , <i>GAC</i> , <i>MW-19-15</i> .	er of sediment at, MW-19-50,
Yes No N/A Comments:  Method 3535: Insufficient sample volume was available to perform a matrix spike/mar duplicate (MS/MSD) associated with preparation batch 320-541736.  Method 3535: The following samples exhibited a yellow hue and contained a thin layer the bottom of the bottle prior to extraction: MW-15-45, MW-115-45, GAC, MW-19-15 and MW-119-50.  Method 3535: The samples MW-118-50 and MW-18-50 were brown in color and contained	er of sediment at, MW-19-50, ained a thin
Yes⊠ No□ N/A□ Comments:  Method 3535: Insufficient sample volume was available to perform a matrix spike/mar duplicate (MS/MSD) associated with preparation batch 320-541736.  Method 3535: The following samples exhibited a yellow hue and contained a thin layer the bottom of the bottle prior to extraction: MW-15-45, MW-115-45, GAC, MW-19-15 and MW-119-50.  Method 3535: The samples MW-118-50 and MW-18-50 were brown in color and contained a thin layer of sediment at the bottom of the bottle prior to extraction.	er of sediment at , <i>MW-19-50</i> , ained a thin extraction.
Yes⊠ No□ N/A□ Comments:  Method 3535: Insufficient sample volume was available to perform a matrix spike/ma duplicate (MS/MSD) associated with preparation batch 320-541736.  Method 3535: The following samples exhibited a yellow hue and contained a thin layer the bottom of the bottle prior to extraction: MW-15-45, MW-115-45, GAC, MW-19-15 and MW-119-50.  Method 3535: The samples MW-118-50 and MW-18-50 were brown in color and contal layer of sediment at the bottom of the bottle prior to extraction.  Method 3535: The samples MW-20-40 and MW-19-15 exhibited a yellow hue prior to	er of sediment at , MW-19-50, ained a thin extraction.
Yes⊠ No□ N/A□ Comments:  Method 3535: Insufficient sample volume was available to perform a matrix spike/mar duplicate (MS/MSD) associated with preparation batch 320-541736.  Method 3535: The following samples exhibited a yellow hue and contained a thin layer the bottom of the bottle prior to extraction: MW-15-45, MW-115-45, GAC, MW-19-15, and MW-119-50.  Method 3535: The samples MW-118-50 and MW-18-50 were brown in color and contained a thin layer of sediment at the bottom of the bottle prior to extraction.  Method 3535: The samples MW-20-40 and MW-19-15 exhibited a yellow hue prior to Method 3535: The samples MW-20-40 and MW-19-15 exhibited a yellow hue prior to Method 3535: The samples MW-15-45 and MW-115-45 were yellow after final voluments.	er of sediment at , MW-19-50, ained a thin extraction.
Yes⊠ No□ N/A□ Comments:  Method 3535: Insufficient sample volume was available to perform a matrix spike/mat duplicate (MS/MSD) associated with preparation batch 320-541736.  Method 3535: The following samples exhibited a yellow hue and contained a thin layer the bottom of the bottle prior to extraction: MW-15-45, MW-115-45, GAC, MW-19-15 and MW-119-50.  Method 3535: The samples MW-118-50 and MW-18-50 were brown in color and contal layer of sediment at the bottom of the bottle prior to extraction.  Method 3535: The samples MW-20-40 and MW-19-15 exhibited a yellow hue prior to Method 3535: The samples MW-15-45 and MW-115-45 were yellow after final volume. Method 3535: The samples MW-118-50 and MW-18-50 were orange after final volume.	er of sediment at , MW-19-50, ained a thin extraction.

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abor	atory Report Date:
	d. What is the effect on data quality/usability according to the case narrative?
	Comments:
	The case narrative does not note an effect on data quality/usability.
. <u>Sa</u>	amples Results
	a. Correct analyses performed/reported as requested on COC?
	Yes⊠ No□ N/A□ Comments:
	b. All applicable holding times met?
	$Yes \boxtimes No \square N/A \square$ Comments:
	A 11 11
	c. All soils reported on a dry weight basis?  Yes□ No□ N/A⊠ Comments:
	Soil samples were not submitted with this work order.
	d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?
	$Yes \boxtimes No \square N/A \square$ Comments:
	The reporting limits (RLs) are less than the applicable DEC regulatory limits for the target PFAS.
	e. Data quality or usability affected?
	The data quality/usability is not affected.
. <u>Q</u> (	C Samples
	a. Method Blank
	i. One method blank reported per matrix, analysis and 20 samples?
	$Yes \boxtimes No \square N/A \square$ Comments:
	ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?
	$Yes \boxtimes No \square N/A \square$ Comments:

## Laboratory Report Date:

iii. If above LOQ or project specified objectives, what samples are affected?  Comments:
None; target PFAS were not detected in the method blank sample.
iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
$Yes \square No \square N/A \boxtimes Comments:$
The samples were not affected by laboratory contamination.
v. Data quality or usability affected?  Comments:
The data quality/usability is not affected.
b. Laboratory Control Sample/Duplicate (LCS/LCSD)
<ul> <li>i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)</li> </ul>
Yes⊠ No□ N/A□ Comments:
ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?
$Yes \square No \square N/A \boxtimes Comments:$
Metals/Inorganics analyses were not requested for this work order.
iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)
Yes⊠ No□ N/A□ Comments:
iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from LCS/LCSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)
Yes⊠ No□ N/A□ Comments:
v. If %R or RPD is outside of acceptable limits, what samples are affected?  Comments:
None; method accuracy and precision were demonstrated to be within acceptable limits.

Laboratory Report Date:
vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?  Yes□ No□ N/A⊠ Comments:
Qualification was not required; see above.
vii. Data quality or usability affected? (Use comment box to explain.)  Comments:
The data quality/usability is not affected.
<ul> <li>c. Matrix Spike/Matrix Spike Duplicate (MS/MSD)</li> <li>Note: Leave blank if not required for project</li> <li>i. Organics – One MS/MSD reported per matrix, analysis and 20 samples?</li> </ul>
Yes □ No⊠ N/A□ Comments:  Insufficient sample volume was available to perform a MS/MSD with the associated preparatory batch. However, the laboratory analyzed LCS and LCSD samples to assess laboratory accuracy and precision.
<ul> <li>ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?</li> <li>Yes□ No□ N/A⊠ Comments:</li> </ul>
Metals/Inorganics analyses were not requested for this work order.
iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?
Yes□ No□ N/A⊠ Comments:
<ul> <li>MS and MSD samples were not analyzed for this work order.</li> <li>iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from MS/MSD, and or sample/sample duplicate.</li> <li>Yes□ No□ N/A⊠ Comments:</li> </ul>
MS and MSD samples were not analyzed for this work order.
v. If %R or RPD is outside of acceptable limits, what samples are affected?  Comments:
N/A; MS and MSD samples were not analyzed for this work order.
vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined? Yes $\square$ No $\square$ N/A $\boxtimes$ Comments:

MS and MSD samples were not analyzed for this work order.

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#### Laboratory Report Date:

vii. Data quality or usability affected? (Use comment box to explain.) Comments: The data quality/usability is not affected. d. Surrogates – Organics Only or Isotope Dilution Analytes (IDA) – Isotope Dilution Methods Only i. Are surrogate/IDA recoveries reported for organic analyses – field, QC and laboratory samples?  $Yes \boxtimes No \square N/A \square$ Comments: ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods 50-150 %R for field samples and 60-120 %R for QC samples; all other analyses see the laboratory report pages)  $Yes \boxtimes No \square N/A \square$ Comments: iii. Do the sample results with failed surrogate/IDA recoveries have data flags? If so, are the data flags clearly defined?  $Yes \square No \square N/A \boxtimes$ Comments: There were no IDA recovery failures for the reported results. iv. Data quality or usability affected? Comments: The data quality/usability is not affected. e. Trip Blanks i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)  $Yes \square No \square N/A \boxtimes$ Comments: PFAS are not volatile compounds. A trip blank is not required for the requested analysis. ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)  $Yes \square No \square N/A \boxtimes$ Comments: A trip blank is not required for the requested analysis. iii. All results less than LOQ and project specified objectives?  $Yes \square No \square N/A \boxtimes$ Comments: A trip blank is not required for the requested analysis.

320-	81504-1
orato	ory Report Date:
	iv. If above LOQ or project specified objectives, what samples are affected?  Comments:
N	N/A; a trip blank is not required for the requested analysis.
	v. Data quality or usability affected?  Comments:
Г	The data quality and/or usability was not affected; see above.
f	Field Duplicate
	i. One field duplicate submitted per matrix, analysis and 10 project samples?
	Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:
	ii. Submitted blind to lab?
_	Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:
	The field duplicate pairs are labeled <i>MW-15-45 / MW-115-45, MW-18-50 / MW-118-50</i> , and <i>MW-19-10 / MW-119-50</i> .
	iii. Precision – All relative percent differences (RPD) less than specified project objectives? (Recommended: 30% water, 50% soil)  RPD (%) = Absolute value of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$
	Where $R_1 = Sample Concentration$
	$R_2$ = Field Duplicate Concentration
	Yes $\boxtimes$ No $\square$ N/A $\square$ Comments:
	iv. Data quality or usability affected? (Use the comment box to explain why or why not.)  Comments:
Τ	The data quality/usability is not affected.
g	Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below)?
	Yes $\square$ No $\square$ N/A $\boxtimes$ Comments:
S	Samples were not collected with reusable equipment. An equipment blank sample was not required.
	i. All results less than LOQ and project specified objectives?
	Yes□ No□ N/A⊠ Comments:

An equipment blank sample was not submitted with this work order.

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	320-81504-1	
La	aboratory Report Date:	
	ii. If above LOQ or projec	t specified objectives, what samples are affected?  Comments:
	N/A; see above.	
	iii. Data quality or usability	y affected? Comments:
	The data quality/usability is not	affected.
7.	Other Data Flags/Qualifiers (ACOE	, AFCEE, Lab Specific, etc.)
	a. Defined and appropriate?	
	Yes□ No□ N/A⊠	Comments:
	No additional data flags/qualifie	rs were required.

### Appendix E

# Updated Conceptual Site Model

#### **CONTENTS**

- Updated Conceptual Site Model Scoping Form
- Updated Conceptual Site Model Graphic Form

Print Form

# **Appendix C - Human Health Conceptual Site Model Scoping Form and Standardized Graphic**

Site Name:	Gustavus Airport Terminal			
File Number:	1507.38.017			
Completed by:	Shannon & Wilson, Inc.			
about which expo summary text about the characterization v	be used to reach agreement with the osure pathways should be further invout the CSM and a graphic depicting work plan and updated as needed in	vestigated dur g exposure pa later reports.	ring site charact thways should l	erization. From this information
1. General In	ions: Follow the italicized instruct  formation:  potential sources at the site)	ions in each	section below.	
USTs		☐ Vehicles	S	
☐ ASTs		☐ Landfill	S	
☐ Dispensers/fue	el loading racks	☐ Transfor	rmers	
Drums			Fire-training activ	rities
Release Mechan	isms (check potential release mech	anisms at the	site)	J
☐ Spills		⊠ Direct d	ischarge	
Leaks		☐ Burning		
		☐ Other:		
Imnacted Media	(check potentially-impacted media	at the site)	,	
Surface soil (0	, -	⊠ Groundy	water	
Subsurface so:	<u> </u>	□ Surface		
☐ Air	(	⊠ Biota		
Sediment     Sediment		Other:		
			]	
- ,	k receptors that could be affected by		•	
Residents (adu	,	⊠ Site visi		
	r industrial worker	⊠ Trespass		
Construction v		Recreati	onal user	
	arvester (i.e. gathers wild foods)	⊠ Farmer		1
⊠ Subsistence co	onsumer (i.e. eats wild foods)	Other:		

2.	<b>Exposure Pathways:</b> (The answers to the following exposure pathways at the site. Check each box when	-		-				
a)	Direct Contact -  1. Incidental Soil Ingestion							
	Are contaminants present or potentially present in surface so (Contamination at deeper depths may require evaluation on	the ground surface	?					
	If the box is checked, label this pathway complete:		Complete					
	Comments:							
	PFOS and/or PFOA were identified above soil-cleanup levels at near the Air Terminal, and at the southern end of Runway 2-20. All of these local restricted area.							
	2. Dermal Absorption of Contaminants from Soil							
	Are contaminants present or potentially present in surface so (Contamination at deeper depths may require evaluation on	the ground surface	?					
	Can the soil contaminants permeate the skin (see Appendix )	$\overline{X}$						
	If both boxes are checked, label this pathway complete:		Complete					
	Comments:							
	We note PFOS and PFOA are present on the Appendix B guidance do Alaska Department of Health and Social Services, PFOS and PFOA are the skin. We therefore consider dermal exposure to these compound	not apprec	iably absorbed through					
b)	Ingestion -  1. Ingestion of Groundwater							
	Have contaminants been detected or are they expected to be or are contaminants expected to migrate to groundwater in the	×						
	Could the potentially affected groundwater be used as a curr source? Please note, only leave the box unchecked if DEC h water is not a currently or reasonably expected future source to 18 AAC 75.350.	X						
	If both boxes are checked, label this pathway complete:							
	Comments:	,						
	PFOS and PFOA have been detected at concentrations exceeding the in onsite and offsite residential and commercial drinking water wells. exceedances of drinking water standards are being supplied bottled	Properties						

2

# 2. Ingestion of Surface Water Have contaminants been detected or are they expected to be detected in surface water, $\overline{X}$ or are contaminants expected to migrate to surface water in the future? Could potentially affected surface water bodies be used, currently or in the future, as a $\overline{\times}$ drinking water source? Consider both public water systems and private use (i.e., during residential, recreational or subsistence activities). If both boxes are checked, label this pathway complete: Complete Comments: This pathway is considered complete due surface-water influence on drinking-water wells in the affected area. 3. Ingestion of Wild and Farmed Foods Is the site in an area that is used or reasonably could be used for hunting, fishing, or $\overline{X}$ harvesting of wild or farmed foods? Do the site contaminants have the potential to bioaccumulate (see Appendix C in the guidance $\overline{\times}$ document)? Are site contaminants located where they would have the potential to be taken up into $\overline{X}$ biota? (i.e. soil within the root zone for plants or burrowing depth for animals, in groundwater that could be connected to surface water, etc.) If all of the boxes are checked, label this pathway complete: Complete Comments: PFOS and PFOA have the potential to bioaccumulate and could be taken up by plants, fish, and birds. Residents fish in the area. Residents may also harvest plants and berries around the airport. Contaminated well water could be used for gardening. c) Inhalation-1. Inhalation of Outdoor Air Are contaminants present or potentially present in surface soil between 0 and 15 feet below the $\overline{X}$ ground surface? (Contamination at deeper depths may require evaluation on a site specific basis.) Are the contaminants in soil volatile (see Appendix D in the guidance document)? If both boxes are checked, label this pathway complete: Incomplete Comments: PFAS contaminants are not volatile.

2. Inhalation of Indoor Air				
Are occupied buildings on the site or reasonably expected to be occupied the site in an area that could be affected by contaminant vapors? (with or vertical feet of petroleum contaminated soil or groundwater; within non-petroleum contaminted soil or groundwater; or subject to "prefewhich promote easy airflow like utility conduits or rock fractures)	thin 30 horizontal in 100 feet of	×		
Are volatile compounds present in soil or groundwater (see Appendix D in the guidance document)?				
If both boxes are checked, label this pathway complete:	Incomplete			
Comments:				

The site characterization activities did not identify petroleum soil contamination at former fire training areas. PFAS contaminants are not volatile.

3. Additional Exposure Pathways: (Although there are no definitive questions provided in this section, these exposure pathways should also be considered at each site. Use the guidelines provided below to determine if further evaluation of each pathway is warranted.)

#### Dermal Exposure to Contaminants in Groundwater and Surface Water

Dermal exposure to contaminants in groundwater and surface water may be a complete pathway if:

- Climate permits recreational use of waters for swimming.
- o Climate permits exposure to groundwater during activities, such as construction.
- o Groundwater or surface water is used for household purposes, such as bathing or cleaning.

Generally, DEC groundwater cleanup levels in 18 AAC 75, Table C, are deemed protective of this pathway because dermal absorption is incorporated into the groundwater exposure equation for residential uses.

Check the box if further evaluation of this pathway is needed:

### $\overline{\times}$

#### Comments:

Some residential water supply wells near airport property have PFOS and PFOA concentrations that exceed the EPA lifetime health advisory level. These wells are used for domestic purposes including bathing. Residents, site visitors, commercial workers, subsistence harvesters, DOT&PF employees, and construction workers could come in contact with PFOS-contaminated surface water.

According to the Alaska Department of Health and Social Services, PFOS and PFOA are not appreciably absorbed through the skin. We therefore consider dermal exposure to these compounds to be "insignificant" for the purposes of this CSM.

#### Inhalation of Volatile Compounds in Tap Water

Inhalation of volatile compounds in tap water may be a complete pathway if:

- The contaminated water is used for indoor household purposes such as showering, laundering, and dish washing.
- The contaminants of concern are volatile (common volatile contaminants are listed in Appendix D in the guidance document.)

DEC groundwater cleanup levels in 18 AAC 75, Table C are protective of this pathway because the inhalation of vapors during normal household activities is incorporated into the groundwater exposure equation.

Check the box if further evaluation of this pathway is needed:			
Comments:			
PFAS compounds are not volatile.			

#### **Inhalation of Fugitive Dust**

Inhalation of fugitive dust may be a complete pathway if:

- Nonvolatile compounds are found in the top 2 centimeters of soil. The top 2 centimeters of soil are likely to be dispersed in the wind as dust particles.
- O Dust particles are less than 10 micrometers (Particulate Matter PM<sub>10</sub>). Particles of this size are called respirable particles and can reach the pulmonary parts of the lungs when inhaled.

DEC human health soil cleanup levels in Table B1 of 18 AAC 75 are protective of this pathway because the inhalation of particulates is incorporated into the soil exposure equation.

inhalation of particulates is incorporated into the soil exposure equation.	
Check the box if further evaluation of this pathway is needed:  Comments:	$\overline{ X }$
Several surface soil samples near the airport terminals and DOT&PF Maintenance building were above current cleanup levels.	

#### **Direct Contact with Sediment**

This pathway involves people's hands being exposed to sediment, such as during some recreational, subsistence, or industrial activity. People then incidentally ingest sediment from normal hand-to-mouth activities. In addition, dermal absorption of contaminants may be of concern if the contaminants are able to permeate the skin (see Appendix B in the guidance document). This type of exposure should be investigated if:

- O Climate permits recreational activities around sediment.
- The community has identified subsistence or recreational activities that would result in exposure to the sediment, such as clam digging.

Generally, DEC direct contact soil cleanup levels in 18 AAC 75, Table B1, are assumed to be protective of direct contact with sediment

contact with sediment.	
Check the box if further evaluation of this pathway is needed:	×

#### Comments:

Sediment analytical samples were not above current cleanup levels.									

## **HUMAN HEALTH CONCEPTUAL SITE MODEL GRAPHIC FORM**

Site: Gustavus Airport Terminal	Instructions: Follow the numbered directions below. Do not consider contaminant concentrations or engineering/land use controls when describing pathways.								
Completed By: Shannon & Wilson, Inc.		use controls when describing pat	iways	•					
(1) (2) Check the media that could be directly affected  Character and the could be directly affected  Character and the could be directly affected  Character and the could be directly affected  Character and the could be directly affected to parrow and check possible transport	(3) Check all exposure media identified in (2).	<b>(4)</b> Check all pathways that could be complete. The pathways identified in this column <b>must</b>	(5)  Identify the receptors potentially affected by eac exposure pathway: Enter "C" for current receptor "F" for future receptors, "C/F" for both current are future receptors, or "I" for insignificant exposure.  Current & Future Receptor					eptors, nt and sure.	
by the release.  mechanisms. Check additional media under (1) if the media acts as a secondary source.  Media  Transport Mechanisms	Exposure Media	agree with Sections 2 and 3 of the Human Health CSM Scoping Form	/	dren) r Kers	Construction workers Farmers or subsistence Subsistence consumers			onsumers	Starriers
Surface Soil  V Migration to subsurface check soil Soil  V Migration to groundwater  (0-2 ft bgs)  Check soil Check soil Check soil Check soil Check soil Check soil Check groundwater Check groundwater Check air			Residents	Commercial or industrial workers or resistors.	Construct:	Farmers or su	Subsistence	Other	
Runoff or erosion check surface water		Incidental Soil Ingestion	C/F	C/F C/F	C/F	C/F	C/F		
Uptake by plants or animals check biota	✓ soil	Dermal Absorption of Contaminants from Soil	1	1 1	1	1			
Other (list):	V	Inhalation of Fugitive Dust	C/F	C/F C/F	C/F				
Subsurface Soil  (2-15 ft bgs)  Other (list):  Direct release to subsurface soil  Alignation to groundwater  Check groundwater  Check groundwater  Check deck groundwater  Check air  Check biota  Other (list):	✓ groundwater	Ingestion of Groundwater  Dermal Absorption of Contaminants in Groundwater  Inhalation of Volatile Compounds in Tap Water	C/F	C/F C/F	C/F	C/F			
Ground- water  Volatilization  Velous to surface water body  Flow to sediment  Vlytake by plants or animals  Other (list):  Direct release to groundwater  Check groundwater  Check groundwater  Check groundwater  Check surface water  Check sediment  Check biota  Other (list):	air	Inhalation of Outdoor Air Inhalation of Indoor Air Inhalation of Fugitive Dust							
Direct release to surface water check surface water		Ingestion of Surface Water	C/F	C/F C/F	C/F	C/F			
Surface Volatilization check air	✓ surface water	Dermal Absorption of Contaminants in Surface Water	I	l I	I	I			
Water   ✓ Sedimentation check sediment  ✓ Uptake by plants or animals check biota		Inhalation of Volatile Compounds in Tap Water							
Other (list):    Direct release to sediment   Check sediment		Direct Contact with Sediment		C/F C/F					
Uptake by plants or animals check biota Other (list):	✓ biota	Ingestion of Wild or Farmed Foods	C/F	C/F C/F	C/F	C/F	C/F		
	<u> </u>								

# Important Information About Your Geotechnical/Environmental Report

# CONSULTING SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES AND FOR SPECIFIC CLIENTS.

Consultants prepare reports to meet the specific needs of specific individuals. A report prepared for a civil engineer may not be adequate for a construction contractor or even another civil engineer. Unless indicated otherwise, your consultant prepared your report expressly for you and expressly for the purposes you indicated. No one other than you should apply this report for its intended purpose without first conferring with the consultant. No party should apply this report for any purpose other than that originally contemplated without first conferring with the consultant.

#### THE CONSULTANT'S REPORT IS BASED ON PROJECT-SPECIFIC FACTORS.

A geotechnical/environmental report is based on a subsurface exploration plan designed to consider a unique set of project-specific factors. Depending on the project, these may include the general nature of the structure and property involved; its size and configuration; its historical use and practice; the location of the structure on the site and its orientation; other improvements such as access roads, parking lots, and underground utilities; and the additional risk created by scope-of-service limitations imposed by the client. To help avoid costly problems, ask the consultant to evaluate how any factors that change subsequent to the date of the report may affect the recommendations. Unless your consultant indicates otherwise, your report should not be used (1) when the nature of the proposed project is changed (for example, if an office building will be erected instead of a parking garage, or if a refrigerated warehouse will be built instead of an unrefrigerated one, or chemicals are discovered on or near the site); (2) when the size, elevation, or configuration of the proposed project is altered; (3) when the location or orientation of the proposed project is modified; (4) when there is a change of ownership; or (5) for application to an adjacent site. Consultants cannot accept responsibility for problems that may occur if they are not consulted after factors that were considered in the development of the report have changed.

#### SUBSURFACE CONDITIONS CAN CHANGE.

Subsurface conditions may be affected as a result of natural processes or human activity. Because a geotechnical/environmental report is based on conditions that existed at the time of subsurface exploration, construction decisions should not be based on a report whose adequacy may have been affected by time. Ask the consultant to advise if additional tests are desirable before construction starts; for example, groundwater conditions commonly vary seasonally.

Construction operations at or adjacent to the site and natural events such as floods, earthquakes, or groundwater fluctuations may also affect subsurface conditions and, thus, the continuing adequacy of a geotechnical/environmental report. The consultant should be kept apprised of any such events and should be consulted to determine if additional tests are necessary.

#### MOST RECOMMENDATIONS ARE PROFESSIONAL JUDGMENTS.

Site exploration and testing identifies actual surface and subsurface conditions only at those points where samples are taken. The data were extrapolated by your consultant, who then applied judgment to render an opinion about overall subsurface conditions. The actual interface between materials may be far more gradual or abrupt than your report indicates. Actual conditions in areas not sampled may differ from those predicted in your report. While nothing can be done to prevent

such situations, you and your consultant can work together to help reduce their impacts. Retaining your consultant to observe subsurface construction operations can be particularly beneficial in this respect.

#### A REPORT'S CONCLUSIONS ARE PRELIMINARY.

The conclusions contained in your consultant's report are preliminary, because they must be based on the assumption that conditions revealed through selective exploratory sampling are indicative of actual conditions throughout a site. Actual subsurface conditions can be discerned only during earthwork; therefore, you should retain your consultant to observe actual conditions and to provide conclusions. Only the consultant who prepared the report is fully familiar with the background information needed to determine whether or not the report's recommendations based on those conclusions are valid and whether or not the contractor is abiding by applicable recommendations. The consultant who developed your report cannot assume responsibility or liability for the adequacy of the report's recommendations if another party is retained to observe construction.

#### THE CONSULTANT'S REPORT IS SUBJECT TO MISINTERPRETATION.

Costly problems can occur when other design professionals develop their plans based on misinterpretation of a geotechnical/environmental report. To help avoid these problems, the consultant should be retained to work with other project design professionals to explain relevant geotechnical, geological, hydrogeological, and environmental findings, and to review the adequacy of their plans and specifications relative to these issues.

# BORING LOGS AND/OR MONITORING WELL DATA SHOULD NOT BE SEPARATED FROM THE REPORT.

Final boring logs developed by the consultant are based upon interpretation of field logs (assembled by site personnel), field test results, and laboratory and/or office evaluation of field samples and data. Only final boring logs and data are customarily included in geotechnical/environmental reports. These final logs should not, under any circumstances, be redrawn for inclusion in architectural or other design drawings, because drafters may commit errors or omissions in the transfer process. To reduce the likelihood of boring log or monitoring well misinterpretation, contractors should be given ready access to the complete geotechnical engineering/environmental report prepared or authorized for their use. If access is provided only to the report prepared for you, you should advise contractors of the report's limitations, assuming that a contractor was not one of the specific persons for whom the report was prepared, and that developing construction cost estimates was not one of the specific purposes for which it was prepared. While a contractor may gain important knowledge from a report prepared for another party, the contractor should discuss the report with your consultant and perform the additional or alternative work believed necessary to obtain the data specifically appropriate for construction cost estimating purposes. Some clients hold the mistaken impression that simply disclaiming responsibility for the accuracy of subsurface information always insulates them from attendant liability. Providing the best available information to contractors helps prevent costly construction problems and the adversarial attitudes that aggravate them to a disproportionate scale.

#### READ RESPONSIBILITY CLAUSES CLOSELY.

Because geotechnical/environmental engineering is based extensively on judgment and opinion, it is far less exact than other design disciplines. This situation has resulted in wholly unwarranted claims being lodged against consultants. To help prevent this problem, consultants have developed a number of clauses for use in their contracts, reports, and other documents. These responsibility clauses are not exculpatory clauses designed to transfer the consultant's liabilities to other parties; rather, they are definitive clauses that identify where the consultant's responsibilities begin and end. Their use helps all parties involved recognize their individual responsibilities and take appropriate action. Some of these definitive clauses are likely to appear in your report, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to your questions.

The preceding paragraphs are based on information provided by the ASFE/Association of Engineering Firms Practicing in the Geosciences, Silver Spring, Maryland