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REV 2

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.

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ACRONYMS

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	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

ACRONYMS

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
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 ($\mu\text{g}/\text{kg}$) PFOS in sediment taken from an onsite culvert and 4.5 $\mu\text{g}/\text{kg}$ PFOA in surface soil taken onsite near the DOT&PF facilities building. The 2019 soil boring concentrations ranged from not detected to 14 $\mu\text{g}/\text{kg}$ PFOS and 1.9 $\mu\text{g}/\text{kg}$ 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 µg/kg and 1.7 µg/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 ($\mu\text{g/L}$) for the remaining project analytes. The soil limits are reported in $\mu\text{g/kg}$ 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

Method	Analyte	Regulatory		Laboratory LODs/RLs ^c	
		Soil Limit ^a	Water Limit ^b	Soil	Water
PFAS Analytes		(µg/kg)	(ng/L)	(µg/kg)	(ng/L)
537.1 or 537.1M ^d	PFOS	3.0	400	0.5	2.0
	PFOA	1.7	400	0.2	2.0
	PFOS+PFOA (drinking)	-	70	-	-
Petroleum Analytes		(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
EPA 8260 (BTEX)	Benzene	0.022	4.6	0.00625	0.2
	Toluene	6.7	1,100	0.0125	0.5
	Ethylbenzene	0.13	15	0.0125	0.5
	Xylenes Total	1.5	190	0.0375	1.5
PAH Analytes		(mg/kg)	(µg/L)	(mg/kg)	(µg/L)
EPA 8270D-SIM (PAH)	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
	Benzo[b]fluoranthene	20	2.5	0.0125	0.025
	Benzo[g,h,i]perylene	15,000	0.26	0.0125	0.025
	Benzo[k]fluoranthene	190	0.80	0.0125	0.025
	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:

- 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.
- 18 AAC 75 Table C. Groundwater Cleanup Levels.
- May 2021 LODs from SGS North America, Inc. for petroleum and PAH analyses. May 2021 RLs from Eurofins TestAmerica, Sacramento for PFAS analyses.
- 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 TWP 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 TWP's 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);
- 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).



Exhibit 2-2: Well installation at MW-22

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 annular 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 valve 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.

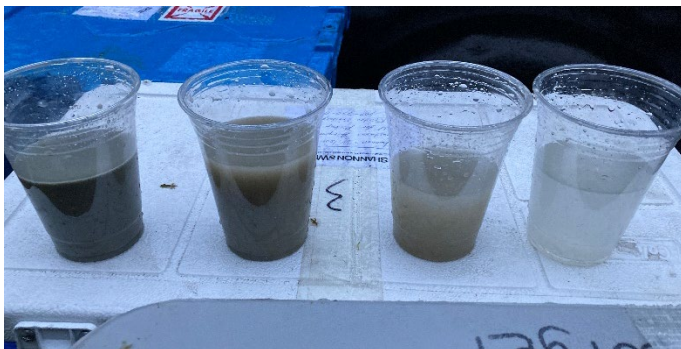


Exhibit 2-3: Entrained silt in MW development water

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 ($^{\circ}\text{C}$), 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: ± 0.1 pH, ± 3 percent $^{\circ}\text{C}$, ± 10 percent DO, ± 3 percent conductivity, and ± 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 (TWP) 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 TWP 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 courier. 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 TWP's 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 TWP's 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 residence 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 µg/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 µg/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 µg/kg surface soil sample 21GST-SS-022 with a concentration of 1.8 µg/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), perfluorotridecanoic acid (PFTrDA), perfluorotetradecanoic acid (PFTeA), and N-methyl perfluorooctane 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 µg/kg, over eight times the DEC migration-to-groundwater cleanup level. PFOA exceeded the soil cleanup level at a concentration of 4.9 µg/kg. PFHxS was also reported at 20 µg/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 µg/kg in the shallow sediment and at 2.5 µg/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 TWP 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 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.



Exhibit 4-1: Drilling near the Alaska Airlines terminal

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. Private-wells 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.

1. 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 µg/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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- EPA, (2016, February 23). *EPA On-Line Tools for Site Assessment Calculation*. Retrieved from <https://www3.epa.gov/ceampubl/learn2model/part-two/onsite/gradient4plus-ns.html>

GUSTAVUS AIRPORT 2021 SITE CHARACTERIZATION
TABLE 1: GROUNDWATER ELEVATIONS

SHANNON & WILSON, INC.

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

SHANNON & WILSON, INC.

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.

* 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**

Analyte	Regulatory Limit	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	
		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	10/29/2021	10/29/2021	10/29/2021	10/29/2021	10/29/2021	10/29/2021	10/29/2021	10/29/2021	10/29/2021	10/29/2021
		Units	Soil	Soil	Soil	Soil	Soil	Soil	Soil	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 (9Cl-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 (11Cl-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.
 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.
 µg/kg = micrograms per kilogram;

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

SHANNON & WILSON, INC.

Analyte	Regulatory Limit	Sample: 21GST-SS-011	21GST-SS-012	21GST-SS-013	21GST-SS-014	21GST-SS-015	21GST-SS-016	21GST-SS-017	21GST-SS-018	21GST-SS-019	21GST-SS-020	21GST-SS-021	21GST-SS-022	21GST-SS-023	
		Date: 10/31/2021	10/31/2021	10/31/2021	10/29/2021	10/29/2021	10/29/2021	10/29/2021	10/29/2021	10/29/2021	10/29/2021	10/29/2021	10/29/2021	10/29/2021	10/29/2021
	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 (9Cl-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.
 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.
 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.
 µg/kg = micrograms per kilogram;

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

SHANNON & WILSON, INC.

Analyte	Regulatory Limit	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
		Date: 10/29/2021	Date: 10/29/2021	10/29/2021	Duplicate	10/29/2021	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
		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 (9Cl-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 (11Cl-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.
 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.
 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.
 µg/kg = micrograms per kilogram;

**GUSTAVUS AIRPORT 2021 SITE CHARACTERIZATION
TABLE 3: SOIL BORING PFAS RESULTS**

SHANNON & WILSON, INC.

Analyte	Regulatory Limit	Units	Location: 21GST-SB001				21GST-SB002				21GST-SB003			21GST-SB004			
			Sample:	Sample 1	Sample 2	Sample 3	Sample 4	Sample 1	Sample 2	Sample 3	Sample 4	Sample 1	Sample 2	Sample 3	Sample 1	Sample 2	Sample 3
			Depth:	0.00'-0.25'	3.9'-4.1'	7.9'-8.1'	13.9'-14.1'	0.00'-0.25'	4.4'-4.6'	8.9'-9.1'	13.4'-13.6'	0.00'-0.25'	3.7'-3.9'	9.4'-9.6'	0.00'-0.25'	3.7'-3.9'	8.9'-9.1'
			Date:	10/30/2021	10/30/2021	10/30/2021	10/30/2021	10/30/2021	10/30/2021	10/30/2021	10/30/2021	10/30/2021	10/31/2021	10/31/2021	10/31/2021	10/31/2021	10/31/2021
			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 (PFTTrDA)	—	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 (9Cl-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.
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 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;

**GUSTAVUS AIRPORT 2021 SITE CHARACTERIZATION
TABLE 3: SOIL BORING PFAS RESULTS**

SHANNON & WILSON, INC.

Analyte	Regulatory Limit	Units	Location: 21GST-SB005			21GST-SB006				21GST-SB007				21GST-SB008			
			Sample:	Sample 1	Sample 2	Sample 3	Sample 1	Sample 2	Sample 3	Sample 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'
			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
		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 (PFTriDA)	—	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 (9Cl-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.
 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;

**GUSTAVUS AIRPORT 2021 SITE CHARACTERIZATION
TABLE 3: SOIL BORING PFAS RESULTS**

SHANNON & WILSON, INC.

Analyte	Regulatory Limit	Units	Location: 21GST-SB009					21GST-SB010				21GST-SB011				
			Sample: Sample 1		Sample 2	Sample 3	Sample 4	Sample 1		Sample 2	Sample 3	Sample 1	Sample 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'
			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
			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 (PFTTrDA)	—	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 (9Cl-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-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;

**GUSTAVUS AIRPORT 2021 SITE CHARACTERIZATION
TABLE 3: SOIL BORING PFAS RESULTS**

Analyte	Regulatory Limit	Units	Location: 21GST-SB012			21GST-SB013			21GST-SB014			
			Sample:	Sample 1	Sample 2	Sample 3	Sample 1	Sample 2	Sample 3	Sample 1	Sample 2	Sample 3
			Depth:	0.00'-0.25'	2.9'-3.1'	8.4'-8.6'	0.00'-0.25'	3.4'-3.6'	9.9'-10.1'	0.00'-0.25'	3.4'-3.6'	9.4'-9.6'
			Date:	10/30/2021	10/30/2021	10/30/2021	10/30/2021	10/30/2021	10/30/2021	10/31/2021	10/31/2021	10/31/2021
			Soil	Soil	Soil	Soil	Soil	Soil	Soil	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 (PFTTrDA)	—	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 (9Cl-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.
 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;

**GUSTAVUS AIRPORT 2021 SITE CHARACTERIZATION
TABLE 4: MONITORING WELL SOIL BORING PFAS RESULTS**

Analyte	Regulatory Limit	Units	21GST-MW13							21GST-MW14							
			Location:	Sample 1	Sample 2		Sample 3	Sample 4	Sample 5	Sample 7	Sample 1		Sample 2	Sample 3	Sample 4	Sample 5	Sample 6
			Sample:	Sample 1	Sample 2	Sample 2	Sample 3	Sample 4	Sample 5	Sample 7	Sample 1	Duplicate	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6
			Depth:	1.9'-2.1'	8.9'-9.1'	8.9'-9.1'	19.9'-20.1'	24.9'-25.1'	29.9'-30.1'	42.9'-43.1'	0.9'-1.1'	0.9'-1.1'	6.9'-7.1'	16.9'-17.1'	24.9'-25.1'	33.9'-34.1'	43.9'-44.1'
Date:	10/19/2021	10/19/2021	Duplicate	10/19/2021	10/19/2021	10/19/2021	10/19/2021	10/27/2021	Duplicate	10/27/2021	10/27/2021	10/27/2021	10/27/2021	10/27/2021	10/27/2021		
Soil	Soil	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 (PFTriDA)	—	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 (9Cl-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.
 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;

**GUSTAVUS AIRPORT 2021 SITE CHARACTERIZATION
TABLE 4: MONITORING WELL SOIL BORING PFAS RESULTS**

Analyte	Regulatory Limit	Units	Location: 21GST-MW15						21GST-MW16				21GST-MW17			
			Sample:	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Sample 1	Sample 2	Sample 3	Sample 4	Sample 1	Sample 2	
			Depth:	0.00'-0.25'	8.4'-8.6'	17.9'-18.1'	27.9'-28.1'	27.9'-28.1'	38.9'-39.1'	47.9'-48.1'	0.00'-0.25'	3.7'-3.9'	9.4'-9.6'	13.4'-13.6'	11.9'-12.1'	36.9'-37.1'
			Date:	10/29/2021	10/29/2021	10/29/2021	10/29/2021	Duplicate	10/29/2021	10/29/2021	10/31/2021	10/31/2021	10/31/2021	10/31/2021	10/22/2021	10/22/2021
			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 (9Cl-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 (11Cl-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;

**GUSTAVUS AIRPORT 2021 SITE CHARACTERIZATION
TABLE 4: MONITORING WELL SOIL BORING PFAS RESULTS**

Analyte	Regulatory Limit	Units	Location: 21GST-MW18						21GST-MW19		21GST-MW20				
			Sample:	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Sample 1	Sample 2	Sample 1	Sample 2		
			Depth:	0.4'-0.6'	4.9'-5.1'	4.9'-5.1'	16.9'-17.1'	24.9'-25.1'	34.9'-35.1'	44.9'-45.1'	2.9'-3.1'	47.9'-48.1'	4.9'-5.1'	4.9'-5.1'	36.9'-37.1'
			Date:	10/28/2021	10/28/2021	Duplicate	10/28/2021	10/28/2021	10/28/2021	10/28/2021	10/31/2021	11/1/2021	11/1/2021	Duplicate	11/1/2021
			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	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 (PFTTrDA)	—	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 (9Cl-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.
 µg/kg = micrograms per kilogram;

**GUSTAVUS AIRPORT 2021 SITE CHARACTERIZATION
TABLE 4: MONITORING WELL SOIL BORING PFAS RESULTS**

Analyte	Regulatory Limit	Units	Location: 21GST-MW21		21GST-MW22		21GST-MW23		21GST-MW24		21GST-MW25	
			Sample 1	Sample 2	Sample 1	Sample 2	Sample 1	Sample 2	Sample 1	Sample 2	Sample 1	Sample 2
			Depth: 7.4'-7.6'	41.9'-42.1'	4.4'-4.6'	39.9'-40.1'	12.9'-13.1'	41.9'-42.1'	3.9'-4.1'	27.9'-28.1'	3.9'-4.1'	46.9'-47.1'
			Date: 10/25/2021	10/25/2021	10/25/2021	10/25/2021	10/20/2021	10/20/2021	10/24/2021	10/24/2021	10/23/2021	10/23/2021
			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 (9Cl-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.
 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;

**GUSTAVUS AIRPORT 2021 SITE CHARACTERIZATION
TABLE 5: SOIL BORING PETROLEUM RESULTS**

SHANNON & WILSON, INC.

Analytical Method	Analyte	Regulatory Limit	Units	Boring: 21GST-SB001		21GST-SB002		21GST-SB003		21GST-SB004		21GST-SB005		21GST-SB007					
				Sample:	Sample 1	Sample 2	Sample 1	Sample 2	Sample 1	Sample 2	Sample 1	Sample 2	Sample 1	Sample 2	Sample 1	Sample 2	Sample 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'	3.9'-4.1'	0.00'-0.25'	0.00'-0.25'	3.9'-4.1'
				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	10/31/2021	10/31/2021	10/30/2021	10/30/2021	10/30/2021	Duplicate	10/30/2021
				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	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			
8270D SIM (PAH)	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			
	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			
	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				
SW8260D (BTEX)	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			
	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			
	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.
J 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

**GUSTAVUS AIRPORT 2021 SITE CHARACTERIZATION
TABLE 5: SOIL BORING PETROLEUM RESULTS**

Analytical Method	Analyte	Regulatory Limit	Units	Boring: 21GST-SB009			21GST-SB011			21GST-SB012		21GST-SB013			
				Sample:	Sample 1	Sample 2	Sample 1	Sample 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'
				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
				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		
8270D SIM (PAH)	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		
	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		
	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			
SW8260D (BTEX)	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		
	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		
	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.
J 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

**GUSTAVUS AIRPORT 2021 SITE CHARACTERIZATION
TABLE 6: MONITORING WELL PFAS RESULTS**

Analyte	EPA LHA	Sample: MW-1-15 Date: 10/26/2021 Units	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		
			10/26/2021 Water	10/26/2021 Water	Duplicate Water	10/26/2021 Water	10/26/2021 Water	10/26/2021 Water	10/25/2021 Water	10/25/2021 Water	10/25/2021 Water	10/26/2021 Water	10/25/2021 Water	10/25/2021 Water	10/25/2021 Water	Duplicate Water	10/25/2021 Water	10/31/2021 Water	10/31/2021 Water	Duplicate 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 (9Cl-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)	70†	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.
- 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.
- ‡ Minimum concentration, the LHA Combined concentration 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

**GUSTAVUS AIRPORT 2021 SITE CHARACTERIZATION
TABLE 6: MONITORING WELL PFAS RESULTS**

Analyte	EPA LHA	Sample: MW-9-10 Date: 10/25/2021 Units	MW-13-20		MW-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-18-50		MW-19-15
			10/27/2021	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
		Water	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 (PFTTrDA)	-	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 (9Cl-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)	70†	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)	70†	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.
- 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.
- ‡ Minimum concentration, the LHA Combined concentration 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

**GUSTAVUS AIRPORT 2021 SITE CHARACTERIZATION
TABLE 6: MONITORING WELL PFAS RESULTS**

SHANNON & WILSON, INC.

Analyte	EPA LHA	Sample: Date: Units	MW-19-50		MW-20-15	MW-20-40	MW-21-15	MW-21-45		MW-22-15	MW-22-40	MW-23-20	MW-23-50		MW-24-10	MW-24-30	MW-25-15	MW-25-47		GAC 2021
			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
			Water	Water	Water	Water	Water	Water	Water	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 (9Cl-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 (11Cl-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)	70†	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)	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.
- 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.
- ‡ Minimum concentration, the LHA Combined concentration 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

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

Analyte	EPA LHA	Sample: 21GST-TWP-1 Date: 10/27/2021 Units Water	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	
			10/27/2021 Water	10/28/2021 Water	Duplicate 10/28/2021 Water	10/28/2021 Water	10/30/2021 Water	10/30/2021 Water	10/28/2021 Water	10/30/2021 Water	10/27/2021 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 (9Cl-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)		ng/L	<1.8	44	<1.8	<1.8	340	170	8.0	19	150	74	63
Perfluorooctanoic acid (PFOA)	70†	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 quality-control (QC) failures.
- Bold** Concentration exceeds LHA level.
- 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.
- ‡ Minimum concentration, the LHA Combined concentration 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

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

Analyte	EPA LHA	Sample: Date: Units	21GST-TWP-11		21GST-TWP-12	21GST-TWP-13	21GST-TWP-14		21GST-TWP-15		PW-016
			10/30/2021	Duplicate	10/30/2021	10/24/2021	10/24/2021	Duplicate	10/27/2021	Duplicate	10/26/2021
			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 (9Cl-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 (11Cl-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.
- 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.
- ‡ Minimum concentration, the LHA Combined concentration 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

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

Analyte	EPA LHA	Sample: 21GST-SW-001 Date: 10/18/2021 Units: Water	21GST-SW-002	21GST-SW-003	21GST-SW-005	21GST-SW-006	21GST-SW-007	21GST-SW-008	21GST-SW-009	21GST-SW-010	21GST-SW-011	21GST-SW-012	
			10/18/2021 Water	10/18/2021 Water	10/17/2021 Water	10/17/2021 Water	10/17/2021 Water	10/17/2021 Water	10/18/2021 Water	10/17/2021 Water	10/17/2021 Water	10/17/2021 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 (PFTTrDA)	-	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 (9Cl-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.
- 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.
- ‡ Minimum concentration, the LHA Combined concentration 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

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

Analyte	EPA LHA	Units	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	10/17/2021	Duplicate	10/17/2021	10/17/2021	10/17/2021	10/18/2021
			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 (PFTTrDA)	-	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 (9Cl-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.
- 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.
- ‡ Minimum concentration, the LHA Combined concentration 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

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

Analyte	EPA LHA	Sample: Date: Units	21GST-SW-024		21GST-SW-025	21GST-SW-026	21GST-SW-027		21GST-SW-028	21GST-SW-029	21GST-SW-030	21GST-SW-031	
			10/17/2021 Water	Duplicate Water	10/18/2021 Water	10/18/2021 Water	10/18/2021 Water	Duplicate Water	10/18/2021 Water	10/18/2021 Water	10/18/2021 Water	10/31/2021 Water	Duplicate 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 (PFTTrDA)	-	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 (9Cl-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†	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.
- 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.
- ‡ Minimum concentration, the LHA Combined concentration 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

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

SHANNON & WILSON, INC.

Analyte	Regulatory Limit	Units	Sample: 21GST-SED-004	21GST-SED-005	21GST-SED-006	21GST-SED-007	21GST-SED-008	21GST-SED-009		21GST-SED-010	21GST-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'	0.0'-0.5'	2.0'-2.5'	0.0'-0.5'	0.0'-0.5'	2.0'-2.5'
			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
			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 (9Cl-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.
 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.
 µg/kg = micrograms per kilogram;

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

SHANNON & WILSON, INC.

Analyte	Regulatory Limit	Sample: 21GST-SED-013 Depth: 0.0'-0.5' Date: 10/17/2021 Units Sediment	21GST-SED-014	21GST-SED-015	21GST-SED-016	21GST-SED-017		21GST-SED-018		21GST-SED-019	21GST-SED-020		
			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 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
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 (9Cl-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.
 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.
 µg/kg = micrograms per kilogram;

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

SHANNON & WILSON, INC.

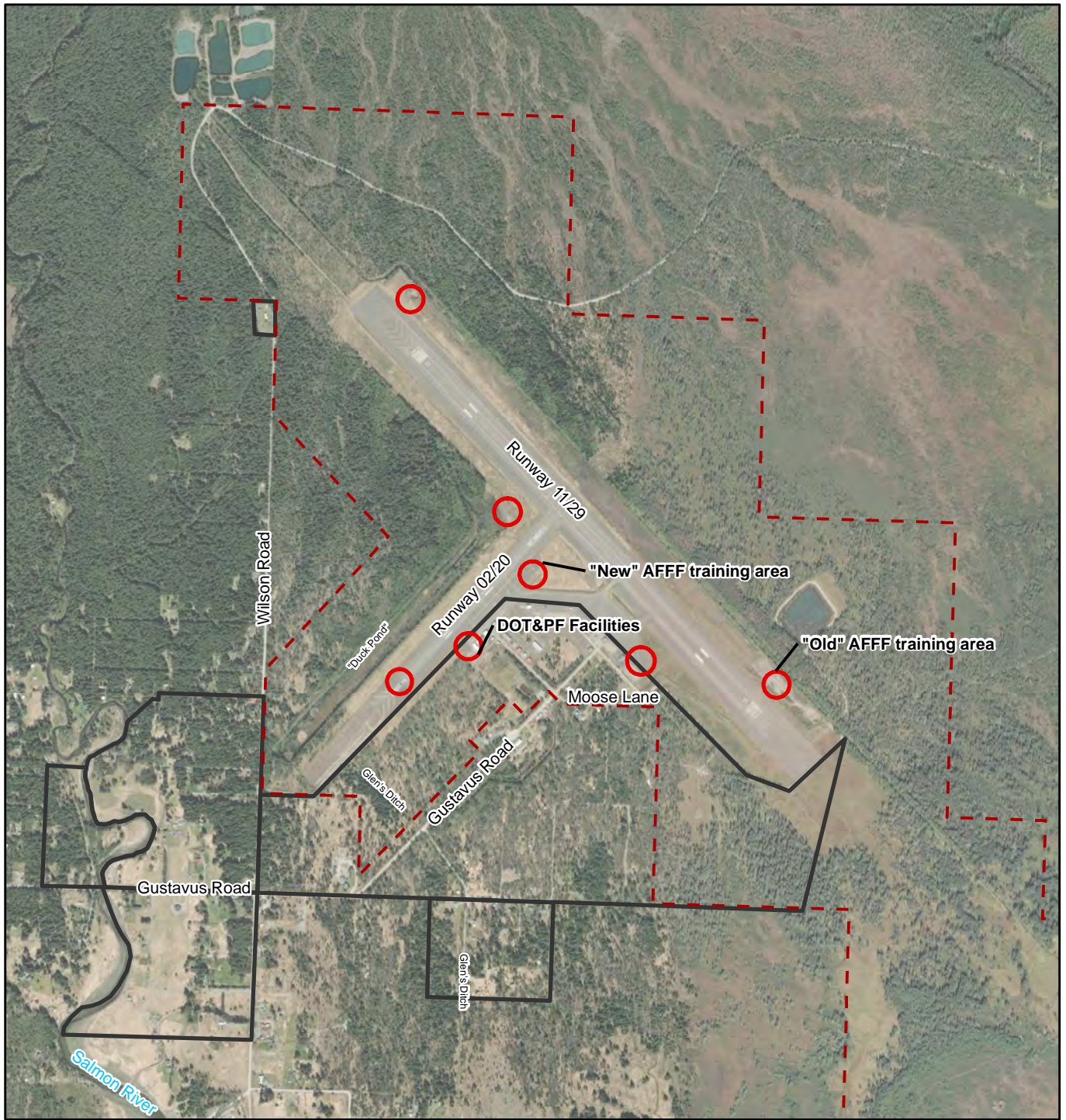
Analyte	Regulatory Limit	Sample: Depth: Date: Units	21GST-SED-021		21GST-SED-022	21GST-SED-023		21GST-SED-024				21GST-SED-025	21GST-SED-026
			0.0'-0.5'	2.0'-2.5'	0.0'-0.5'	0.0'-0.5'	2.0'-2.5'	0.0'-0.5'	0.0'-0.5'	2.0'-2.5'	2.0'-2.5'	0.0'-0.5'	0.0'-0.5'
			10/17/2021	10/17/2021	10/18/2021	10/18/2021	10/18/2021	10/17/2021	Duplicate	10/17/2021	Duplicate	10/18/2021	10/18/2021
		Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	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 (9Cl-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.
 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.
 µg/kg = micrograms per kilogram;

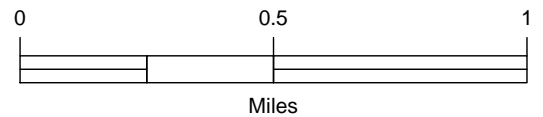
**GUSTAVUS AIRPORT 2021 SITE CHARACTERIZATION
TABLE 9: SEDIMENT SAMPLE PFAS RESULTS**

Analyte	Regulatory Limit	Units	Sample: 21GST-SED-027		21GST-SED-028		21GST-SED-029	21GST-SED-030
			Depth: 0.0'-0.5'	0.0'-0.5'	0.0'-0.5'	2.0'-2.5'	0.0'-0.5'	0.0'-0.5'
			Date: 10/18/2021	Duplicate	10/18/2021	10/18/2021	10/18/2021	10/18/2021
			Sediment	Sediment	Sediment	Sediment	Sediment	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 (9Cl-PF3ONS)	—	µg/kg	<0.27	<0.28	<0.90	<0.31	<0.28	<0.26
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-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.
 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.
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 J* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc.
 µg/kg = micrograms per kilogram;

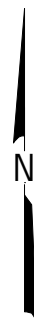


Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

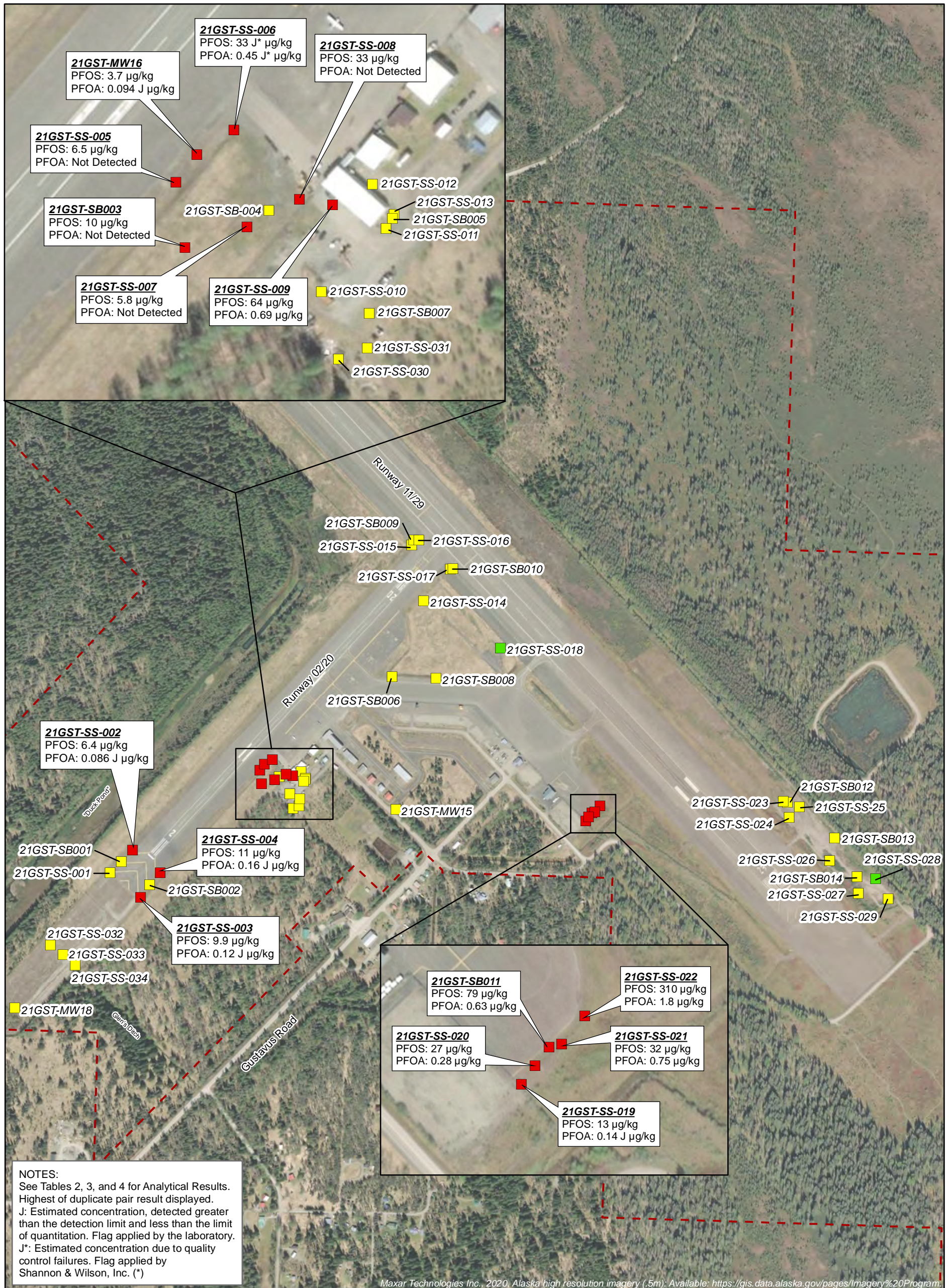


LEGEND

- - - Airport Property Boundary
- Sampling Boundaries
- Potential AFFF Use Areas



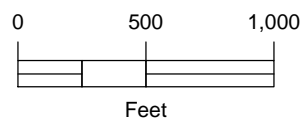
Gustavus Airport PFAS Site Characterization Report Gustavus, Alaska	
SITE MAP	
May 2022	102599-018
SHANNON & WILSON, INC. <small>GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS</small>	
Figure 1	



NOTES:
 See Tables 2, 3, and 4 for Analytical Results.
 Highest of duplicate pair result displayed.
 J: Estimated concentration, detected greater than the detection limit and less than the limit of quantitation. Flag applied by the laboratory.
 J*: Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (*)

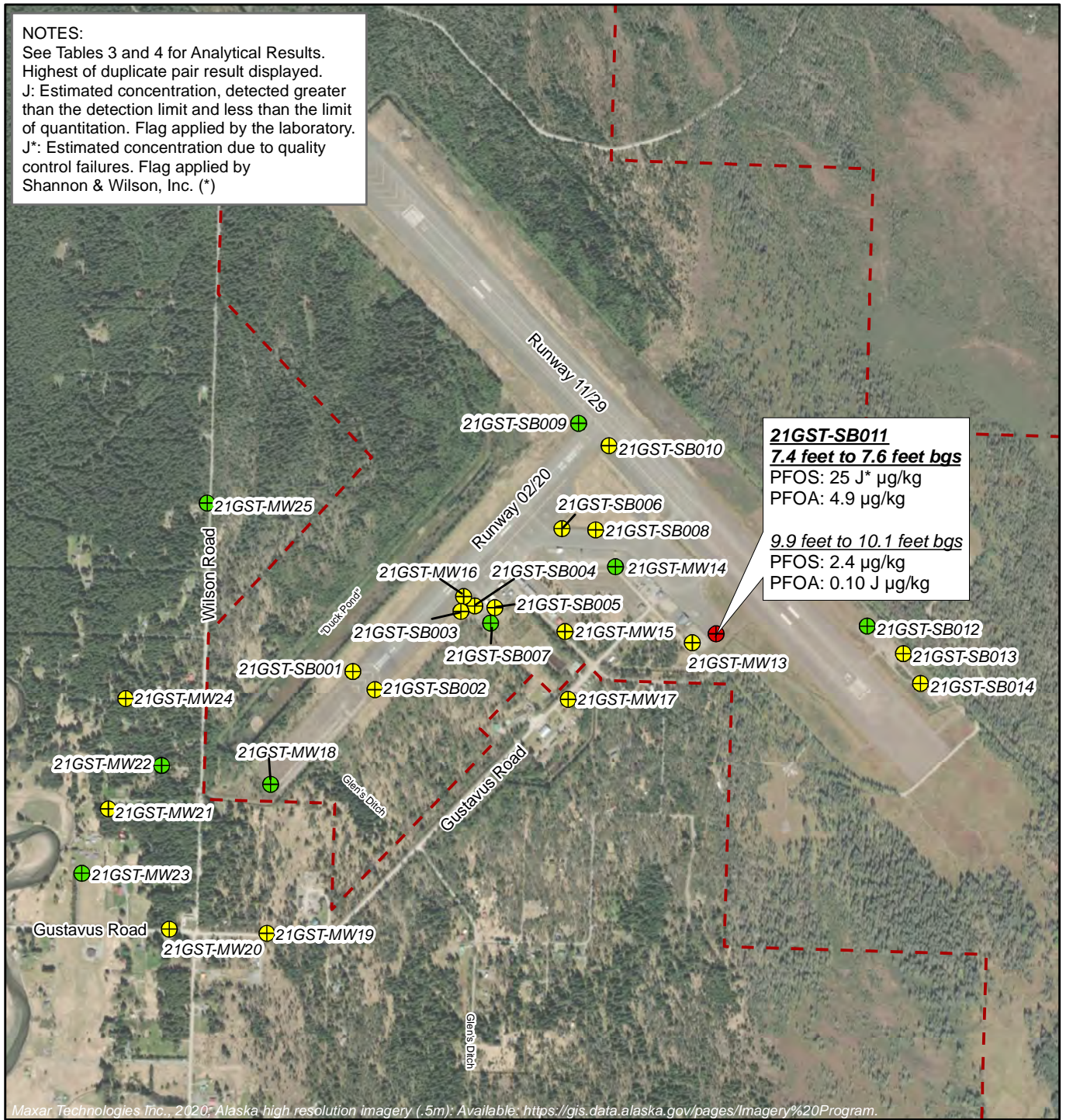
LEGEND

- Analytical Result for Any PFAS Compound
- PFAS Analytes Not Detected
 - PFAS Concentration Does Not Exceed Regulatory Levels
 - PFAS Concentrations Exceed Regulatory Levels
 - - - - Airport Property Boundary



Gustavus Airport PFAS Site Characterization Report Gustavus, Alaska	
SURFACE SOIL PFAS RESULTS	
May 2022	102599-018
SHANNON & WILSON, INC. <small>GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS</small>	
Figure 2	

NOTES:
 See Tables 3 and 4 for Analytical Results.
 Highest of duplicate pair result displayed.
 J: Estimated concentration, detected greater than the detection limit and less than the limit of quantitation. Flag applied by the laboratory.
 J*: Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (*)

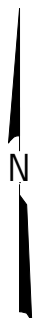
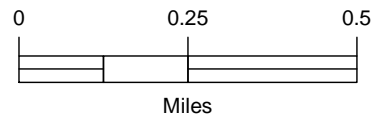


Maxar Technologies Inc., 2020; Alaska high resolution imagery (.5m). Available: <https://gis.data.alaska.gov/pages/Imagery%20Program>.

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

**SUBSURFACE SOIL BORING
 PFAS RESULTS**

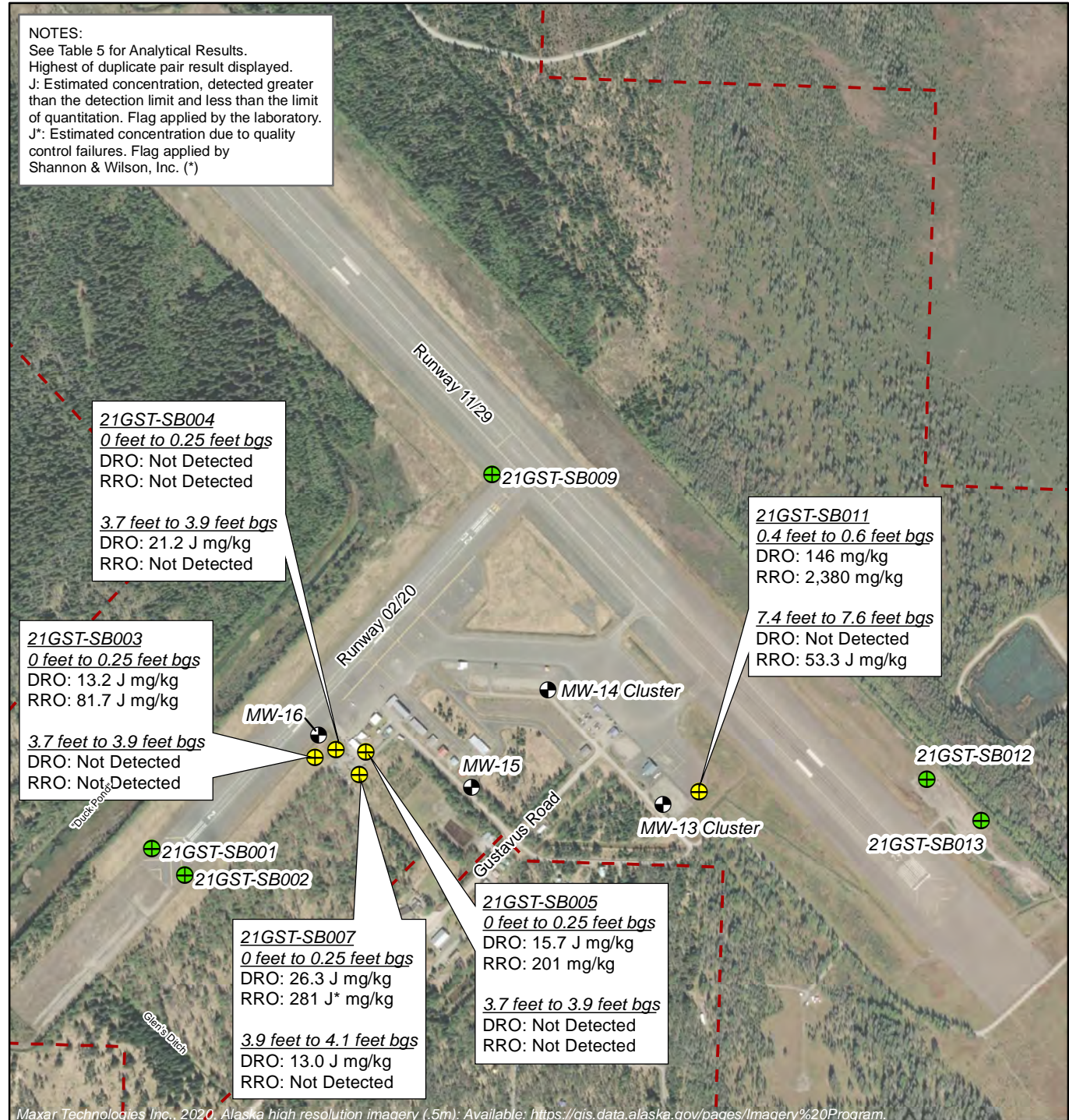
May 2022

102599-018

SHANNON & WILSON, INC.
 GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

Figure 3

NOTES:
 See Table 5 for Analytical Results.
 Highest of duplicate pair result displayed.
 J: Estimated concentration, detected greater than the detection limit and less than the limit of quantitation. Flag applied by the laboratory.
 J*: Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (*)

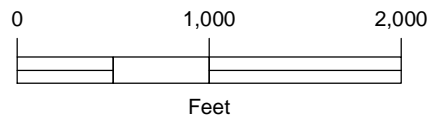


Maxar Technologies Inc., 2020. Alaska high resolution imagery (.5m). Available: <https://gis.data.alaska.gov/pages/Imagery%20Program>.

LEGEND

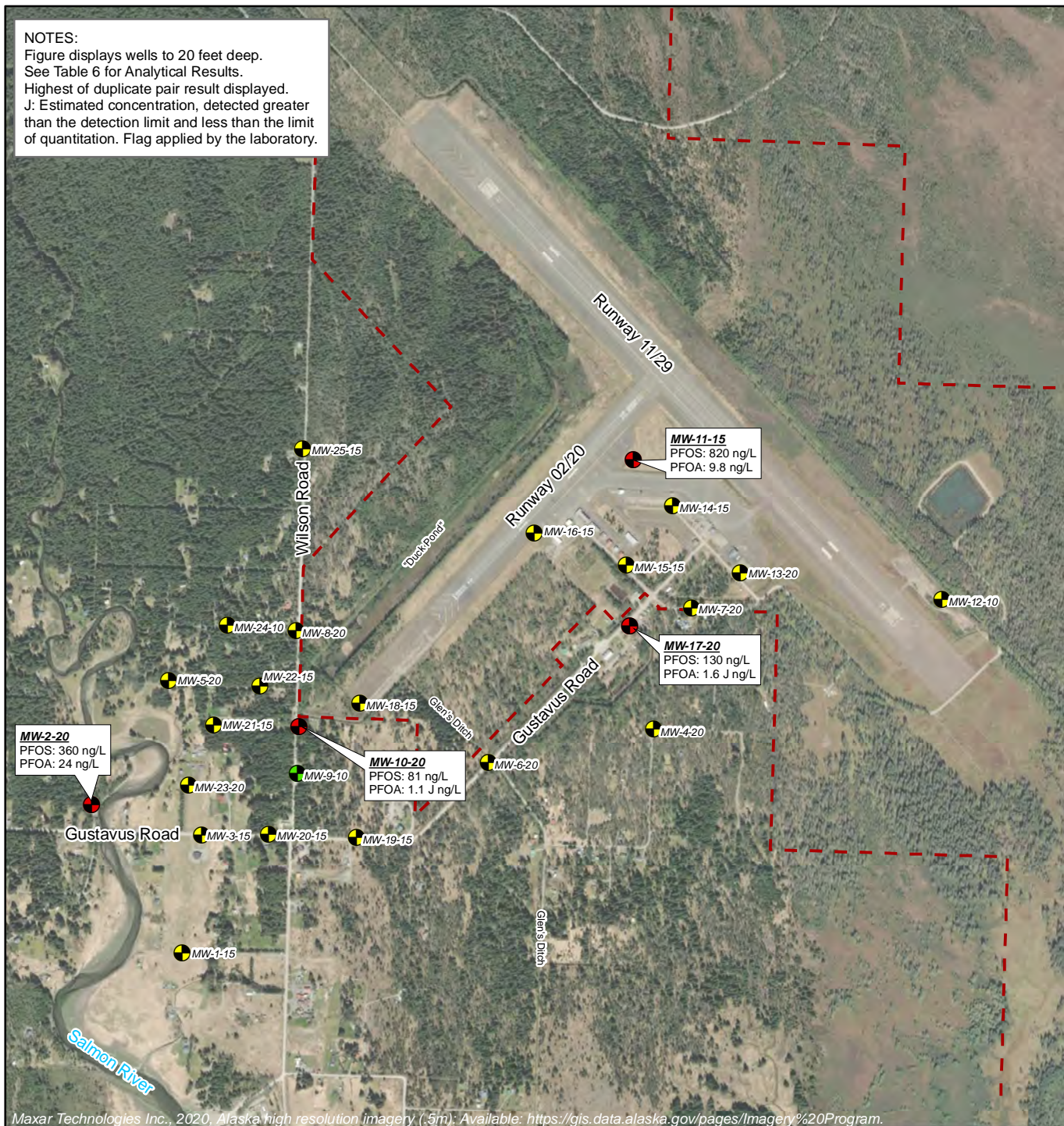
Analytical Result for Petroleum Analytes

- ⊕ Petroleum Analytes Not Detected
- ⊕ Petroleum Analytes Detected at Concentrations Not Exceeding Regulatory Levels
- ⊕ Monitoring Well
- - - Airport Property Boundary



Gustavus Airport PFAS Site Characterization Report Gustavus, Alaska	
SURFACE AND SUBSURFACE SOIL BORING PETROLEUM RESULTS	
May 2022	102599-018
SHANNON & WILSON, INC. GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS	
Figure 4	

NOTES:
 Figure displays wells to 20 feet deep.
 See Table 6 for Analytical Results.
 Highest of duplicate pair result displayed.
 J: Estimated concentration, detected greater than the detection limit and less than the limit of quantitation. Flag applied by the laboratory.

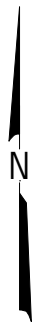
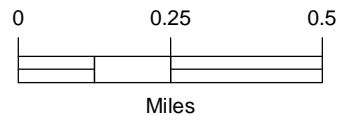


Maxar Technologies Inc., 2020, Alaska high resolution imagery (.5m). Available: <https://gis.data.alaska.gov/pages/Imagery%20Program>.

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

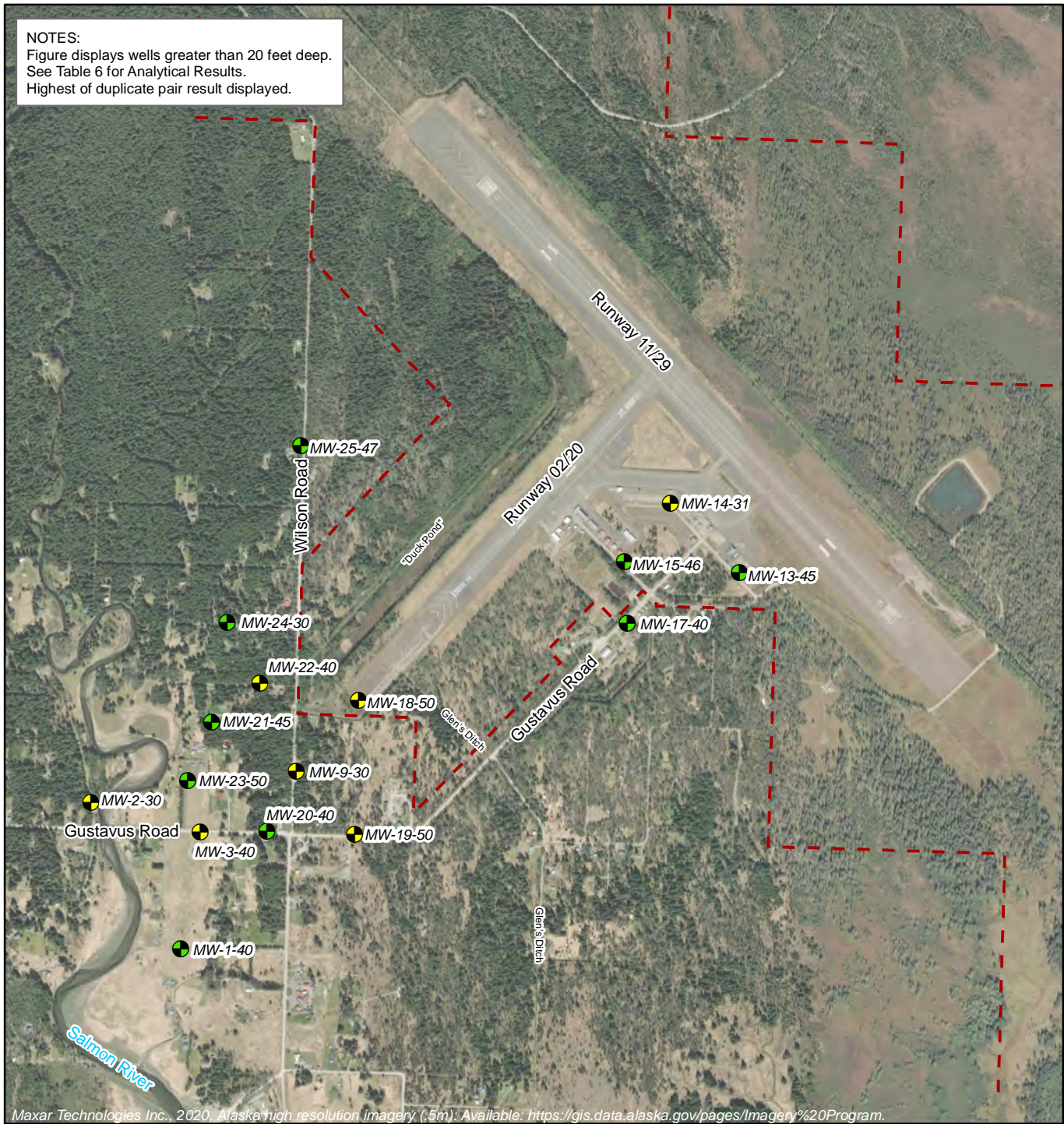
May 2022

102599-018

SHANNON & WILSON, INC.
 GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

Figure 5




NOTES:
 Figure displays wells greater than 20 feet deep.
 See Table 6 for Analytical Results.
 Highest of duplicate pair result displayed.

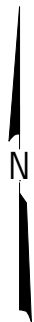
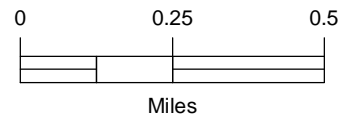


Maxar Technologies Inc., 2020, Alaska high resolution imagery (.5m). Available: <https://gis.data.alaska.gov/pages/Imagery%20Program>.

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

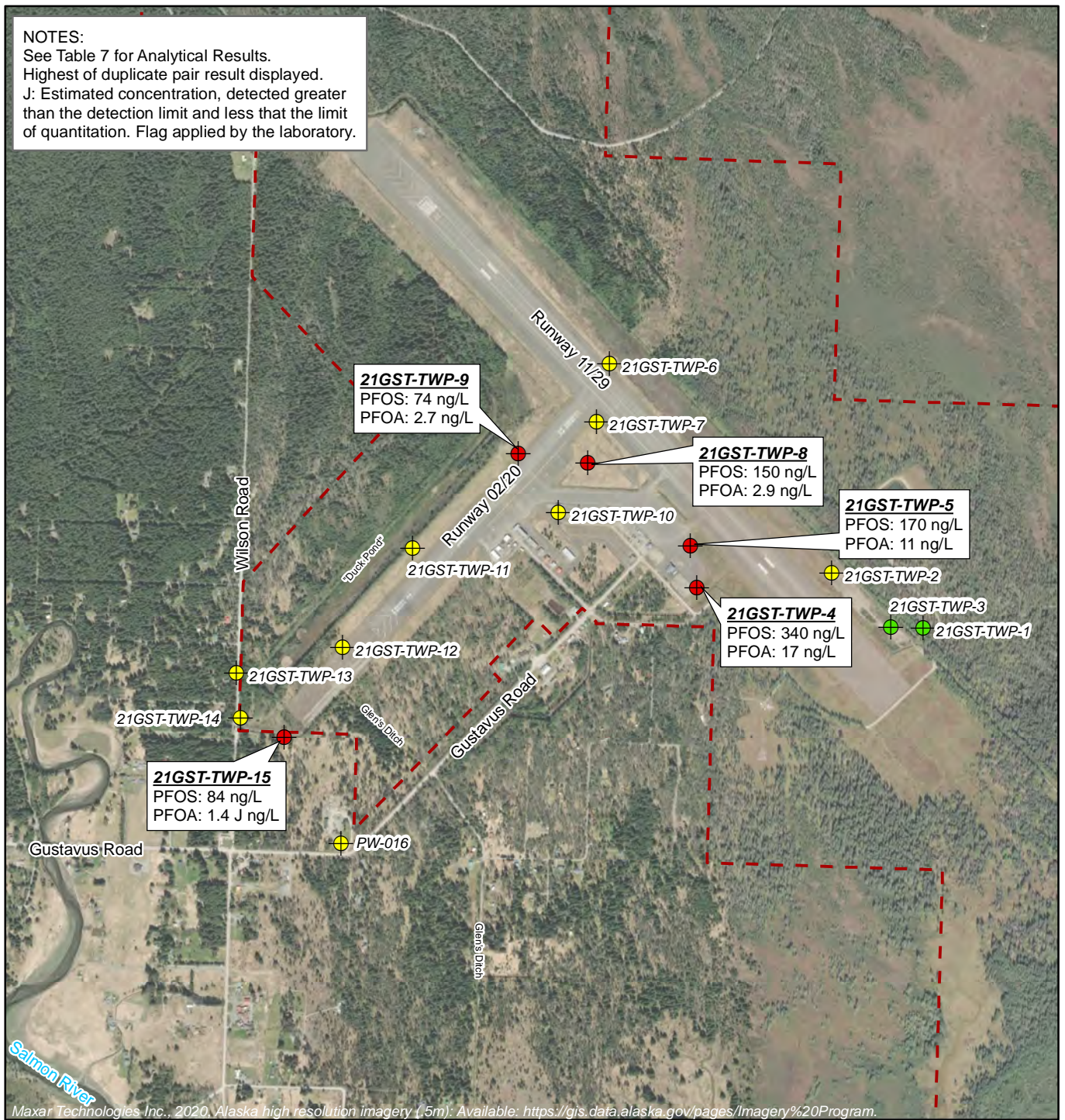
May 2022

102599-018

SHANNON & WILSON, INC.
 GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

Figure 6

NOTES:
 See Table 7 for Analytical Results.
 Highest of duplicate pair result displayed.
 J: Estimated concentration, detected greater than the detection limit and less than the limit of quantitation. Flag applied by the laboratory.

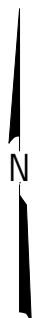
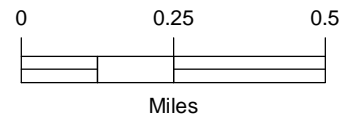


Maxar Technologies Inc., 2020, Alaska high resolution imagery (.5m). Available: <https://gis.data.alaska.gov/pages/Imagery%20Program>.

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

**TEMPORARY WELL POINT
 PFAS RESULTS**

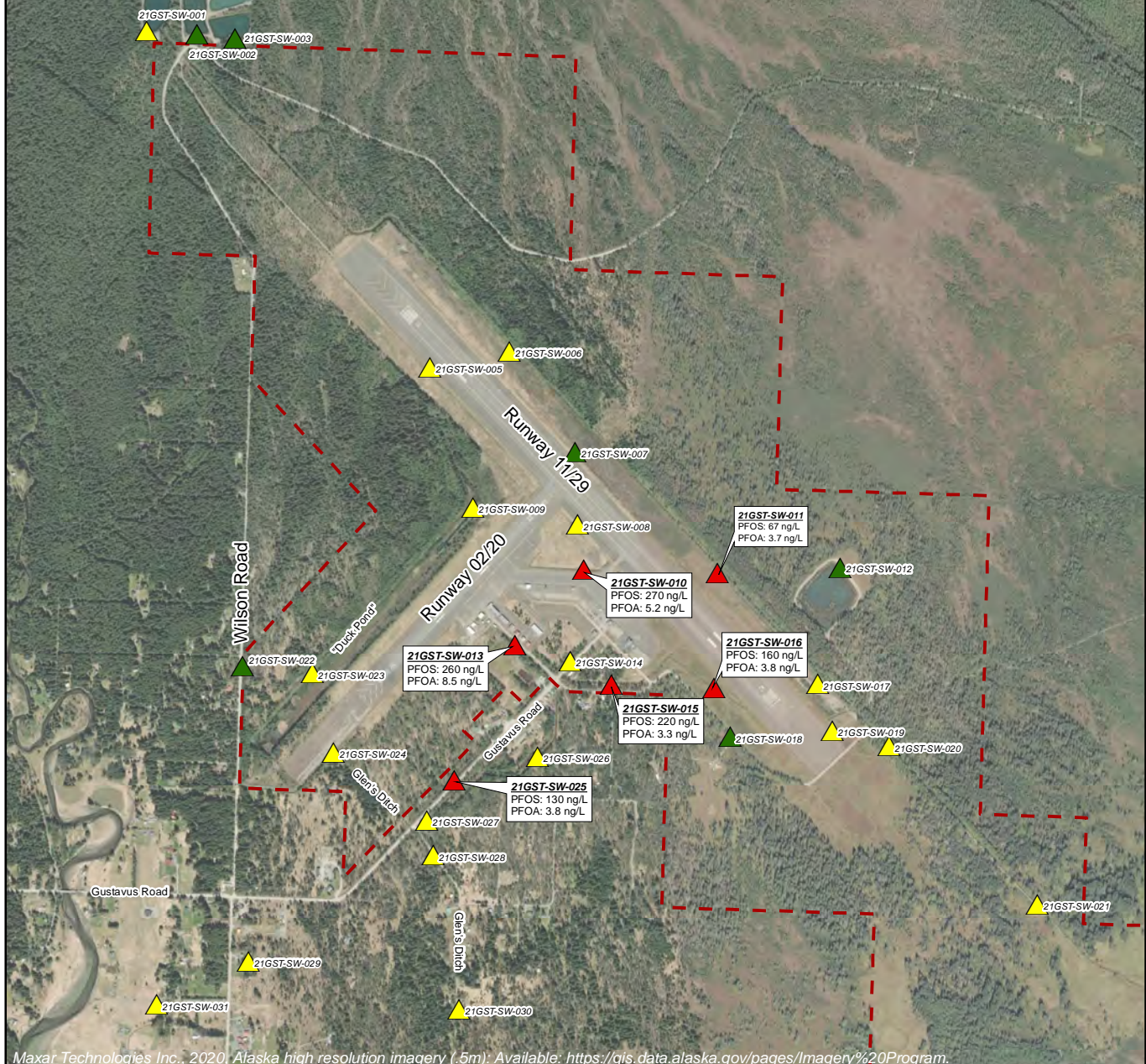
May 2022

102599-018

SHANNON & WILSON, INC.
 GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

Figure 7

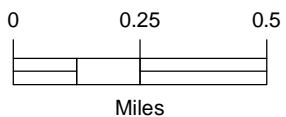
NOTES:
 See Table 8 for Analytical Results.
 Highest of duplicate pair result displayed.



Maxar Technologies Inc., 2020 Alaska high resolution imagery (.5m). Available: <https://gis.data.alaska.gov/pages/Imagery%20Program>.

LEGEND

- Analyte 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

**SURFACE WATER
 PFAS SAMPLE RESULTS**

May 2022 102599-018

SHANNON & WILSON, INC.
 GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS **Figure 8**

NOTES:
 See Table 9 for Analytical Results.
 Highest of duplicate pair result displayed.
 *Deep sediment samples also collected at these locations.

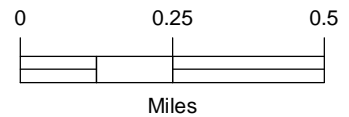


Maxar Technologies Inc., 2020, Alaska high resolution imagery (.5m). Available: <https://gis.data.alaska.gov/pages/Imagery%20Program>.

LEGEND

Analyte 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

**SEDIMENT
 PFAS SAMPLE RESULTS**

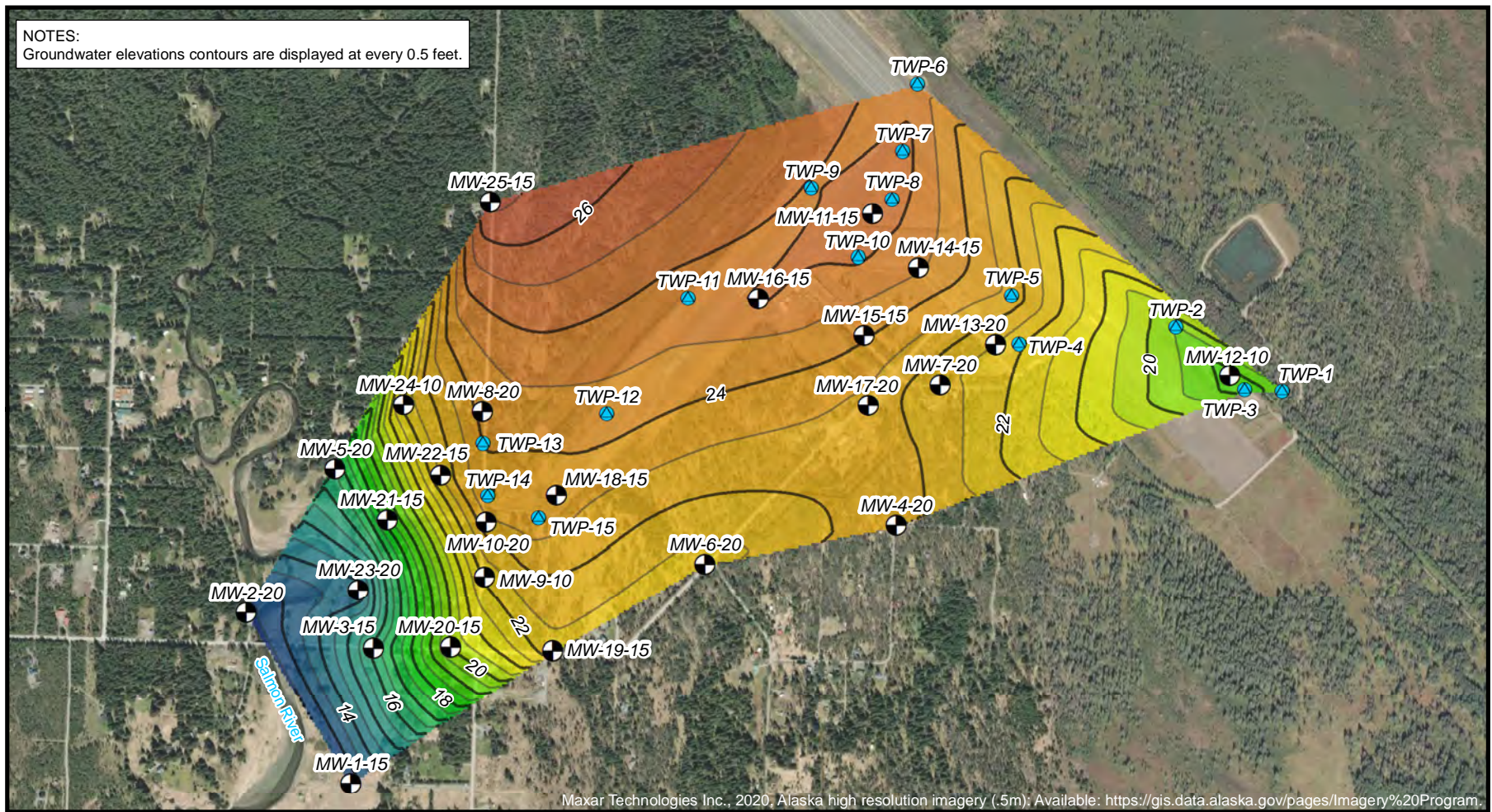
May 2022

102599-018

SHANNON & WILSON, INC.
 GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

Figure 9

NOTES:
Groundwater elevations contours are displayed at every 0.5 feet.

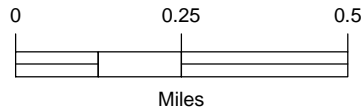


Maxar Technologies Inc., 2020, Alaska high resolution imagery (.5m); Available: <https://gis.data.alaska.gov/pages/Imagery%20Program>.

LEGEND

Groundwater Elevation (ft)	15.1 - 15.5	19.1 - 19.5	23.1 - 23.5
12.3 - 12.5	15.6 - 16.0	19.6 - 20.0	23.6 - 24.0
12.6 - 13.0	16.1 - 16.5	20.1 - 20.5	24.1 - 24.5
13.1 - 13.5	16.6 - 17.0	20.6 - 21.0	24.6 - 25.0
13.6 - 14.0	17.1 - 17.5	21.1 - 21.5	25.1 - 25.5
14.1 - 14.5	17.6 - 18.0	21.6 - 22.0	25.6 - 26.0
14.6 - 15.0	18.1 - 18.5	22.1 - 22.5	26.1 - 26.5
	18.6 - 19.0	22.6 - 23.0	26.6 - 27.0

- Monitoring Well
- Temporary Well Point



Gustavus Airport
PFAS Site Characterization Report
Gustavus, Alaska

**HYDRAULIC GRADIENT
WELLS SHALLOWER
THAN 20 FEET**

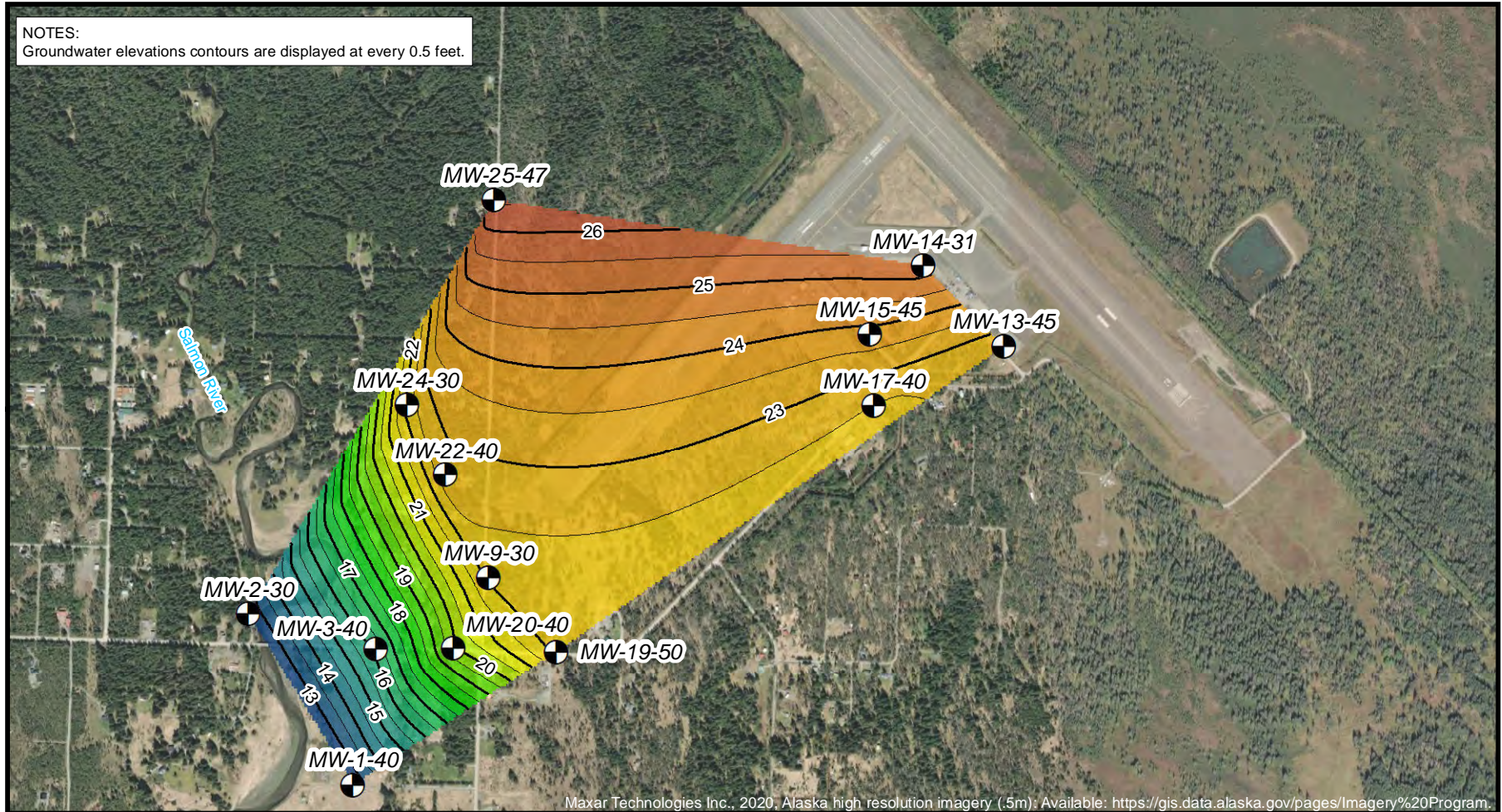
May 2022

102599-018

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

Figure 10

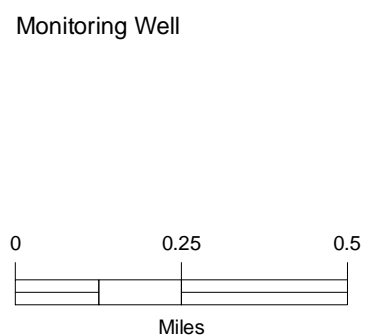
NOTES:
Groundwater elevations contours are displayed at every 0.5 feet.



Maxar Technologies Inc., 2020, Alaska high resolution imagery (.5m); Available: <https://gis.data.alaska.gov/pages/Imagery%20Program>.

LEGEND

Groundwater Elevation (ft)	12.6 - 13.0	15.6 - 16.0	19.6 - 20.0	23.6 - 24.0	Monitoring Well
	13.1 - 13.5	16.1 - 16.5	20.1 - 20.5	24.1 - 24.5	
	13.6 - 14.0	16.6 - 17.0	20.6 - 21.0	24.6 - 25.0	
	14.1 - 14.5	17.1 - 17.5	21.1 - 21.5	25.1 - 25.5	
	14.6 - 15.0	17.6 - 18.0	21.6 - 22.0	25.6 - 26.0	
	15.1 - 15.5	18.1 - 18.5	22.1 - 22.5	26.1 - 26.5	
		18.6 - 19.0	22.6 - 23.0	26.6 - 27.0	
		19.1 - 19.5	23.1 - 23.5		



Gustavus Airport PFAS Site Characterization Report Gustavus, Alaska	
HYDRAULIC GRADIENT WELLS DEEPER THAN 20 FEET	
May 2022	102599-018
SHANNON & WILSON, INC. <small>GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS</small>	
Figure 11	

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



Federal Aviation Administration
 222 West 7th Ave. Box 14
 Anchorage, AK 99513-7587

Tyson Price

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 flush-mount 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 [Airport Sponsor Strategic Event Submission Form](#) including all date, time and/or duration changes via email to [9-AJV-SEC- WSA@faa.gov](mailto:9-AJV-SEC-WSA@faa.gov).

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



THE STATE
of **ALASKA**
GOVERNOR MIKE DUNLEAVY

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 22nd, 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 8th, 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 erin.gleason@alaska.gov.

Erin Gleason

Erin Gleason
Environmental Program Specialist

Electronic cc:
Marcus Zimmerman, ADOT, marcus.zimmerman@alaska.gov
Kristen Freiburger, Shannon and Wilson, krf@shanwil.com



THE STATE
of **ALASKA**
GOVERNOR MIKE DUNLEAVY

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 Facilities.

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



Signed:

Title: Chief, Aviation Leasing

Date: October 08, 2021

THIS PERMIT EXPIRES AT MIDNIGHT ON OCTOBER 08, 2022.

Post This Building Permit Certificate and addendum at the Construction Site

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 administrator@gustavus-ak.gov

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 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

Work description (*attach additional pages if needed. Include any design documents, equipment specifications, 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

Utilities location provisions:

Have contacted the Alaska Digline and someone will arrive in Gustavus on the 14th to finalize locations with utility locators

Traffic Safety and flow provisions: Any residents affected by the permitted work must be notified 24 hours prior to commencement of activities. Coordination with any resident that may have egress/ingress blocked or impaired is mandatory to ensure availability for emergency vehicles or use 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.

Site restoration provisions:

Monitoring 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 visits with Adam work will be off of travel ways and off of ROW for snow removal.

Applicant Attests: In signing this permit application I understand that I may not begin site civil work until the City of Gustavus has issued me an approved civil work permit for the covered work. I agree to comply with the terms of the permit including amendments required by the city administrator. I understand that work in the city maintained road/easement is subject to road work done in the future and that any costs incurred to me including relocation of equipment, loss of service to customers, or repairs to the city roads will be at my own expense. I will notify the city administrator in writing at the start and completion of the permitted work. I will notify the administrator in writing in advance if there are any significant changes to the work plan that may affect the terms of the permit.

Applicant Signed Kristen Freiburger Date of application: 10/5/2021

For official Use Only:

Permit is Approved Not Approved City Administrator: [Signature] Date 10/18/2021



Final inspection required Yes No

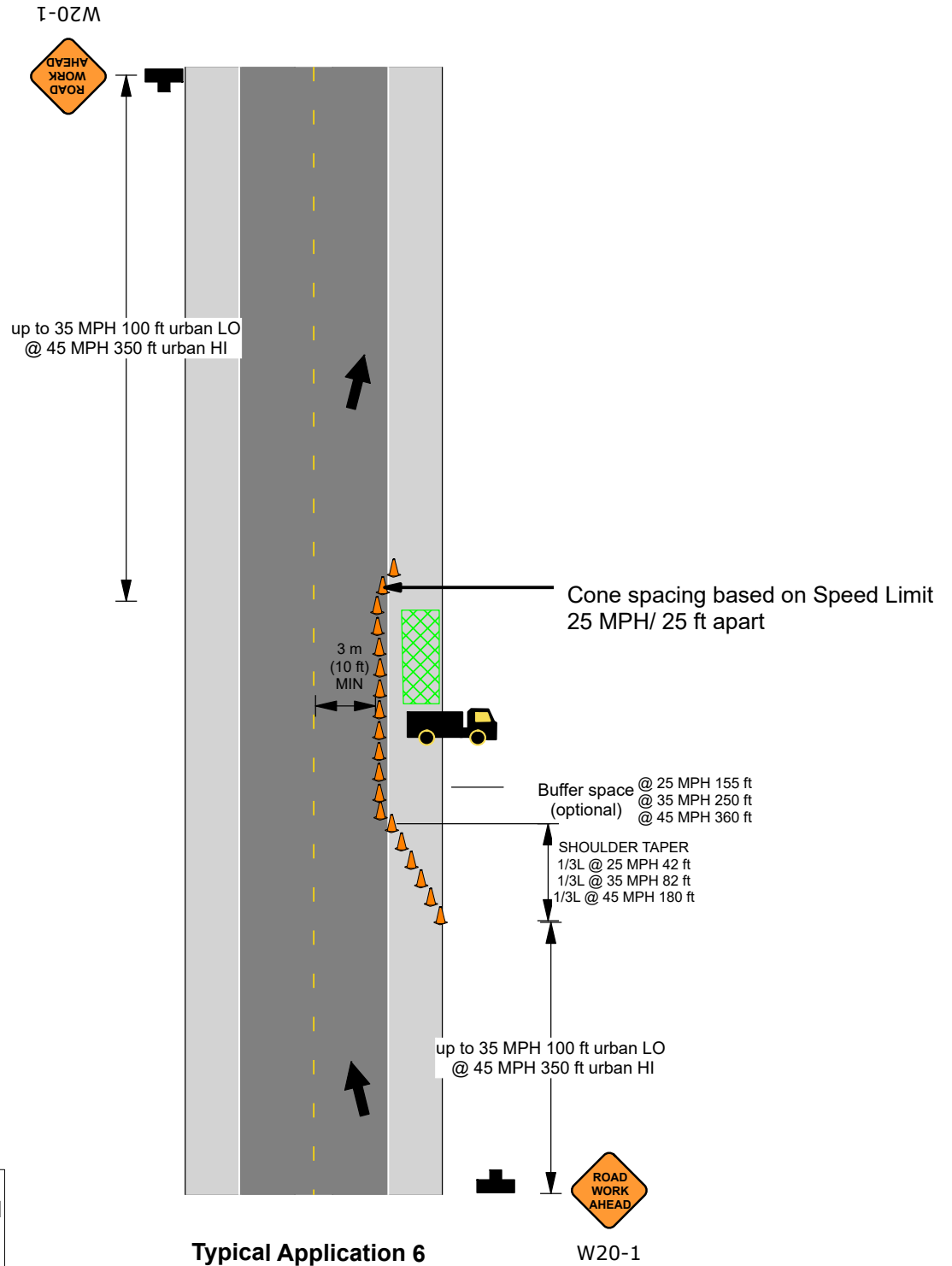
Project is complete and accepted. City Administrator: _____ Date _____

12/10/2020

Shoulder Work with Minor Encroachment (TA-6)

Legend

-  Cone
-  Work Area



I 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:

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"
 3. All signs & devices to conform to MUTCD & ATM and, be topped with high level warning devices
 4. 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 BORING





Date Started	10/24/21	Location	Ground Elevation:
Date Completed	10/24/21	In the eastern shoulder of Wilson Rd, 685 feet north of the intersection with Gustavus Rd.	25.423 feet
Total Depth (ft)	10.0	Drilling Company:	Typical Run Length
		Discovery Drilling	5 feet
			Hole Diameter:
			2.25 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Brown, <i>Topsoil</i> ; moist.	0.1					
		Brown, <i>Silt (ML)</i> ; moist; nonplastic fines.	0.6					
		Gray, <i>Sandy Silt (ML)</i> ; moist, fine, subangular to subrounded sand; nonplastic fines.	2.7					
		Brown to gray, <i>Poorly Graded Sand with Silt (SP-SM)</i> ; wet at 7.6 feet bgs; trace subangular to subrounded gravel; fine to coarse, subangular to subrounded sand; nonplastic fines.	10.0					
		BOTTOM OF BORING						
		Monitoring Well MW-09-10 completed 10/24/21						
		Construction Details:						
		Flush-mount monument						
		Top of casing is 0.5 feet bgs						
		2-inch diameter PVC riser pipe						
		20/40 gradation silica sand pre-pack						
		Screened interval: 4.87 to 9.62 feet bgs						
		Total depth of well: 10.06 feet bgs						
		Top of casing elevation: 25.019 feet						
		*Soil boring log details are from adjacent soil boring SB-09-50 / MW-9-30, installed in 2019.						

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	 Piezometer Screen and Sand Filter
 2" Plastic Tube with Soil Recovery	 Ground Water Level ATD

Run No.

Gustavus Airport
2021 Site Characterization Report
Gustavus, Alaska

LOG OF BORING MW-09-10

January 2022

102599-018

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Figure 1

GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22 Log: APW Rev: Typ: VTY

LOG OF BORING

Date Started	10/19/21	Location	Ground Elevation:
Date Completed	10/19/21	<i>In the vacant lot immediately southeast of the Alaska Airlines terminal and northeast of Apron Access Rd.</i>	28.969 feet
Total Depth (ft)	20.0		Drilling Company:
		<i>Discovery Drilling</i>	5 feet
			Hole Diameter:
			2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Grey-brown, <i>Sand with Trace Gravel (SP)</i> ; moist; unconsolidated.		[Stippled Pattern]				
		Grey, <i>Silt with Sand (MLS)</i> ; moist.	2.4	[Horizontal Lines]				
		Brown to grey-brown, <i>Poorly Graded Sand (SP)</i> ; moist to 9.5 feet, wet below.	3.1	[Stippled Pattern]				
5								5
10								10
15								15
20			20.0					20
		BOTTOM OF BORING						
		Monitoring Well MW-13-20 completed 10/22/21						
		Construction Details: Flush-mount monument						
		CONTINUED NEXT PAGE						

Typ: VTY
 Rev:
 Log: APW
 GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22

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

- | | |
|---|---|
| 3" 2" Plastic Tube - No Soil Recovery
2" Plastic Tube with Soil Recovery
Run No. | Piezometer Screen and Sand Filter
Ground Water Level ATD |
|---|---|

Gustavus Airport 2021 Site Characterization Report Gustavus, Alaska	
<h2 style="margin: 0;">LOG OF BORING MW-13-20</h2>	
January 2022	102599-018
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	Figure 2 Sheet 1 of 2

LOG OF BORING

Date Started	10/19/21	Location	Ground Elevation:
Date Completed	10/19/21	<i>In the vacant lot immediately southeast of the Alaska Airlines terminal and northeast of Apron Access Rd.</i>	28.969 feet
Total Depth (ft)	20.0		Drilling Company:
		<i>Discovery Drilling</i>	5 feet
			Hole Diameter:
			<i>2 inches</i>





Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		<p>Soil Description</p> <p><i>Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.</i></p>						
30		Top of casing is 0.25 feet bgs 2-inch diameter PVC riser pipe 20/40 gradation silica sand pre-pack Screened interval: 9.75 to 19.48 feet bgs Total depth of well: 20.04 feet bgs Top of casing elevation: 28.548 feet						30
35								35
40								40
45								45

 Typ: VTY
 Rev:
 Log: APW
 GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22

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 |  Piezometer Screen and Sand Filter |
|  2" Plastic Tube with Soil Recovery |  Ground Water Level ATD |
- Run No.

Gustavus Airport 2021 Site Characterization Report Gustavus, Alaska	
<h2 style="margin: 0;">LOG OF BORING MW-13-20</h2>	
January 2022	102599-018
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	Figure 2 Sheet 2 of 2

LOG OF BORING

Date Started	10/19/21	Location	Ground Elevation:
Date Completed	10/19/21	<i>In the vacant lot immediately southeast of the Alaska Airlines terminal and northeast of Apron Access Rd.</i>	29.209 feet
Total Depth (ft)	50.0		Drilling Company:
		<i>Discovery Drilling</i>	5 feet
			Hole Diameter:
			2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		<i>Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.</i>						
		Grey brown, <i>Sand with Trace Gravel (SP)</i> ; moist; unconsolidated.					21GST-MW13-01	
		Grey, <i>Silt with Sand (MLS)</i> ; moist.	2.4					
		Brown to grey-brown, <i>Poorly Graded Sand (SP)</i> ; moist to 9.5 feet, wet below.	3.1					
5								5
						During Drilling	21GST-MW13-02	
10								10
							21GST-MW13-03	
		Grey, <i>Silt with Clay (CL-ML)</i> ; wet.	20.0					
15								15
20								20

CONTINUED NEXT PAGE

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 with Soil Recovery	Piezometer Screen and Sand Filter
2" Plastic Tube - No Soil Recovery	Ground Water Level ATD

Run No. 3

Gustavus Airport
2021 Site Characterization Report
Gustavus, Alaska

LOG OF BORING MW-13-45

January 2022 102599-018

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Figure 3
Sheet 1 of 3

GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22 Log: APW Rev: Typ: VTY

LOG OF BORING

Date Started	10/19/21	Location	Ground Elevation:
Date Completed	10/19/21	<i>In the vacant lot immediately southeast of the Alaska Airlines terminal and northeast of Apron Access Rd.</i>	29.209 feet
Total Depth (ft)	50.0		Drilling Company:
		<i>Discovery Drilling</i>	5 feet
			Hole Diameter:
			<i>2 inches</i>

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.						
		Dark grey, Poorly Graded Gravel with Sand (GPS); wet.	25.0				21GST-MW13-04	
30		Grey, Sandy Silt (MLS); wet.	30.0				21GST-MW13-05	30
		Grey, Fat Clay (CH); wet.	33.0					
		Dark grey, Silty Sand (SM); wet.	34.0					
35		Grey, Silty Clay (CL-ML); wet.	35.0				21GST-MW13-06	35
		Grey to dark grey, Sandy Silt (MLS); wet.	38.0					
40								
		Grey, Silt with Clay (CL-ML); wet.	43.5				21GST-MW13-07	
45		Grey, Sandy Silt (SM); wet.	44.0					45
		Grey, Silt with Clay (CL-ML); wet.	45.0					

CONTINUED NEXT PAGE

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		Piezometer Screen and Sand Filter
	2" Plastic Tube with Soil Recovery		Ground Water Level ATD

Run No.

Gustavus Airport
2021 Site Characterization Report
Gustavus, Alaska

LOG OF BORING MW-13-45

January 2022 102599-018

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Figure 3
Sheet 2 of 3

GEOPROBE WELL 102599-018.GPJ 21-20447.GPJ 1/17/22 Log: APW Rev: Typ: VTY

LOG OF BORING

Date Started	10/19/21	Location	Ground Elevation:
Date Completed	10/19/21	<i>In the vacant lot immediately southeast of the Alaska Airlines terminal and northeast of Apron Access Rd.</i>	29.209 feet
Total Depth (ft)	50.0		Drilling Company:
		<i>Discovery Drilling</i>	5 feet
			Hole Diameter:
			<i>2 inches</i>





Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
55		<p>BOTTOM OF BORING</p> <p>Monitoring Well MW-13-45 completed 10/21/21</p> <p>Construction Details: Flush-mount monument Top of casing is 0.25 feet bgs 2-inch diameter PVC riser pipe 20/40 gradation silica sand pre-pack Screened interval: 39.75 to 44.48 feet bgs Total depth of well: 45.04 feet bgs Top of casing elevation: 28.61 feet</p>	50.0					55
60								60
65								65
70								70

Typ: VTY
 Rev:
 Log: APW
 GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22

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 |  Piezometer Screen and Sand Filter |
|  2" Plastic Tube with Soil Recovery
Run No. |  Ground Water Level ATD |

Gustavus Airport 2021 Site Characterization Report Gustavus, Alaska	
<h2 style="margin: 0;">LOG OF BORING MW-13-45</h2>	
January 2022	102599-018
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	Figure 3 Sheet 3 of 3

LOG OF BORING

Date Started	10/27/21	Location	Ground Elevation:
Date Completed	10/28/21	In the northern shoulder of Apron Access Rd. 530 feet northwest of Alaska Seaplanes.	29.668 feet
Total Depth (ft)	15.0	Drilling Company:	Typical Run Length
		Discovery Drilling	5 feet
			Hole Diameter:
			2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Light grey, Well Graded Sand (SW); moist.				During Drilling		
		Grey, Sandy Silt (MLS); moist.	3.0					
5		Light grey to grey-brown, Well Graded Sand (SW); moist to 6.8 feet, wet below.	3.8					5
		Grey, Poorly Graded Sand (SP); wet.	9.0					
10		Grey, Poorly Graded Sand with Gravel (SPG); wet.	10.0					10
15		BOTTOM OF BORING	15.0					15
		Monitoring Well MW-14-15 completed 10/28/21						
		Construction Details: Flush-mount monument Top of casing is 0.5 feet bgs 2-inch diameter PVC riser pipe 20/40 gradation silica sand pre-pack Screened interval: 5.10 to 14.83 feet bgs Total depth of well: 15.27 feet bgs Top of casing elevation: 29.404 feet						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		Piezometer Screen and Sand Filter
	2" Plastic Tube with Soil Recovery		Ground Water Level ATD

Run No.

Gustavus Airport
2021 Site Characterization Report
Gustavus, Alaska

LOG OF BORING MW-14-15

January 2022 102599-018

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Figure 4

GEOPROBE WELL 102599-018.GPJ 21-20447.GPJ 1/17/22 Log: APW Rev: Typ: VTY

LOG OF BORING

Date Started	10/27/21	Location	Ground Elevation:
Date Completed	10/27/21	In the northern shoulder of Apron Access Rd. 530 feet northwest of Alaska Seaplanes.	29.717 feet
Total Depth (ft)	45.0	Drilling Company:	Typical Run Length
		Discovery Drilling	5 feet
			Hole Diameter:
			2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.						
		Light grey, Well Graded Sand (SW); moist.					21GST-MW14-01	
		Grey, Sandy Silt (MLS); moist.	3.0					
		Light grey to grey-brown, Well Graded Sand (SW); moist to 6.8 feet, wet below.	3.8					
5							21GST-MW14-02	5
		Grey, Poorly Graded Sand (SP); wet.	9.0					
		Grey, Poorly Graded Sand with Gravel (SPG); wet.	10.0					
10								10
							21GST-MW14-03	
15								15
		Grey to dark grey, Fat Clay (CH); wet.	20.0					
20								20

CONTINUED NEXT PAGE

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 with Soil Recovery	Piezometer Screen and Sand Filter
2" Plastic Tube - No Soil Recovery	Ground Water Level ATD

Run No.

Gustavus Airport
2021 Site Characterization Report
Gustavus, Alaska

LOG OF BORING MW-14-31

January 2022

102599-018

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Figure 5
Sheet 1 of 3

GEOPROBE WELL 102599-018.GPJ 21-20447.GPJ 1/17/22 Log: APW Rev: Typ: VTY

LOG OF BORING

Date Started	10/27/21	Location	Ground Elevation:
Date Completed	10/27/21	In the northern shoulder of Apron Access Rd. 530 feet northwest of Alaska Seaplanes.	29.717 feet
Total Depth (ft)	45.0	Drilling Company:	Typical Run Length
		Discovery Drilling	5 feet
			Hole Diameter:
			2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.						
		Grey, Silty Sand (SM); wet.	26.3				21GST-MW14-04	
30		Grey, Fat Clay (CH); wet.	33.0					
		Dark grey, Silt with Clay (CL-ML); wet.	33.8				21GST-MW14-05	
35		Grey, Sandy Silt (MLS); wet.	35.0					
		Dark grey, Silt with Clay (CL-ML); wet.	38.0					
		Grey, Sandy Silt (MLS); wet.	38.8					
40		Grey to dark grey, Silt with Sand (MLS); wet.	40.0					
			45.0				21GST-MW14-06	
		BOTTOM OF BORING						
		Monitoring Well MW-14-31 completed 10/27/21						
		Construction Details: Flush-mount monument						
		CONTINUED NEXT PAGE						

Typ: VTY
 Rev:
 Log: APW
 GEOPROBE WELL_102599-018.GPJ_21-20447.GPJ_1/17/22

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	Piezometer Screen and Sand Filter
2" Plastic Tube with Soil Recovery	Ground Water Level ATD

Run No.

Gustavus Airport
2021 Site Characterization Report
Gustavus, Alaska

LOG OF BORING MW-14-31

January 2022 102599-018

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Figure 5
Sheet 2 of 3

LOG OF BORING

Date Started	10/27/21	Location	Ground Elevation:
Date Completed	10/27/21	In the northern shoulder of Apron Access Rd. 530 feet northwest of Alaska Seaplanes.	29.717 feet
Total Depth (ft)	45.0	Drilling Company:	Typical Run Length
		Discovery Drilling	5 feet
			Hole Diameter:
			2 inches





Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		<p style="font-size: small;">Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.</p> <p>Top of casing is 0.5 feet bgs 2-inch diameter PVC riser pipe 20/40 gradation silica sand pre-pack Screened interval: 26.11 to 30.86 feet bgs Total depth of well: 31.30 feet bgs Top of casing elevation: 29.3 feet</p>						

Typ: VTY
 Rev:
 Log: APW
 GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22

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 |  Piezometer Screen and Sand Filter |
|  2" Plastic Tube with Soil Recovery |  Ground Water Level ATD |
- Run No.

Gustavus Airport 2021 Site Characterization Report Gustavus, Alaska	
<h2 style="margin: 0;">LOG OF BORING MW-14-31</h2>	
January 2022	102599-018
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	Figure 5 Sheet 3 of 3

LOG OF BORING

Date Started	10/29/21	Location	Ground Elevation:
Date Completed	10/29/21	Near the rental hangars in the northern shoulder of FAA Rd. 435 feet northwest of the intersection with Gustavus Rd.	31.474 feet
Total Depth (ft)	15.0		Drilling Company:
		Discovery Drilling	5 feet
			Hole Diameter:
			2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Brown, <i>Organic Soil (TOPSOIL)</i> ; moist.	0.5			During Drilling		
		Grey-brown, <i>Well Graded Sand (SW)</i> ; moist.						
5								
		Grey-brown, <i>Poorly Graded Sand (SP)</i> ; wet.	8.5					
10		Grey-brown to grey, <i>Poorly Graded Sand with Gravel (SPG)</i> ; wet.	10.0					
15		BOTTOM OF BORING	15.0					
		Monitoring Well MW-15-15 completed 10/29/21						
		Construction Details:						
		Flush-mount monument						
		Top of casing is 0.25 feet bgs						
		2-inch diameter PVC riser pipe						
		20/40 gradation silica sand pre-pack						
		Screened interval: 4.85 to 14.58 feet bgs						
		Total depth of well: 15.14 feet bgs						
		Top of casing elevation: 31.338 feet						

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		Piezometer Screen and Sand Filter
	2" Plastic Tube with Soil Recovery		Ground Water Level ATD

Run No.

Gustavus Airport
2021 Site Characterization Report
Gustavus, Alaska

LOG OF BORING MW-15-15

January 2022

102599-018

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Figure 6

GEOPROBE WELL 102599-018.GPJ 21-20447.GPJ 1/17/22

LOG OF BORING

Date Started	10/29/21	Location	Ground Elevation:
Date Completed	10/29/21	Near the rental hangars in the northern shoulder of FAA Rd. 435 feet northwest of the intersection with Gustavus Rd.	31.591 feet
Total Depth (ft)	50.0	Drilling Company:	Typical Run Length
		Discovery Drilling	5 feet
			Hole Diameter:
			2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		<p style="font-size: small;">Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.</p> <p>Brown, <i>Organic Soil (TOPSOIL)</i>; moist.</p>	0.5				21GST-MW15-01	
		Grey-brown, <i>Well Graded Sand (SW)</i> ; moist.						
5								5
		Grey-brown, <i>Poorly Graded Sand (SP)</i> ; wet.	8.5				21GST-MW15-02	
10		Grey-brown to grey, <i>Poorly Graded Sand with Gravel (SPG)</i> ; wet.	10.0					10
15								15
20		Grey, <i>Poorly Graded Sand (SP)</i> ; wet.	20.5				21GST-MW15-03	20

CONTINUED NEXT PAGE

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 with Soil Recovery | Piezometer Screen and Sand Filter |
| 2" Plastic Tube - No Soil Recovery | Ground Water Level ATD |
- Run No.

Gustavus Airport
2021 Site Characterization Report
Gustavus, Alaska

LOG OF BORING MW-15-46

January 2022 102599-018

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Figure 7
Sheet 1 of 3

GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22
 Log: APW
 Rev:
 Typ: VTY

LOG OF BORING

Date Started	10/29/21	Location	Ground Elevation:
Date Completed	10/29/21	Near the rental hangars in the northern shoulder of FAA Rd. 435 feet northwest of the intersection with Gustavus Rd.	31.591 feet
Total Depth (ft)	50.0	Drilling Company:	Typical Run Length
		Discovery Drilling	5 feet
			Hole Diameter:
			2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.						
		Grey, Well Graded Sand (SW); wet.	25.0	[Symbol]			21GST-MW15-04	
30		Dark grey, Poorly Graded Sand (SP); wet.	30.0	[Symbol]				
		Grey to dark grey, Poorly Graded Sand with Silt (SP-SM); wet.	33.5	[Symbol]			21GST-MW15-05	
35		Grey, Fat Clay (CH); wet.	37.5	[Symbol]				
		Dark grey to grey, Sandy Silt (MLS); wet.	38.0	[Symbol]				
40			45.0	[Symbol]			21GST-MW15-06	
		Grey, Poorly Graded Sand with Silt (SP-SM); wet.						

CONTINUED NEXT PAGE

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 with Soil Recovery Run No.	Piezometer Screen and Sand Filter
2" Plastic Tube - No Soil Recovery	Ground Water Level ATD

Gustavus Airport
2021 Site Characterization Report
Gustavus, Alaska

LOG OF BORING MW-15-46

January 2022 102599-018

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Figure 7
Sheet 2 of 3

Typ: VTY
 Rev:
 Log: APW
 GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22

LOG OF BORING

Date Started	10/29/21	Location	Ground Elevation:
Date Completed	10/29/21	Near the rental hangars in the northern shoulder of FAA Rd. 435 feet northwest of the intersection with Gustavus Rd.	31.591 feet
Total Depth (ft)	50.0	Drilling Company:	Typical Run Length
		Discovery Drilling	5 feet
			Hole Diameter:
			2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
55		BOTTOM OF BORING Monitoring Well MW-15-46 completed 10/29/21 Construction Details: Flush-mount monument Top of casing is 0.33 feet bgs 2-inch diameter PVC riser pipe 20/40 gradation silica sand pre-pack Screened interval: 41.47 to 46.23 feet bgs Total depth of well: 46.78 feet bgs Top of casing elevation: 31.25 feet	50.0					55
60								60
65								65
70								70

 Typ: VTY
 Rev:
 Log: APW
 GEOPROBE WELL 102599-018.GPJ 21-20447.GPJ 1/17/22

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
2" Plastic Tube with Soil Recovery
Run No. | Piezometer Screen and Sand Filter
Ground Water Level ATD |
|---|---|

Gustavus Airport
2021 Site Characterization Report
Gustavus, Alaska

LOG OF BORING MW-15-46

January 2022	102599-018
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	Figure 7 Sheet 3 of 3

LOG OF BORING

Date Started	10/31/21	Location	Near the ARFF building south of Runway 2-20.
Date Completed	10/31/21	Ground Elevation:	29.601 feet
Total Depth (ft)	15.0	Drilling Company:	Discovery Drilling
		Typical Run Length	5 feet
		Hole Diameter:	2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Dark brown, <i>Organic Sandy Soil (TOPSOIL)</i> ; moist.	0.5			During Drilling [K]	21GST-MW16-01	
		Light grey, <i>Well Graded Sand (SW)</i> ; moist. Iron staining and trace silt present.					21GST-MW16-02	
		Light grey, <i>Poorly Graded Sand (SP)</i> ; wet.	3.8					
5		Grey-brown, <i>Poorly Graded Sand with Silt (SP-SM)</i> ; wet.	5.0					5
		Grey-brown, <i>Poorly Graded Gravel with Sand (GPS)</i> ; wet.	5.8					
		Grey-brown, <i>Poorly Graded Sand (SP)</i> ; wet.	9.1					10
		Grey-brown, <i>Poorly Graded Sand with Gravel (SPG)</i> ; wet.	10.0					
		Light grey, <i>Poorly Graded Sand (SP)</i> ; wet.	11.8					
		Light grey, <i>Poorly Graded Gravel with Sand (GPS)</i> ; wet.	13.8					15
		BOTTOM OF BORING	15.0					
		Monitoring Well MW-16-15 completed 10/31/21						
		Construction Details:						
		Flush-mount monument						
		Top of casing is 0.58 feet bgs						
		2-inch diameter PVC riser pipe						
		20/40 gradation silica sand pre-pack						
		Screened interval: 4.97 to 14.70 feet bgs						
		Total depth of well: 15.14 feet bgs						
		Top of casing elevation: 29.105 feet						

Typ: VTY
 Rev:
 Log: APW
 GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22

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		Piezometer Screen and Sand Filter
	2" Plastic Tube with Soil Recovery		Ground Water Level ATD

Run No. 3

Gustavus Airport
2021 Site Characterization Report
Gustavus, Alaska

LOG OF BORING MW-16-15

January 2022 102599-018

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Figure 8

LOG OF BORING

Date Started	10/22/21	Location	Ground Elevation:
Date Completed	10/22/21	In the southern shoulder of Gustavus Rd. near the Alaska Power & Telephone office.	30.596 feet
Total Depth (ft)	20.0	Drilling Company:	Typical Run Length
		Discovery Drilling	5 feet
			Hole Diameter:
			2 inches





Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Grey-brown, Poorly Graded Sand with Organics (SP); moist.						
		Light grey, Poorly Graded Sand (SP); moist.	1.5					
		Grey, Silt with Clay (CL-ML); moist.	3.6					
5		Grey-brown to grey, Poorly Graded Sand (SP); moist.	4.3					5
		Grey, Well Graded Sand (SW); moist to wet.	8.0					
		Grey, Poorly Graded Sand with Gravel (SPG); wet.	12.5					
15		Grey, Poorly Graded Gravel with Sand (GPS); wet.	15.0					15
		BOTTOM OF BORING	20.0					20
		Monitoring Well MW-17-20 completed 10/22/21						
		Construction Details: Flush-mount monument						
		CONTINUED NEXT PAGE						

Typ: VTY
 Rev:
 Log: APW
 GEOPROBE WELL 102599-018.GPJ 21-20447.GPJ 1/17/22

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	 Piezometer Screen and Sand Filter
 2" Plastic Tube with Soil Recovery	 Ground Water Level ATD

Run No.

Gustavus Airport
2021 Site Characterization Report
Gustavus, Alaska

LOG OF BORING MW-17-20

January 2022 102599-018

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Figure 9
Sheet 1 of 2

LOG OF BORING

Date Started	10/22/21	Location	Ground Elevation:
Date Completed	10/22/21	In the southern shoulder of Gustavus Rd. near the Alaska Power & Telephone office.	30.596 feet
Total Depth (ft)	20.0	Drilling Company:	Typical Run Length
		Discovery Drilling	5 feet
			Hole Diameter:
			2 inches





Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		<p style="font-size: small; text-align: center;">Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.</p> <p>Top of casing is 0.67 feet bgs 2-inch diameter PVC riser pipe 20/40 gradation silica sand pre-pack Screened interval: 10.07 to 19.80 feet bgs Total depth of well: 20.36 feet bgs Top of casing elevation: 29.977 feet</p>						

Typ: VTY
 Rev:
 Log: APW
 GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22

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 |  Piezometer Screen and Sand Filter |
|  2" Plastic Tube with Soil Recovery |  Ground Water Level ATD |
- Run No.

Gustavus Airport 2021 Site Characterization Report Gustavus, Alaska	
<h2 style="margin: 0;">LOG OF BORING MW-17-20</h2>	
January 2022	102599-018
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	Figure 9 Sheet 2 of 2

LOG OF BORING

Date Started	10/22/21	Location	Ground Elevation:
Date Completed	10/22/21	In the southern shoulder of Gustavus Rd. near the Alaska Power & Telephone office.	30.522 feet
Total Depth (ft)	45.0	Drilling Company:	Typical Run Length
		Discovery Drilling	5 feet
			Hole Diameter:
			2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Grey-brown, Poorly Graded Sand with Organics (SP); moist.						
		Light grey, Poorly Graded Sand (SP); moist.	1.5					
		Grey, Silt with Clay (CL-ML); moist.	3.6					
5		Grey-brown to grey, Poorly Graded Sand (SP); moist.	4.3					5
		Grey, Well Graded Sand (SW); moist to wet.	8.0					
		Grey, Poorly Graded Sand with Gravel (SPG); wet.	12.5					
15		Grey, Poorly Graded Gravel with Sand (GPS); wet.	15.0					15
		Grey, Poorly Graded Sand (SP); wet. Clay layer present between 22.5 and 23 feet.	20.0					20

CONTINUED NEXT PAGE

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 with Soil Recovery	Piezometer Screen and Sand Filter
2" Plastic Tube - No Soil Recovery	Ground Water Level ATD

Run No.

Gustavus Airport
2021 Site Characterization Report
Gustavus, Alaska

LOG OF BORING MW-17-40

January 2022

102599-018

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Figure 10
Sheet 1 of 2

GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22 Log: APW Rev: Typ: VTY

LOG OF BORING





Date Started	10/22/21	Location	Ground Elevation:
Date Completed	10/22/21	In the southern shoulder of Gustavus Rd. near the Alaska Power & Telephone office.	30.522 feet
Total Depth (ft)	45.0	Drilling Company:	Typical Run Length
		Discovery Drilling	5 feet
			Hole Diameter:
			2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.						
30			31.3	[Symbol]				30
		Dark grey, Silt with Sand (MLS); wet.						
		Grey, Fat Clay (CH); wet.	32.5	[Symbol]				
35		Grey, Lean Clay with Sand and Silt (CLS); wet.						35
		Grey to dark grey, Sandy Silt (MLS); wet.	35.5	[Symbol]				
40		BOTTOM OF BORING	40.0				21GST-MW17-02	40
		Monitoring Well MW-17-40 completed 10/22/21						
45		Construction Details: Flush-mount monument Top of casing is 0.5 feet bgs 2-inch diameter PVC riser pipe 20/40 gradation silica sand pre-pack Screened interval: 35.05 to 39.80 feet bgs Total depth of well: 40.36 feet bgs Top of casing elevation: 30.037 feet						45

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  2" Plastic Tube with Soil Recovery Run No.	 Piezometer Screen and Sand Filter  Ground Water Level ATD
---	---

Gustavus Airport
2021 Site Characterization Report
Gustavus, Alaska

LOG OF BORING MW-17-40

January 2022 102599-018

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Figure 10
Sheet 2 of 2

Typ: VTY
 Rev:
 Log: APW
 GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22

LOG OF BORING

Date Started	10/28/21	Location	At the southern extent of the Runway 2-20 safety area.	Ground Elevation:	28.276 feet
Date Completed	10/28/21			Typical Run Length	5 feet
Total Depth (ft)	15.0	Drilling Company:	Discovery Drilling	Hole Diameter:	2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Light grey, <i>Well Graded Sand (SW)</i> ; moist.				During Drilling		
		Light grey, <i>Silty Sand (SM)</i> ; moist. Banded iron staining.	3.5					
5		Grey to grey-brown, <i>Poorly Graded Sand (SP)</i> ; wet. Trace gravel present below 6.8 feet.	5.0					5
		Grey-brown, <i>Sand with Silt (SM)</i> ; wet.	9.5					
10		Light grey, <i>Poorly Graded Sand with Gravel (SPG)</i> ; wet.	10.0					10
15		BOTTOM OF BORING	15.0					15
		Monitoring Well MW-18-15 completed 10/28/21						
		Construction Details: Flush-mount monument Top of casing is 0.5 feet bgs 2-inch diameter PVC riser pipe 20/40 gradation silica sand pre-pack Screened interval: 5.19 to 14.92 feet bgs Total depth of well: 15.36 feet bgs Top of casing elevation: 27.988 feet						

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		Piezometer Screen and Sand Filter
	2" Plastic Tube with Soil Recovery		Ground Water Level ATD

Run No. 3

Gustavus Airport
2021 Site Characterization Report
Gustavus, Alaska

LOG OF BORING MW-18-15

January 2022

102599-018

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Figure 11

GEOPROBE WELL 102599-018.GPJ 21-20447.GPJ 1/17/22 Log: APW Rev: Typ: VTY

LOG OF BORING

Date Started	10/28/21	Location	At the southern extent of the Runway 2-20 safety area.
Date Completed	10/28/21	Ground Elevation:	28.287 feet
Total Depth (ft)	50.0	Drilling Company:	Discovery Drilling
		Typical Run Length	5 feet
		Hole Diameter:	2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Light grey, <i>Well Graded Sand (SW)</i> ; moist.					21GST-MW18-01	
		Light grey, <i>Silty Sand (SM)</i> ; moist. Banded iron staining.	3.5					
5		Grey to grey-brown, <i>Poorly Graded Sand (SP)</i> ; wet. Trace gravel present below 6.8 feet.	5.0			During Drilling	21GST-MW18-02	5
		Grey-brown, <i>Sand with Silt (SM)</i> ; wet.	9.5					
10		Light grey, <i>Poorly Graded Sand with Gravel (SPG)</i> ; wet.	10.0					10
		Light grey to grey, <i>Poorly Graded Sand (SP)</i> ; wet. Trace silt present at 20-25 feet and 30-40 feet bgs.	15.0				21GST-MW18-03	15

CONTINUED NEXT PAGE

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 with Soil Recovery | Piezometer Screen and Sand Filter |
| 2" Plastic Tube - No Soil Recovery | Ground Water Level ATD |
- Run No.

Gustavus Airport
2021 Site Characterization Report
Gustavus, Alaska

LOG OF BORING MW-18-50

January 2022 102599-018

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Figure 12
Sheet 1 of 3

Typ: VTY
 Rev:
 Log: APW
 GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22

LOG OF BORING

Date Started	10/28/21	Location	At the southern extent of the Runway 2-20 safety area.	Ground Elevation:	28.287 feet
Date Completed	10/28/21			Typical Run Length	5 feet
Total Depth (ft)	50.0	Drilling Company:	Discovery Drilling	Hole Diameter:	2 inches





Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.								
30	1					1	21GST-MW18-04	30
35	2					2	21GST-MW18-05	35
40	3					3		40
45	4					4	21GST-MW18-06	45

CONTINUED NEXT PAGE

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
 2" Plastic Tube with Soil Recovery
Run No. |  Piezometer Screen and Sand Filter
 Ground Water Level ATD |
|---|---|

Gustavus Airport
2021 Site Characterization Report
Gustavus, Alaska

LOG OF BORING MW-18-50

January 2022 102599-018

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Figure 12
Sheet 2 of 3

Typ: VTY
 Rev:
 Log: APW
 GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22

LOG OF BORING

Date Started	10/28/21	Location	At the southern extent of the Runway 2-20 safety area.	Ground Elevation:	28.287 feet
Date Completed	10/28/21			Typical Run Length	5 feet
Total Depth (ft)	50.0	Drilling Company:	Discovery Drilling	Hole Diameter:	2 inches





Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
55		BOTTOM OF BORING Monitoring Well MW-18-50 completed 10/28/21 Construction Details: Flush-mount monument Top of casing is 0.5 feet bgs 2-inch diameter PVC riser pipe 20/40 gradation silica sand pre-pack Screened interval: 45.09 to 49.84 feet bgs Total depth of well: 50.40 feet bgs Top of casing elevation: 27.949 feet	50.0					55
60								60
65								65
70								70

 Typ: VTY
 Rev:
 Log: APW
 GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22

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 |  Piezometer Screen and Sand Filter |
|  2" Plastic Tube with Soil Recovery
Run No. |  Ground Water Level ATD |

Gustavus Airport 2021 Site Characterization Report Gustavus, Alaska	
LOG OF BORING MW-18-50	
January 2022	102599-018
SHANNON & WILSON, INC.	Figure 12
Geotechnical and Environmental Consultants	Sheet 3 of 3

LOG OF BORING

Date Started	10/31/21	Location	Ground Elevation:
Date Completed	11/1/21	In the northern shoulder of Gustavus Rd, 660 feet east of the intersection with Wilson Rd.	25.912 feet
Total Depth (ft)	15.0	Drilling Company:	Typical Run Length
		Discovery Drilling	5 feet
			Hole Diameter:
			2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Dark brown, <i>Organic Sandy Soil (TOPSOIL)</i> ; moist.	0.5			During Drilling		
		Grey-brown, <i>Well Graded Sand (SW)</i> ; moist.	0.8					
		Grey, <i>Silt (ML)</i> ; moist.						
		Grey-brown, <i>Poorly Graded Sand (SP)</i> ; wet.	3.0					
5		Grey-brown to light grey, <i>Poorly Graded Sand with Gravel (SPG)</i> ; wet.	5.0					5
10		Grey, <i>Poorly Graded Gravel with Sand (GPS)</i> ; wet.	10.0				10	
15		BOTTOM OF BORING	15.0				15	
		Monitoring Well MW-19-15 completed 11/01/21						
		Construction Details: Flush-mount monument Top of casing is 0.33 feet bgs 2-inch diameter PVC riser pipe 20/40 gradation silica sand pre-pack Screened interval: 5.01 to 14.74 feet bgs Total depth of well: 15.30 feet bgs Top of casing elevation: 25.704 feet						20

Typ: VTY
 Rev:
 Log: APW
 GEOPROBE WELL 102599-018.GPJ 21-20447.GPJ 1/17/22

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		Piezometer Screen and Sand Filter
	2" Plastic Tube with Soil Recovery		Ground Water Level ATD

Run No.

Gustavus Airport 2021 Site Characterization Report Gustavus, Alaska	
<h2 style="margin: 0;">LOG OF BORING MW-19-15</h2>	
January 2022	102599-018
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	
<h2 style="margin: 0;">Figure 13</h2>	

LOG OF BORING

Date Started	10/31/21	Location	Ground Elevation:
Date Completed	11/1/21	In the northern shoulder of Gustavus Rd, 660 feet east of the intersection with Wilson Rd.	25.76 feet
Total Depth (ft)	50.0	Drilling Company:	Typical Run Length
		Discovery Drilling	5 feet
			Hole Diameter:
			2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Dark brown, <i>Organic Sandy Soil (TOPSOIL)</i> ; moist.	0.5				21GST-MW19-01	
		Grey-brown, <i>Well Graded Sand (SW)</i> ; moist.	0.8					
		Grey, <i>Silt (ML)</i> ; moist.						
		Grey-brown, <i>Poorly Graded Sand (SP)</i> ; wet.	3.0					
5		Grey-brown to light grey, <i>Poorly Graded Sand with Gravel (SPG)</i> ; wet.	5.0					
10		Grey, <i>Poorly Graded Gravel with Sand (GPS)</i> ; wet.	10.0					
15		Grey, <i>Poorly Graded Sand (SP)</i> ; wet. Trace silt present from 20 to 25 feet bgs. Interbedded fat clay at 25-30 feet. Trace peat present from 35 feet to 40 feet.	15.0					

CONTINUED NEXT PAGE

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		Piezometer Screen and Sand Filter
	2" Plastic Tube with Soil Recovery		Ground Water Level ATD

Run No. 3

Gustavus Airport
2021 Site Characterization Report
Gustavus, Alaska

LOG OF BORING MW-19-50

January 2022 102599-018

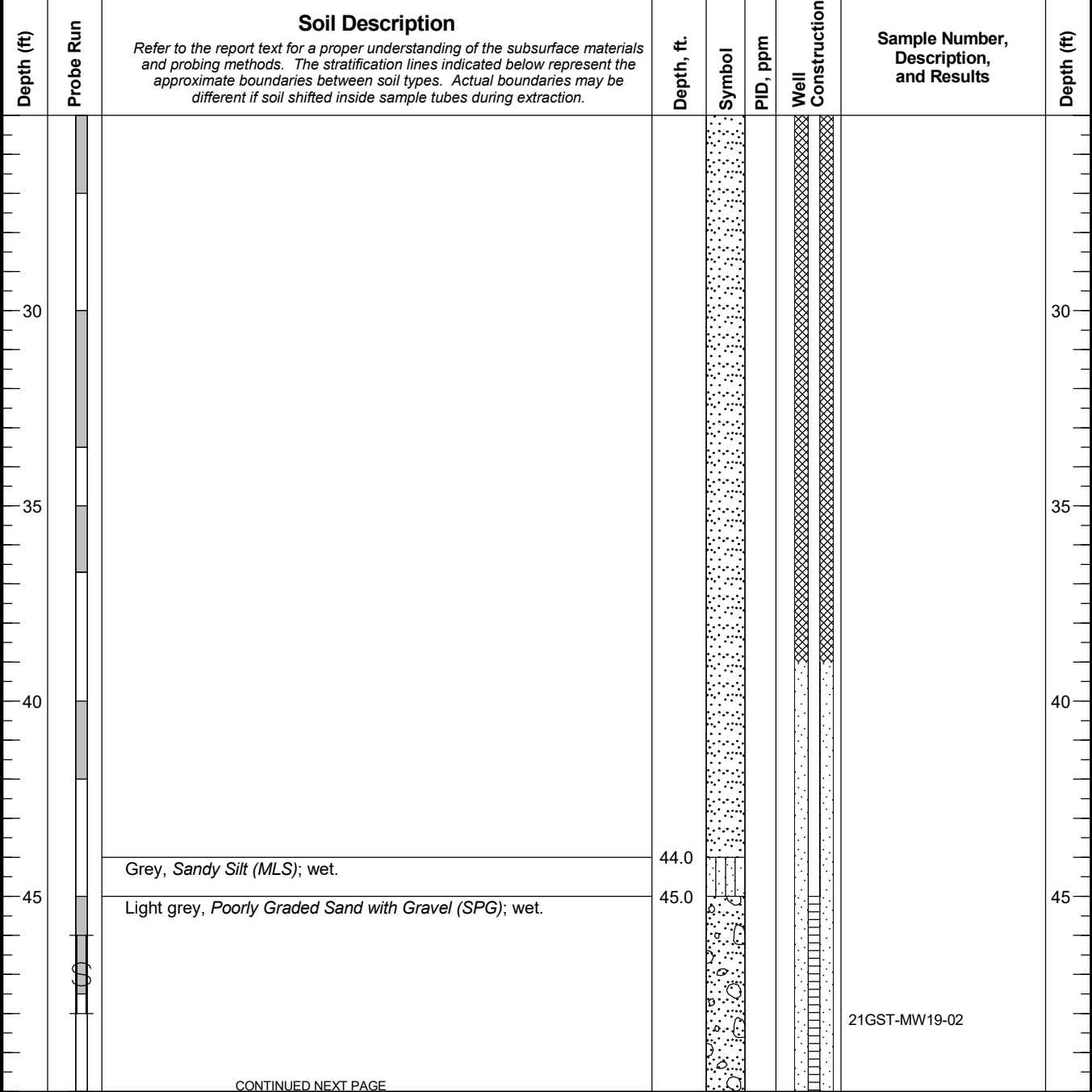
SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Figure 14
Sheet 1 of 3

GEOPROBE WELL 102599-018.GPJ 21-20447.GPJ 1/17/22 Log: APW Rev: Typ: VTY

LOG OF BORING

Date Started	10/31/21	Location	Ground Elevation:
Date Completed	11/1/21	In the northern shoulder of Gustavus Rd, 660 feet east of the intersection with Wilson Rd.	25.76 feet
Total Depth (ft)	50.0	Drilling Company:	Typical Run Length
		Discovery Drilling	5 feet
			Hole Diameter:
			2 inches



CONTINUED NEXT PAGE

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 with Soil Recovery
Run No. | Piezometer Screen and Sand Filter | Ground Water Level ATD |
|---|-----------------------------------|------------------------|

Gustavus Airport
2021 Site Characterization Report
Gustavus, Alaska

LOG OF BORING MW-19-50

January 2022 102599-018

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Figure 14
Sheet 2 of 3

GEOPROBE WELL 102599-018.GPJ 21-20447.GPJ 1/17/22 Log: APW Rev: Typ: VTY

LOG OF BORING

Date Started	10/31/21	Location	Ground Elevation:
Date Completed	11/1/21	In the northern shoulder of Gustavus Rd, 660 feet east of the intersection with Wilson Rd.	25.76 feet
Total Depth (ft)	50.0	Drilling Company:	Typical Run Length
		Discovery Drilling	5 feet
			Hole Diameter:
			2 inches





Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
55		<p>BOTTOM OF BORING</p> <p>Monitoring Well MW-19-50 completed 11/01/21</p> <p>Construction Details: Flush-mount monument Top of casing is 0.33 feet bgs 2-inch diameter PVC riser pipe 20/40 gradation silica sand pre-pack Screened interval: 45.00 to 49.75 feet bgs Total depth of well: 50.31 feet bgs Top of casing elevation: 25.44 feet</p>	50.0					55
60								60
65								65
70								70

Typ: VTY
 Rev:
 Log: APW
 GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22

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
 2" Plastic Tube with Soil Recovery
Run No. |  Piezometer Screen and Sand Filter
 Ground Water Level ATD |
|---|---|

Gustavus Airport 2021 Site Characterization Report Gustavus, Alaska	
<h2 style="margin: 0;">LOG OF BORING MW-19-50</h2>	
January 2022	102599-018
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	Figure 14 Sheet 3 of 3

LOG OF BORING

Date Started	11/1/21	Location	Ground Elevation:
Date Completed	11/1/21	In the northern shoulder of Gustavus Rd, 230 feet west of the intersection with Wilson / State Dock Rd.	26.097 feet
Total Depth (ft)	15.0	Drilling Company:	Hole Diameter:
		Discovery Drilling	2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Dark brown, <i>Organic Sandy Soil (TOPSOIL)</i> ; moist.	1.0			During Drilling		
		Grey-brown, <i>Well Graded Sand (SW)</i> ; moist.	1.3					
		Grey-brown, <i>Silt (ML)</i> ; moist to wet.						
		Light grey, <i>Well Graded Sand (SW)</i> ; moist.	4.0					
5		Light grey, <i>Poorly Graded Sand with Gravel (SPG)</i> ; wet.	5.0					5
		Light grey, <i>Poorly Graded Sand (SP)</i> ; wet.	10.0					
		Light grey, <i>Poorly Graded Sandy Gravel (GPS)</i> ; wet.	11.0					
		BOTTOM OF BORING	15.0					
		Monitoring Well MW-20-15 completed 11/01/21						
		Construction Details: Flush-mount monument Top of casing is 0.33 feet bgs 2-inch diameter PVC riser pipe 20/40 gradation silica sand pre-pack Screened interval: 4.84 to 14.57 feet bgs Total depth of well: 15.13 feet bgs Top of casing elevation: 25.780 feet						

Typ: VTY
 Rev:
 Log: APW
 GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22

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		Piezometer Screen and Sand Filter
	2" Plastic Tube with Soil Recovery		Ground Water Level ATD

Run No.

Gustavus Airport
2021 Site Characterization Report
Gustavus, Alaska

LOG OF BORING MW-20-15

January 2022 102599-018

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Figure 15

LOG OF BORING

Date Started	11/1/21	Location	Ground Elevation:
Date Completed	11/1/21	In the northern shoulder of Gustavus Rd, 230 feet west of the intersection with Wilson / State Dock Rd.	25.993 feet
Total Depth (ft)	45.0	Drilling Company:	Typical Run Length
		Discovery Drilling	5 feet
			Hole Diameter:
			2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Dark brown, Organic Sandy Soil (TOPSOIL); moist.	1.0			During Drilling	21GST-MW20-01	
		Grey-brown, Well Graded Sand (SW); moist.	1.3					
		Grey-brown, Silt (ML); moist to wet.						
		Light grey, Well Graded Sand (SW); moist.	4.0					
5		Light grey, Poorly Graded Sand with Gravel (SPG); wet.	5.0					
		Light grey, Poorly Graded Sand (SP); wet.	10.0					
		Light grey, Poorly Graded Sandy Gravel (GPS); wet.	11.0					
		Light grey, Poorly Graded Sand with Gravel (SPG); wet.	15.0					
		Light grey, Poorly Graded Sand (SP); wet.	20.0					

CONTINUED NEXT PAGE

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		Piezometer Screen and Sand Filter
	2" Plastic Tube with Soil Recovery		Ground Water Level ATD

Run No. 3

Gustavus Airport
2021 Site Characterization Report
Gustavus, Alaska

LOG OF BORING MW-20-40

January 2022 102599-018

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Figure 16
Sheet 1 of 3

GEOPROBE WELL 102599-018.GPJ 21-20447.GPJ 1/17/22 Log: APW Rev: Typ: VTY

LOG OF BORING

Date Started	11/1/21	Location	Ground Elevation:
Date Completed	11/1/21	In the northern shoulder of Gustavus Rd, 230 feet west of the intersection with Wilson / State Dock Rd.	25.993 feet
Total Depth (ft)	45.0	Drilling Company:	Typical Run Length
		Discovery Drilling	5 feet
			Hole Diameter:
			2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Grey, Poorly Graded Sand with Silt (SP-SM); wet.	25.0					
		Grey, Poorly Graded Sand (SP); wet. Woody organics present to 28.8 feet.	28.0					
30								30
		Grey, Poorly Graded Sand with Silt (SP-SM); wet.	35.0					
35								35
		Dark grey, Silty Sand (SM); wet. Fat clay layer from 42 to 42.5 feet.	40.0					
40								40
		BOTTOM OF BORING	45.0					
45								45
		Monitoring Well MW-20-40 completed 11/01/21						
		Construction Details: Flush-mount monument						
		CONTINUED NEXT PAGE						

Typ: VTY
 Rev:
 Log: APW
 GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22

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 with Soil Recovery Run No.	Piezometer Screen and Sand Filter
2" Plastic Tube - No Soil Recovery	Ground Water Level ATD

Gustavus Airport
2021 Site Characterization Report
Gustavus, Alaska

LOG OF BORING MW-20-40

January 2022 102599-018

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Figure 16
Sheet 2 of 3

LOG OF BORING

Date Started	11/1/21	Location	Ground Elevation:
Date Completed	11/1/21	<i>In the northern shoulder of Gustavus Rd, 230 feet west of the intersection with Wilson / State Dock Rd.</i>	25.993 feet
Total Depth (ft)	45.0		Drilling Company:
		<i>Discovery Drilling</i>	5 feet
			Hole Diameter:
			<i>2 inches</i>





Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		<p>Soil Description</p> <p><i>Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.</i></p>						
55		Top of casing is 0.33 feet bgs 2-inch diameter PVC riser pipe 20/40 gradation silica sand pre-pack Screened interval: 34.83 to 39.58 feet bgs Total depth of well: 40.14 feet bgs Top of casing elevation: 25.599 feet						55
60								60
65								65
70								70

 Typ: VTY
 Rev:
 Log: APW
 GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22

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 |  Piezometer Screen and Sand Filter |
|  2" Plastic Tube with Soil Recovery |  Ground Water Level ATD |
- Run No.

Gustavus Airport 2021 Site Characterization Report Gustavus, Alaska	
LOG OF BORING MW-20-40	
January 2022	102599-018
SHANNON & WILSON, INC.	Figure 16
Geotechnical and Environmental Consultants	Sheet 3 of 3

LOG OF BORING

Date Started	10/25/21	Location	Near the western end of Faraway Rd, 50 feet south of the corner.	Ground Elevation:	25.186 feet
Date Completed	10/25/21			Typical Run Length	5 feet
Total Depth (ft)	15.0	Drilling Company:	Discovery Drilling	Hole Diameter:	2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Brown, Organic Silty Soil (TOPSOIL); moist.				During Drilling		
		Grey-brown, Silt (ML); moist.	2.2					
		Grey-brown to light grey, Well Graded Sand (SW); moist.	2.6					
5								
		Light grey, Poorly Graded Sand (SP); wet.	8.0					
10								
		Grey, Poorly Graded Gravel with Sand (GPS); wet.	10.0					
		Grey, Poorly Graded Sand (SP); wet.	12.5					
15								
		BOTTOM OF BORING	15.0					
		Monitoring Well MW-21-15 completed 10/26/21						
		Construction Details: Flush-mount monument Top of casing is 0.58 feet bgs 2-inch diameter PVC riser pipe 20/40 gradation silica sand pre-pack Screened interval: 4.96 to 14.69 feet bgs Total depth of well: 15.13 feet bgs Top of casing elevation: 24.623 feet						
20								

Typ: VTY
 Rev:
 Log: APW
 GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22

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		Piezometer Screen and Sand Filter
	2" Plastic Tube with Soil Recovery		Ground Water Level ATD

Run No. 3

Gustavus Airport
2021 Site Characterization Report
Gustavus, Alaska

LOG OF BORING MW-21-15

January 2022 102599-018

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Figure 17

LOG OF BORING

Date Started	10/25/21	Location	Near the western end of Faraway Rd, 50 feet south of the corner.
Date Completed	10/25/21	Ground Elevation:	25.104 feet
Total Depth (ft)	45.0	Drilling Company:	Discovery Drilling
		Hole Diameter:	2 inches
		Typical Run Length	5 feet

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Brown, Organic Silty Soil (TOPSOIL); moist.						
		Grey-brown, Silt (ML); moist.	2.2					
		Grey-brown to light grey, Well Graded Sand (SW); moist.	2.6					
5								5
		Light grey, Poorly Graded Sand (SP); wet.	8.0				21GST-MW21-01	
10		Grey, Poorly Graded Gravel with Sand (GPS); wet.	10.0					10
		Grey, Poorly Graded Sand (SP); wet.	12.5					
15		Grey, Poorly Graded Sand with Gravel (SPG); wet.	15.0					15
		Grey, Fat Clay (CH); wet.	17.0					
		Grey, Silt (ML); wet.	17.5					
		Grey, Well Graded Sand (SW); wet.	18.5					
20		Grey, Sandy Silt (MLS); wet.	20.0					20
		Dark grey to grey, Fat Clay (CH); wet.	20.5					

CONTINUED NEXT PAGE

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 with Soil Recovery	Piezometer Screen and Sand Filter
2" Plastic Tube - No Soil Recovery	Ground Water Level ATD

Run No. 3

Gustavus Airport
2021 Site Characterization Report
Gustavus, Alaska

LOG OF BORING MW-21-45

January 2022 102599-018

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Figure 18
Sheet 1 of 3

GEOPROBE WELL 102599-018.GPJ 21-20447.GPJ 1/17/22

LOG OF BORING

Date Started	10/25/21	Location	Near the western end of Faraway Rd, 50 feet south of the corner.	Ground Elevation:	25.104 feet
Date Completed	10/25/21			Typical Run Length	5 feet
Total Depth (ft)	45.0	Drilling Company:	Discovery Drilling	Hole Diameter:	2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.						
		Grey to dark grey, Silty Sand (SM); wet.	27.5					
30		Grey, Sandy Silt (MLS); wet.	30.0					30
		Grey, Fat Clay (CH); wet.	33.0					
35		Grey, Sandy Silt (MLS); wet.	37.5					35
		Grey, Silty Sand (SM); wet.	40.0					40
40			45.0					45
		BOTTOM OF BORING						
		Monitoring Well MW-21-45 completed 10/26/21					21GST-MW21-02	
		Construction Details: Flush-mount monument						

Typ: VTY
 Rev:
 Log: APW
 GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22

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 with Soil Recovery	Piezometer Screen and Sand Filter
2" Plastic Tube - No Soil Recovery	Ground Water Level ATD

Run No. 3

Gustavus Airport
2021 Site Characterization Report
Gustavus, Alaska

LOG OF BORING MW-21-45

January 2022 102599-018

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Figure 18
Sheet 2 of 3

LOG OF BORING

Date Started	10/25/21	Location	Ground Elevation:
Date Completed	10/25/21	Near the western end of Faraway Rd, 50 feet south of the corner.	25.104 feet
Total Depth (ft)	45.0	Drilling Company:	Typical Run Length
		Discovery Drilling	5 feet
			Hole Diameter:
			2 inches





Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
55		Top of casing is 0.5 feet bgs 2-inch diameter PVC riser pipe 20/40 gradation silica sand pre-pack Screened interval: 40.01 to 44.76 feet bgs Total depth of well: 45.20 feet bgs Top of casing elevation: 24.664 feet						55
60								60
65								65
70								70

Typ: VTY
 Rev:
 Log: APW
 GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22

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 |  Piezometer Screen and Sand Filter |
|  2" Plastic Tube with Soil Recovery |  Ground Water Level ATD |
- Run No.

Gustavus Airport 2021 Site Characterization Report Gustavus, Alaska	
<h2 style="margin: 0;">LOG OF BORING MW-21-45</h2>	
January 2022	102599-018
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	Figure 18 Sheet 3 of 3

LOG OF BORING

Date Started	10/25/21	Location	Ground Elevation:
Date Completed	10/25/21	In the northern shoulder of White Dr, 390 feet west of the intersection with Wilson Rd.	26.2 feet
Total Depth (ft)	15.0	Drilling Company:	Typical Run Length
		Discovery Drilling	5 feet
			Hole Diameter:
			2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Brown, Organic Soil with Sand (TOPSOIL); moist.						
		Grey-brown to light grey, Poorly Graded Sand (SP); moist to 4.5 feet. wet below. Silt present from 4 to 4.25 feet.	2.3					
5								5
		Grey, Poorly Graded Sand with Silt (SP-SM); wet.	9.0					
10		Grey, Poorly Graded Sand with Gravel (SPG); wet. Trace cobbles present from 10 to 15 feet bgs.	10.0					10
15			15.0					15
		BOTTOM OF BORING						
		Monitoring Well MW-22-15 completed 10/25/21						
		Construction Details: Flush-mount monument Top of casing is 0.42 feet bgs 2-inch diameter PVC riser pipe 20/40 gradation silica sand pre-pack Screened interval: 4.60 to 14.33 feet bgs Total depth of well: 14.77 feet bgs Top of casing elevation: 25.704 feet						
20								20

Typ: VTY
 Rev:
 Log: APW
 GEOPROBE WELL 102599-018.GPJ 21-20447.GPJ 1/17/22

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	Piezometer Screen and Sand Filter
2" Plastic Tube with Soil Recovery	Ground Water Level ATD

Run No.

Gustavus Airport
2021 Site Characterization Report
Gustavus, Alaska

LOG OF BORING MW-22-15

January 2022
102599-018

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants
Figure 19

LOG OF BORING

Date Started	10/25/21	Location	Ground Elevation:
Date Completed	10/25/21	In the northern shoulder of White Dr, 390 feet west of the intersection with Wilson Rd.	25.812 feet
Total Depth (ft)	45.0	Drilling Company:	Typical Run Length
		Discovery Drilling	5 feet
			Hole Diameter:
			2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		<i>Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.</i>						
		Brown, Organic Soil with Sand (TOPSOIL); moist.						
		Grey-brown to light grey, Poorly Graded Sand (SP); moist to 4.5 feet. wet below. Silt present from 4 to 4.25 feet.	2.3					
5							21GST-MW22-01	5
		Grey, Poorly Graded Sand with Silt (SP-SM); wet.	9.0					
10		Grey, Poorly Graded Sand with Gravel (SPG); wet. Trace cobbles present from 10 to 15 feet bgs.	10.0					10
15								15
20								20
		Grey, Well Graded Sand (SW); wet.	23.0					

CONTINUED NEXT PAGE

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

- | | |
|--|---|
| <ul style="list-style-type: none"> 2" Plastic Tube - No Soil Recovery 2" Plastic Tube with Soil Recovery | <ul style="list-style-type: none"> Piezometer Screen and Sand Filter Ground Water Level ATD |
|--|---|
- Run No.

Gustavus Airport
2021 Site Characterization Report
Gustavus, Alaska

LOG OF BORING MW-22-40

January 2022 102599-018

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Figure 20
Sheet 1 of 3

GEOPROBE WELL 102599-018.GPJ 21-20447.GPJ 1/17/22 Log: APW Rev: Typ: VTY

LOG OF BORING

Date Started	10/25/21	Location	Ground Elevation:
Date Completed	10/25/21	In the northern shoulder of White Dr, 390 feet west of the intersection with Wilson Rd.	25.812 feet
Total Depth (ft)	45.0	Drilling Company:	Typical Run Length
		Discovery Drilling	5 feet
			Hole Diameter:
			2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.						
		Grey, Silt with Clay (CL-ML); wet.	25.0					
30		Dark grey, Silty Sand (SM); wet.	30.0					30
35		Grey, Poorly Graded Sand with Silt (SP-SM); wet.	35.0					35
40								
45			45.0					45
		BOTTOM OF BORING						
		Monitoring Well MW-22-40 completed 10/25/21						
		Construction Details: Flush-mount monument						
		CONTINUED NEXT PAGE						

Typ: VTY
 Rev:
 Log: APW
 GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22

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

- | | |
|--|---|
| 3
2" Plastic Tube with Soil Recovery
Run No. | Piezometer Screen and Sand Filter
Ground Water Level ATD |
|--|---|

Gustavus Airport
2021 Site Characterization Report
Gustavus, Alaska

LOG OF BORING MW-22-40

January 2022 102599-018

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Figure 20
Sheet 2 of 3

LOG OF BORING

Date Started	10/25/21	Location	Ground Elevation:
Date Completed	10/25/21	In the northern shoulder of White Dr, 390 feet west of the intersection with Wilson Rd.	25.812 feet
Total Depth (ft)	45.0	Drilling Company:	Typical Run Length
		Discovery Drilling	5 feet
			Hole Diameter:
			2 inches





Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		<p style="font-size: small;">Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.</p> <p>Top of casing is 0.5 feet bgs 2-inch diameter PVC riser pipe 20/40 gradation silica sand pre-pack Screened interval: 34.92 to 39.67 feet bgs Total depth of well: 40.11 feet bgs Top of casing elevation: 25.368 feet</p>						

Typ: VTY
 Rev:
 Log: APW
 GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22

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 |  Piezometer Screen and Sand Filter |
|  2" Plastic Tube with Soil Recovery |  Ground Water Level ATD |
- Run No.

Gustavus Airport 2021 Site Characterization Report Gustavus, Alaska	
<h2 style="margin: 0;">LOG OF BORING MW-22-40</h2>	
January 2022	102599-018
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	Figure 20 Sheet 3 of 3

LOG OF BORING

Date Started	10/20/21	Location	Ground Elevation:
Date Completed	10/20/21	<i>On a private road between the Gustavus Inn and the Salmon River, 500 feet north of the intersection with Gustavus Rd.</i>	21.66 feet
Total Depth (ft)	20.0		Drilling Company:
		<i>Discovery Drilling</i>	5 feet
			Hole Diameter:
			2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Brown, <i>Organic Soil (TOPSOIL)</i> ; moist.	0.3			During Drilling		
		Grey-brown to light grey, <i>Well Graded Sand (SW)</i> ; dry.						
5		Brown, <i>Poorly Graded Sand with Organics (SP)</i> ; moist.	5.0					5
		Light grey to grey-brown, <i>Well Graded Sand (SW)</i> ; moist.	5.6					
		Grey, <i>Poorly Graded Sand (SP)</i> ; wet. Trace silt present to 15 feet. Clay layer present between 16.5 and 16.75 feet.	13.0					
		BOTTOM OF BORING	20.0					
		Monitoring Well MW-23-20 completed 10/21/21						
		Construction Details: Flush-mount monument						

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	Piezometer Screen and Sand Filter
2" Plastic Tube with Soil Recovery	Ground Water Level ATD

Run No.

Gustavus Airport
2021 Site Characterization Report
Gustavus, Alaska

LOG OF BORING MW-23-20

January 2022

102599-018

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Figure 21
Sheet 1 of 2

GEOPROBE WELL 102599-018.GPJ 21-20447.GPJ 1/17/22 Log: APW Rev: Typ: VTY

LOG OF BORING

Date Started	10/20/21	Location	Ground Elevation:
Date Completed	10/20/21	<i>On a private road between the Gustavus Inn and the Salmon River, 500 feet north of the intersection with Gustavus Rd.</i>	21.66 feet
Total Depth (ft)	20.0		Drilling Company:
		<i>Discovery Drilling</i>	5 feet
			Hole Diameter:
			2 inches





Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		<p>Soil Description</p> <p><i>Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.</i></p>						
30		Top of casing is 0.25 feet bgs 2-inch diameter PVC riser pipe 20/40 gradation silica sand pre-pack Screened interval: 9.92 to 19.65 feet bgs Total depth of well: 20.21 feet bgs Top of casing elevation: 21.318 feet.						30
35								35
40								40
45								45

Typ: VTY
 Rev:
 Log: APW
 GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22

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 |  Piezometer Screen and Sand Filter |
|  2" Plastic Tube with Soil Recovery |  Ground Water Level ATD |
- Run No.

Gustavus Airport 2021 Site Characterization Report Gustavus, Alaska	
<h2 style="margin: 0;">LOG OF BORING MW-23-20</h2>	
January 2022	102599-018
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	Figure 21 Sheet 2 of 2

LOG OF BORING

Date Started	10/20/21	Location	Ground Elevation:
Date Completed	10/20/21	<i>On a private road between the Gustavus Inn and the Salmon River, 500 feet north of the intersection with Gustavus Rd.</i>	21.713 feet
Total Depth (ft)	50.0		Drilling Company:
		<i>Discovery Drilling</i>	5 feet
			Hole Diameter:
			2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.						
		Brown, <i>Organic Soil (TOPSOIL)</i> ; moist.	0.3					
		Grey-brown to light grey, <i>Well Graded Sand (SW)</i> ; dry.						
5		Brown, <i>Poorly Graded Sand with Organics (SP)</i> ; moist.	5.0					5
		Light grey to grey-brown, <i>Well Graded Sand (SW)</i> ; moist.	5.6					
10								10
		Grey, <i>Poorly Graded Sand (SP)</i> ; wet. Trace silt present to 15 feet. Clay layer present between 16.5 and 16.75 feet.	13.0					
15								15
		Dark grey to grey, <i>Poorly Graded Sand with Silt (SP-SM)</i> ; wet. Trace organics present below 45 feet.	20.0					
20								20
						During Drilling	21GST-MW23-01	

CONTINUED NEXT PAGE

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 with Soil Recovery
Run No. | Piezometer Screen and Sand Filter | Ground Water Level ATD |
|---|-----------------------------------|------------------------|

Gustavus Airport
2021 Site Characterization Report
Gustavus, Alaska

LOG OF BORING MW-23-50

January 2022

102599-018

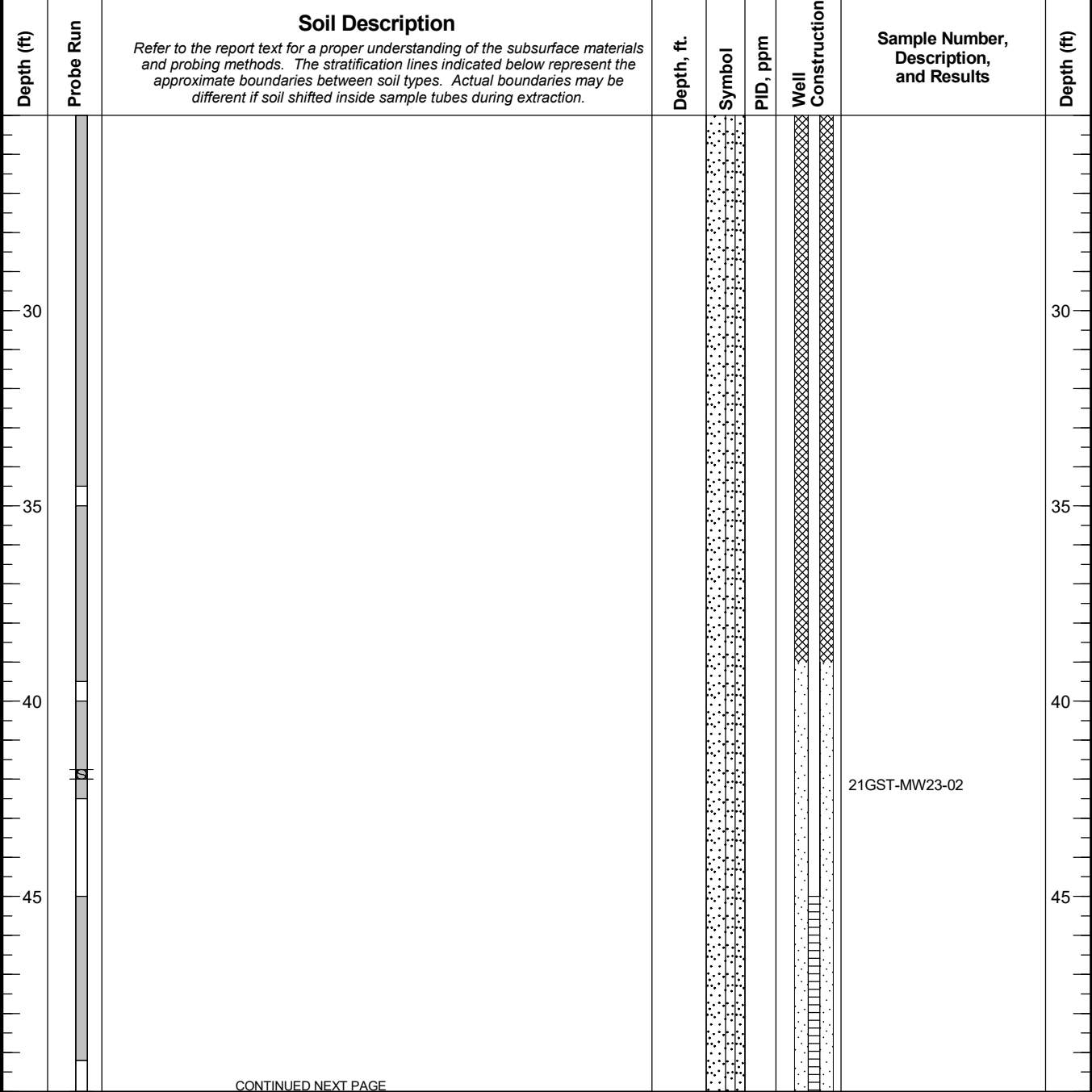
SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Figure 22
Sheet 1 of 3

GEOPROBE WELL 102599-018.GPJ 21-20447.GPJ 1/17/22 Log: APW Rev: Typ: VTY

LOG OF BORING

Date Started	10/20/21	Location	Ground Elevation:
Date Completed	10/20/21	On a private road between the Gustavus Inn and the Salmon River, 500 feet north of the intersection with Gustavus Rd.	21.713 feet
Total Depth (ft)	50.0		Drilling Company:
		Discovery Drilling	5 feet
			Hole Diameter:
			2 inches



CONTINUED NEXT PAGE

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 with Soil Recovery
Run No. | 2" Plastic Tube - No Soil Recovery | Piezometer Screen and Sand Filter | Ground Water Level ATD |
|---|------------------------------------|-----------------------------------|------------------------|

Gustavus Airport 2021 Site Characterization Report Gustavus, Alaska	
<h2 style="margin: 0;">LOG OF BORING MW-23-50</h2>	
January 2022	102599-018
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	
Figure 22 Sheet 2 of 3	

GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22
 Log: APW
 Rev:
 Typ: VTY

LOG OF BORING

Date Started	10/20/21	Location	Ground Elevation:
Date Completed	10/20/21	<i>On a private road between the Gustavus Inn and the Salmon River, 500 feet north of the intersection with Gustavus Rd.</i>	21.713 feet
Total Depth (ft)	50.0		Drilling Company:
		<i>Discovery Drilling</i>	5 feet
			Hole Diameter:
			<i>2 inches</i>





Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
55		<p>BOTTOM OF BORING</p> <p>Monitoring Well MW-23-50 completed 10/21/21</p> <p>Construction Details: Flush-mount monument Top of casing is 0.25 feet bgs 2-inch diameter PVC riser pipe 20/40 gradation silica sand pre-pack Screened interval: 44.55 to 49.30 feet bgs Total depth of well: 49.86 feet bgs Top of casing elevation: 21.409 feet</p>	50.0					55
60								60
65								65
70								70

 Typ: VTY
 Rev:
 Log: APW
 GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22

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 |  Piezometer Screen and Sand Filter |
|  2" Plastic Tube with Soil Recovery
Run No. |  Ground Water Level ATD |

Gustavus Airport	
2021 Site Characterization Report	
Gustavus, Alaska	
LOG OF BORING MW-23-50	
January 2022	102599-018
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	Figure 22 Sheet 3 of 3

LOG OF BORING

Date Started	10/24/21	Location	Ground Elevation:
Date Completed	10/24/21	In the northern shoulder of Parker Dr, 860 feet west of the intersection with Wilson Rd.	25.817 feet
Total Depth (ft)	10.0	Drilling Company:	Typical Run Length
		Discovery Drilling	5 feet
			Hole Diameter:
			2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Grey-brown, Organic Silty Soil (TOPSOIL); moist.	0.5			During Drilling [K]		
		Grey-brown, Sandy Silt (MLS); moist.	0.8					
		Grey-brown, Poorly Graded Sand (SP); moist.	2.4					
		Grey, Well Graded Sand (SW); moist to 4 feet, wet below.						
5								5
		Grey, Poorly Graded Sand with Gravel (SPG); wet.	7.3					
10		BOTTOM OF BORING	10.0					10
		Monitoring Well MW-24-10 completed 10/25/21						
		Construction Details:						
		Flush-mount monument						
		Top of casing is 0.4 feet bgs						
		2-inch diameter PVC riser pipe						
		20/40 gradation silica sand pre-pack						
		Screened interval: 4.77 to 9.52 feet bgs						
		Total depth of well: 9.96 feet bgs						
		Top of casing elevation: 25.75 feet						
15								15
20								20

Typ: VTY
 Rev:
 Log: APW
 GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22

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		Piezometer Screen and Sand Filter
	2" Plastic Tube with Soil Recovery		Ground Water Level ATD

Run No. 3

Gustavus Airport 2021 Site Characterization Report Gustavus, Alaska	
<h2 style="margin: 0;">LOG OF BORING MW-24-10</h2>	
January 2022	102599-018
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	<h2 style="margin: 0;">Figure 23</h2>

LOG OF BORING

Date Started	10/24/21	Location	Ground Elevation:
Date Completed	10/24/21	In the northern shoulder of Parker Dr, 860 feet west of the intersection with Wilson Rd.	26.449 feet
Total Depth (ft)	40.0	Drilling Company:	Typical Run Length
		Discovery Drilling	5 feet
			Hole Diameter:
			2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.						
		Grey-brown, Organic Silty Soil (TOPSOIL); moist.	0.5				21GST-MW24-01	
		Grey-brown, Sandy Silt (MLS); moist.	0.8					
		Grey-brown, Poorly Graded Sand (SP); moist.						
		Grey, Well Graded Sand (SW); moist to 4 feet, wet below.	2.4					
5								5
		Grey, Poorly Graded Sand with Gravel (SPG); wet.	7.3					
10		Grey, Well Graded Sand (SW); wet. Trace gravel present to 15 feet.	10.0					10
15								15
		Grey, Poorly Graded Sand with Gravel (SPG); wet.	18.3					
		Grey, Fat Clay (CH); wet.	18.7					
20		Grey, Poorly Graded Gravel with Sand (GPS); wet.	18.8				20	
		Grey, Poorly Graded Sand (SP); wet.	20.0					

CONTINUED NEXT PAGE

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		Piezometer Screen and Sand Filter
	2" Plastic Tube with Soil Recovery		Ground Water Level ATD

Run No.

Gustavus Airport
2021 Site Characterization Report
Gustavus, Alaska

LOG OF BORING MW-24-30

January 2022

102599-018

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Figure 24
Sheet 1 of 2

GEOPROBE WELL 102599-018.GPJ 21-20447.GPJ 1/17/22 Log: APW Rev: Typ: VTY

LOG OF BORING

Date Started	10/24/21	Location	Ground Elevation:
Date Completed	10/24/21	In the northern shoulder of Parker Dr, 860 feet west of the intersection with Wilson Rd.	26.449 feet
Total Depth (ft)	40.0	Drilling Company:	Typical Run Length
		Discovery Drilling	5 feet
			Hole Diameter:
			2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.						
30.0		Grey, Silt with Clay (CL-ML); wet.	30.0			21GST-MW24-02		30.0
31.0		Grey, Fat Clay (CH); wet.	31.0					31.0
32.5		Dark grey, Silt with Clay (CL-ML); wet.	32.5					32.5
37.0		Grey, Silty Sand (SM); wet.	37.0					37.0
40.0		BOTTOM OF BORING	40.0					40.0
		Monitoring Well MW-24-30 completed 10/24/21						
		Construction Details:						
		Flush-mount monument						
		Top of casing is 0.42 feet bgs						
		2-inch diameter PVC riser pipe						
		20/40 gradation silica sand pre-pack						
		Screened interval: 25.17 to 29.92 feet bgs						
		Total depth of well: 30.36 feet bgs						
		Top of casing elevation: 26.005 feet						

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		Piezometer Screen and Sand Filter
	2" Plastic Tube with Soil Recovery		Ground Water Level ATD

Run No. 3

Gustavus Airport
2021 Site Characterization Report
Gustavus, Alaska

LOG OF BORING MW-24-30

January 2022 102599-018

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Figure 24
Sheet 2 of 2

GEOPROBE WELL 102599-018.GPJ 21-20447.GPJ 1/17/22 Log: APW Rev: Typ: VTY

LOG OF BORING

Date Started	10/23/21	Location	Ground Elevation:
Date Completed	10/23/21	In the western shoulder of Wilson Rd, at the intersection with Icy Dr.	28.918 feet
Total Depth (ft)	15.0	Drilling Company:	Typical Run Length
		Discovery Drilling	5 feet
			Hole Diameter:
			2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Brown, Organic Silty Soil (TOPSOIL); moist.	0.3					
		Grey-brown, Sandy Silt (MLS); moist.	1.0					
		Grey-brown, Well Graded Sand (SW); moist to 5 feet, wet below.						
5								5
		Grey, Poorly Graded Sand with Gravel (SPG); wet.	7.8					
10								10
		Grey, Poorly Graded Sand (SP); wet.	12.8					
15								15
		BOTTOM OF BORING	15.0					
		Monitoring Well MW-25-15 completed 10/23/21						
		Construction Details:						
		Flush-mount monument						
		Top of casing is 0.5 feet bgs						
		2-inch diameter PVC riser pipe						
		20/40 gradation silica sand pre-pack						
		Screened interval: 4.93 to 14.66 feet bgs						
		Total depth of well: 15.10 feet bgs						
		Top of casing elevation: 28.645 feet						
20								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	Piezometer Screen and Sand Filter
2" Plastic Tube with Soil Recovery	Ground Water Level ATD

Run No. 3

Gustavus Airport
2021 Site Characterization Report
Gustavus, Alaska

LOG OF BORING MW-25-15

January 2022

102599-018

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Figure 25

GEOPROBE WELL 102599-018.GPJ 21-20447.GPJ 1/17/22

LOG OF BORING

Date Started	10/23/21	Location	Ground Elevation:
Date Completed	10/23/21	In the western shoulder of Wilson Rd, at the intersection with Icy Dr.	29.473 feet
Total Depth (ft)	50.0	Drilling Company:	Typical Run Length
		Discovery Drilling	5 feet
			Hole Diameter:
			2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.						
		Brown, Organic Silty Soil (TOPSOIL); moist.	0.3					
		Grey-brown, Sandy Silt (MLS); moist.	1.0					
		Grey-brown, Well Graded Sand (SW); moist to 5 feet, wet below.						
5							21GST-MW25-01	5
		Grey, Poorly Graded Sand with Gravel (SPG); wet.	7.8					
10								10
		Grey, Poorly Graded Sand (SP); wet.	12.8					
15								15
		Grey, Well Graded Sand (SW); wet.	15.0					
20								20
		Grey, Poorly Graded Sand with Silt (SP-SM); wet.	19.0					
		Grey, Poorly Graded Sand (SP); wet. A layer of fat clay present between 24.5 and 25 feet.	20.0					

CONTINUED NEXT PAGE

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	Piezometer Screen and Sand Filter
2" Plastic Tube with Soil Recovery	Ground Water Level ATD

Run No.

Gustavus Airport
2021 Site Characterization Report
Gustavus, Alaska

LOG OF BORING MW-25-47

January 2022 102599-018

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Figure 26
Sheet 1 of 3

GEOPROBE WELL 102599-018.GPJ 21-20447.GPJ 1/17/22 Log: APW Rev: Typ: VTY

LOG OF BORING

Date Started	10/23/21	Location	Ground Elevation:
Date Completed	10/23/21	In the western shoulder of Wilson Rd, at the intersection with Icy Dr.	29.473 feet
Total Depth (ft)	50.0	Drilling Company:	Typical Run Length
		Discovery Drilling	5 feet
			Hole Diameter:
			2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.						
		Grey, Silt with Sand (MLS); wet.	28.5				21GST-MW25-02	
30		Grey, Poorly Graded Sand (SP); wet.	30.0					
		Grey, Silt with Sand (MLS); wet.	39.0					
40		Grey, Poorly Graded Sand (SP); wet. Trace silt present.	40.0					
		Grey, Poorly Graded Sand with Silt (SP-SM); wet.	45.0					

CONTINUED NEXT PAGE

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 | | Piezometer Screen and Sand Filter |
| | 2" Plastic Tube with Soil Recovery | | Ground Water Level ATD |
- Run No. 3

Gustavus Airport
2021 Site Characterization Report
Gustavus, Alaska

LOG OF BORING MW-25-47

January 2022

102599-018

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Figure 26
Sheet 2 of 3

GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22 Log: APW Rev: Typ: VTY

LOG OF BORING

Date Started	10/23/21	Location	Ground Elevation:
Date Completed	10/23/21	In the western shoulder of Wilson Rd, at the intersection with Icy Dr.	29.473 feet
Total Depth (ft)	50.0	Drilling Company:	Typical Run Length
		Discovery Drilling	5 feet
			Hole Diameter:
			2 inches





Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
55		BOTTOM OF BORING	50.0					55
60		Monitoring Well MW-25-47 completed 10/23/21						60
65		Construction Details:						65
70		Flush-mount monument						70
		Top of casing is 0.75 feet bgs						
		2-inch diameter PVC riser pipe						
		20/40 gradation silica sand pre-pack						
		Screened interval: 42.22 to 46.97 feet bgs						
		Total depth of well: 47.53 feet bgs						
		Top of casing elevation: 28.263 feet						

Log: APW
Rev:
Typ: VTY
GEOPROBE WELL 102599-018.GPJ 21-20447.GPJ 1/17/22

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
 2" Plastic Tube with Soil Recovery
Run No. |  Piezometer Screen and Sand Filter
 Ground Water Level ATD |
|---|---|

Gustavus Airport
2021 Site Characterization Report
Gustavus, Alaska

LOG OF BORING MW-25-47

January 2022	102599-018
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	Figure 26 Sheet 3 of 3

LOG OF BORING

Date Started	10/30/21	Location	Ground Elevation:
Date Completed	10/30/21	At the southwestern end of Runway 2-20 within the safety area immediately north of the tarmac.	NA
Total Depth (ft)	15.0		Drilling Company:
		Discovery Drilling	5 feet
			Hole Diameter:
			2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.						
		Grey-brown, Well Graded Sand (SW); moist.			0.8		21GST-SB001-01	
		Red-brown to light grey, Poorly Graded Sand (SP); moist.	1.0		0.8			
		Light grey, Poorly Graded Sand with Gravel (SPG); wet.	4.0		0.5	During Drilling	21GST-SB001-02	
5		Grey-brown, Poorly Graded Sand (SP); wet. Trace gravel present.	5.0					5
		Grey-brown to grey, Poorly Graded Sand with Gravel (SPG); wet	8.8				21GST-SB001-03	
15			15.0				21GST-SB001-04	15
		BOTTOM OF BORING						

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 with Soil Recovery
 - 2" Plastic Tube - No Soil Recovery
 - Ground Water Level ATD
- Run No.

Gustavus Airport
2021 Site Characterization Report
Gustavus, Alaska

LOG OF BORING SB-001

January 2022

102599-018

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Figure 27

GEOPROBE WELL 102599-018.GPJ 21-20447.GPJ 1/17/22 Log: APW Rev: Typ: VTY

LOG OF BORING

Date Started	10/30/21	Location	At the southwestern end of Runway 2-20 within the safety area immediately south of the tarmac.
Date Completed	10/30/21	Ground Elevation:	NA
Total Depth (ft)	15.0	Typical Run Length	5 feet
Drilling Company:		Discovery Drilling	
		Hole Diameter:	2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Red-brown to light grey, <i>Well Graded Sand (SW)</i> ; moist.			0.2	During Drilling ▽	21GST-SB002-01	
		Light grey to grey-brown, <i>Poorly Graded Sand (SP)</i> ; wet. Woody organics below 5 feet.	4.5		0.2		21GST-SB002-02	5
		Dark grey to grey, <i>Poorly Graded Sand with Gravel (SPG)</i> ; wet. Woody organics present in whole interval.	8.0		0.1		21GST-SB002-03	
		Grey-brown, <i>Poorly Graded Sand (SP)</i> ; wet.	10.0		0.1			
		Dark grey to grey, <i>Poorly Graded Sand with Gravel (SPG)</i> ; wet.	11.3					
		Grey, <i>Silty Sand (SM)</i> ; wet.	13.3				21GST-SB002-04	
		Grey, <i>Poorly Graded Sand with Gravel (SPG)</i> ; wet.	13.8					
		BOTTOM OF BORING	15.0					

Typ: VTY
 Rev:
 Log: APW
 GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22

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 with Soil Recovery
 - 2" Plastic Tube - No Soil Recovery
 - Ground Water Level ATD
- Run No.

Gustavus Airport 2021 Site Characterization Report Gustavus, Alaska	
<h2 style="margin: 0;">LOG OF BORING SB-002</h2>	
January 2022	102599-018
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	<h2 style="margin: 0;">Figure 28</h2>

LOG OF BORING

Date Started	10/31/21	Location	Ground Elevation:
Date Completed	10/31/21	<i>Within the safety area south of Runway 2-20 and 230 feet west by southwest of the ARFF building.</i>	NA
Total Depth (ft)	10.0		Drilling Company:
		<i>Discovery Drilling</i>	5 feet
			Hole Diameter:
			<i>2 inches</i>

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		<i>Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.</i>						
		Brown, <i>Organic Soil (TOPSOIL)</i> ; moist.	0.5	[Symbol]	0.5	During Drilling [Symbol]	21GST-SB003-01	
		Red-brown to light grey, <i>Well Graded Sand (SW)</i> ; moist.						
5		Light grey to grey-brown, <i>Poorly Graded Sand (SP)</i> ; wet. Trace gravel present below 5 feet.	3.8		0.3		21GST-SB003-02	5
		Grey, <i>Poorly Graded Sand with Gravel (SPG)</i> ; wet.	8.5					
10		BOTTOM OF BORING	10.0				21GST-SB003-03	10

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
 - 2" Plastic Tube with Soil Recovery
 - Ground Water Level ATD
- Run No.

Gustavus Airport 2021 Site Characterization Report Gustavus, Alaska	
LOG OF BORING SB-003	
January 2022	102599-018
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	Figure 29

GEOPROBE WELL 102599-018.GPJ 21-20447.GPJ 1/17/22 Log: APW Rev: Typ: VTY

LOG OF BORING

Date Started	10/31/21	Location	Ground Elevation:
Date Completed	10/31/21	<i>Within the safety area south of Runway 2-20 and 110 feet west by west of the ARFF building.</i>	NA
Total Depth (ft)	10.0		Drilling Company:
		<i>Discovery Drilling</i>	5 feet
			Hole Diameter:
			<i>2 inches</i>

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		<i>Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.</i>						
		Brown to grey-brown, <i>Well Graded Sand (SW)</i> ; moist. Woody organics present.	1.0	●	0.5	During Drilling	21GST-SB004-01	
		Grey to grey-brown, <i>Poorly Graded Sand with Gravel (SPG)</i> ; moist to 4 feet, wet below.		○	0.5		21GST-SB004-02	
5			8.0	●	0.6			
		Grey, <i>Poorly Graded Sand (SP)</i> ; wet.		○	0.6		21GST-SB004-03	
10		BOTTOM OF BORING	10.0					

Typ: VTY
 Rev:
 Log: APW
 GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22

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
 - 2" Plastic Tube with Soil Recovery
 - Ground Water Level ATD
- Run No.

Gustavus Airport 2021 Site Characterization Report Gustavus, Alaska	
<h2 style="margin: 0;">LOG OF BORING SB-004</h2>	
January 2022	102599-018
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	<h3 style="margin: 0;">Figure 30</h3>

LOG OF BORING

Date Started	10/30/21	Location	Adjacent to the southern face of the ARFF building.
Date Completed	10/30/21	Ground Elevation:	NA
Total Depth (ft)	10.0	Typical Run Length	5 feet
		Drilling Company:	Discovery Drilling
		Hole Diameter:	2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
	S	Grey-brown, <i>Well Graded Sand (SW)</i> ; moist.		•••••	1.2	During Drilling	21GST-SB005-01	
	S	Grey-brown, <i>Silty Sand (SM)</i> ; moist to 4.5 feet, wet below.	2.5	•••••	1.2			
5	S	Grey-brown, <i>Poorly Graded Sand (SP)</i> ; wet. Trace silt present.	5.0	•••••	1.1 1.1		21GST-SB005-02	5
	S	Light grey, <i>Poorly Graded Sandy Gravel (GPS)</i> ; wet.	9.3	•••••	1.1 1.1			
		BOTTOM OF BORING	10.0				21GST-SB005-03	10

Typ: VTY
 Rev:
 Log: APW
 GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22

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 with Soil Recovery | | Ground Water Level ATD |
| | 2" Plastic Tube - No Soil Recovery | | |
- Run No.

Gustavus Airport 2021 Site Characterization Report Gustavus, Alaska	
<h2 style="margin: 0;">LOG OF BORING SB-005</h2>	
January 2022	102599-018
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	<h3 style="margin: 0;">Figure 31</h3>

LOG OF BORING

Date Started	10/31/21	Location	North of the taxiway between Runways 2-20 and 11-29, 450 feet southwest of the windsock.	Ground Elevation:	NA
Date Completed	10/31/21			Typical Run Length	5 feet
Total Depth (ft)	10.0	Drilling Company:	Discovery Drilling	Hole Diameter:	2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
	S	Brown, <i>Sandy Organic Soil (TOPSOIL)</i> ; moist.	0.5	S			21GST-SB006-01	
		Grey-brown, <i>Well Graded Sand (SW)</i> ; moist.		SW				
		Red-brown to grey, <i>Sandy Silt (MLS)</i> ; moist.	3.5	MLS				
5		Light grey, <i>Well Graded Sand (SW)</i> ; moist.	4.1	SW				5
	S	Light grey, <i>Poorly Graded Sand with Gravel (SPG)</i> ; wet.	6.0	SPG		During Drilling	21GST-SB006-02	
10	S	BOTTOM OF BORING	10.0				21GST-SB006-03	10

Typ: VTY
 Rev:
 Log: APW
 GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22

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 | | |
| | 2" Plastic Tube with Soil Recovery | | Ground Water Level ATD |
- Run No.

Gustavus Airport 2021 Site Characterization Report Gustavus, Alaska	
<h2 style="margin: 0;">LOG OF BORING SB-006</h2>	
January 2022	102599-018
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	<h3 style="margin: 0;">Figure 32</h3>

LOG OF BORING

Date Started	10/30/21	Location	Ground Elevation:
Date Completed	10/30/21	In the DOT yard, 150 feet south of the ARFF building.	NA
Total Depth (ft)	10.0	Drilling Company:	Typical Run Length
		Discovery Drilling	5 feet
			Hole Diameter:
			2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.						
	1	Brown, <i>Sandy Organic Soil (TOPSOIL)</i> ; moist.	0.3	[Symbol]	1.3		21GST-SB007-01	
		Grey-brown, <i>Poorly Graded Sand (SP)</i> ; moist. Trace silt present.						
	2	Light grey to grey-brown, <i>Well Graded Sand (SW)</i> ; moist to 4 feet, wet below.	3.5	[Symbol]	1.3	During Drilling [Symbol]	21GST-SB007-02	
		Grey-brown, <i>Poorly Graded Sand with Gravel (SPG)</i> ; wet.	7.0	[Symbol]	1.3			
	3	BOTTOM OF BORING	10.0	[Symbol]			21GST-SB007-03	

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 with Soil Recovery
 - 2" Plastic Tube - No Soil Recovery
 - Ground Water Level ATD
- Run No.

Gustavus Airport
2021 Site Characterization Report
Gustavus, Alaska

LOG OF BORING SB-007

January 2022

102599-018

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Figure 33

GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22

Log: APW

Typ: VTY

Rev:

LOG OF BORING

Date Started	10/31/21	Location	North of the taxiway between runways 2-20 and 11-29, 300 feet south of the windsock.	Ground Elevation:	NA
Date Completed	10/31/21			Typical Run Length	5 feet
Total Depth (ft)	10.0	Drilling Company:	Discovery Drilling	Hole Diameter:	2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
	1	Grey-brown, <i>Well Graded Sand (SW)</i> , moist. Organics present.	0.8	[Symbol]		During Drilling [Symbol]	21GST-SB008-01	
	2	Grey, <i>Sandy Silt (MLS)</i> ; moist.	1.8	[Symbol]				
	3	Grey-brown to light grey, <i>Well Graded Sand (SW)</i> ; wet. Trace silt present to 5 feet.	5.5	[Symbol]			21GST-SB008-02	
	4	Light grey, <i>Poorly Graded Sand (SP)</i> ; wet.	10.0	[Symbol]			21GST-SB008-03	
		BOTTOM OF BORING						

Typ: VTY
 Rev:
 Log: APW
 GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22

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
 - 2" Plastic Tube with Soil Recovery
 - Ground Water Level ATD
- Run No.

Gustavus Airport 2021 Site Characterization Report Gustavus, Alaska	
<h2 style="margin: 0;">LOG OF BORING SB-008</h2>	
January 2022	102599-018
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	<h2 style="margin: 0;">Figure 34</h2>

LOG OF BORING

Date Started	10/30/21	Location	North of the intersection of Runways 2-20 and 11-29.	Ground Elevation:	NA
Date Completed	10/30/21			Typical Run Length	5 feet
Total Depth (ft)	15.0	Drilling Company:	Discovery Drilling	Hole Diameter:	2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
	S	Light grey to grey-brown, <i>Well Graded Sand (SW)</i> ; moist. Silt layer present at 1 foot.		•••••	0.9		21GST-SB009-01	
5	S	Light grey to grey-brown, <i>Poorly Graded Sand (SP)</i> ; wet. Trace gravel present below 5 feet.	4.5	•••••	0.9	During Drilling	21GST-SB009-02	5
	S	Light grey to brown-grey, <i>Poorly Graded Sand with Gravel (SPG)</i> ; wet.	8.8	•••••	0.8		21GST-SB009-03	10
10	S	Grey-brown, <i>Poorly Graded Sand (SP)</i> ; wet. Trace gravel present.	10.0	•••••				10
	S	Light grey, <i>Poorly Graded Gravel with Sand (GPS)</i> ; wet.	12.5	•••••			21GST-SB009-03	15
15		BOTTOM OF BORING	15.0					15

Typ: VTY
 Rev:
 Log: APW
 GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22

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
 - 2" Plastic Tube with Soil Recovery
 - Ground Water Level ATD
- Run No.

Gustavus Airport 2021 Site Characterization Report Gustavus, Alaska	
<h2 style="margin: 0;">LOG OF BORING SB-009</h2>	
January 2022	102599-018
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	Figure 35

LOG OF BORING

Date Started	10/30/21	Location	South of the intersection of Runways 2-20 and 11-29.	Ground Elevation:	NA
Date Completed	10/30/21			Typical Run Length	5 feet
Total Depth (ft)	10.0	Drilling Company:	Discovery Drilling	Hole Diameter:	2 inches




Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
	1	Grey-brown, <i>Well Graded Sand (SW)</i> ; moist.		●		During Drilling	21GST-SB010-01	
	2	Grey-brown, <i>Poorly Graded Sand with Silt (SP-SM)</i> ; moist to 4.25 feet, wet below. Crushed cobble present at 4.25 feet.	3.0	●			21GST-SB010-02	
5		Grey-brown, <i>Poorly Graded Sandy Gravel (GPS)</i> ; wet.	5.0	●				5
		Grey-brown, <i>Poorly Graded Sand (SP)</i> ; wet.	6.0	●				
10	3	BOTTOM OF BORING	10.0				21GST-SB010-03	10

Typ: VTY
 Rev:
 Log: APW
 GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22

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 | | |
|  | 2" Plastic Tube with Soil Recovery |  | Ground Water Level ATD |
- Run No.

Gustavus Airport 2021 Site Characterization Report Gustavus, Alaska	
<h2 style="margin: 0;">LOG OF BORING SB-010</h2>	
January 2022	102599-018
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	<h3 style="margin: 0;">Figure 36</h3>

LOG OF BORING

Date Started	10/31/21	Location	Southeastern end of the taxiway near the Alaska Airlines terminal.	Ground Elevation:	NA
Date Completed	10/31/21			Typical Run Length	5 feet
Total Depth (ft)	10.0	Drilling Company:	Discovery Drilling	Hole Diameter:	2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.						
		Dark brown, <i>Sandy Organic Soil (TOPSOIL)</i> , moist.	0.5	ST	0.8		21GST-SB011-01	
		Grey-brown, <i>Well Graded Sand (SW)</i> ; moist.	1.6	SW				
		Grey, <i>Silty Sand (SM)</i> ; moist.	2.5	SM	0.9			
5		Light grey, <i>Well Graded Sand (SW)</i> ; moist. Iron staining present to 5 feet.						5
		Grey-brown, <i>Poorly Graded Sand (SP)</i> ; wet.	7.5	SP	1.9	During Drilling	21GST-SB011-02	
		Grey, <i>Poorly Graded Sand with Silt (SP-SM)</i> ; wet.	9.0	SP-SM				
10		BOTTOM OF BORING	10.0					21GST-SB011-03
15								15
20								20

Typ: VTY
 Rev:
 Log: APW
 GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22

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
 - 2" Plastic Tube with Soil Recovery
 - Ground Water Level ATD
- Run No.

Gustavus Airport 2021 Site Characterization Report Gustavus, Alaska	
<h2 style="margin: 0;">LOG OF BORING SB-011</h2>	
January 2022	102599-018
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	Figure 37

LOG OF BORING

Date Started	10/30/21	Location	Near the southeastern end of Runway 11-29 at the northern edge of the contaminated soil staging area.
Date Completed	10/30/21	Ground Elevation:	NA
Total Depth (ft)	10.0	Drilling Company:	Discovery Drilling
		Hole Diameter:	2 inches
		Typical Run Length	5 feet

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		<i>Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.</i>						
		Brown to grey-brown, <i>Well Graded Sand (SW)</i> ; moist.		●	0.5		21GST-SB012-01	
		Grey-brown to grey, <i>Poorly Graded Sand with Gravel (SPG)</i> ; wet.	3.0	●	0.8	During Drilling	21GST-SB012-02	
5		Grey-brown, <i>Silty Sand (SM)</i> ; wet.	5.0	●	0.8			5
		Grey to dark grey, <i>Poorly Graded Sandy Gravel (GPS)</i> ; wet. Woody organics present from 8.5 to 9.2 feet.	7.0	●				
		Grey, <i>Poorly Graded Sand (SP)</i> , wet.	9.2	●			21GST-SB012-03	
		BOTTOM OF BORING	10.0					10

Typ: VTY
 Rev:
 Log: APW
 GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22

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
 - 2" Plastic Tube with Soil Recovery
 - Ground Water Level ATD
- Run No.

Gustavus Airport 2021 Site Characterization Report Gustavus, Alaska	
<h2 style="margin: 0;">LOG OF BORING SB-012</h2>	
January 2022	102599-018
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	<h3 style="margin: 0;">Figure 38</h3>

LOG OF BORING

Date Started	10/30/21	Location	Near the southeastern end of Runway 11-29 at the eastern edge of the contaminated soil staging area.
Date Completed	10/30/21	Ground Elevation:	NA
Total Depth (ft)	10.0	Typical Run Length	5 feet
		Drilling Company:	Discovery Drilling
		Hole Diameter:	2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Soil Description <i>Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.</i>						
		Grey-brown, <i>Silty Sand (SM)</i> ; moist. Organics present.	0.5	[Symbol]	0.3	During Drilling [Symbol]	21GST-SB013-01	
		Grey-brown, <i>Well Graded Sand (SW)</i> ; moist. Trace gravel present.			0.5			
		Grey-brown to grey, <i>Poorly Graded Sand with Gravel (SPG)</i> ; wet.	3.5		0.5		21GST-SB013-02	
		Grey, <i>Fat Clay (CH)</i> ; wet.	9.8	[Symbol]			21GST-SB013-03	
		BOTTOM OF BORING	10.0					

Typ: VTY
 Rev:
 Log: APW
 GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22

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
 - 2" Plastic Tube with Soil Recovery
 - Ground Water Level ATD
- Run No.

Gustavus Airport 2021 Site Characterization Report Gustavus, Alaska	
<h2 style="margin: 0;">LOG OF BORING SB-013</h2>	
January 2022	102599-018
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	<h3 style="margin: 0;">Figure 39</h3>

LOG OF BORING

Date Started	10/31/21	Location	Near the southeastern end of Runway 11-29 in the southern half of the contaminated soil staging area.	Ground Elevation:	NA
Date Completed	10/31/21			Typical Run Length	5 feet
Total Depth (ft)	10.0	Drilling Company:	Discovery Drilling	Hole Diameter:	2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
	S	Grey-brown, <i>Well Graded Sand (SW)</i> ; moist. Trace silt present to 0.7 feet.		•••••			21GST-SB014-01	
5	S	Grey-brown to grey, <i>Poorly Graded Sand with Gravel (SPG)</i> ; wet. Trace silt present to 5 feet.	3.5	•••••		▽	21GST-SB014-02	5
		Grey, <i>Poorly Graded Gravel with Sand (GPS)</i> ; wet.	6.0	•••••				
10	S	Grey, <i>Fat Clay (CH)</i> ; wet.	9.9	•••••			21GST-SB014-03	10
		BOTTOM OF BORING	10.0					

Typ: VTY
 Rev:
 Log: APW
 GEOPROBE WELL: 102599-018.GPJ 21-20447.GPJ 1/17/22

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 with Soil Recovery
 - 2" Plastic Tube - No Soil Recovery
 - Ground Water Level ATD
- Run No.

Gustavus Airport 2021 Site Characterization Report Gustavus, Alaska	
<h2 style="margin: 0;">LOG OF BORING SB-014</h2>	
January 2022	102599-018
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	<h3 style="margin: 0;">Figure 40</h3>

Appendix C
Field Notes

CONTENTS

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

MONITORING WELL CONSTRUCTION DETAILS

Monitoring Well No. <u>MW 9-10</u>	Date Installed <u>10/24/2021</u>
Project Name <u>Gustavus DOT & PF</u>	Logged By <u>Adam Wybrany</u>
Project Number <u>102599-008</u>	Driller <u>Discovery Drilling</u>

I. TOP SECTION (CASING)

Initial Pipe Length 10'
 Cutoff Length 5.8'
 Add-on Length _____
Total Length 4.2

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)

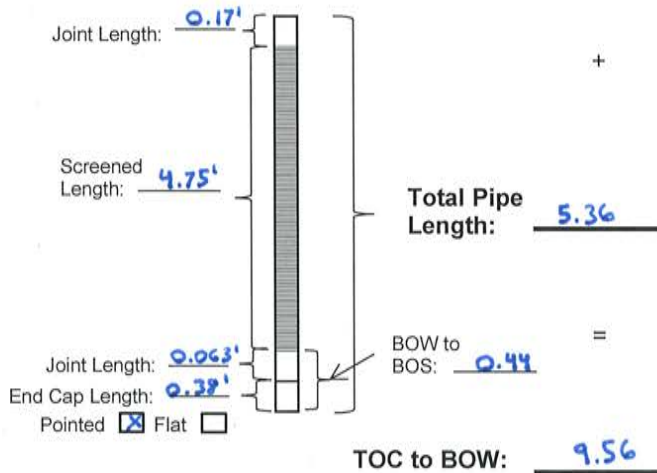
Number of Blank Sections 0
 Length of Section(s): _____

Sum of Lengths: 0'

V. BACKFILL

	Depth Below GS	
	Bottom	Top
CEM (No Pipe)		
<u>CEM_PB</u>	<u>1'</u>	<u>0'</u>
<u>SLUF_PB/FIL_PB</u>	<u>2'</u>	<u>1'</u>
<u>BCH_PB</u>	<u>3'</u>	<u>2'</u>
*SLUF_PB/FIL_PB		
BGR PB		
*SLUF_PB/FIL_PB	<u>5</u>	<u>3</u>
*SLUF_PS/FIL_PS	<u>10'</u>	<u>5.8'</u>
*SLUF/FIL (No Pipe)		
*SLUF_PB/FIL_PB		
Filter Pack Type or Gradation	<u>20/40 rounded silica sand</u>	

III. SCREENED SECTION(S)



VI. MONUMENTS

Stickup Flushmount
 TOM to GS 0'
 TOM to TOC 0.5'
 ^TOC to GS 0.5'
 Lock type N/A

VII. MOISTURE CONTENT

Depth to Water Below GS 3.5'
 Frozen Soil Below GS

	Bottom	Top
Seasonal 1		
Seasonal 2		
Permafrost 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)
- 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

VIII. CALCULATIONS BELOW GROUND SURFACE

TOC to BOW 9.56
 - BOW to BOS 0.44
= TOC to BOS 9.12
 TOC to BOS 9.12
 - Screened Length 4.75
= TOC to TOS 4.37

TOC to BOW	<u>9.56</u>
- TOC to GS	<u>-0.5</u>
BOW bgs	<u>10.06</u>
TOC to TOS	<u>4.37</u>
- TOC to GS	<u>-0.5</u>
TOS bgs	<u>4.87</u>
TOC to BOS	<u>9.12</u>
- TOC to GS	<u>-0.5</u>
BOS bgs	<u>9.62</u>

*Note - no log of bary - reference
 log from
 MW-9-30 installed
 in 2019

4/9/2020

SHANNON & WILSON, INC.

Well No.

MW-9-10

KRF

FIELD LOG OF BORING

DRILL COMPANY/DRILLER: <u>Discovery Drilling</u> DRILL RIG EQUIPMENT: <u>GeoProbe 6610 DT</u> DRILLING METHOD: <u>Direct Push</u> HAMMER TYPE: <u>Auto</u> ROD TYPE/DIA.: <u>2"</u> HAMMER WEIGHT: <u>N/A</u> HAMMER DROP: <u>N/A</u> CASING SIZE/TYPE: <u>1.5"</u> HOLE SIZE: <u>2"</u>	JOB NO: <u>102599-008</u> BORING NO: <u>MW-14</u> JOB NAME: <u>Gustavus DOT & PF PFAS</u> LOGGED BY: <u>Adam Wyborny</u> LOCATION: <u>GST</u> ELEV.: _____ START DATE: <u>10/27/21</u> END DATE: <u>10/27/21</u> WEATHER DURING DRILLING: <u>Rain 40°F wind < 5mph</u>
---	--

SAMPLE DATA

TIME DATE	SAMP. NO. TYPE	DEPTH FEET	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	8	35'		/	3.9			/	/	35'-38': Grey sandy silt, wet
10/27		40'		/	/					38'-38.8': Dark grey silt with clay, wet
1550	9	40'		/	4.6			/	06	38.8'-40': Grey sandy silt, wet
10/27		45'		/	1				44'	

SUMMARY FIELD LOG OF BORING

DEPTH		USCS CLASSIF.	GENERALIZED SOIL DESCRIPTION FOR DRAFTED GINT LOG
FROM	TO		

COMMENTS (i.e. materials used, visitors, problems, etc.):

GROUNDWATER DATA

WATER DEPTH	TIME	DATE
7'	1400	10/27/21

SUMMARY OF TIME AND FOOTAGE

FOOTAGE _____ SAMPLES: _____ Attempted
 DRILLED: _____ Recovered

DRILL/SAMPLE _____ hrs. STANDBY: _____ hrs.

SETUP/CLEANUP: _____ hrs. WELL INSTALL: _____ hrs.

OTHER: _____

BORING: MW-14 SHEET 2 OF 2

KAF

MONITORING WELL CONSTRUCTION DETAILS

Monitoring Well No. <u>MW14-15</u>	Date Installed <u>10/28/2021</u>
Project Name <u>Gustavus DOT & PF</u>	Logged By <u>Adam Wyberny</u>
Project Number <u>102599-008</u>	Driller <u>Discovery Drilling</u>

I. TOP SECTION (CASING)

Initial Pipe Length 10'
 Cutoff Length 5.58'
 Add-on Length _____

Total Length 4.42'

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)

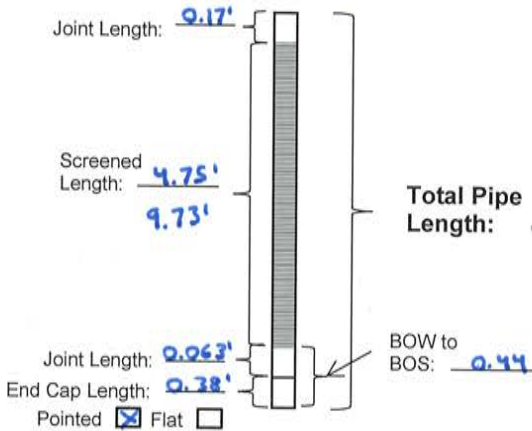
Number of Blank Sections 0
 Length of Section(s): _____

Sum of Lengths: 0'

V. BACKFILL

	Depth Below GS	
	Bottom	Top
CEM (No Pipe)		
CEM_PB	1'	0'
*SLUF_PB/FIL_PB	2'	1'
BCH_PB	3'	2'
*SLUF_PB/FIL_PB		
BGR_PB		
*SLUF_PB/FIL_PB	5'	3'
*SLUF_PS/FIL_PS	15'	5'
*SLUF/FIL (No Pipe)		
*SLUF_PB/FIL_PB		
Filter Pack Type or Gradation	<u>20/40 rounded silica sand</u>	

III. SCREENED SECTION(S) x 2



VI. MONUMENTS

Stickup Flushmount
 TOM to GS 0'
 TOM to TOC -0.5'
 ^TOC to GS -0.5'
 Lock type N/A

VII. MOISTURE CONTENT

Depth to Water Below GS _____

	Frozen Soil Below GS	
	Bottom	Top
Seasonal 1		
Seasonal 2		
Permafrost 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)
- 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

VIII. CALCULATIONS BELOW GROUND SURFACE

TOC to BOW 14.77
 - BOW to BOS 0.44
 = **TOC to BOS** 14.33
 TOC to BOS 14.33
 - Screened Length 9.73
 = **TOC to TOS** 4.6

TOC to BOW	<u>14.77</u>
- TOC to GS	<u>-0.50</u>
BOW bgs	<u>15.27</u>
TOC to TOS	<u>4.60</u>
- TOC to GS	<u>-0.50</u>
TOS bgs	<u>5.10</u>
TOC to BOS	<u>14.33</u>
- TOC to GS	<u>-0.50</u>
BOS bgs	<u>14.83</u>

MONITORING WELL CONSTRUCTION DETAILS

Monitoring Well No. <u>MW 14-31</u>	Date Installed <u>10/27/2021</u>
Project Name <u>Gustavus DOT + PF</u>	Logged By <u>Adam Wyberny</u>
Project Number <u>102599-008</u>	Driller <u>Discovery Drilling</u>

I. TOP SECTION (CASING)

Initial Pipe Length 10'
 Cutoff Length 2.17 + 2.39
 Add-on Length _____
Total Length 7.83 5.44

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): _____

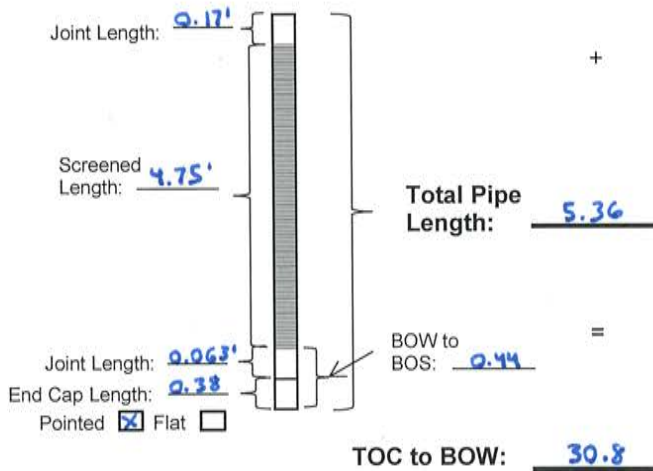
10'	10'	

Sum of Lengths: 20'

V. BACKFILL

	Depth Below GS	
	Bottom	Top
CEM (No Pipe)	_____	_____
CEM_PB	1'	0'
SLUF_PB/FIL_PB	5'	1'
BCH_PB	24'	5'
*SLUF_PB/FIL_PB	_____	_____
BGR_PB	_____	_____
*SLUF_PB/FIL_PB	26	24
*SLUF_PS/FIL_PS	21	28
*SLUF/FIL (No Pipe)	_____	_____
*SLUF_PB/FIL_PB	_____	_____
Filter Pack Type or Gradation	<u>20/40 rounded silica sand</u>	

III. SCREENED SECTION(S)



VI. MONUMENTS

Stickup Flushmount
 TOM to GS 0'
 TOM to TOC -0.5
 ^TOC to GS -0.5
 Lock type N/A

VII. MOISTURE CONTENT

Depth to Water Below GS _____

	Frozen Soil Below GS	
	Bottom	Top
Seasonal 1	_____	_____
Seasonal 2	_____	_____
Permafrost 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)
- 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

VIII. CALCULATIONS BELOW GROUND SURFACE

TOC to BOW 30.8
 - BOW to BOS 0.44
= TOC to BOS 30.36
 TOC to BOS 30.36
 - Screened Length 4.75
= TOC to TOS 25.61

TOC to BOW	<u>30.80</u>
- TOC to GS	<u>-0.50</u>
BOW bgs	<u>31.30</u>
TOC to TOS	<u>25.61</u>
- TOC to GS	<u>26.11 - 0.5</u>
TOS bgs	<u>26.11</u>
TOC to BOS	<u>30.36</u>
- TOC to GS	<u>-0.50</u>
BOS bgs	<u>30.86</u>

MONITORING WELL CONSTRUCTION DETAILS

Monitoring Well No. <u>MW15-15</u>	Date Installed <u>10/29/2021</u>
Project Name <u>Gustavus DOT & PF</u>	Logged By <u>Adam Wylbany</u>
Project Number <u>102599-008</u>	Driller <u>Discovery Drilling</u>

I. TOP SECTION (CASING)

Initial Pipe Length 10'
 Cutoff Length 5.58'
 Add-on Length _____
Total Length 4.42'

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)

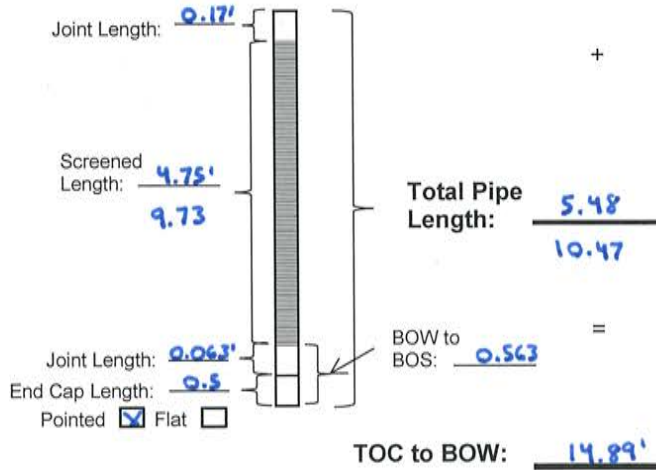
Number of Blank Sections 0
 Length of Section(s): _____

Sum of Lengths: 0'

V. BACKFILL

	Depth Below GS	
	Bottom	Top
CEM (No Pipe)		
<u>CEM_PB</u>	<u>1'</u>	<u>0'</u>
<u>SLUF_PB/FIL_PB</u>	<u>2'</u>	<u>1'</u>
<u>BCH_PB</u>	<u>3'</u>	<u>2'</u>
*SLUF_PB/FIL_PB		
BGR PB		
*SLUF_PB/FIL_PB	<u>5'</u>	<u>3'</u>
*SLUF_PS/FIL_PS	<u>15'</u>	<u>5'8"</u>
*SLUF/FIL (No Pipe)		
*SLUF_PB/FIL_PB		
Filter Pack Type or Gradation	<u>20/40 rounded silica sand</u>	

III. SCREENED SECTION(S) x 2



VI. MONUMENTS

Stickup Flushmount
 TOM to GS 0'
 TOM to TOC -0.25'
 ^TOC to GS -0.25'
 Lock type N/A

VII. MOISTURE CONTENT

Depth to Water Below GS _____
 Frozen Soil Below GS
 Bottom _____ Top _____
 Seasonal 1 _____
 Seasonal 2 _____
 Permafrost 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)
- 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

VIII. CALCULATIONS BELOW GROUND SURFACE

TOC to BOW 14.89'
 - BOW to BOS 0.563
= TOC to BOS 14.33
 TOC to BOS 14.33
 - Screened Length 9.73
= TOC to TOS 4.6

TOC to BOW	<u>14.89</u>
- TOC to GS	<u>-0.25</u>
BOW bgs	<u>14.64</u>
TOC to TOS	<u>4.60</u>
- TOC to GS	<u>-0.25</u>
TOS bgs	<u>4.35</u>
TOC to BOS	<u>14.33</u>
- TOC to GS	<u>-0.25</u>
BOS bgs	<u>14.08</u>

PF

MONITORING WELL CONSTRUCTION DETAILS

Monitoring Well No. <u>MW15-46</u>	Date Installed <u>10/29/2021</u>
Project Name <u>Gustarus DOT 2PF</u>	Logged By <u>Adam Wybarny</u>
Project Number <u>102599-008</u>	Driller <u>Discovery Drilling</u>

I. TOP SECTION (CASING)

Initial Pipe Length 10'
 Cutoff Length _____
 Add-on Length 0.97'
Total Length 10.97'

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): _____

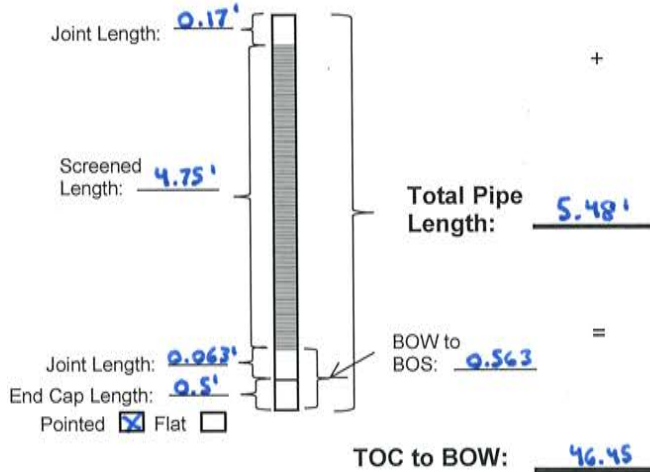
<u>10'</u>	<u>10'</u>	<u>10'</u>

Sum of Lengths: 30'

V. BACKFILL

	Depth Below GS	
	Bottom	Top
CEM (No Pipe)		
CEM_PB	<u>1'</u>	<u>0'</u>
*SLUF_PB/FIL_PB	<u>5'</u>	<u>1'</u>
BCH_PB	<u>37'</u>	<u>5'</u>
*SLUF_PB/FIL_PB		
BGR_PB		
*SLUF_PB/FIL_PB	<u>41</u>	<u>37</u>
*SLUF_PS/FIL_PS	<u>46'</u>	<u>37' 41</u>
*SLUF/FIL (No Pipe)		
*SLUF_PB/FIL_PB		
Filter Pack Type or Gradation	<u>20/40 rounded silica sand</u>	

III. SCREENED SECTION(S)



VI. MONUMENTS

Stickup Flushmount
 TOM to GS 0'
 TOM to TOC -0.33
 ^TOC to GS -0.33
 Lock type N/A

VII. MOISTURE CONTENT

Depth to Water Below GS _____

	Frozen Soil Below GS	
	Bottom	Top
Seasonal 1		
Seasonal 2		
Permafrost 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)
- 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

VIII. CALCULATIONS BELOW GROUND SURFACE

TOC to BOW 46.45
 - BOW to BOS 0.563
= TOC to BOS 45.9

TOC to BOS 45.9
 - Screened Length 4.75
= TOC to TOS 41.14

TOC to BOW	<u>46.45</u>
- TOC to GS	<u>-0.33</u>
BOW bgs	<u>46.78</u>
TOC to TOS	<u>41.14</u>
- TOC to GS	<u>-0.33</u>
TOS bgs	<u>41.47</u>
TOC to BOS	<u>45.90</u>
- TOC to GS	<u>-0.33</u>
BOS bgs	<u>46.23</u>

KRF

MONITORING WELL CONSTRUCTION DETAILS

Monitoring Well No. <u>MW-16-15</u>	Date Installed <u>10/31/2021</u>
Project Name <u>Gustavus DOT & PF</u>	Logged By <u>Adam Wyborny</u>
Project Number <u>102599-008</u>	Driller <u>Discovery Drilling</u>

I. TOP SECTION (CASING)

Initial Pipe Length 10'
 Cutoff Length 5.79'
 Add-on Length _____

Total Length 4.21

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)

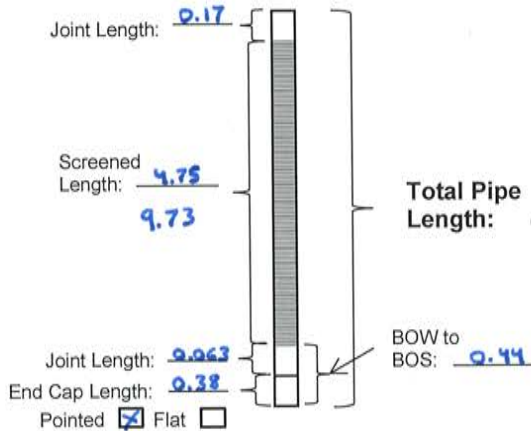
Number of Blank Sections 0
 Length of Section(s): _____

Sum of Lengths: 0'

V. BACKFILL

	Depth Below GS	
	Bottom	Top
CEM (No Pipe)		
CEM PB	1'	0'
*SLUF_PB/FIL_PB	2'	1'
BCH_PB	3'	2'
*SLUF_PB/FIL_PB		
BGR_PB		
*SLUF_PB/FIL_PB	5'	3'
SLUF_PS/FIL_PS	15'	7.5'
*SLUF/FIL (No Pipe)		
*SLUF_PB/FIL_PB		
Filter Pack Type or Gradation		

III. SCREENED SECTION(S) x 2



Total Pipe Length: 5.36
10.35

TOC to BOW: 14.56

VI. MONUMENTS

Stickup Flushmount
 TOM to GS 0'
 TOM to TOC -0.58
 ^TOC to GS -0.58
 Lock type N/A

VII. MOISTURE CONTENT

Depth to Water Below GS _____

	Frozen Soil Below GS	
	Bottom	Top
Seasonal 1		
Seasonal 2		
Permafrost 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)
- 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

VIII. CALCULATIONS BELOW GROUND SURFACE

TOC to BOW 14.56
 - BOW to BOS 9.73 0.44
= TOC to BOS 4.83 14.12

TOC to BOS 4.83 14.12
 - Screened Length 9.73
= TOC to TOS 4.39

TOC to BOW	<u>14.56</u>
- TOC to GS	<u>-0.58</u>
BOW bgs	<u>14.12</u>
TOC to TOS	<u>4.39</u>
- TOC to GS	<u>-0.58</u>
TOS bgs	<u>4.97</u>
TOC to BOS	<u>14.12</u>
- TOC to GS	<u>-0.58</u>
BOS bgs	<u>14.70</u>

KRF

MONITORING WELL CONSTRUCTION DETAILS

Monitoring Well No. <u>MW 18-15</u>	Date Installed <u>10/28/2021</u>
Project Name <u>Grustavus DOT & PF</u>	Logged By <u>Adam Wyborny</u>
Project Number <u>102599-008</u>	Driller <u>Discovery Drilling</u>

I. TOP SECTION (CASING)

Initial Pipe Length 10'
 Cutoff Length 2.63' + 2.86
 Add-on Length _____
Total Length 7.37 9.51

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)

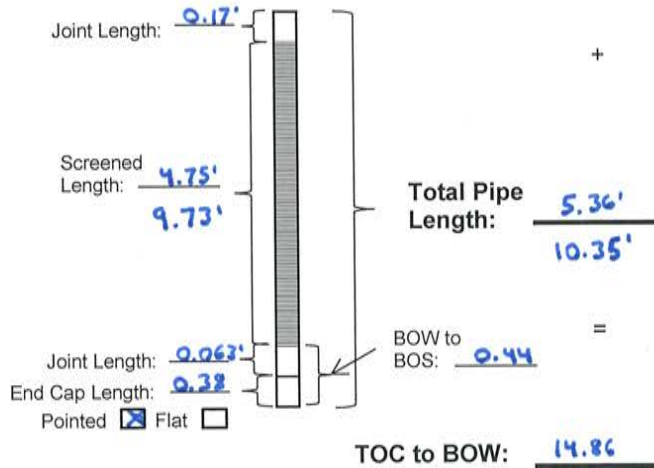
Number of Blank Sections 0
 Length of Section(s): _____

Sum of Lengths: 0'

V. BACKFILL

	Depth Below GS	
	Bottom	Top
CEM (No Pipe)		
<u>CEM PB</u>	<u>1'</u>	<u>0'</u>
* <u>SLUF PB/FIL PB</u>	<u>2'</u>	<u>1'</u>
<u>BCH PB</u>	<u>3'</u>	<u>2'</u>
*SLUF_PB/FIL_PB		
BGR PB		
* <u>SLUF_PB/FIL PB</u>	<u>5'</u>	<u>3'</u>
* <u>SLUF_PS/FIL PS</u>	<u>15'</u>	<u>8'5"</u>
*SLUF/FIL (No Pipe)		
*SLUF_PB/FIL_PB		
Filter Pack Type or Gradation	<u>20/40 rounded silica sand</u>	

III. SCREENED SECTION(S) $\times 2$



VI. MONUMENTS

Stickup Flushmount
 TOM to GS 0'
 TOM to TOC -0.5'
 ^TOC to GS -0.5'
 Lock type N/A

VII. MOISTURE CONTENT

Depth to Water Below GS _____
 Frozen Soil Below GS

	Bottom	Top
Seasonal 1		
Seasonal 2		
Permafrost 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)
- 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

VIII. CALCULATIONS BELOW GROUND SURFACE

TOC to BOW 14.86
 - BOW to BOS 0.44
 = TOC to BOS 14.42
 TOC to BOS 14.42
 - Screened Length 9.73
 = TOC to TOS 4.69

TOC to BOW	<u>14.86'</u>
- TOC to GS	<u>-0.50</u>
BOW bgs	<u>15.36'</u>
TOC to TOS	<u>4.69'</u>
- TOC to GS	<u>-0.50</u>
TOS bgs	<u>5.19'</u>
TOC to BOS	<u>14.42'</u>
- TOC to GS	<u>-0.50</u>
BOS bgs	<u>14.92'</u>

MONITORING WELL CONSTRUCTION DETAILS

Monitoring Well No. <u>MW 18-50</u>	Date Installed <u>10/28/2021</u>
Project Name <u>Gustavus DOT & PF</u>	Logged By <u>Adam Wyboray</u>
Project Number <u>102599-008</u>	Driller <u>Discovery Drilling</u>

I. TOP SECTION (CASING)

Initial Pipe Length 10'
 Cutoff Length 5.58'
 Add-on Length _____
Total Length 4.42'

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 4
 Length of Section(s):

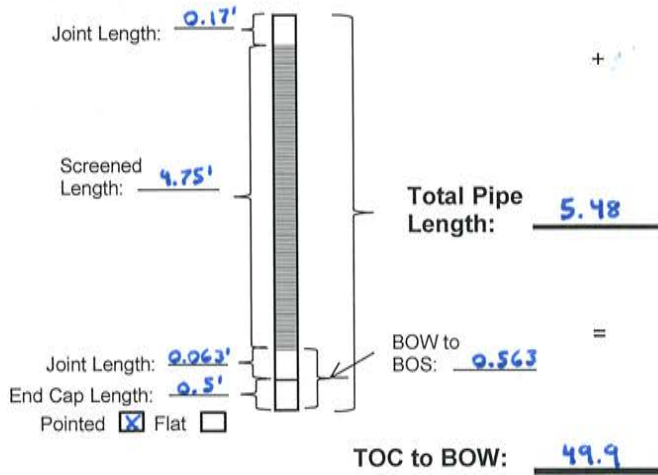
<u>10'</u>	<u>10'</u>	<u>10'</u>	
<u>10'</u>			

Sum of Lengths: 40'

V. BACKFILL

	Depth Below GS	
	Bottom	Top
CEM (No Pipe)		
CEM PB	<u>1'</u>	<u>0'</u>
*SLUF_PB/FIL_PB	<u>4'</u>	<u>1'</u>
BCH_PB	<u>41'</u>	<u>4'</u>
*SLUF_PB/FIL_PB		
BGR PB		
*SLUF_PB/FIL_PB	<u>45'</u>	<u>41'</u>
*SLUF_PS/FIL_PS	<u>50'</u>	<u>41'45"</u>
*SLUF/FIL (No Pipe)		
*SLUF_PB/FIL_PB		
Filter Pack Type or Gradation	<u>20/40 rounded silica sand</u>	

III. SCREENED SECTION(S)



VI. MONUMENTS

Stickup Flushmount
 TOM to GS 0'
 TOM to TOC -0.5'
 ^TOC to GS -0.5'
 Lock type N/A

VII. MOISTURE CONTENT

Depth to Water Below GS _____
 Frozen Soil Below GS

	Bottom	Top
Seasonal 1		
Seasonal 2		
Permafrost 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)
- 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

VIII. CALCULATIONS BELOW GROUND SURFACE

TOC to BOW 49.9
 - BOW to BOS 0.563
= TOC to BOS 49.34
 TOC to BOS 49.34
 - Screened Length 4.75
= TOC to TOS 44.59

TOC to BOW	<u>49.90</u>
- TOC to GS	<u>-0.50</u>
BOW bgs	<u>50.40</u>
TOC to TOS	<u>44.59</u>
- TOC to GS	<u>-0.50</u>
TOS bgs	<u>45.00</u>
TOC to BOS	<u>49.34</u>
- TOC to GS	<u>-0.50</u>
BOS bgs	<u>49.84</u>

KER

MONITORING WELL CONSTRUCTION DETAILS

Monitoring Well No. <u>MW-19-15</u>	Date Installed <u>11/01/2021</u>
Project Name <u>102599-008 Gustavus DOT & PF</u>	Logged By <u>Adam Wybarny</u>
Project Number <u>102599-008</u>	Driller <u>Discovery Drilling</u>

I. TOP SECTION (CASING)

Initial Pipe Length 10'
 Cutoff Length 5.5'
 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 (CASING)

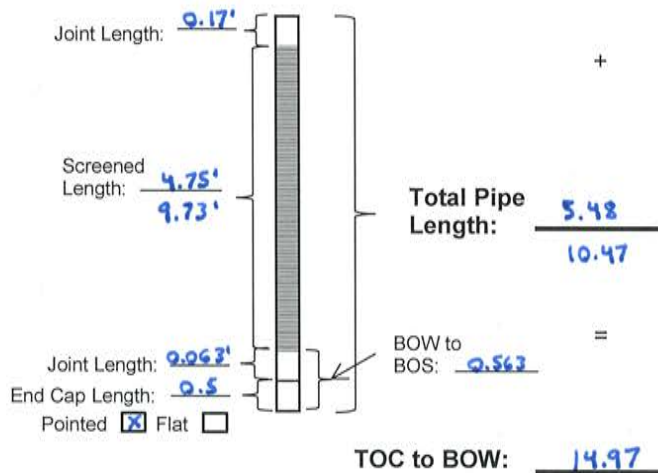
Number of Blank Sections 0
 Length of Section(s): _____

Sum of Lengths: 0'

V. BACKFILL

	Depth Below GS	
	Bottom	Top
CEM (No Pipe)		
<u>CEM_PB</u>	<u>1'</u>	<u>0'</u>
<u>*SLUF_PB/FIL_PB</u>	<u>2'</u>	<u>1'</u>
<u>BCH_PB</u>	<u>3'</u>	<u>2'</u>
*SLUF_PB/FIL_PB		
BGR_PB		
<u>*SLUF_PB/FIL_PB</u>	<u>5'</u>	<u>3'</u>
<u>*SLUF_PS/FIL_PS</u>	<u>15'</u>	<u>7.5'</u>
*SLUF/FIL (No Pipe)		
*SLUF_PB/FIL_PB		
Filter Pack Type or Gradation	<u>20/40 rounded silica sand</u>	

III. SCREENED SECTION(S) x 2



VI. MONUMENTS

Stickup Flushmount
 TOM to GS 0'
 TOM to TOC -0.33
 ^TOC to GS -0.33
 Lock type N/A

VII. MOISTURE CONTENT

Depth to Water Below GS _____
 Frozen Soil Below GS

	Bottom	Top
Seasonal 1		
Seasonal 2		
Permafrost 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)
 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

VIII. CALCULATIONS BELOW GROUND SURFACE

TOC to BOW 14.97
 - BOW to BOS 0.563
= TOC to BOS 14.41
 TOC to BOS 14.41
 - Screened Length 9.73
= TOC to TOS 4.68

TOC to BOW	<u>14.97</u>
- TOC to GS	<u>-0.33</u>
BOW bgs	<u>15.30</u>
TOC to TOS	<u>4.68</u>
- TOC to GS	<u>-0.33</u>
TOS bgs	<u>50'</u>
TOC to BOS	<u>14.41</u>
- TOC to GS	<u>-0.33</u>
BOS bgs	<u>14.74</u>

KRF

MONITORING WELL CONSTRUCTION DETAILS

Monitoring Well No. <u>MW-19-50</u>	Date Installed <u>11/01/2021</u>
Project Name <u>Gustavus DOT & PF</u>	Logged By <u>Adam Wyborny</u>
Project Number <u>102599-008</u>	Driller <u>Discovery Drilling</u>

I. TOP SECTION (CASING)

Initial Pipe Length 10'
 Cutoff Length 5.5'
 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 (CASING)

Number of Blank Sections 4
 Length of Section(s): _____

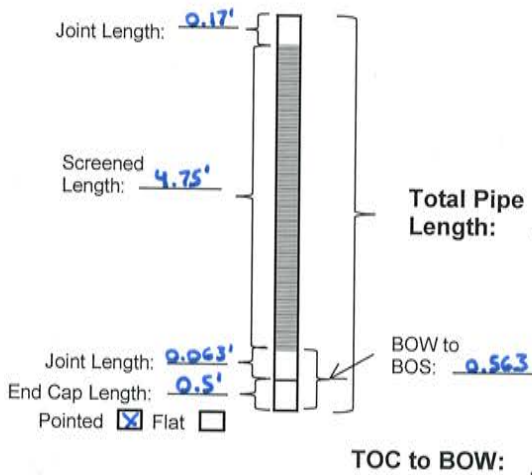
<u>10'</u>	<u>10'</u>	<u>10'</u>	
<u>10'</u>			

Sum of Lengths: 40'

V. BACKFILL

	Depth Below GS	
	Bottom	Top
CEM (No Pipe)		
CEM_PB	<u>1'</u>	<u>0'</u>
*SLUF_PB/FIL_PB	<u>2'</u>	<u>1'</u>
BCH_PB	<u>29'</u>	<u>2'</u>
*SLUF_PB/FIL_PB		
BGR_PB		
*SLUF_PB/FIL_PB	<u>45'</u>	<u>39'</u>
*SLUF_PS/FIL_PS	<u>50'</u>	<u>21'45"</u>
*SLUF/FIL (No Pipe)		
*SLUF_PB/FIL_PB		
Filter Pack Type or Gradation	<u>20/40 rounded silica sand</u>	

III. SCREENED SECTION(S)



VI. MONUMENTS

Stickup Flushmount
 TOM to GS 0'
 TOM to TOC -0.33'
 ^TOC to GS -0.33'
 Lock type N/A

VII. MOISTURE CONTENT

Depth to Water Below GS _____

	Frozen Soil Below GS	
	Bottom	Top
Seasonal 1		
Seasonal 2		
Permafrost 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)
- 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

VIII. CALCULATIONS BELOW GROUND SURFACE

TOC to BOW 49.98
 - BOW to BOS 0.563
= TOC to BOS 49.42
 TOC to BOS 49.42
 - Screened Length 4.75
= TOC to TOS 44.67

TOC to BOW	<u>49.98</u>
- TOC to GS	<u>-0.33</u>
BOW bgs	<u>50.31</u>
TOC to TOS	<u>44.67</u>
- TOC to GS	<u>-0.33</u>
TOS bgs	<u>45.00</u>
TOC to BOS	<u>49.42</u>
- TOC to GS	<u>-0.33</u>
BOS bgs	<u>49.75</u>

Monitoring Well No. MW-20-15

Project Name: Gustavus DOT & PF

Project Number: 102599-008

Date Installed: 11/01/2021

Logged by: Adam Wybarny

Driller: Discovery Drilling

I. Top section (Casing)

Initial Pipe Length: 10'

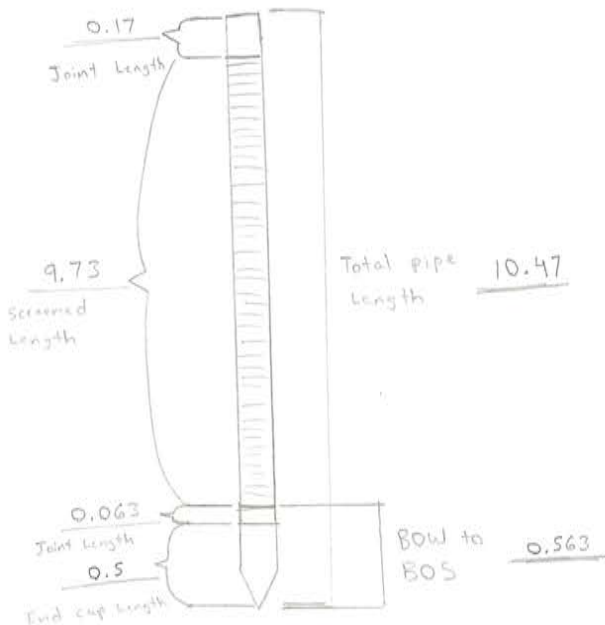
Cutoff Length: 5.67' 4.33'

II. Mid section (Casing)

Number of blank sections:

sum of Lengths:

III. Screened section (s) x 2



IV. Well Data

2" PVC

Slot size 0.01

Joint Pin end up

V. Backfill

	Bottom	Top
CEM - PB	1'	0'
SLUF - PB	2'	1'
BCH - PB	3'	2'
FIL - PS	15'	85'
+ FIL - PB	5	3

VI. Monuments - Flushmount

TOM to TOC: -0.33

TOC to GS: -0.33

Lock Type: N/A

VII. Moisture Content

Depth to water Below GS:

VIII. Calculations Below Ground Surface

TOC to BOW 14.8

TOC to BOW: 14.80

- BOW to BOS: + 0.563

= TOC to BOS: 14.24

TOC to BOW: 14.80

- TOC to GS: -0.33

= BOW to GS: 15.13

TOC to BOS: 14.24

- Screened Length: 9.73

= TOC to TOS: 4.51

TOC to TOS: 4.51

- TOC to GS: -0.33

= TOS: 4.84

TOC to BOS: 14.24

- TOC to GS: -0.33

= BOS: 14.57

MW-20-15

MONITORING WELL CONSTRUCTION DETAILS

Monitoring Well No. <u>MW-20-40</u>	Date Installed <u>11/01/2021</u>
Project Name <u>Gustavus DOT-PP</u>	Logged By <u>Adam Wyborny</u>
Project Number <u>102599-008</u>	Driller <u>Discovery Drilling</u>

I. TOP SECTION (CASING)

Initial Pipe Length 10'
 Cutoff Length 3.54' + 2.13'
 Add-on Length _____
Total Length 6.46' 4.33'

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): _____

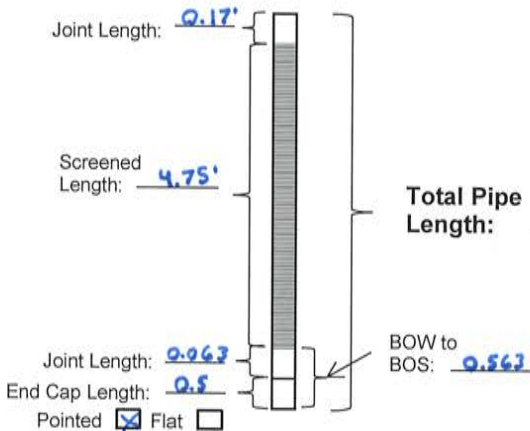
10'	10'	10'

Sum of Lengths: 30'

V. BACKFILL

	Depth Below GS	
	Bottom	Top
CEM (No Pipe)		
CEM_PB	1'	0'
*SLUF_PB/FIL_PB	5'	1'
BCH_PB	33'	5'
*SLUF_PB/FIL_PB		
BGR_PB		
*SLUF_PB/FIL_PB	35	33
*SLUF_PS/FIL_PS	40'	25' 35
*SLUF/FIL (No Pipe)		
*SLUF_PB/FIL_PB		
Filter Pack Type or Gradation	<u>20/40 rounded silica sand</u>	

III. SCREENED SECTION(S)



VI. MONUMENTS

Stickup Flushmount
 TOM to GS 0'
 TOM to TOC -0.33
 ^TOC to GS -0.33
 Lock type N/A

VII. MOISTURE CONTENT

Depth to Water Below GS _____

	Frozen Soil Below GS	
	Bottom	Top
Seasonal 1		
Seasonal 2		
Permafrost 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)
- 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

VIII. CALCULATIONS BELOW GROUND SURFACE

TOC to BOW 39.81
 - BOW to BOS 0.563
= TOC to BOS 39.25

 TOC to BOS 39.25
 - Screened Length 4.75
= TOC to TOS 34.5

TOC to BOW	<u>39.81</u>
- TOC to GS	<u>-0.33</u>
BOW bgs	<u>40.14</u>
TOC to TOS	<u>34.50</u>
- TOC to GS	<u>-0.33</u>
TOS bgs	<u>34.83</u>
TOC to BOS	<u>39.25</u>
- TOC to GS	<u>-0.33</u>
BOS bgs	<u>39.58</u>

RF

MONITORING WELL CONSTRUCTION DETAILS

Monitoring Well No. <u>MW-13-20</u>	Date Installed <u>10/22/2021</u>
Project Name <u>Gustavus DOT & PF</u>	Logged By <u>Adam Wyborny</u>
Project Number <u>102599-008</u>	Driller <u>Discovery Drilling</u>

I. TOP SECTION (CASING)

Initial Pipe Length 10'
 Cutoff Length 0.67'
 Add-on Length _____
Total Length 9.33

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)

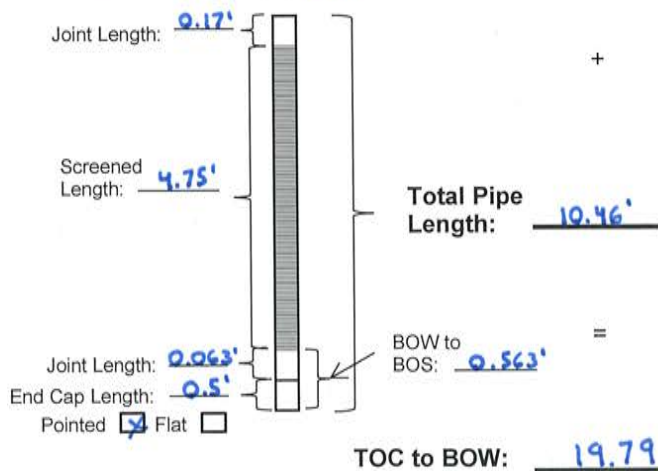
Number of Blank Sections 0
 Length of Section(s): _____

Sum of Lengths: 0'

V. BACKFILL

	Depth Below GS	
	Bottom	Top
CEM (No Pipe)		
CEM_PB	<u>0.5'</u>	<u>0.0'</u>
*SLUF_PB/FIL_PB	<u>3.5'</u>	<u>0.5'</u>
BCH_PB	<u>8'</u>	<u>3.5'</u>
*SLUF_PB/FIL_PB		
BGR_PB		
*SLUF_PB/FIL_PB	<u>10'</u>	<u>8'</u>
*SLUF_PS/FIL_PS	<u>20'</u>	<u>8'10"</u>
*SLUF/FIL (No Pipe)		
*SLUF_PB/FIL_PB		
Filter Pack Type or Gradation	<u>20/40 rounded silica sand</u>	

III. SCREENED SECTION(S) x 2



VI. MONUMENTS

Stickup Flushmount
 TOM to GS 0'
 TOM to TOC -0.25'
 ^TOC to GS -0.25'
 Lock type N/A

VII. MOISTURE CONTENT

Depth to Water Below GS _____
 Frozen Soil Below GS

	Bottom	Top
Seasonal 1		
Seasonal 2		
Permafrost 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)
- 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

VIII. CALCULATIONS BELOW GROUND SURFACE

TOC to BOW 19.79
 - BOW to BOS 0.563
 = TOC to BOS 19.23
 TOC to BOS 19.23
 - Screened Length 9.73
 = TOC to TOS 9.5

TOC to BOW	<u>19.79</u>
- TOC to GS	<u>-0.25</u>
BOW bgs	<u>20.04</u>
TOC to TOS	<u>9.5</u>
- TOC to GS	<u>-0.25</u>
TOS bgs	<u>9.75'</u>
TOC to BOS	<u>19.23</u>
- TOC to GS	<u>-0.25</u>
BOS bgs	<u>19.51948</u>

KRF

MONITORING WELL CONSTRUCTION DETAILS

Monitoring Well No. <u>MW-13-45</u>	Date Installed <u>10/21/2021</u>
Project Name <u>Gustavus DOT+PF</u>	Logged By <u>Adam Wylborny</u>
Project Number <u>102599</u>	Driller <u>Discovery Drilling</u>

I. TOP SECTION (CASING)

Initial Pipe Length 10'
 Cutoff Length 0.69'
 Add-on Length _____
Total Length 9.31

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 3
 Length of Section(s):

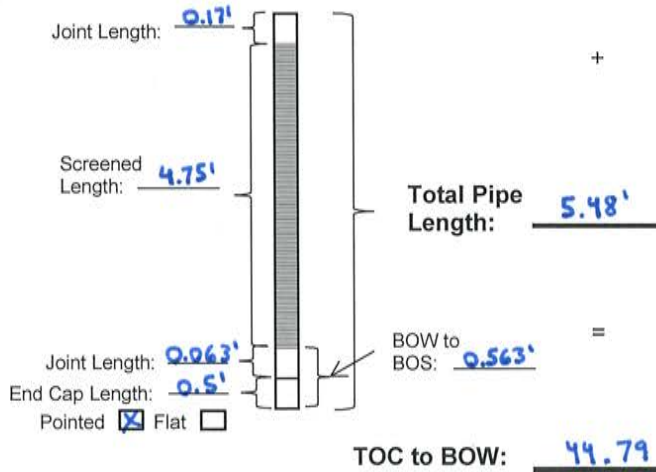
<u>10'</u>	<u>10'</u>	<u>10'</u>

Sum of Lengths: 30'

V. BACKFILL

	Depth Below GS	
	Bottom	Top
CEM (No Pipe)		
CEM PB	<u>0.5'</u>	<u>0'</u>
*SLUF_PB/FIL_PB	<u>5'</u>	<u>0.5'</u>
BCH_PB	<u>31'</u>	<u>5'</u>
*SLUF_PB/FIL_PB	<u>35'</u>	<u>31'</u>
BCH BGR PB	<u>38'</u>	<u>35'</u>
*SLUF_PB/FIL_PB	<u>40'</u>	<u>38'</u>
*SLUF_PS/FIL_PS	<u>45'</u>	<u>37' 40"</u>
*SLUF/FIL (No Pipe)		
*SLUF_PB/FIL_PB		
Filter Pack Type or Gradation	<u>20/40 rounded silica sand</u>	

III. SCREENED SECTION(S)



VI. MONUMENTS

Stickup Flushmount
 TOM to GS 0'
 TOM to TOC -0.25'
 ^TOC to GS -0.25'
 Lock type N/A

VII. MOISTURE CONTENT

Depth to Water Below GS _____

	Frozen Soil Below GS	
	Bottom	Top
Seasonal 1		
Seasonal 2		
Permafrost 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)
- 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

VIII. CALCULATIONS BELOW GROUND SURFACE

TOC to BOW 44.79
 - BOW to BOS 0.563
= TOC to BOS 44.23
 TOC to BOS 44.23
 - Screened Length 4.75
= TOC to TOS 39.5

TOC to BOW	<u>44.79</u>
- TOC to GS	<u>-0.25</u>
BOW bgs	<u>45.04</u>
TOC to TOS	<u>39.5</u>
- TOC to GS	<u>-0.25</u>
TOS bgs	<u>39.75</u>
TOC to BOS	<u>44.23</u>
- TOC to GS	<u>-0.25</u>
BOS bgs	<u>44.54448</u>

KRF

MONITORING WELL CONSTRUCTION DETAILS

Monitoring Well No. <u>MW-17-20</u>	Date Installed <u>10/22/2021</u>
Project Name <u>Gustavus DOT & PF</u>	Logged By <u>Adam Wyborny</u>
Project Number <u>102599-008</u>	Driller <u>Discovery Drilling</u>

I. TOP SECTION (CASING)

Initial Pipe Length 10'
 Cutoff Length 0.77'
 Add-on Length _____
Total Length 9.23

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 0
 Length of Section(s): _____

Sum of Lengths: 0

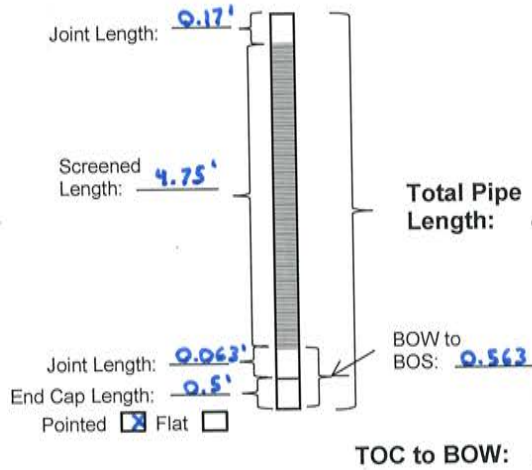
V. BACKFILL

	Depth Below GS	
	Bottom	Top
CEM (No Pipe)		
CEM_PB	1'	0'
*SLUF_PB/FIL_PB	2'	1'
BCH_PB	8'	2'
*SLUF_PB/FIL_PB		
BGR_PB		
*SLUF_PB/FIL_PB	10	8
*SLUF_PS/FIL_PS	20	8' 10
*SLUF/FIL (No Pipe)		
*SLUF_PB/FIL_PB		

Column collapsed as DT45 casing was extracted. Screen is surrounded by filter pack and stuff.

Filter Pack Type or Gradation 20/40 rounded silica sand

III. SCREENED SECTION(S) X 2



VI. MONUMENTS

Stickup Flushmount
 TOM to GS 0'
 TOM to TOC 0.67'
 ^TOC to GS 0.67'
 Lock type N/A

VII. MOISTURE CONTENT

Depth to Water Below GS _____

	Frozen Soil Below GS	
	Bottom	Top
Seasonal 1		
Seasonal 2		
Permafrost 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)
- 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

VIII. CALCULATIONS BELOW GROUND SURFACE

TOC to BOW 19.69
 - BOW to BOS 0.563
= TOC to BOS 19.13
 TOC to BOS 19.13
 - Screened Length 9.73
= TOC to TOS 9.4

TOC to BOW	<u>19.69</u>
- TOC to GS	<u>-0.67</u>
BOW bgs	<u>20.36</u>
TOC to TOS	<u>9.40</u>
- TOC to GS	<u>-0.67</u>
TOS bgs	<u>10.07</u>
TOC to BOS	<u>19.13</u>
- TOC to GS	<u>-0.67</u>
BOS bgs	<u>19.80</u>

KRF

MONITORING WELL CONSTRUCTION DETAILS

Monitoring Well No. <u>MW-17-40</u>	Date Installed <u>10/22/2021</u>
Project Name <u>Gustavus DOT+PF</u>	Logged By <u>Adam Wyborny</u>
Project Number <u>102599-008</u>	Driller <u>Discovery Drilling</u>

I. TOP SECTION (CASING)

Initial Pipe Length 10'
 Cutoff Length 4.08' + 1.54'
 Add-on Length _____
Total Length 4.38

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): _____

<u>10'</u>	<u>10'</u>	<u>10'</u>

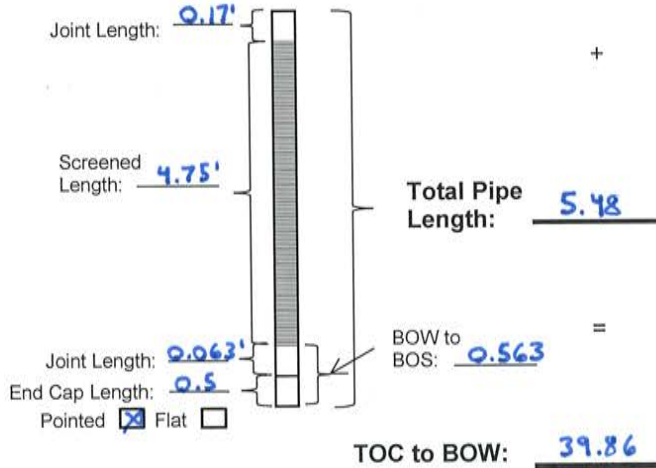
Sum of Lengths: 30'

V. BACKFILL

	Depth Below GS	
	Bottom	Top
CEM (No Pipe)	_____	_____
CEM PB	<u>1'</u>	<u>0'</u>
SLUF_PB/FIL_PB	<u>29'</u>	<u>9'</u>
BCH_PB	<u>32'</u>	<u>29'</u>
SLUF_PB/FIL_PB	_____	_____
BGR PB	_____	_____
*SLUF_PB/FIL_PB	<u>35</u>	<u>32</u>
*SLUF_PS/FIL_PS	<u>40'</u>	<u>38' 35</u>
*SLUF/FIL (No Pipe)	_____	_____
*SLUF_PB/FIL_PB	_____	_____
Filter Pack Type or Gradation	<u>20/40 rounded silica sand fine-grate</u>	

Columns collapsed from 29' to 9' more bentonite added from 9' to 4'
4' to 1'
29' and 9' to 4'

III. SCREENED SECTION(S)



VI. MONUMENTS

Stickup Flushmount
 TOM to GS 0'
 TOM to TOC -0.5'
 ^TOC to GS -0.5'
 Lock type N/A

VII. MOISTURE CONTENT

Depth to Water Below GS _____

	Frozen Soil Below GS	
	Bottom	Top
Seasonal 1	_____	_____
Seasonal 2	_____	_____
Permafrost 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)
- 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

VIII. CALCULATIONS BELOW GROUND SURFACE

TOC to BOW 39.86
 - BOW to BOS 0.563
= TOC to BOS 39.3

TOC to BOS 39.3
 - Screened Length 4.75
= TOC to TOS 34.55

TOC to BOW	<u>39.86</u>
- TOC to GS	<u>-0.50</u>
BOW bgs	<u>40.36</u>
TOC to TOS	<u>34.55</u>
- TOC to GS	<u>-0.50</u>
TOS bgs	<u>35.05</u>
TOC to BOS	<u>39.30</u>
- TOC to GS	<u>-0.50</u>
BOS bgs	<u>39.80</u>

KEP

MONITORING WELL CONSTRUCTION DETAILS

Monitoring Well No. <u>MW-21-15</u>	Date Installed <u>10/26/2021</u>
Project Name <u>Gustavus DOT & PF</u>	Logged By <u>Adam Wyborny</u>
Project Number <u>102599-008</u>	Driller <u>Discovery Drilling</u>

I. TOP SECTION (CASING)

Initial Pipe Length 10'
 Cutoff Length 5.8'
 Add-on Length _____

Total Length 4.2'

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)

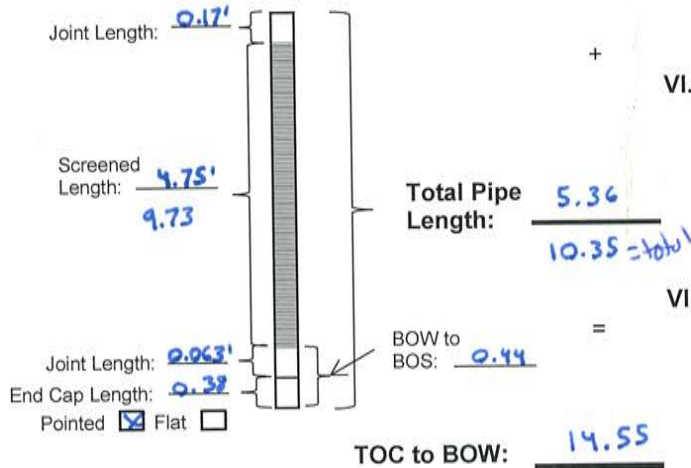
Number of Blank Sections 0
 Length of Section(s): _____

Sum of Lengths: 0'

V. BACKFILL

	Depth Below GS	
	Bottom	Top
CEM (No Pipe)		
CEM_PB	<u>0.5'</u>	<u>0'</u>
*SLUF_PB/FIL_PB	<u>2'</u>	<u>0.5'</u>
BCH_PB	<u>3'</u>	<u>2'</u>
*SLUF_PB/FIL_PB		
BGR_PB		
*SLUF_PB/FIL_PB	<u>5'</u>	<u>3'</u>
*SLUF_PS/FIL_PS	<u>15'</u>	<u>2' 5"</u>
*SLUF/FIL (No Pipe)		
*SLUF_PB/FIL_PB		
Filter Pack Type or Gradation		

III. SCREENED SECTION(S) x 2



VI. MONUMENTS

Stickup Flushmount
 TOM to GS 0'
 TOM to TOC 0.58'
 ^TOC to GS 0.58'
 Lock type N/A

VII. MOISTURE CONTENT

Depth to Water Below GS _____

	Frozen Soil Below GS	
	Bottom	Top
Seasonal 1		
Seasonal 2		
Permafrost 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)
- 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

VIII. CALCULATIONS BELOW GROUND SURFACE

TOC to BOW 14.55
 - BOW to BOS 0.44
 = TOC to BOS 14.11
 TOC to BOS 14.11
 - Screened Length 9.73
 = TOC to TOS 4.38

TOC to BOW	<u>14.55</u>
- TOC to GS	<u>-0.58</u>
BOW bgs	<u>15.13</u>
TOC to TOS	<u>4.38</u>
- TOC to GS	<u>-0.58</u>
TOS bgs	<u>4.96</u>
TOC to BOS	<u>14.11</u>
- TOC to GS	<u>-0.58</u>
BOS bgs	<u>14.69</u>

MONITORING WELL CONSTRUCTION DETAILS

Monitoring Well No. <u>MW-21-45</u>	Date Installed <u>10/26/2021</u>
Project Name <u>Gustavus DOT 3 PF</u>	Logged By <u>Adam Wyborny</u>
Project Number <u>102599-008</u>	Driller <u>Discovery Drilling</u>

I. TOP SECTION (CASING)

Initial Pipe Length 10'
 Cutoff Length 0.33' 0.66'
 Add-on Length _____
Total Length 9.34

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 3
 Length of Section(s): _____

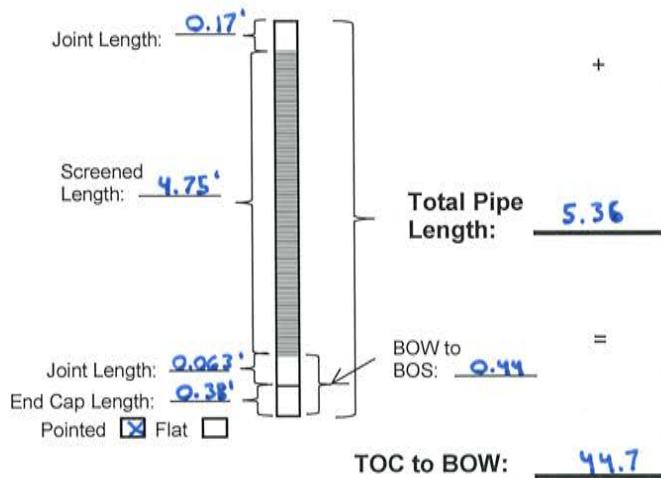
<u>10'</u>	<u>10'</u>	<u>10'</u>

Sum of Lengths: 30'

V. BACKFILL

	Depth Below GS	
	Bottom	Top
CEM (No Pipe)		
CEM_PB	<u>0.5'</u>	<u>0'</u>
*SLUF_PB/FIL_PB	<u>4'</u>	<u>0.5'</u>
BCH_PB	<u>37'</u>	<u>4'</u>
*SLUF_PB/FIL_PB		
BGR PB		
*SLUF_PB/FIL_PB	<u>40</u>	<u>37</u>
*SLUF_PS/FIL_PS	<u>45'</u>	<u>21'40</u>
*SLUF/FIL (No Pipe)		
*SLUF_PB/FIL_PB		
Filter Pack Type or Gradation	<u>20/40 rounded silica sand</u>	

III. SCREENED SECTION(S)



VI. MONUMENTS

Stickup Flushmount
 TOM to GS 0'
 TOM to TOC 0.5'
 ^TOC to GS 0.5'
 Lock type N/A

VII. MOISTURE CONTENT

Depth to Water Below GS _____
 Frozen Soil Below GS

	Bottom	Top
Seasonal 1		
Seasonal 2		
Permafrost 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)
- 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

VIII. CALCULATIONS BELOW GROUND SURFACE

TOC to BOW 44.7
 - BOW to BOS 0.44
= TOC to BOS 44.26

TOC to BOS 44.26
 - Screened Length 4.75
= TOC to TOS 39.51

TOC to BOW	<u>44.70</u>
- TOC to GS	<u>-0.50</u>
BOW bgs	<u>44.20</u>
TOC to TOS	<u>39.51</u>
- TOC to GS	<u>-0.5</u>
TOS bgs	<u>39.01</u>
TOC to BOS	<u>44.26</u>
- TOC to GS	<u>-0.5</u>
BOS bgs	<u>43.76</u>

KPT

MONITORING WELL CONSTRUCTION DETAILS

Monitoring Well No. <u>MW 22-15</u>	Date Installed <u>10/25/2021</u>
Project Name <u>Gustavus DOT+PF</u>	Logged By <u>Adam Wyboray</u>
Project Number <u>102599-008</u>	Driller <u>Discovery Drilling</u>

I. TOP SECTION (CASING)

Initial Pipe Length 10'
 Cutoff Length 6
 Add-on Length _____

Total Length 4

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)

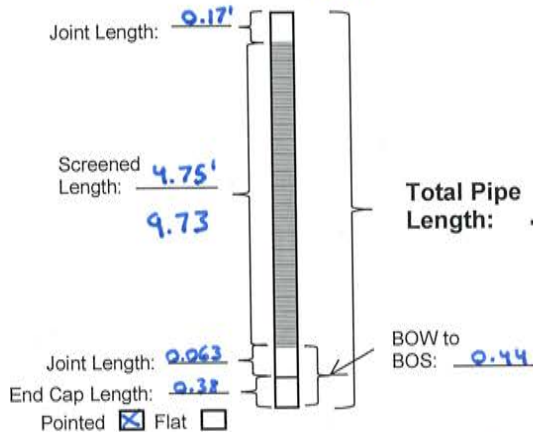
Number of Blank Sections 0
 Length of Section(s): _____

Sum of Lengths: 0'

V. BACKFILL

	Depth Below GS	
	Bottom	Top
CEM (No Pipe)		
CEM PB	<u>0.5'</u>	<u>0'</u>
*SLUF_PB/FIL_PB	<u>2'</u>	<u>0.5'</u>
BCH_PB	<u>4'</u>	<u>2'</u>
*SLUF_PB/FIL_PB		
BGR_PB		
*SLUF_PB/FIL_PB	<u>5</u>	<u>4</u>
*SLUF_PS/FIL_PS	<u>15'</u>	<u>15</u>
*SLUF/FIL (No Pipe)		
*SLUF_PB/FIL_PB		
Filter Pack Type or Gradation	<u>20/40 rounded silica sand</u>	

III. SCREENED SECTION(S) x 2



Total Pipe Length: 5.36
10.35 = total

VI. MONUMENTS

Stickup Flushmount
 TOM to GS 0'
 TOM to TOC -0.42'
 ^TOC to GS -0.42'
 Lock type N/A

VII. MOISTURE CONTENT

Depth to Water Below GS _____

	Frozen Soil Below GS	
	Bottom	Top
Seasonal 1		
Seasonal 2		
Permafrost 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)
 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

VIII. CALCULATIONS BELOW GROUND SURFACE

TOC to BOW 14.35
 - BOW to BOS 0.44
 = TOC to BOS 13.91

TOC to BOS 13.91
 - Screened Length 9.73
 = TOC to TOS 4.18

TOC to BOW	<u>14.35</u>
- TOC to GS	<u>-0.42</u>
BOW bgs	<u>14.77</u>
TOC to TOS	<u>4.18</u>
- TOC to GS	<u>-0.42</u>
TOS bgs	<u>4.60</u>
TOC to BOS	<u>13.91</u>
- TOC to GS	<u>-0.42</u>
BOS bgs	<u>14.33</u>

KRF

MONITORING WELL CONSTRUCTION DETAILS

Monitoring Well No. <u>MW 22-40</u>	Date Installed <u>10/25/2021</u>
Project Name <u>Gustavus DOT ± PF</u>	Logged By <u>Adam Wyborny</u>
Project Number <u>102599-008</u>	Driller <u>Discovery Drilling</u>

I. TOP SECTION (CASING)

Initial Pipe Length 10'
 Cutoff Length 5.75'
 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)

Number of Blank Sections 3
 Length of Section(s): _____

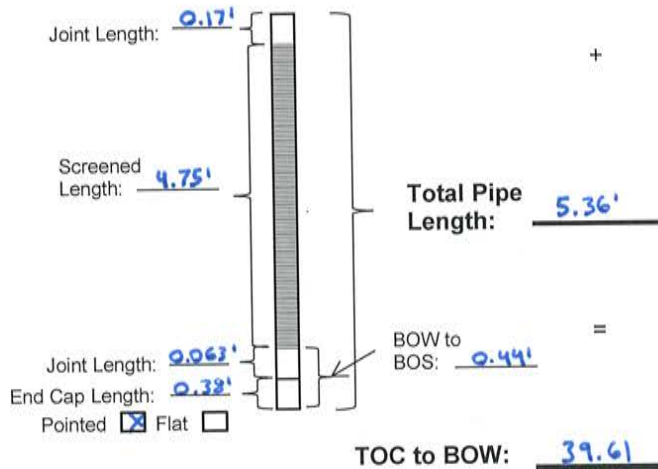
<u>10'</u>	<u>10'</u>	<u>10'</u>

Sum of Lengths: 30'

V. BACKFILL

	Bottom	Top
CEM (No Pipe)	_____	_____
CEM_PB	<u>1'</u>	<u>0'</u>
SLUF_PB/FIL_PB	<u>2'</u>	<u>1'</u>
BCH_PB	<u>31'</u>	<u>2'</u>
*SLUF_PB/FIL_PB	_____	_____
BGR_PB	_____	_____
*SLUF_PB/FIL_PB	<u>35'</u>	<u>31'</u>
*SLUF_PS/FIL_PS	<u>40'</u>	<u>31' 35'</u>
*SLUF/FIL (No Pipe)	_____	_____
*SLUF_PB/FIL_PB	_____	_____
Filter Pack Type or Gradation	<u>20/40 rounded silica sand</u>	

III. SCREENED SECTION(S)



VI. MONUMENTS

Stickup Flushmount
 TOM to GS 0'
 TOM to TOC -0.5'
 ^TOC to GS -0.5'
 Lock type N/A

VII. MOISTURE CONTENT

Depth to Water Below GS _____
 Frozen Soil Below GS

	Bottom	Top
Seasonal 1	_____	_____
Seasonal 2	_____	_____
Permafrost 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)
 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

VIII. CALCULATIONS BELOW GROUND SURFACE

TOC to BOW 39.61
 - BOW to BOS 0.44
= TOC to BOS 39.17
 TOC to BOS 39.17
 - Screened Length 4.75
= TOC to TOS 34.42

TOC to BOW	<u>39.61</u>
- TOC to GS	<u>-0.50</u>
BOW bgs	<u>40.11</u>
TOC to TOS	<u>34.42</u>
- TOC to GS	<u>-0.50</u>
TOS bgs	<u>34.92</u>
TOC to BOS	<u>39.17</u>
- TOC to GS	<u>-0.50</u>
BOS bgs	<u>39.67</u>

MONITORING WELL CONSTRUCTION DETAILS

Monitoring Well No. <u>MW-23-20</u>	Date Installed <u>10/21/2021</u>
Project Name <u>Gustavus DOT + PF</u>	Logged By <u>Adam Wyberny</u>
Project Number <u>102599-008</u>	Driller _____

I. TOP SECTION (CASING)

Initial Pipe Length 10'
 Cutoff Length 0.5'
 Add-on Length _____

Total Length 9.5'

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 (CASING)

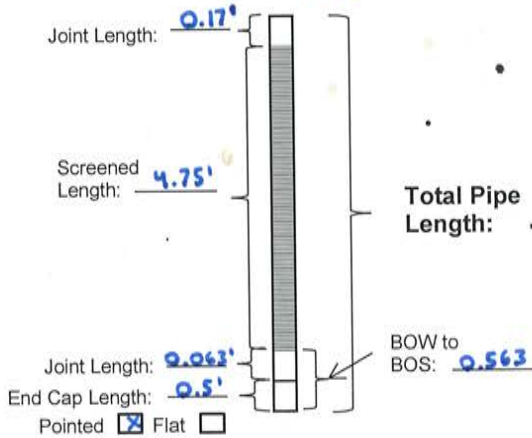
Number of Blank Sections 0
 Length of Section(s): _____

Sum of Lengths: 0

V. BACKFILL

	Depth Below GS	
	Bottom	Top
CEM (No Pipe)	_____	_____
CEM_PB	1'	0'
*SLUF_PB/FIL_PB	3'	1'
BCH_PB	7'	3'
*SLUF_PB/FIL_PB	_____	_____
BGR_PB	_____	_____
*SLUF_PB/FIL_PB	10'	7'
*SLUF_PS/FIL_PS	20'	6' 7" #10
*SLUF/FIL (No Pipe)	_____	_____
*SLUF_PB/FIL_PB	_____	_____
Filter Pack Type or Gradation	<u>20/40 rounded silica sand</u>	

III. SCREENED SECTION(S) x 2



VI. MONUMENTS

Stickup Flushmount
 TOM to GS 0'
 TOM to TOC -0.25'
 ^TOC to GS -0.25'
 Lock type N/A

VII. MOISTURE CONTENT

Depth to Water Below GS _____

	Frozen Soil Below GS	
	Bottom	Top
Seasonal 1	_____	_____
Seasonal 2	_____	_____
Permafrost 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)
- 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

VIII. CALCULATIONS BELOW GROUND SURFACE

TOC to BOW 19.96
 - BOW to BOS 0.563
 = TOC to BOS 19.4

TOC to BOS 19.4
 - Screened Length 4.75 9.73
 = TOC to TOS 14.65
9.67

TOC to BOW	<u>19.96</u>
- TOC to GS	<u>-0.25</u>
BOW bgs	<u>20.21</u>
TOC to TOS	<u>14.65</u> 9.67
- TOC to GS	<u>-0.25</u>
TOS bgs	<u>9.92</u>
TOC to BOS	<u>19.40</u>
- TOC to GS	<u>-0.25</u>
BOS bgs	<u>19.65</u>

KRF

MONITORING WELL CONSTRUCTION DETAILS

Monitoring Well No. <u>MW-23-50</u>	Date Installed <u>10/21/2021</u>
Project Name <u>Gustavus DOT+PF</u>	Logged By <u>Adam Wyborny</u>
Project Number <u>102599-008</u>	Driller <u>Discovery Drilling</u>

I. TOP SECTION (CASING)

Initial Pipe Length 10'
 Cutoff Length 5.37 +0.5'
 Add-on Length _____
Total Length 4.63'
4.13'

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 4
 Length of Section(s): _____

<u>10'</u>	<u>10'</u>	<u>10'</u>	
<u>10'</u>			

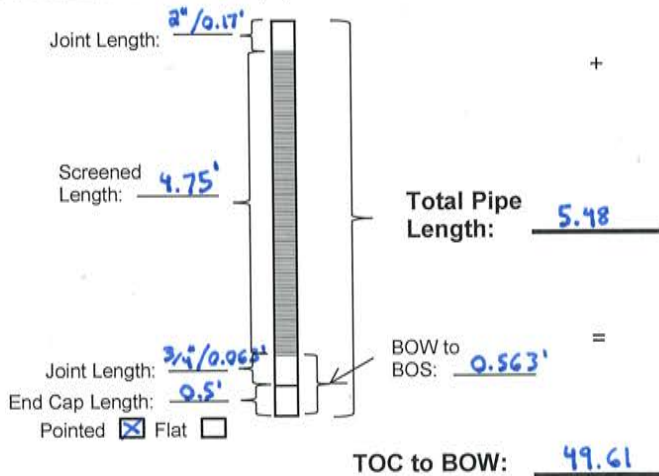
Sum of Lengths: 40'

V. BACKFILL

	Depth Below GS	
	Bottom	Top
CEM (No Pipe)		
CEM PB	<u>1'</u>	<u>0'</u>
*SLUF_PB/FIL_PB	<u>5'</u>	<u>1'</u>
BCH_PB	<u>39'</u>	<u>30'</u>
*SLUF_PB/FIL_PB		
BGR_PB		
*SLUF_PB/FIL_PB	<u>45'</u>	<u>39'</u>
*SLUF_PS/FIL_PS	<u>50'</u>	<u>39' 45"</u>
*SLUF/FIL (No Pipe)		
*SLUF_PB/FIL_PB		
Filter Pack Type or Gradation	<u>20/40 rounded silica sand</u>	

pea gravel up to 5' with sluff

III. SCREENED SECTION(S)



VI. MONUMENTS

Stickup Flushmount
 TOM to GS 0'
 TOM to TOC -0.25'
 ^TOC to GS -0.25'
 Lock type N/A

VII. MOISTURE CONTENT

Depth to Water Below GS _____

	Frozen Soil Below GS	
	Bottom	Top
Seasonal 1		
Seasonal 2		
Permafrost 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)
- 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

VIII. CALCULATIONS BELOW GROUND SURFACE

TOC to BOW 49.61
 - BOW to BOS 0.563
= TOC to BOS 49.05
 TOC to BOS 49.05
 - Screened Length 4.75
= TOC to TOS 44.3

TOC to BOW	<u>49.61</u>
- TOC to GS	<u>-0.25</u>
BOW bgs	<u>49.86</u>
TOC to TOS	<u>44.30</u>
- TOC to GS	<u>-0.25</u>
TOS bgs	<u>44.55</u>
TOC to BOS	<u>49.05</u>
- TOC to GS	<u>-0.25</u>
BOS bgs	<u>49.30</u>

KRF

MONITORING WELL CONSTRUCTION DETAILS

Monitoring Well No. <u>MW-24-10</u>	Date Installed <u>10/25/2021</u>
Project Name <u>Gustavus DOT&PF</u>	Logged By <u>Adam Wyborny</u>
Project Number <u>102599-008</u>	Driller <u>Discovery Drilling</u>

I. TOP SECTION (CASING)

Initial Pipe Length 10'
 Cutoff Length 5.8'
 Add-on Length _____

Total Length 4.2

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)

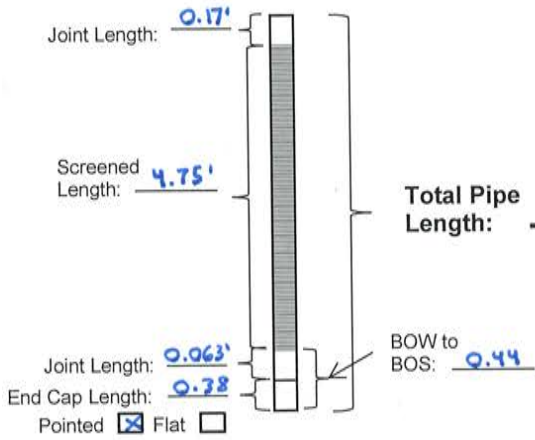
Number of Blank Sections 0
 Length of Section(s): _____

Sum of Lengths: 0'

V. BACKFILL

	Depth Below GS	
	Bottom	Top
CEM (No Pipe)		
CEM_PB	<u>1'</u>	<u>0'</u>
*SLUF_PB/FIL_PB	<u>2'</u>	<u>1'</u>
BCH_PB	<u>4'</u>	<u>2'</u>
*SLUF_PB/FIL_PB		
BGR_PB		
*SLUF_PB/FIL_PB	<u>5</u>	<u>4</u>
SLUF_PS/FIL_PS	<u>10'</u>	<u>4'5"</u>
*SLUF/FIL (No Pipe)		
*SLUF_PB/FIL_PB		
Filter Pack Type or Gradation	<u>20/40 rounded silica sand</u>	

III. SCREENED SECTION(S)



Total Pipe Length: 5.36

TOC to BOW: 9.56

VI. MONUMENTS

Stickup Flushmount
 TOM to GS 0'
 TOM to TOC 0.4'
 ^TOC to GS 0.4'
 Lock type N/A

VII. MOISTURE CONTENT

Depth to Water Below GS _____

	Frozen Soil Below GS	
	Bottom	Top
Seasonal 1		
Seasonal 2		
Permafrost 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)
- 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

VIII. CALCULATIONS BELOW GROUND SURFACE

TOC to BOW 9.56
 - BOW to BOS 0.44
= TOC to BOS 9.12

TOC to BOS 9.12
 - Screened Length 4.75
= TOC to TOS 4.37

TOC to BOW	<u>9.56</u>
- TOC to GS	<u>- 0.40</u>
BOW bgs	<u>9.96</u>
TOC to TOS	<u>4.37</u>
- TOC to GS	<u>- 0.40</u>
TOS bgs	<u>4.77</u>
TOC to BOS	<u>9.12</u>
- TOC to GS	<u>- 0.40</u>
BOS bgs	<u>9.52</u>

KRF

MONITORING WELL CONSTRUCTION DETAILS

Monitoring Well No. <u>MW-24-30</u>	Date Installed <u>10/24/2021</u>
Project Name <u>Gustavus DOT&PF</u>	Logged By <u>Adam Wyborny</u>
Project Number <u>102599-008</u>	Driller <u>Discovery Drilling</u>

I. TOP SECTION (CASING)

Initial Pipe Length 10'
 Cutoff Length 5.42'
 Add-on Length _____

Total Length 4.58'

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 2
 Length of Section(s): _____

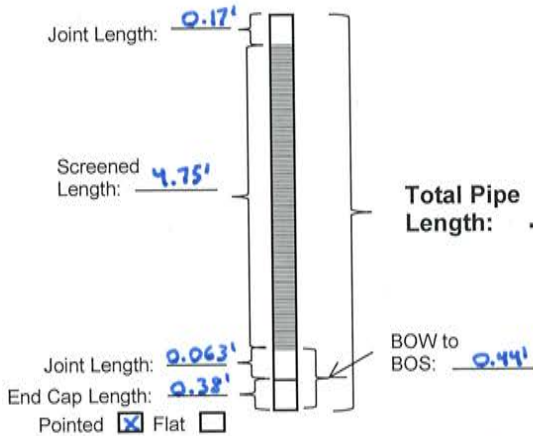
<u>10'</u>	<u>10'</u>	

Sum of Lengths: 20'

V. BACKFILL

	Depth Below GS	
	Bottom	Top
CEM (No Pipe)	_____	_____
CEM_PB	<u>1'</u>	<u>0'</u>
*SLUF_PB/FIL_PB	<u>3'</u>	<u>1'</u>
SLUF+ BCH_PB	<u>22'</u>	<u>3'</u>
*SLUF_PB/FIL_PB	_____	_____
BGR_PB	_____	_____
*SLUF_PB/FIL_PB	<u>25</u>	<u>22</u>
SLUF_PS/FIL_PS	<u>30'</u>	<u>22+25</u>
*SLUF/FIL (No Pipe)	_____	_____
*SLUF_PB/FIL_PB	_____	_____
Filter Pack Type or Gradation	_____	_____

III. SCREENED SECTION(S)



Total Pipe Length: 5.36'

TOC to BOW: 29.94

VI. MONUMENTS

Stickup Flushmount
 TOM to GS 0
 TOM to TOC -0.42
 ^TOC to GS -0.42
 Lock type N/A

VII. MOISTURE CONTENT

Depth to Water Below GS _____

	Frozen Soil Below GS	
	Bottom	Top
Seasonal 1	_____	_____
Seasonal 2	_____	_____
Permafrost 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)
- 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

VIII. CALCULATIONS BELOW GROUND SURFACE

TOC to BOW 29.94
 - BOW to BOS 0.44
= TOC to BOS 29.5

TOC to BOS 29.5
 - Screened Length 4.75
= TOC to TOS 24.75

TOC to BOW	<u>29.94</u>
- TOC to GS	<u>-0.42</u>
BOW bgs	<u>30.36</u>
TOC to TOS	<u>24.75</u>
- TOC to GS	<u>-0.42</u>
TOS bgs	<u>25.17</u>
TOC to BOS	<u>29.50</u>
- TOC to GS	<u>-0.42</u>
BOS bgs	<u>29.92</u>

KRF

MONITORING WELL CONSTRUCTION DETAILS

Monitoring Well No. <u>MW 25-15</u>	Date Installed <u>10/23/2021</u>
Project Name <u>Gustavus DOT LPP</u>	Logged By <u>Adam Wyborny</u>
Project Number <u>102599-008</u>	Driller <u>Discovery Drilling</u>

I. TOP SECTION (CASING)

Initial Pipe Length 4.85
 Cutoff Length 0.6
 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)

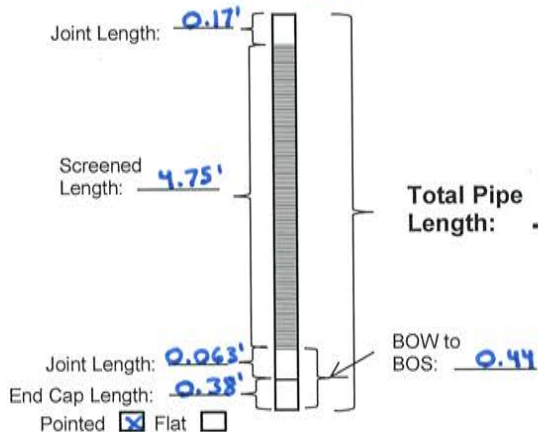
Number of Blank Sections 0
 Length of Section(s): _____

Sum of Lengths: 0'

V. BACKFILL

	Depth Below GS	
	Bottom	Top
CEM (No Pipe)		
CEM_PB	<u>0.5'</u>	<u>0'</u>
*SLUF_PB/FIL_PB	<u>1'</u>	<u>0.5'</u>
BCH_PB	<u>3'</u>	<u>1'</u>
*SLUF_PB/FIL_PB		
BGR_PB		
*SLUF_PB/FIL_PB	<u>5</u>	<u>3</u>
*SLUF_PS/FIL_PS	<u>15'</u>	<u>3+5</u>
*SLUF/FIL (No Pipe)		
*SLUF_PB/FIL_PB		
Filter Pack Type or Gradation		

III. SCREENED SECTION(S) $\times 2$



VI. MONUMENTS

Stickup Flushmount
 TOM to GS 0'
 TOM to TOC 0.5'
 ^TOC to GS 0.5'
 Lock type N/A

VII. MOISTURE CONTENT

Depth to Water Below GS _____

	Frozen Soil Below GS	
	Bottom	Top
Seasonal 1		
Seasonal 2		
Permafrost 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)
- 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

VIII. CALCULATIONS BELOW GROUND SURFACE

TOC to BOW 14.6
 - BOW to BOS 0.44
= TOC to BOS 14.16
 TOC to BOS 14.16
 - Screened Length 9.73
= TOC to TOS 4.43

TOC to BOW	<u>14.60</u>
- TOC to GS	<u>- 0.5</u>
BOW bgs	<u>15.10</u>
TOC to TOS	<u>4.43</u>
- TOC to GS	<u>- 0.5</u>
TOS bgs	<u>4.93</u>
TOC to BOS	<u>14.16</u>
- TOC to GS	<u>- 0.5</u>
BOS bgs	<u>14.66</u>

KRF

MONITORING WELL CONSTRUCTION DETAILS

Monitoring Well No. <u>MW25-47</u>	Date Installed <u>10/23/2021</u>
Project Name <u>Gustavus DOT & PF</u>	Logged By <u>Adam Wylborny</u>
Project Number <u>102599-008</u>	Driller <u>Discovery Drilling</u>

I. TOP SECTION (CASING)

Initial Pipe Length 10'
 Cutoff Length 8.7'
 Add-on Length _____

Total Length 1.3'

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 4
 Length of Section(s): _____

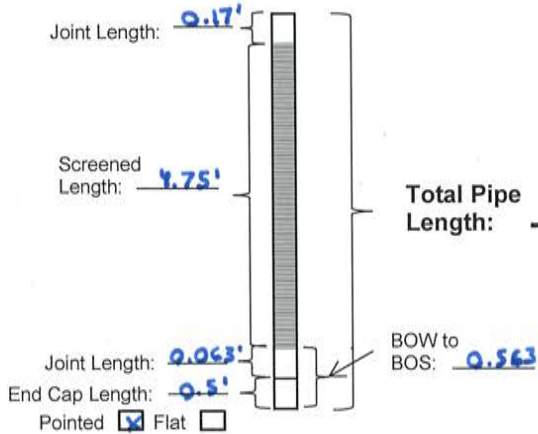
<u>10'</u>	<u>10'</u>	<u>10'</u>	
<u>10'</u>			

Sum of Lengths: 40'

V. BACKFILL

	Depth Below GS	
	Bottom	Top
CEM (No Pipe)	_____	_____
CEM_PB	<u>1'</u>	<u>0'</u>
*SLUF_PB/FIL_PB	<u>3'</u>	<u>1'</u>
SLUF+ BCH_PB	<u>39'</u>	<u>3'</u>
*SLUF_PB/FIL_PB	_____	_____
BGR_PB	_____	_____
*SLUF_PB/FIL_PB	<u>4.2</u>	<u>39</u>
*SLUF_PS/FIL_PS	<u>47'</u>	<u>39+4.2</u>
*SLUF/FIL (No Pipe)	_____	_____
*SLUF_PB/FIL_PB	_____	_____
Filter Pack Type or Gradation	_____	_____

III. SCREENED SECTION(S)



TOC to BOW: 46.78'

VI. MONUMENTS

Stickup Flushmount
 TOM to GS 0'
 TOM to TOC -0.75
 ^TOC to GS -0.75
 Lock type N/A

VII. MOISTURE CONTENT

Depth to Water Below GS _____

	Frozen Soil Below GS	
	Bottom	Top
Seasonal 1	_____	_____
Seasonal 2	_____	_____
Permafrost 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)
- 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

VIII. CALCULATIONS BELOW GROUND SURFACE

TOC to BOW 46.78
 - BOW to BOS 0.563
 = TOC to BOS 46.22
 TOC to BOS 46.22
 - Screened Length 4.75
 = TOC to TOS 41.47

TOC to BOW	<u>46.78</u>
- TOC to GS	<u>-0.75</u>
BOW bgs	<u>47.53</u>
TOC to TOS	<u>41.47</u>
- TOC to GS	<u>-0.75</u>
TOS bgs	<u>42.22</u>
TOC to BOS	<u>46.22</u>
- TOC to GS	<u>-0.75</u>
BOS bgs	<u>46.97</u>

KRP

WELL DEVELOPMENT LOG

Owner-Client DOT+PC Well No. MW-9-10
 Location GST Project No. 102599-008
 Weather rainy Date 10-25-21
 Development Personnel JKR

Diameter and Type of Casing: 2" PVC
 Total Depth of Well **Before** Development (feet below top of casing): 9.65
 Depth to Water **Before** Development (feet below top of casing): 2.46
 Depth to Screen Top and Bottom (from Construction Log): Top: 4.87 Bottom: 10.06

Development Details

Feet of water in well 7.19 Time pumping started 16:30 - 1645 1701
 Gallons per foot 0.17 Flow rate (gal/min) ~0.7
 Gallons in well 1.22 Flow-rate measurement method: _____
 Surge method surge block _____
 Pump used Wattera Time pumping ended 17:30 17:31
 Tubing used (ft) 18 Gallons Pumped ~30
 Disposal: GAC

Depth to Water **After** Development (feet below top of casing): 9.66 ↕
 Total Depth of Well **After** Development (feet below top of casing): 2.47 ↕

Observations

Time	Water Clarity (Visual)	Time	Water Clarity (Visual)
0 1631	turbid, gray, nity		
1703	turbid, gray		
1707	cloudy		
1 1712	SAA		
2 1715	slightly cloudy		
3 1718	SAA		
4 1721	SAA		
5 1724	SAA		
0 1729	SAA		

NOTES: _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

KRP

MONITORING WELL SAMPLING LOG

Owner/Client DOT + PIF
 Location GST
 Sampling Personnel SKR
 Weather Conditions 19/14 Air Temp. (°F) 45

Project No. 102599-008
 Date 10-25-21
 Well MW-9-10
 Time started 1720
 Time completed 1815

Sample No. MW-9-10 Time 1801
 Duplicate - Time -
 Equipment Blank - Time -

Pump Pevi
 Purging Method portable / dedicated pump
 Pumping Start 1749
 Purge Rate (gal./min.) ~0.1
 Pumping End 17:58
 Pump Set Depth Below MP (ft.) 7
 KuriTec Tubing (ft.) -
 TruPoly Tubing (ft.) 4

Diameter and Type of Casing 2"
 Approximate Total Depth of Well Below MP (ft.) 10
 Measured Total Depth of Well Below MP (ft.) 9.66
 Depth to Water Below MP (ft.) 2.47
 Depth to Ice (if frozen) Below MP (ft.) -
 Feet of Water in Well 7.19
 Gallons per foot 0.17
 Gallons in Well 1.2
 Purge Water Volume (gal.) ~1.2
 Purge Water Disposal GAC

Monument Condition good
 Casing Condition good
 Wiring Condition -
 (dedicated pumps)

Measuring Point (MP) Top of Casing (TOC) Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) 0.26 Datalogger type n/a
 Monument to ground surface (ft.) - Datalogger serial # n/a
 Measured cable length (ft.) n/a

- Lock present and operational
- Well name legible on outside of well
- Evidence of frost-jacking _____

Notes _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1¼	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-9-10

WELL DEVELOPMENT LOG

Owner-Client DOT-PP Well No. MW-13-20
 Location GST Project No 102588-008
 Weather overcast Date 10-27-21
 Development Personnel JKR

Diameter and Type of Casing: 2" PVC
 Total Depth of Well **Before** Development (feet below top of casing): 19.53
 Depth to Water **Before** Development (feet below top of casing): 5.89
 Depth to Screen Top and Bottom (from Construction Log): Top: 9.75 Bottom: 19.48

Development Details

Feet of water in well 13.64 Time pumping started 1104
 Gallons per foot 0.17 Flow rate (gal/min) ~0.9
 Gallons in well 2.32 Flow-rate measurement method: _____
 Surge method surge block _____
 Pump used Wattvera Time pumping ended 1154
 Tubing used (ft) 28' Gallons Pumped ~45
 Disposal: GAC

Depth to Water **After** Development (feet below top of casing): 5.91
 Total Depth of Well **After** Development (feet below top of casing): 19.53

Observations

	Time	Water Clarity (Visual)		Time	Water Clarity (Visual)
0	1105	terrible gray	8	1143	SAA
	1110	opaque gray	9	1147	SAA
	1114	very cloudy	10	1151	SAA
1	1117	cloudy	0	1154	SAA
2	1120	SAA			
3	1124	SAA			
4	1128	SAA			
5	1133	SAA			
6	1136	SAA			
7	1140	SAA			

NOTES: _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

RF

MONITORING WELL SAMPLING LOG

Owner/Client DOT + PF
 Location GST
 Sampling Personnel JLR
 Weather Conditions overcast Air Temp. (°F) 45°

Project No. 102581-008
 Date 10-29-21
 Well MW-13-20
 Time started 12:00
 Time completed 12:35

Sample No. MW-13-20 Time 12:26
 Duplicate - Time -
 Equipment Blank - Time -

Pump Peri
 Purging Method portable / dedicated pump
 Pumping Start 12:15
 Purge Rate (gal./min.) ~0.3
 Pumping End 12:23

Diameter and Type of Casing 2"
 Approximate Total Depth of Well Below MP (ft.) 20
 Measured Total Depth of Well Below MP (ft.) 19.53
 Depth to Water Below MP (ft.) 5.91
 Depth to Ice (if frozen) Below MP (ft.) -
 Feet of Water in Well 13.62
 Gallons per foot 0.17
 Gallons in Well 2.31
 Purge Water Volume (gal.) ~3

Pump Set Depth Below MP (ft.) 17
 KuriTec Tubing (ft.) -
 TruPoly Tubing (ft.) 23

Purge Water Disposal GAC

Monument Condition good
 Casing Condition good
 Wiring Condition -
 (dedicated pumps)

Measuring Point (MP) Top of Casing (TOC)

Monument type: Stickup Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) 0.36
 Monument to ground surface (ft.) -

Datalogger type n/a
 Datalogger serial # n/a
 Measured cable length (ft.) n/a

- Lock present and operational
- Well name legible on outside of well
- Evidence of frost-jacking _____

Notes _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1¼	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-13-20

WELL DEVELOPMENT LOG

Owner-Client DOT-PF
 Location GST
 Weather rainy
 Development Personnel SKR

Well No. (102599-008) MW-13-4B
 Project No. _____
 Date 10-27-21

Diameter and Type of Casing: 2" PVC
 Total Depth of Well **Before** Development (feet below top of casing): 44.75
 Depth to Water **Before** Development (feet below top of casing): 4.50
 Depth to Screen Top and Bottom (from Construction Log): Top: 39.75 Bottom: 44.48

Development Details

Feet of water in well 46.25 Time pumping started 1419 1427
 Gallons per foot 0.17 Flow rate (gal/min) ~0.7
 Gallons in well 6.84 Flow-rate measurement method: _____
 Surge method surge block _____
 Pump used Watters Time pumping ended 1652
 Tubing used (ft) 57' Gallons Pumped ~95
 Disposal: GAC

Depth to Water **After** Development (feet below top of casing): 8.38
 Total Depth of Well **After** Development (feet below top of casing): 44.75

Observations

Time	Water Clarity (Visual)
<u>1427</u>	<u>turbid, gray</u>
<u>1444</u>	<u>turbid</u>
<u>1501</u>	<u>SAA</u>
<u>1517</u>	<u>SAA</u>
<u>1528</u>	<u>very cloudy</u>
<u>1537</u>	<u>SAA</u>
<u>1542</u>	<u>SAA</u>
<u>1549</u>	<u>SAA</u>
<u>1555</u>	<u>SAA</u>
<u>1602</u>	<u>SAA</u>

Time	Water Clarity (Visual)
<u>1617</u>	<u>very cloudy</u>
<u>1628</u>	<u>SAA</u>
<u>1650</u>	<u>cloudy</u>

NOTES: So many PVC shavings; had to pull up foot valve
5' drilling timer. Has been addressed now with the drilling crew

WELL CASING VOLUMES

Diameter of Well (ID-inches)	1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

Well No. MW-13-4B

SKR

MONITORING WELL SAMPLING LOG

Owner/Client DOte PP
 Location GST
 Sampling Personnel SKR
 Weather Conditions halny Air Temp. (°F) 45°

Project No. 102599-008
 Date 10-27-21
 Well MW-13-45
 Time started 1715
 Time completed 1745

Sample No. MW-13-45 Time 1731
 Duplicate MW-113-45 Time 1721
 Equipment Blank — Time —

Pump Peri
 Purging Method portable / dedicated pump
 Pumping Start 1721
 Purge Rate (gal./min.) ~0.3
 Pumping End 1728
 Pump Set Depth Below MP (ft.) —
 KuriTec Tubing (ft.) —
 TruPoly Tubing (ft.) —
 Diameter and Type of Casing 2" PVC
 Approximate Total Depth of Well Below MP (ft.) 45
 Measured Total Depth of Well Below MP (ft.) 44.75
 Depth to Water Below MP (ft.) 8.38
 Depth to Ice (if frozen) Below MP (ft.) —
 Feet of Water in Well 36.37
 Gallons per foot 0.17
 Gallons in Well 6.18
 Purge Water Volume (gal.) ~2.1
 Purge Water Disposal GAC

Monument Condition good
 Casing Condition good
 Wiring Condition (dedicated pumps) —

Measuring Point (MP) Top of Casing (TOC) Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) 0.50 Datalogger type n/a
 Monument to ground surface (ft.) — Datalogger serial # n/a
 Measured cable length (ft.) n/a

- Lock present and operational
- Well name legible on outside of well
- Evidence of frost-jacking —

Notes depth to water is a/cloze approximation
saltwater on the edge of casing kept sounder
from functioning properly

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1¼	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-13-45

WELL DEVELOPMENT LOG

Owner-Client DOT/PF Well No. MW-14-15
 Location Enstaurus Project No. 102599-008
 Weather Partly cloudy Date 11-1-31
 Development Personnel MSC

Diameter and Type of Casing: 2" PVC
 Total Depth of Well **Before** Development (feet below top of casing): 13.58+1.19 = 14.77
 Depth to Water **Before** Development (feet below top of casing): 7.76
 Depth to Screen Top and Bottom (from Construction Log): Top: 5.1 Bottom: 14.83

Development Details

Feet of water in well 7.01 Time pumping started 1335
 Gallons per foot 0.17 Flow rate (gal/min) 0.8
 Gallons in well 1.19 Flow-rate measurement method: Container
 Surge method Surge block
 Pump used Waterira Time pumping ended 1455
 Tubing used (ft) 35 Gallons Pumped 30
 Disposal: GAC

Depth to Water **After** Development (feet below top of casing): 4.75
 Total Depth of Well **After** Development (feet below top of casing): 13.33+1.19 = 14.52

Observations

	Time	Water Clarity (Visual)		Time	Water Clarity (Visual)
0	1337	Turbid	5	1428	Cloudy
0	1346	Very cloudy	0	1432	Cloudy
1	1402	Turbid	0	1436	Very cloudy
2	1404	Very cloudy	0	1440	Cloudy
2	1408	Very cloudy	0	1446	Cloudy
3	1413	Very cloudy	0	1454	Slightly cloudy
3	1415	Cloudy			
4	1419	Cloudy			
4	1421	Cloudy			
5	1425	Cloudy			

NOTES: _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

MONITORING WELL SAMPLING LOG

Owner/Client DOT + PP
 Location GST
 Sampling Personnel SKR
 Weather Conditions clear Air Temp. (°F) 40°

Project No. 102599-008
 Date 11-1-21
 Well MW-14-15
 Time started 1625
 Time completed 1656

Sample No. MW-14-15 Time 1650
 Duplicate - Time -
 Equipment Blank - Time -

Pump Peri
 Purging Method portable / dedicated pump
 Pumping Start 1634
 Purge Rate (gal./min.) ~0.3
 Pumping End 1647
 Pump Set Depth Below MP (ft.) ~13
 KuriTec Tubing (ft.) -
 TruPoly Tubing (ft.) 17

Diameter and Type of Casing 2" PVC
 Approximate Total Depth of Well Below MP (ft.) 15
 Measured Total Depth of Well Below MP (ft.) -
 Depth to Water Below MP (ft.) 4.74
 Depth to Ice (if frozen) Below MP (ft.) -
 Feet of Water in Well -
 Gallons per foot 0.17
 Gallons in Well 24
 Purge Water Volume (gal.) 24
 Purge Water Disposal GAC

Monument Condition good
 Casing Condition good
 Wiring Condition -
 (dedicated pumps)

Measuring Point (MP) Top of Casing (TOC) Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure
 Top-of-casing to monument (ft.) 0.33 Datalogger type n/a
 Monument to ground surface (ft.) - Datalogger serial # n/a
 Measured cable length (ft.) n/a

- Lock present and operational
- Well name legible on outside of well
- Evidence of frost-jacking _____

Notes _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1¼	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-14-15

WELL DEVELOPMENT LOG

Owner-Client <u>Gustavus DOT / PF</u>	Well No. <u>MW-14-31</u>
Location <u>Gustavus</u>	Project No <u>102599-008</u>
Weather <u>Partly Cloudy</u>	Date <u>11-1-21</u>
Development Personnel <u>MSR, JKR</u>	

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 **Before** Development (feet below top of casing): 4.16

Depth to Screen Top and Bottom (from Construction Log): Top: 26.11 Bottom: 30.86

Development Details

Feet of water in well <u>26.8</u>	Time pumping started <u>0925</u>
Gallons per foot <u>0.17</u>	Flow rate (gal/min) <u>0.8</u>
Gallons in well <u>4.56</u>	Flow-rate measurement method: <u>Container</u>
Surge method <u>Surge block</u>	Time pumping ended <u>1130</u>
Pump used <u>Watera</u>	Gallons Pumped <u>40 45</u>
Tubing used (ft) <u>50</u>	Disposal: <u>GAC</u>

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

Total Depth of Well **After** Development (feet below top of casing): 29.67 + 1.19 = 30.86

Observations

Time	Water Clarity (Visual)	Time	Water Clarity (Visual)
0 0926	Turbid, gray	4 1102	Cloudy
0 0946	Very cloudy	5 1110	Cloudy
1 1001	Very cloudy	0 1118	Cloudy
1 1015	Turbid, grey	0 1130	Cloudy
2 1023	Turbid, grey		
2 1027	Very cloudy		
3 1031	Very cloudy		
3 1036	Cloudy		
4 1052	Cloudy		
4 1055	Turbid		

NOTES: slight shun : n barrel

WELL CASING VOLUMES

Diameter of Well [ID-inches]	1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

KPF

MONITORING WELL SAMPLING LOG

Owner/Client DOT+PP
 Location GST
 Sampling Personnel SKR
 Weather Conditions clear Air Temp. (°F) 40
First I've seen here in
 Sample No. MW-14-31 Time 1620
 Duplicate — Time —
 Equipment Blank — Time —

Project No. 102599-008
 Date 4-1-21
 Well MW-14-31
 Time started 1550
 Time completed 1627

Pump Peri
 Purging Method portable / dedicated pump Diameter and Type of Casing 2" PVC
 Pumping Start 1606 Approximate Total Depth of Well Below MP (ft.) 31
 Purge Rate (gal./min.) ~0.1 Measured Total Depth of Well Below MP (ft.) —
 Pumping End 1617 Depth to Water Below MP (ft.) 5.20
 Depth to Ice (if frozen) Below MP (ft.) —
 Pump Set Depth Below MP (ft.) ~29 Feet of Water in Well —
 KuriTec Tubing (ft.) — Gallons per foot 0.17
 TruPoly Tubing (ft.) 33' Gallons in Well —
 Purge Water Volume (gal.) ~1
 Purge Water Disposal GAC

Monument Condition good
 Casing Condition good
 Wiring Condition —
 (dedicated pumps) —

Measuring Point (MP) Top of Casing (TOC)

Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) 0.32
 Monument to ground surface (ft.) —

Datalogger type n/a
 Datalogger serial # n/a
 Measured cable length (ft.) n/a

- Lock present and operational
- Well name legible on outside of well
- Evidence of frost-jacking —

Notes —
—
—
—

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1/4	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-14-31

Generator books

WELL DEVELOPMENT LOG

Owner-Client DOT PF
 Location Gustavus
 Weather Rainy
 Development Personnel MSC

Well No. MW-15-15
 Project No. 102599-008
 Date 11-2-21
3

Diameter and Type of Casing: 2" PVC
 Total Depth of Well **Before** Development (feet below top of casing): 13.67 + 1.19 = 14.86 ~~14.79~~
 Depth to Water **Before** Development (feet below top of casing): 7.24 7.25
 Depth to Screen Top and Bottom (from Construction Log): Top: 4.85 Bottom: 14.58

Development Details

Feet of water in well 7.53
 Gallons per foot 1.29 0.17
 Gallons in well _____
 Surge method Surge block
 Pump used Watera
 Tubing used (ft) Q8

Time pumping started 1423
 Flow rate (gal/min) 0.9
 Flow-rate measurement method: Container
 Time pumping ended 1515
 Gallons Pumped 15
 Disposal: C&A

Depth to Water **After** Development (feet below top of casing): 7.25
 Total Depth of Well **After** Development (feet below top of casing): 13.58 + 1.19 = 14.77

Observations

Time	Water Clarity (Visual)
0 1433	Turbid brown
1 1436	" "
2 1440	" "
3 1443	Very Cloudy
4 1446	" "
5 1449	" "
6 1452	Cloudy
7 1456	" "
8 1459	" "
9 1502	" "

Time	Water Clarity (Visual)
10 1503	Cloudy
10 1508	Cloudy

NOTES: _____

WELL CASING VOLUMES

Diameter of Well (ID-inches)	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

Well No. MW-15-15

KRF

MONITORING WELL SAMPLING LOG

Owner/Client DOT/PP
 Location Gustatus
 Sampling Personnel MSC
 Weather Conditions Cloudy Air Temp. (°F) 45

Project No. 108597-008
 Date 11-3-21
 Well MW-15-15
 Time started 1534
 Time completed 1615

Sample No. MW-15-15 Time 1611
 Duplicate - Time -
 Equipment Blank - Time -

Pump Per: A
 Purging Method portable / dedicated pump
 Pumping Start 1535
 Purge Rate (gal./min.) 0.2
 Pumping End 1611

Diameter and Type of Casing 2"
 Approximate Total Depth of Well Below MP (ft.) 15
 Measured Total Depth of Well Below MP (ft.) 14.77
 Depth to Water Below MP (ft.) 7.25
 Depth to Ice (if frozen) Below MP (ft.) -
 Feet of Water in Well 7.52
 Gallons per foot 170.17
 Gallons in Well 1.28
 Purge Water Volume (gal.) 5 3.5+ developed
 Purge Water Disposal GAC

Pump Set Depth Below MP (ft.) 14.50
 KuriTec Tubing (ft.) -
 TruPoly Tubing (ft.) 19
0.5 silicon

Monument Condition good
 Casing Condition good
 Wiring Condition -
 (dedicated pumps)

Measuring Point (MP) Top of Casing (TOC)

Monument type: Stickup ~~Flushmount~~
 Measurement method: Rod & level ~~Tape measure~~

Top-of-casing to monument (ft.) 0.24
 Monument to ground surface (ft.) -

Datalogger type n/a
 Datalogger serial # n/a
 Measured cable length (ft.) n/a

- Lock present and operational
- Well name legible on outside of well
- Evidence of frost-jacking

Notes No lock

WELL CASING VOLUMES

Diameter of Well (ID-inches)	CMT	1 1/4	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-15-15

WELL DEVELOPMENT LOG

Owner-Client DOT PF Well No. MW-15-45
 Location Castavus Project No. 102599-008
 Weather Rainy Date 11-2-21
 Development Personnel MSC

Diameter and Type of Casing: 2" PVC
 Total Depth of Well **Before** Development (feet below top of casing): 45.47 + 1.19 = 46.66
 Depth to Water **Before** Development (feet below top of casing): 6.85
 Depth to Screen Top and Bottom (from Construction Log): Top: 41.47 Bottom: 46.23

Development Details

Feet of water in well 39.81 Time pumping started 1310
 Gallons per foot 0.17 Flow rate (gal/min) 0.8
 Gallons in well 6.77 Flow-rate measurement method: Container
 Surge method Surge block Time pumping ended 1432
 Pump used Watera Gallons Pumped 85
 Tubing used (ft) 65 Disposal: GAC

Depth to Water **After** Development (feet below top of casing): 7.96
 Total Depth of Well **After** Development (feet below top of casing): 45.25 + 1.19 = 46.49

Observations

	Time	Water Clarity (Visual)		Time	Water Clarity (Visual)
0	1311	Turbid grey	0	1415	Turbid grey
1	1315	Turbid grey	0	1421	Very Cloudy
2	1319	Turbid grey			
3	1323	Turbid grey			
4	1328	Turbid grey			
5	1332	Turbid grey			
6	1336	Turbid grey			
0	1345	Turbid grey			
0	1351	Turbid grey			
0	1402	Turbid grey			

NOTES: _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

Well No. MW-15-45

RPF

MONITORING WELL SAMPLING LOG

Owner/Client DOT PF
 Location Custards
 Sampling Personnel MSC
 Weather Conditions Partly Cloudy Air Temp. (°F) 45

Project No. 102599-008
 Date 11-3-21
 Well MW-15-45
 Time started 1614
 Time completed 1743

Sample No. MW-15-45 Time 1728
 Duplicate MW-115-45 Time 1718
 Equipment Blank _____ Time _____

Pump Peri A
 Purging Method portable / dedicated pump
 Pumping Start 1629
 Purge Rate (gal./min.) 0.2
 Pumping End 1728
 Pump Set Depth Below MP (ft.) _____
 KuriTec Tubing (ft.) ✓
 TruPoly Tubing (ft.) _____

Diameter and Type of Casing 2"
 Approximate Total Depth of Well Below MP (ft.) 45
 Measured Total Depth of Well Below MP (ft.) 45.27+1.17+1.41
 Depth to Water Below MP (ft.) 7.25
 Depth to Ice (if frozen) Below MP (ft.) _____
 Feet of Water in Well 39.16
 Gallons per foot 0.17
 Gallons in Well 6.66
 Purge Water Volume (gal.) 15
 Purge Water Disposal GAC

Monument Condition good
 Casing Condition good
 Wiring Condition _____
 (dedicated pumps) _____

Measuring Point (MP) Top of Casing (TOC)

Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) 0.20
 Monument to ground surface (ft.) _____

Datalogger type _____ n/a
 Datalogger serial # _____ n/a
 Measured cable length (ft.) _____ n/a

- Lock present and operational
- Well name legible on outside of well
- Evidence of frost-jacking _____

Notes No lock

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1¼	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

MONITORING WELL SAMPLING LOG

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)
1630	7.71	5.00	2913	6.91	-54.1	Slightly cloudy
1637	7.44	2.82	22012	6.87	-96.6	" "
1636	7.24	1.30	27302	6.94	-144.5	" "
1639	7.18	0.55	28590	6.703	-236.9	" "
1642	7.17	0.42	29820	7.07	-262.9	clear
1645	7.16	0.37	29102	7.12	-285.2	clear
1650	7.17	0.56	29387	7.17	-297.4	clear
1655	7.14	0.34	29277	7.21	-287.8	clear
1658	7.14	0.35	29488	7.22	-272.9	clear
1701	7.16	0.32	29536	7.23	-298.9	clear
1704	7.16	0.30	29844	7.24	-329.6	clear
1707	7.16	0.27	29782	7.24	-354.8	clear
1710	7.16	0.24	29886	7.24	-349.4	clear
1713	7.15	0.21	29421	7.27	-322.7	clear
1714	7.15	0.27	29383	7.27	-333.3	clear
1719	7.15	0.24	29484	7.28	-308.4	clear
1722	7.15	0.25	29533	7.28	-315.8	clear
1725	7.14	0.24	29562	7.29	-319.3	clear
1728	Sample					

16SP

Laboratory SGS

	Analysis	Sample Containers	Preservatives	Dup
<input checked="" type="checkbox"/>	<u>FA</u>			<input checked="" type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>

KRF

Well No.
MW-15-45

WELL DEVELOPMENT LOG

Owner-Client <u>DoT, PF</u>	Well No. <u>MW-16-15</u>
Location <u>Gustavus</u>	Project No. <u>102599-008</u>
Weather <u>Cloudy</u>	Date <u>11-2-21</u>
Development Personnel <u>MSC</u>	

Diameter and Type of Casing: 2"

Total Depth of Well **Before** Development (feet below top of casing): 13.34 + 1.19 = 14.53

Depth to Water **Before** Development (feet below top of casing): 4.00

Depth to Screen Top and Bottom (from Construction Log): Top: 4.97 Bottom: 14.70

Development Details

Feet of water in well <u>9.34</u>	Time pumping started <u>9:27</u>
Gallons per foot <u>0.17</u>	Flow rate (gal/min) <u>0.8</u>
Gallons in well <u>1.59</u>	Flow-rate measurement method: <u>Container</u>
Surge method <u>Surge block</u>	Time pumping ended <u>10:29</u>
Pump used <u>Whitford</u>	Gallons Pumped <u>22</u>
Tubing used (ft) <u>50</u>	Disposal: <u>GAC</u>

Depth to Water **After** Development (feet below top of casing): 3.99

Total Depth of Well **After** Development (feet below top of casing): 13.30 + 1.19 = 14.49

Observations

Time	Water Clarity (Visual)	Time	Water Clarity (Visual)
0 0932	Turbid, brown	10 1014	very cloudy
1 0934	Turbid, brown	0 1023	cloudy
2 0940	Turbid, brown	0 1037	cloudy
3 0946	Turbid, brown		
4 0949	Very cloudy		
5 0953	Very cloudy		
6 0955	Very cloudy		
7 1003	Very cloudy		
8 1005	Very cloudy		
9 1008	Very cloudy		

NOTES: _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

KRE

MONITORING WELL SAMPLING LOG

Owner/Client DOT DF
 Location Constavus
 Sampling Personnel MSC
 Weather Conditions Cloudy Air Temp. (°F) 36

Project No. 102599-008
 Date 11-2-21
 Well MW-16-15
 Time started 1037
 Time completed 1130

Sample No. MW-16 Time 1122
 Duplicate - Time -
 Equipment Blank - Time -

Pump Peri A
 Purging Method portable / dedicated pump
 Pumping Start 1106
 Purge Rate (gal./min.) 0.2
 Pumping End 1120
 Pump Set Depth Below MP (ft.) 14
 KuriTec Tubing (ft.) -
 TruPoly Tubing (ft.) 25
0.5 Silicon
 Diameter and Type of Casing 2"
 Approximate Total Depth of Well Below MP (ft.) 15
 Measured Total Depth of Well Below MP (ft.) 14.49
 Depth to Water Below MP (ft.) 3.29
 Depth to Ice (if frozen) Below MP (ft.) -
 Feet of Water in Well 10.5
 Gallons per foot 0.17
 Gallons in Well 1.78
 Purge Water Volume (gal.) 4.8
 Purge Water Disposal GAC

Monument Condition good
 Casing Condition good
 Wiring Condition -
 (dedicated pumps)

Measuring Point (MP) Top of Casing (TOC)
 Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure
 Top-of-casing to monument (ft.) 0.37
 Monument to ground surface (ft.) -
 Datalogger type n/a
 Datalogger serial # n/a
 Measured cable length (ft.) n/a

- Lock present and operational
- Well name legible on outside of well
- Evidence of frost-jacking

Notes No lock

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

KLF

Well No.
MW-16-15

WELL DEVELOPMENT LOG

Owner-Client DOI+PP
 Location GST
 Weather overcast
 Development Personnel JFK

Well No. MW-17-20
 Project No. 102599-008
 Date 10-26-21

Diameter and Type of Casing: 2" PVC
 Total Depth of Well **Before** Development (feet below top of casing): 19.54
 Depth to Water **Before** Development (feet below top of casing): 7.57 6.57
 Depth to Screen Top and Bottom (from Construction Log): Top: 10.07 Bottom: ~~26.36~~ 19.80

Development Details

Feet of water in well 11.97 Time pumping started 1118
 Gallons per foot 0.17 Flow rate (gal/min) ~0.8
 Gallons in well 2.03 Flow-rate measurement method: _____
 Surge method Surge block _____
 Pump used Wattkem Time pumping ended 1229
 Tubing used (ft) 30' Gallons Pumped ~50
 Disposal: GAC

Depth to Water **After** Development (feet below top of casing): 6.57
 Total Depth of Well **After** Development (feet below top of casing): 19.55

Observations

	Time	Water Clarity (Visual)		Time	Water Clarity (Visual)
⊙	1123	turbid, gray, silty	8	1210	cloudy
	1130	opaque	9:00	1214	SAA
1	1134	very cloudy	10	1217	SAA
2	1141	cloudy	0	1221	SAA
3	1144	SAA		1229	SAA
4	1153	SAA			
5	1156	SAA			
6	1201	SAA			
7	1204	SAA			
8	1207	SAA very cloudy			

NOTES: _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

MONITORING WELL SAMPLING LOG

Owner/Client DOT-PF
 Location GST
 Sampling Personnel SKR
 Weather Conditions overcast Air Temp. (°F) _____

Project No. 102599-008
 Date 10-26-21
 Well MW-17-20
 Time started 1240
 Time completed 1310

Sample No. MW-17-20 Time 1258
 Duplicate _____ Time _____
 Equipment Blank _____ Time _____

Pump Peri
 Purging Method portable / dedicated pump
 Pumping Start 1247
 Purge Rate (gal./min.) _____
 Pumping End 1255
 Pump Set Depth Below MP (ft.) _____
 KuriTec Tubing (ft.) _____
 TruPoly Tubing (ft.) _____

Diameter and Type of Casing 2" PVC
 Approximate Total Depth of Well Below MP (ft.) 20
 Measured Total Depth of Well Below MP (ft.) 19.55
 Depth to Water Below MP (ft.) 6.57
 Depth to Ice (if frozen) Below MP (ft.) _____
 Feet of Water in Well 12.98
 Gallons per foot 0.17
 Gallons in Well 2.2
 Purge Water Volume (gal.) ~0.7
 Purge Water Disposal GAC

Monument Condition good
 Casing Condition good
 Wiring Condition _____
 (dedicated pumps) _____

Measuring Point (MP) Top of Casing (TOC)

Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) -0.44
 Monument to ground surface (ft.) _____

Datalogger type n/a
 Datalogger serial # n/a
 Measured cable length (ft.) n/a

- Lock present and operational
- Well name legible on outside of well
- Evidence of frost-jacking _____

Notes _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1¼	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-17-20

WELL DEVELOPMENT LOG

Owner-Client DOT+PP Well No. MW-17-40
 Location GST Project No. 102590-008
 Weather overcast Date 10-26-21
 Development Personnel JKR

Diameter and Type of Casing: 2" PVC
 Total Depth of Well **Before** Development (feet below top of casing): 39.82
 Depth to Water **Before** Development (feet below top of casing): 5.80
 Depth to Screen Top and Bottom (from Construction Log): Top: 35.05 Bottom: 39.80

Development Details

Feet of water in well _____ Time pumping started 1330 1353
 Gallons per foot 0.17 Flow rate (gal/min) ~0.8
 Gallons in well _____ Flow-rate measurement method: _____
 Surge method Surge block _____
 Pump used Watters Time pumping ended 1427
 Tubing used (ft) 52' Gallons Pumped ~28
 Disposal: GAC

* Depth to Water **After** Development (feet below top of casing): _____
 Total Depth of Well **After** Development (feet below top of casing): 39.82

Observations

	Time	Water Clarity (Visual)		Time	Water Clarity (Visual)
	<u>1330</u>				
<u>0</u>	<u>1353</u>	<u>turbid, gray, silty</u>			
	<u>1402</u>	<u>slightly turbid, gray</u>			
	<u>1403</u>	<u>cloudy</u>			
<u>1</u>	<u>1407</u>	<u>cloudy</u>			
<u>2</u>	<u>1411</u>	<u>SAA</u>			
<u>3</u>	<u>1414</u>	<u>SAA</u>			
<u>4</u>	<u>1417</u>	<u>SAA</u>			
<u>5</u>	<u>1420</u>	<u>SAA</u>			
<u>0</u>	<u>1427</u>	<u>SAA</u>			

NOTES: unusually amount of PVC shavings in well...

WELL CASING VOLUMES

Diameter of Well [ID-inches]	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

KRF

MONITORING WELL SAMPLING LOG

Owner/Client DOT & PF
 Location GST
 Sampling Personnel SKR
 Weather Conditions rainy Air Temp. (°F) 45°

Project No. 102592-008
 Date 10-26-21
 Well MW-17-40
 Time started 1435
 Time completed 1330

Sample No. MW-17-40 Time 1454
 Duplicate MW-117-40 Time 1444
 Equipment Blank — Time —

Pump Peri
 Purging Method portable / dedicated pump
 Pumping Start 1443
 Purge Rate (gal./min.) ~0.1
 Pumping End 1451

Diameter and Type of Casing 2"
 Approximate Total Depth of Well Below MP (ft.) 40
 Measured Total Depth of Well Below MP (ft.) 39.82
 Depth to Water Below MP (ft.) —
 Depth to Ice (if frozen) Below MP (ft.) —
 Feet of Water in Well —
 Gallons per foot 0.17
 Gallons in Well —
 Purge Water Volume (gal.) ~1
 Purge Water Disposal GAC

Pump Set Depth Below MP (ft.) 37
 KuriTec Tubing (ft.) —
 TruPoly Tubing (ft.) 48 41

Monument Condition good
 Casing Condition good
 Wiring Condition —
 (dedicated pumps)

Measuring Point (MP) Top of Casing (TOC)

Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) 0.37
 Monument to ground surface (ft.) —

Datalogger type n/a
 Datalogger serial # n/a
 Measured cable length (ft.) n/a

- Lock present and operational
- Well name legible on outside of well
- Evidence of frost-jacking

Notes _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1 1/4	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

WELL DEVELOPMENT LOG

Owner-Client DOT PA Well No. MW-18-15
 Location Gustelus Project No. 102599-008
 Weather Rainy Date 11-3-21
 Development Personnel MSC

Diameter and Type of Casing: 2 1/4" PVC
 Total Depth of Well **Before** Development (feet below top of casing): 13.62 + 1.19 = 14.82
 Depth to Water **Before** Development (feet below top of casing): 4.50
 Depth to Screen Top and Bottom (from Construction Log): Top: 9.19 Bottom: 14.92

Development Details

Feet of water in well 10.32 Time pumping started 1226
 Gallons per foot 0.17 Flow rate (gal/min) 0.8
 Gallons in well 1.75 Flow-rate measurement method: Container
 Surge method Surge block Time pumping ended 1305
 Pump used Wagner Gallons Pumped 18
 Tubing used (ft) 25 Disposal: GAC

Depth to Water **After** Development (feet below top of casing): 4.50
 Total Depth of Well **After** Development (feet below top of casing): 13.62 + 1.19 = 14.81

Observations

	Time	Water Clarity (Visual)		Time	Water Clarity (Visual)
0	1227	Turbid Grey-brown	0	1257	Cloudy
1	1232	" "	0	1304	Cloudy
2	1235	" "			
3	1238	very cloudy			
4	1241	" "			
5	1244	" "			
6	1246	cloudy			
7	1248	cloudy			
8	1250	" "			
9	1254	" "			

NOTES: _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

KRF

MONITORING WELL SAMPLING LOG

Owner/Client At DoT / PF
 Location Gustavus
 Sampling Personnel MSC
 Weather Conditions Cloudy Air Temp. (°F) 55

Project No. 102599
 Date 11-4-21
 Well MW-18-15
 Time started 0944
 Time completed 1026

Sample No. MW-18-15 Time 1014
 Duplicate - Time -
 Equipment Blank - Time -

Pump Per: A
 Purging Method portable / dedicated pump
 Pumping Start 0955
 Purge Rate (gal./min.) 0.2
 Pumping End 1014
 Pump Set Depth Below MP (ft.) 13
 KuriTec Tubing (ft.) -
 TruPoly Tubing (ft.) 20
OIS silicon

Diameter and Type of Casing 2"
 Approximate Total Depth of Well Below MP (ft.) 15
 Measured Total Depth of Well Below MP (ft.) 13.62 + 1.19 = 14.81
 Depth to Water Below MP (ft.) 4.50
 Depth to Ice (if frozen) Below MP (ft.) -
 Feet of Water in Well 10.51
 Gallons per foot 0.17
 Gallons in Well 1.79
 Purge Water Volume (gal.) 8
 Purge Water Disposal GAC

Monument Condition good
 Casing Condition good
 Wiring Condition -
 (dedicated pumps)

Measuring Point (MP) Top of Casing (TOC) Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure
 Top-of-casing to monument (ft.) 0.22 Datalogger type n/a
 Monument to ground surface (ft.) - Datalogger serial # n/a
 Measured cable length (ft.) n/a

- Lock present and operational
- Well name legible on outside of well
- Evidence of frost-jacking

Notes No lock

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1/4	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-18-15

WELL DEVELOPMENT LOG

Owner-Client DOT PP
 Location Custavus
 Weather Cloudy
 Development Personnel MSC

Well No. MW-18-50
 Project No. 102599-008
 Date 11-3-21

Diameter and Type of Casing: 2" PVC
 Total Depth of Well **Before** Development (feet below top of casing): 40.66 + 1.19 = 41.85
 Depth to Water **Before** Development (feet below top of casing): 3.72
 Depth to Screen Top and Bottom (from Construction Log): Top 45.09 Bottom: 49.84

Development Details

Feet of water in well <u>44.13</u>	Time pumping started <u>1050</u>
Gallons per foot <u>0.17</u>	Flow rate (gal/min) <u>0.8</u>
Gallons in well <u>7,50</u>	Flow-rate measurement method: <u>Continued</u>
Surge method <u>Surge block</u>	Time pumping ended <u>1146</u>
Pump used <u>Waterco</u>	Gallons Pumped <u>30</u>
Tubing used (ft) <u>140</u>	Disposal: <u>GAC</u>

Depth to Water **After** Development (feet below top of casing): 33.27
 Total Depth of Well **After** Development (feet below top of casing): 48.62 + 1.19 = 49.81

Observations

Time	Water Clarity (Visual)	Time	Water Clarity (Visual)
1059	Turbid grey		
1104	" "		
1108	" "		
1111	Very cloudy		
1115	" "		
1100	" "		
1138	" "		
1145	Cloudy		

NOTES: _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

Well No. MW-18-50

MONITORING WELL SAMPLING LOG

Owner/Client DOT/PF
 Location Gustavus
 Sampling Personnel MSC
 Weather Conditions Foggy Air Temp. (°F) 36

Project No. 109599-008
 Date 11-4-21
 Well MW-18-50
 Time started 8:44
 Time completed 9:43

Sample No. MW-18-50 Time 0933
 Duplicate MW-118-50 Time 0923
 Equipment Blank - Time -

Pump Peri A
 Purging Method portable / dedicated pump
 Pumping Start 0914
 Purge Rate (gal./min.) 0.2
 Pumping End 0933

Diameter and Type of Casing 2"
 Approximate Total Depth of Well Below MP (ft.) 50
 Measured Total Depth of Well Below MP (ft.) 48.63 + 1.19 = 49.82
 Depth to Water Below MP (ft.) 8.95
 Depth to Ice (if frozen) Below MP (ft.) -
 Feet of Water in Well 40.87
 Gallons per foot 0.17
 Gallons in Well 6.95
 Purge Water Volume (gal.) 4.2
 Purge Water Disposal GAC

Pump Set Depth Below MP (ft.) 48
 KuriTec Tubing (ft.) -
 TruPoly Tubing (ft.) 53
0.5 Silicon

Monument Condition good
 Casing Condition good
 Wiring Condition -
 (dedicated pumps)

Measuring Point (MP) Top of Casing (TOC) Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure
 Top-of-casing to monument (ft.) 0.29 Datalogger type n/a
 Monument to ground surface (ft.) - Datalogger serial # n/a
 Measured cable length (ft.) n/a

- Lock present and operational
- Well name legible on outside of well
- Evidence of frost-jacking

Notes No lock

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1 1/4	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-18-50

WELL DEVELOPMENT LOG

Owner-Client DOT PF Well No. MW-19-15
 Location Gustavus Project No. 102519-008
 Weather Cloudy Date 4-5-21
 Development Personnel MSC

Diameter and Type of Casing: 8" PVC
 Total Depth of Well **Before** Development (feet below top of casing): 13.83 + 1.19 = 15.02
 Depth to Water **Before** Development (feet below top of casing): 3.49
 Depth to Screen Top and Bottom (from Construction Log): Top: 5.04 Bottom: 14.74

Development Details

Feet of water in well 11.53 Time pumping started 0918
 Gallons per foot 0.17 Flow rate (gal/min) 0.8
 Gallons in well 1.96 Flow-rate measurement method: Container
 Surge method Surge block Time pumping ended 0951
 Pump used Waterma Gallons Pumped 25
 Tubing used (ft) 40 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): 13.82 + 1.19 = 15.01

Observations

	Time	Water Clarity (Visual)		Time	Water Clarity (Visual)
0	0919	Turbid brown-grey	0	0951	cloudy
1	0923	" "	0	0951	cloudy
2	0926	" "			
3	0930	Very Cloudy			
4	0933	" "			
5	0936	" "			
6	0939	" "			
7	0942	cloudy			
8	0945	" "			
9	0948	" "			

NOTES: _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

Well No. MW-19-15

RF

MONITORING WELL SAMPLING LOG

102549-008

Owner/Client Williams Alaska Petroleum, Inc. DOT/PF Project No. 107383-001
 Location North Pole Terminal Off-Site Gustavus Date 11-5-21
 Sampling Personnel MSC Well MW-19-15
 Weather Conditions Cloudy Air Temp. (°F) 38 Time started 1231
 Sample No. MW-19-15 Time 1258 Time completed 1300
 Duplicate — Analysis: — Depth to Water (ft.) —
 Equipment Blank (EB) EB Analysis: — Depth to LNAPL (ft.) —
 Method of NAPL Measurement X NAPL Thickness (ft.) —

Pump/Controller Peri A
 Purging Method portable / dedicated pump Diameter and Type of Casing 2"
 Pumping Start 1240 Approximate Total Depth of Well Below MP (ft.) 15
 Purge Rate (gal./min.) 0.2 Measured Total Depth of Well Below MP (ft.) 15.01
 Pumping End 1258 Depth to Water Below MP (ft.) 3.49
 Pump Set Depth Below MP (ft.) 13 Depth to Ice (if frozen) Below MP (ft.) —
 KuriTec Tubing (ft.) — Feet of Water in Well 0.17 11.52
 TruPoly Tubing (ft.) 43 Gallons per foot 0.17
 Silicone Tubing (ft.) 0.5 Gallons in Well 1.95
 Gallons in Well x3 = 5.85
 (also enter on back) Total Gallons Purged 4.5 x developed
 Purge Water Disposal Onsite GAC Treatment

Monument Condition good
 Casing Condition good
 Wiring Condition —
 (dedicated pumps)

Measuring Point (MP) Top of Casing (TOC) Monument type: Stickup / Flushmount
 Measurement method: Tape measure
 Top-of-casing to monument (ft.) 0.24
 Monument to ground surface (ft.) —

- Frost-jacking? Y / CN
- Lock present and operational
- Well name legible on outside of well (stickup) or inside of well (flushmount)

Notes No lock

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1¼	2	3	4	6	8
Gallons per lineal foot	0.01057	0.08	0.17	0.38	0.66	1.5	2.6

WELL DEVELOPMENT LOG

Owner-Client DOT PF Well No. MW-19-50
 Location Constarus Project No. 102599-008
 Weather Cloudy Date 1-5-21
 Development Personnel MSC

Diameter and Type of Casing: 2" PVC
 Total Depth of Well **Before** Development (feet below top of casing): 48.69 + 1.19 = 49.88
 Depth to Water **Before** Development (feet below top of casing): 3.53
 Depth to Screen Top and Bottom (from Construction Log): Top: 45.00 Bottom: 49.75

Development Details

Feet of water in well 46.35 Time pumping started 1037
 Gallons per foot 0.17 Flow rate (gal/min) 0.8
 Gallons in well 7.88 Flow-rate measurement method: 28 Container
 Surge method Surge block
 Pump used Veterra Time pumping ended 1113
 Tubing used (ft) 70 Gallons Pumped 28
 Disposal: GAC

Depth to Water **After** Development (feet below top of casing): 3.94
 Total Depth of Well **After** Development (feet below top of casing): 48.65 + 1.19 = 49.84

Observations

	Time	Water Clarity (Visual)		Time	Water Clarity (Visual)
0	1039	Turbid brown-green			
1	1042	" "			
2	1046	" "			
3	1049	" "			
4	1053	" "			
5	1100	" "			
0	1103	Very Cloudy			
0	1112	Cloudy			

NOTES: _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

Well No. MW-19-50

KRF

MONITORING WELL SAMPLING LOG

Owner/Client DoT PF
 Location Gustavus
 Sampling Personnel MSC
 Weather Conditions Cloudy Air Temp. (°F) 38

Project No. 102599-008
 Date 11-5-21
 Well MW-19-50
 Time started 1146
 Time completed 1230

Sample No. MW-19-50 Time 1222
 Duplicate MW-19-50 Time 1212
 Equipment Blank - Time -

Pump Peri A
 Purging Method portable / dedicated pump Diameter and Type of Casing 2"
 Pumping Start 1206 Approximate Total Depth of Well Below MP (ft.) 50
 Purge Rate (gal./min.) 0.2 Measured Total Depth of Well Below MP (ft.) 49.84
 Pumping End 1222 Depth to Water Below MP (ft.) 3.94
 Pump Set Depth Below MP (ft.) 48 Depth to Ice (if frozen) Below MP (ft.) -
 KuriTec Tubing (ft.) 63 Feet of Water in Well 45.90
 TruPoly Tubing (ft.) 63 Gallons per foot 0.17
0.5 silicon Gallons in Well 7.80
 Purge Water Volume (gal.) 4.5 + developed

Monument Condition good Purge Water Disposal GAC
 Casing Condition good
 Wiring Condition -
 (dedicated pumps)

Measuring Point (MP) Top of Casing (TOC) Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) 0.24 Datalogger type n/a
 Monument to ground surface (ft.) - Datalogger serial # n/a
 Measured cable length (ft.) n/a

- Lock present and operational
- Well name legible on outside of well
- Evidence of frost-jacking

Notes No lock

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1/4	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-19-50

WELL DEVELOPMENT LOG

Owner-Client DOT/PP Well No. MW-20-15
 Location Constance Project No. 102594-008
 Weather cloudy Date 11-4-21
 Development Personnel MSC

Diameter and Type of Casing: 2" PVC
 Total Depth of Well **Before** Development (feet below top of casing): 13.64 + 1.19 = 14.83
 Depth to Water **Before** Development (feet below top of casing): 5.70
 Depth to Screen Top and Bottom (from Construction Log): Top: 4.84 Bottom: 14.57

Development Details

Feet of water in well 9.13 Time pumping started 1153
 Gallons per foot 0.17 Flow rate (gal/min) 0.8
 Gallons in well 1.55 Flow-rate measurement method:
 Surge method Surge block 0.8 Container
 Pump used Waterira Time pumping ended 1237
 Tubing used (ft) 25 Gallons Pumped 15
 Disposal: GAC

Depth to Water **After** Development (feet below top of casing): 5.70
 Total Depth of Well **After** Development (feet below top of casing): 13.64 + 1.19 = 14.83

Observations

	Time	Water Clarity (Visual)		Time	Water Clarity (Visual)
0	1154	Turbid brown-gro	9	1225	cloudy
1	1157	" "	10	1228	Cloudy
2	1200	" "	0	1237	Cloudy
3	1203	" "			
4	1206	Very cloudy			
5	1213	" "			
6	1216	" "			
7	1219	" "			
8	1222	Cloudy			

NOTES: _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

KRF

MONITORING WELL SAMPLING LOG

Owner/Client DOT/PF
 Location Constance
 Sampling Personnel MJC
 Weather Conditions Partly Cloudy Air Temp. (°F) 30

Project No. 102599-008
 Date 10-11-4-01
 Well MW-20-15
 Time started 1542
 Time completed 1622

Sample No. MW-20-15 Time 1618
 Duplicate - Time -
 Equipment Blank - Time -

Pump Per: A
 Purging Method portable / dedicated pump
 Pumping Start 1602
 Purge Rate (gal./min.) 0.2
 Pumping End 1618

Diameter and Type of Casing 3"
 Approximate Total Depth of Well Below MP (ft.) 15
 Measured Total Depth of Well Below MP (ft.) 14.83
 Depth to Water Below MP (ft.) 5.70
 Depth to Ice (if frozen) Below MP (ft.) -
 Feet of Water in Well 9.13
 Gallons per foot 0.17
 Gallons in Well 1.5
 Purge Water Volume (gal.) 4 + developed

Pump Set Depth Below MP (ft.) 13
 KuriTec Tubing (ft.) ✓
 TruPoly Tubing (ft.) 28

0.5 Silicon

Purge Water Disposal GAC

Monument Condition good
 Casing Condition good
 Wiring Condition ✓
 (dedicated pumps)

Measuring Point (MP) Top of Casing (TOC)

Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) 0.23
 Monument to ground surface (ft.) ✓

Datalogger type n/a
 Datalogger serial # n/a
 Measured cable length (ft.) n/a

- Lock present and operational
- Well name legible on outside of well
- Evidence of frost-jacking _____

Notes No lock

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1 1/4	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-20-15

WELL DEVELOPMENT LOG

Owner-Client DOT & PF
 Location Gustavus
 Weather Partly Cloudy
 Development Personnel MSC

Well No. ~~102599-008~~ MW-20-40
 Project No 102599-008
 Date 11-4-21

Diameter and Type of Casing: 2" PVC
 Total Depth of Well **Before** Development (feet below top of casing): 38.60 + 1.19 = 39.79
 Depth to Water **Before** Development (feet below top of casing): 7.62
 Depth to Screen Top and Bottom (from Construction Log): Top: 34.83 Bottom: 37.58

Development Details

Feet of water in well <u>32.17</u>	Time pumping started <u>1407</u>
Gallons per foot <u>0.17</u>	Flow rate (gal/min) <u>0.8</u>
Gallons in well <u>5.47</u>	Flow-rate measurement method: <u>Container</u>
Surge method <u>Surge block</u>	Time pumping ended <u>1438</u>
Pump used <u>Waterira</u>	Gallons Pumped <u>30</u>
Tubing used (ft) <u>52</u>	Disposal: <u>GAC</u>

Depth to Water **After** Development (feet below top of casing): 5.65
 Total Depth of Well **After** Development (feet below top of casing): 38.6 + 1.19 = 39.79

Observations

	Time	Water Clarity (Visual)		Time	Water Clarity (Visual)
0	1408	Turbid grey			
1	1410	Turbid grey			
2	1415	Very cloudy			
3	1420	Very cloudy			
4	1423	Cloudy			
5	1426	Cloudy			
0	1437	Cloudy			

NOTES: _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

KRF

MONITORING WELL SAMPLING LOG

Owner/Client DOT PF
 Location Gustavus
 Sampling Personnel MSC
 Weather Conditions Partly Cloudy Air Temp. (°F) 38

Project No. 102599-008
 Date 11-4-21
 Well MW-20-40
 Time started 1502
 Time completed 1547

Sample No. MW-20-40 Time 1539
 Duplicate - Time -
 Equipment Blank - Time -

Pump Peci A
 Purging Method portable / dedicated pump
 Pumping Start 1523
 Purge Rate (gal./min.) 0.7
 Pumping End 1537

Diameter and Type of Casing 2"
 Approximate Total Depth of Well Below MP (ft.) 40
 Measured Total Depth of Well Below MP (ft.) 39.79
 Depth to Water Below MP (ft.) 5.65
 Depth to Ice (if frozen) Below MP (ft.) -
 Feet of Water in Well 34.14
 Gallons per foot 0.17
 Gallons in Well 5.80
 Purge Water Volume (gal.) 4 + developed
 Purge Water Disposal GAC

Pump Set Depth Below MP (ft.) 38
 KuriTec Tubing (ft.) -
 TruPoly Tubing (ft.) 55
0.5 silicon

Monument Condition good
 Casing Condition good
 Wiring Condition -
 (dedicated pumps)

Measuring Point (MP) Top of Casing (TOC)

Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) 0.25
 Monument to ground surface (ft.) -

Datalogger type n/a
 Datalogger serial # n/a
 Measured cable length (ft.) n/a

- Lock present and operational
- Well name legible on outside of well
- Evidence of frost-jacking

Notes N/A

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1¼	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-20-40

WELL DEVELOPMENT LOG

Owner-Client DOT + PC Well No. MW-21-15
 Location GST Project No. 102699-008
 Weather overcast Date 10-30-21
 Development Personnel JFR

Diameter and Type of Casing: 2" PVC
 Total Depth of Well **Before** Development (feet below top of casing): 14.51
 Depth to Water **Before** Development (feet below top of casing): 6.22
 Depth to Screen Top and Bottom (from Construction Log): Top: 4.96 Bottom: 14.69

Development Details

Feet of water in well 8.29 Time pumping started 1558
 Gallons per foot 0.17 Flow rate (gal/min) ~ 0.8
 Gallons in well 1.40 Flow-rate measurement method: _____
 Surge method Surge block _____
 Pump used Wittara Time pumping ended 1451
 Tubing used (ft) 27' Gallons Pumped ~40
 Disposal: GAC

Depth to Water **After** Development (feet below top of casing): 6.23
 Total Depth of Well **After** Development (feet below top of casing): 14.51

Observations

	Time	Water Clarity (Visual)		Time	Water Clarity (Visual)
-2 min	1557	turbid, gray	9	1642	SAA
	1615	cloudy	10	1645	SAA
1	1618	SAA	0	1650	SAA
2	1621	SAA			
3	1624	SAA			
4	1627	SAA			
5	1630	SAA			
6	1633	SAA			
7	1636	SAA			
8	1639	SAA			

NOTES: _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

KRF

MONITORING WELL SAMPLING LOG

Owner/Client DOT+PI
 Location GST
 Sampling Personnel SKR
 Weather Conditions partly cloudy Air Temp. (°F) 38°

Project No. 102589003
 Date 11-11-21
 Well MW-21-15
 Time started 10:40
 Time completed 11:20

Sample No. MW-21-15 Time 11:15
 Duplicate _____ Time _____
 Equipment Blank _____ Time _____

Pump Peri
 Purging Method portable / dedicated pump
 Pumping Start 10:56
 Purge Rate (gal./min.) ~0.2
 Pumping End 11:12

Diameter and Type of Casing 2" PVC
 Approximate Total Depth of Well Below MP (ft.) 15
 Measured Total Depth of Well Below MP (ft.) 14.51
 Depth to Water Below MP (ft.) 6.27
 Depth to Ice (if frozen) Below MP (ft.) _____
 Feet of Water in Well 8.24
 Gallons per foot 0.17
 Gallons in Well 1.40
 Purge Water Volume (gal.) 3.2
 Purge Water Disposal GAC

Pump Set Depth Below MP (ft.) 12
 KuriTec Tubing (ft.) _____
 TruPoly Tubing (ft.) #2 17

Monument Condition good
 Casing Condition good
 Wiring Condition _____
 (dedicated pumps)

Measuring Point (MP) Top of Casing (TOC)

Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) 0.47
 Monument to ground surface (ft.) _____

Datalogger type n/a
 Datalogger serial # n/a
 Measured cable length (ft.) n/a

- Lock present and operational
- Well name legible on outside of well
- Evidence of frost-jacking _____

Notes _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1¼	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-21-15

WELL DEVELOPMENT LOG

Owner-Client DOT-PP
 Location GST
 Weather overcast
 Development Personnel SKR

Well No. MW-21-45
 Project No. 102599-008
 Date 10-31-21

Diameter and Type of Casing: 2" PVC
 Total Depth of Well **Before** Development (feet below top of casing): 44.63
 Depth to Water **Before** Development (feet below top of casing): 7.33
 Depth to Screen Top and Bottom (from Construction Log): Top: 40.01 Bottom: 44.76

Development Details

Feet of water in well 37.30 Time pumping started 10:30
 Gallons per foot 0.17 Flow rate (gal/min) _____
 Gallons in well 6.34 Flow-rate measurement method: _____
 Surge method surge block _____
 Pump used wattvera Time pumping ended 11:21
 Tubing used (ft) 63' Gallons Pumped ~45
 Disposal: GAC

Depth to Water **After** Development (feet below top of casing): ~5.5
 Total Depth of Well **After** Development (feet below top of casing): 44.64

Observations

	Time	Water Clarity (Visual)
0	1031	turbid, silty grey
	1040	SAA
	1046	very cloudy
1	1058	cloudy
2	1102	SAA
3	1105	SAA
4	1108	SAA
5	1111	SAA
0	1120	SAA

Time	Water Clarity (Visual)

NOTES: ~ salt water; messed with water sounder visual

WELL CASING VOLUMES

Diameter of Well (ID-inches)	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

MONITORING WELL SAMPLING LOG

Owner/Client DOT+PF
 Location OST
 Sampling Personnel SKR
 Weather Conditions overcast Air Temp. (°F) 40°
partly cloudy

Sample No. MW-21-45 Time 1152
 Duplicate MW-21-45 Time 1142
 Equipment Blank — Time —

Project No. 102591-008
 11-1-21 Date 10-21-21
 Well MW-21-45
 Time started 1150 1120
 Time completed 1210

Pump Pevi
 Purging Method portable / dedicated pump
 Pumping Start 1126
 Purge Rate (gal./min.) 1142
 Pumping End 1141

Diameter and Type of Casing 2" PVC
 Approximate Total Depth of Well Below MP (ft.) 45
 Measured Total Depth of Well Below MP (ft.) 44.64
 Depth to Water Below MP (ft.) ~5.5 ✓
 Depth to Ice (if frozen) Below MP (ft.) —
 Feet of Water in Well 39.14
 Gallons per foot 0.17
 Gallons in Well 6.65
 Purge Water Volume (gal.) ~2.5
 Purge Water Disposal GAC

Pump Set Depth Below MP (ft.) 42
 KuriTec Tubing (ft.) —
 TruPoly Tubing (ft.) 48

Monument Condition good
 Casing Condition good
 Wiring Condition —
 (dedicated pumps)

Measuring Point (MP) Top of Casing (TOC) Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) 0.45 Datalogger type n/a
 Monument to ground surface (ft.) — Datalogger serial # n/a
 Measured cable length (ft.) n/a

- Lock present and operational
- Well name legible on outside of well
- Evidence of frost-jacking _____

Notes * salt water; stirred with water sounder; had to visually measure/estimate depth to water

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1¼	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

WELL DEVELOPMENT LOG

Owner-Client DOT+PP Well No. MW-22-15
 Location GST Project No. 102599-008
 Weather overcast Date 10-30-21
 Development Personnel SKR

Diameter and Type of Casing: 2" PVC
 Total Depth of Well **Before** Development (feet below top of casing): 14.29
 Depth to Water **Before** Development (feet below top of casing): 2.94
 Depth to Screen Top and Bottom (from Construction Log): Top: 4.60 Bottom: 14.33

Development Details

Feet of water in well 11.35 Time pumping started 9:11
 Gallons per foot 0.17 Flow rate (gal/min) ~0.5
 Gallons in well 1.93 Flow-rate measurement method:
 Surge method surge block jug
 Pump used Watters Time pumping ended 1005
 Tubing used (ft) 24' Gallons Pumped ~27
 Disposal: GAC

Depth to Water **After** Development (feet below top of casing): 2.94
 Total Depth of Well **After** Development (feet below top of casing): 14.29

Observations

	Time	Water Clarity (Visual)		Time	Water Clarity (Visual)
0	9:12	turbid, silty, grey	8	9:52	SAA
	9:21	less turbid	9	9:55	SAA
	9:25	very cloudy	10	9:58	SAA
1	9:30	cloudy	0	10:07	SAA
2	9:33	SAA		1005	
3	9:36	SAA			
4	9:40	SAA			
5	9:43	SAA			
6	9:46	SAA			
7	9:49	SAA			

NOTES: _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

KRF

MONITORING WELL SAMPLING LOG

Owner/Client Gustavus
 Location Gustavus
 Sampling Personnel hgc
 Weather Conditions cloudy Air Temp. (°F) 37

Project No. 182599-019
 Date 10-30-21
 Well MW-22-15
 Time started 1502
 Time completed 1535

Sample No. MW-22-15 Time 1536
 Duplicate - Time -
 Equipment Blank ✓ Time -

Pump Peri A
 Purging Method portable / dedicated pump
 Pumping Start 1511
 Purge Rate (gal./min.) 0.13
 Pumping End 1530

Diameter and Type of Casing 2"
 Approximate Total Depth of Well Below MP (ft.) 15
 Measured Total Depth of Well Below MP (ft.) 13.18 + 1.19 = 14.57
 Depth to Water Below MP (ft.) 2.95
 Depth to Ice (if frozen) Below MP (ft.) -
 Feet of Water in Well 11.42
 Gallons per foot 0.17
 Gallons in Well 7.94
 Purge Water Volume (gal.) 2.4
 Purge Water Disposal CAC

Pump Set Depth Below MP (ft.) 12
 KuriTec Tubing (ft.) -
 TruPoly Tubing (ft.) -
0.5 silicon

Monument Condition good

Casing Condition good

Wiring Condition ✓
 (dedicated pumps)

Measuring Point (MP) Top of Casing (TOC)

Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) -0.27
 Monument to ground surface (ft.) -

Datalogger type n/a
 Datalogger serial # n/a
 Measured cable length (ft.) n/a

- Lock present and operational
- Well name legible on outside of well
- Evidence of frost-jacking

Notes No lock

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1 1/4	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-22-15

WELL DEVELOPMENT LOG

Owner-Client DOT+PF
 Location GST
 Weather overcast
 Development Personnel JKR

Well No. MW-22-40
 Project No. 102592-008
 Date 10-30-21

Diameter and Type of Casing: 2" PVC
 Total Depth of Well **Before** Development (feet below top of casing): 39.55
 Depth to Water **Before** Development (feet below top of casing): 2.28
 Depth to Screen Top and Bottom (from Construction Log): Top: 34.92 Bottom: 39.67

Development Details

Feet of water in well 34.27 Time pumping started 10:20
 Gallons per foot 0.19 Flow rate (gal/min) ~1.0
 Gallons in well 5.83 Flow-rate measurement method: jug
 Surge method surge blocks Time pumping ended 11:21
 Pump used Wattaka Gallons Pumped ~40
 Tubing used (ft) 63' Disposal: GAC

Depth to Water **After** Development (feet below top of casing): 2.33
 Total Depth of Well **After** Development (feet below top of casing): 39.55

Observations

	Time	Water Clarity (Visual)		Time	Water Clarity (Visual)
0	10:50	dark gray			
	10:55	very cloudy			
1	10:58	SAA			
2	11:03	cloudy			
3	11:06	SAA			
4	11:12	SAA			
5	11:16	SAA			
0	11:20	SAA			

NOTES: surge blocks + footer @ bottom of well

WELL CASING VOLUMES

Diameter of Well [ID-inches]	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

JKR

MONITORING WELL SAMPLING LOG

Owner/Client Gustavus
 Location Gustavus
 Sampling Personnel nsc
 Weather Conditions cloudy Air Temp. (°F) 40

Project No. 102579-049
 Date 10-30-21
 Well MW-22-40
 Time started 1402
 Time completed 1502

Sample No. 8 MW-22-40 Time 1459
 Duplicate _____ Time _____
 Equipment Blank _____ Time _____

Pump Pari A
 Purging Method portable / dedicated pump
 Pumping Start 1425
 Purge Rate (gal./min.) 0.12
 Pumping End 1454

Diameter and Type of Casing 2
 Approximate Total Depth of Well Below MP (ft.) 40
 Measured Total Depth of Well Below MP (ft.) 38.15 + 1.19 = 39.34
 Depth to Water Below MP (ft.) 2.30
 Depth to Ice (if frozen) Below MP (ft.) _____
 Feet of Water in Well 35.94
 Gallons per foot 0.17
 Gallons in Well 6.11
 Purge Water Volume (gal.) 4
 Purge Water Disposal GAC

Pump Set Depth Below MP (ft.) 36.37
 KuriTec Tubing (ft.) _____
 TruPoly Tubing (ft.) 42
0.5 section

Monument Condition good
 Casing Condition good
 Wiring Condition _____
 (dedicated pumps) _____

Measuring Point (MP) Top of Casing (TOC)

Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) 0.30
 Monument to ground surface (ft.) _____

Datalogger type _____ n/a
 Datalogger serial # _____ n/a
 Measured cable length (ft.) _____ n/a

- Lock present and operational
- Well name legible on outside of well
- Evidence of frost-jacking _____

Notes No lat

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1¼	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-22-40

WELL DEVELOPMENT LOG

Owner-Client DOT Well No. MW-23-20
 Location GST Project No. 102599-008
 Weather partly cloudy Date 10-24-21
 Development Personnel SKR

Diameter and Type of Casing: 2"
 Total Depth of Well **Before** Development (feet below top of casing): ~~18.02~~ 19.77
 Depth to Water **Before** Development (feet below top of casing): 7.45
 Depth to Screen Top and Bottom (from Construction Log): Top: 9.67 Bottom: 19.40

Development Details

Feet of water in well ~~12.37~~ 12.32 Time pumping started 1329
 Gallons per foot 0.17 Flow rate (gal/min) ~~2.06~~ ~1
 Gallons in well ~~2.00~~ 2.09 Flow-rate measurement method: _____
 Surge method Wattera surge block _____
 Pump used Wattera Time pumping ended 1612
 Tubing used (ft) ~30' Gallons Pumped ~110
 Disposal: GAC

Depth to Water **After** Development (feet below top of casing): ~~19.77~~ 7.47
 Total Depth of Well **After** Development (feet below top of casing): 19.77

Observations

	Time	Water Clarity (Visual)		Time	Water Clarity (Visual)
0	1330	turbid, silty, gray	8	1421	cloudy
	1340	cloudy opaque	9	1426	SAA
1	1344	opaque	10	1431	SAA
	1348	very cloudy	020	1435	SAA
2	1354	cloudy		1505	SAA
3	1358	cloudy		1525	SAA
4	1403	SAA		1535	SAA
5	1409	SAA		1550	SAA
6	1413	SAA		1612	SAA
7	1416	SAA			

NOTES: _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

Well No. MW-23-20

KRF

WELL DEVELOPMENT LOG

Owner-Client DOT + PF
 Location GST
 Weather rainy
 Development Personnel SKR

Well No. MW-23-50
 Project No. 102599-008
 Date 10-25-21

Diameter and Type of Casing: 2" PVC
 Total Depth of Well **Before** Development (feet below top of casing): 48.01 + 1.52 = 49.53
 Depth to Water **Before** Development (feet below top of casing): 9.21
 Depth to Screen Top and Bottom (from Construction Log): Top: ~~9.21~~ Bottom: 49.30

Development Details

Feet of water in well 40.32 Time pumping started 12 51
 Gallons per foot 0.17 Flow rate (gal/min) ~ 0.9
 Gallons in well 6.85 Flow-rate measurement method: jug
 Surge method Surge block Time pumping ended 1347
 Pump used Wattvera Gallons Pumped ~ 50
 Tubing used (ft) 60' Disposal: GAC

Depth to Water **After** Development (feet below top of casing): 49.55
 Total Depth of Well **After** Development (feet below top of casing): 9.35

Observations

	Time	Water Clarity (Visual)		Time	Water Clarity (Visual)
0	12 52	gray, turbid		1347	slightly cloudy
	1302	gray, less turbid			
	1308	opaque, gray			
	1311	less opaque, ^{13.5K gray} gray			
1	1322	very cloudy			
2	1326	cloudy			
3	1331	SAA			
4	1335	SAA			
5	1339	SAA			
0	1341	gray, opaque			

NOTES: _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

KLP

MONITORING WELL SAMPLING LOG

Owner/Client DOT & PF
 Location GST
 Sampling Personnel SKR
 Weather Conditions rainy Air Temp. (°F) 45

Project No. 102599-008
 Date 10-25-21
 Well MW-23-50
 Time started 1420
 Time completed 1500

Sample No. MW-23-50 Time 1439
 Duplicate MW-123-50 Time 1429
 Equipment Blank — Time —

Pump Puri
 Purging Method portable / dedicated pump
 Pumping Start 1428
 Purge Rate (gal./min.) ~0.1
 Pumping End 1436
 Pump Set Depth Below MP (ft.) 47
 KuriTec Tubing (ft.) —
 TruPoly Tubing (ft.) 53

Diameter and Type of Casing 2" PVC
 Approximate Total Depth of Well Below MP (ft.) 50
 Measured Total Depth of Well Below MP (ft.) 49.55
 Depth to Water Below MP (ft.) 9.35
 Depth to Ice (if frozen) Below MP (ft.) —
 Feet of Water in Well 40.20
 Gallons per foot 0.17
 Gallons in Well 6.83
 Purge Water Volume (gal.) ~1
 Purge Water Disposal GAC

Monument Condition good
 Casing Condition good
 Wiring Condition —
 (dedicated pumps)

Measuring Point (MP) Top of Casing (TOC) Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) 0.34 Datalogger type n/a
 Monument to ground surface (ft.) — Datalogger serial # n/a
 Measured cable length (ft.) n/a

- Lock present and operational
- Well name legible on outside of well
- Evidence of frost-jacking _____

Notes _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1 1/4	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-23-50

WELL DEVELOPMENT LOG

Owner-Client DOT + PF Well No. MW-24-10
 Location GST Project No. 102599-008
 Weather overcast Date 10-29-21
 Development Personnel SKR

Diameter and Type of Casing: 2" PVC
 Total Depth of Well **Before** Development (feet below top of casing): 9.65
 Depth to Water **Before** Development (feet below top of casing): 3.38
 Depth to Screen Top and Bottom (from Construction Log): Top: 4.77 Bottom: 9.52

Development Details

Feet of water in well 6.27 Time pumping started 1236
 Gallons per foot 0.17 Flow rate (gal/min) ~0.4
 Gallons in well 1.07 Flow-rate measurement method: jug
 Surge method surge block Time pumping ended 1325
 Pump used Vetter Gallons Pumped ~16
 Tubing used (ft) 20 Disposal: GAC

Depth to Water **After** Development (feet below top of casing): 3.40
 Total Depth of Well **After** Development (feet below top of casing): 9.66

Observations

	Time	Water Clarity (Visual)		Time	Water Clarity (Visual)
0	1237	turbid			
	1244	less turbid			
1	1249	very cloudy			
2	1253	SAA			
3	1257	SAA			
4	1301	SAA			
5	1304	SAA			
0	1325	cloudy			

NOTES: flow rate affected by PVC pipe shavings

WELL CASING VOLUMES

Diameter of Well [ID-inches]	1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

KRP

WELL DEVELOPMENT LOG

Owner-Client DOT+PF
 Location GST
 Weather partly cloudy
 Development Personnel SKR

Well No. MW-24-30
 Project No 102599-008
 Date 10-29-30

Diameter and Type of Casing: 2" PVC
 Total Depth of Well **Before** Development (feet below top of casing): 29.92
 Depth to Water **Before** Development (feet below top of casing): 3.61
 Depth to Screen Top and Bottom (from Construction Log): Top: 28.17 Bottom: 29.92

Development Details

Feet of water in well <u>26.31</u>	Time pumping started <u>1405</u>
Gallons per foot <u>0.17</u>	Flow rate (gal/min) <u>20.8</u>
Gallons in well <u>4.47</u>	Flow-rate measurement method: <u>jug</u>
Surge method <u>Surge block</u>	Time pumping ended <u>1435</u>
Pump used <u>Wattara</u>	Gallons Pumped <u>~25</u>
Tubing used (ft) <u>42</u>	Disposal: <u>GAC</u>

Depth to Water **After** Development (feet below top of casing): 3.62
 Total Depth of Well **After** Development (feet below top of casing): 29.92 *

Observations

	Time	Water Clarity (Visual)		Time	Water Clarity (Visual)
0	1406	turbid, gray			
	1414	cloudy			
1	1419	SAA			
2	1422	SAA			
3	1425	SAA			
4	1428	SAA			
S	1431	SAA			
0	1435	SAA			

NOTES: X surge block and footer came off in well; will be fished out at quarterly event

WELL CASING VOLUMES

Diameter of Well [ID-inches]	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

SRF

MONITORING WELL SAMPLING LOG

Owner/Client DOT & PF
 Location GST
 Sampling Personnel SKR
 Weather Conditions partly cloudy Air Temp. (°F) 45°

Project No. 1025 09-008
 Date 10-29-21
 Well MW-24-30
 Time started 1530 15:25
 Time completed 1540

Sample No. MW-24-30 Time 1539
 Duplicate — Time —
 Equipment Blank — Time —

Pump Peri
 Purging Method portable / dedicated pump
 Pumping Start 1528
 Purge Rate (gal./min.) ~0.3
 Pumping End 1536
 Pump Set Depth Below MP (ft.) 28
 KuriTec Tubing (ft.) —
 TruPoly Tubing (ft.) 33

Diameter and Type of Casing 2" PVC
 Approximate Total Depth of Well Below MP (ft.) 30
 Measured Total Depth of Well Below MP (ft.) 29.92
 Depth to Water Below MP (ft.) 3.62
 Depth to Ice (if frozen) Below MP (ft.) —
 Feet of Water in Well 26.30
 Gallons per foot 0.17
 Gallons in Well 4.47
 Purge Water Volume (gal.) ~2
 Purge Water Disposal GAC

Monument Condition good
 Casing Condition good
 Wiring Condition —
 (dedicated pumps)

Measuring Point (MP) Top of Casing (TOC)

Monument type: Stickup ~~Flushmount~~
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) 0.32
 Monument to ground surface (ft.) —

Datalogger type n/a
 Datalogger serial # n/a
 Measured cable length (ft.) n/a

- Lock present and operational
- Well name legible on outside of well
- Evidence of frost-jacking

Notes _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

KRP

Well No.
MW-24-30

WELL DEVELOPMENT LOG

Owner-Client DOT-PPF
 Location GST
 Weather rainy
 Development Personnel SKD

Well No. MW-25-15
 Project No. 102599-008
 Date 10-28-21

Diameter and Type of Casing: 2" PVC
 Total Depth of Well **Before** Development (feet below top of casing): 14.71
 Depth to Water **Before** Development (feet below top of casing): 1.63
 Depth to Screen Top and Bottom (from Construction Log): Top: 4.93 Bottom: 14.66

Development Details

Feet of water in well _____	Time pumping started <u>1334</u>
Gallons per foot <u>0.17</u>	Flow rate (gal/min) <u>14.7</u>
Gallons in well _____	Flow-rate measurement method: _____
Surge method <u>surge block</u>	<u>jug</u>
Pump used <u>Wattera</u>	Time pumping ended <u>1436</u>
Tubing used (ft) <u>28</u>	Gallons Pumped <u>~20</u>
	Disposal: <u>GAL</u>

Depth to Water **After** Development (feet below top of casing): 1.65
 Total Depth of Well **After** Development (feet below top of casing): 14.71

Observations

Time	Water Clarity (Visual)	Time	Water Clarity (Visual)
0 1334	thick turbid gray	9 1420	SAA
1345	very cloudy	10 1423	SAA
1 1351	SAA	0 1435	SAA
2 1354	SAA		
3 1359	SAA		
4 1404	cloudy		
5 1408	SAA		
6 1411	SAA		
7 1414	SAA		
8 1417	SAA		

NOTES: _____

WELL CASING VOLUMES

Diameter of Well (ID-inches)	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

KRF

MONITORING WELL SAMPLING LOG

Owner/Client DOT-MF
 Location GST
 Sampling Personnel SKR
 Weather Conditions rainy Air Temp. (°F) 48°

Project No. 102599-008
 Date 10-28-21
 Well MW-25-15
 Time started 1445
 Time completed 1515

Sample No. MW-25-15 Time 1509
 Duplicate - Time -
 Equipment Blank - Time -

Pump Pari
 Purging Method portable / dedicated pump
 Pumping Start 1459
 Purge Rate (gal./min.) _____
 Pumping End 1506
 Pump Set Depth Below MP (ft.) 13
 KuriTec Tubing (ft.) -
 TruPoly Tubing (ft.) 17

Diameter and Type of Casing 2" PVC
 Approximate Total Depth of Well Below MP (ft.) 15
 Measured Total Depth of Well Below MP (ft.) 14.71
 Depth to Water Below MP (ft.) 1.65
 Depth to Ice (if frozen) Below MP (ft.) -
 Feet of Water in Well 13.06
 Gallons per foot 0.17
 Gallons in Well 2.22
 Purge Water Volume (gal.) ~2
 Purge Water Disposal GAC

Monument Condition good
 Casing Condition good
 Wiring Condition -
 (dedicated pumps) _____

Measuring Point (MP) Top of Casing (TOC) Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) 0.27 Datalogger type n/a
 Monument to ground surface (ft.) - Datalogger serial # n/a
 Measured cable length (ft.) n/a

- Lock present and operational
- Well name legible on outside of well
- Evidence of frost-jacking _____

Notes _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1¼	2	3	4	6	8
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

WELL DEVELOPMENT LOG

Owner-Client DOT+PF Well No. MW-25-47
 Location GSI Project No. 102529-008
 Weather rainy Date 10-28-21
 Development Personnel SKL

Diameter and Type of Casing: 2" PVC
 Total Depth of Well **Before** Development (feet below top of casing): 46.63
 Depth to Water **Before** Development (feet below top of casing): 1.21
 Depth to Screen Top and Bottom (from Construction Log): Top: 42.22 Bottom: 46.97

Development Details

Feet of water in well 45.42 Time pumping started 1605
 Gallons per foot 0.17 Flow rate (gal/min) ~0.6
 Gallons in well 7:72 Flow-rate measurement method: jug
 Surge method surge block
 Pump used Watters Time pumping ended 1706
 Tubing used (ft) 82' Gallons Pumped ~35
 Disposal: GAC

Depth to Water **After** Development (feet below top of casing): 1.43
 Total Depth of Well **After** Development (feet below top of casing): 46.63

Observations

	Time	Water Clarity (Visual)		Time	Water Clarity (Visual)
0	1606	far hazy grey			
-20 min	1636	SAA			
	1645	very cloudy			
1	1648	SAA			
2	1651	cloudy			
3	1654	SAA			
4	1657	SAA			
5	1700	SAA			
0	1705	SAA			
1					

NOTES: _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

KPT

MONITORING WELL SAMPLING LOG

Owner/Client DOT+PF
 Location GST
 Sampling Personnel J&R
 Weather Conditions partly cloudy Air Temp. (°F) 48°
 Sample No. MW-25-47 Time 1121
 Duplicate MW-125-47 Time 1051
 Equipment Blank — Time —

Project No. 102529-008
 10-29-21 Date 10-30-21
 Well MW-25-47
 Time started 1710 9:55
 Time completed 1110

Pump Peri
 Purging Method portable / dedicated pump
 Pumping Start 10:29
 Purge Rate (gal./min.) ~0.3
 Pumping End 10:58
 Pump Set Depth Below MP (ft.) 44
 KuriTec Tubing (ft.) —
 TruPoly Tubing (ft.) 48

Diameter and Type of Casing 2" PVC
 Approximate Total Depth of Well Below MP (ft.) 47
 Measured Total Depth of Well Below MP (ft.) 46.63
 Depth to Water Below MP (ft.) 1.43
 Depth to Ice (if frozen) Below MP (ft.) —
 Feet of Water in Well 45.20
 Gallons per foot 0.17
 Gallons in Well 7.68
 Purge Water Volume (gal.) 5
 Purge Water Disposal GAC

Monument Condition good
 Casing Condition good
 Wiring Condition —
 (dedicated pumps)

Measuring Point (MP) Top of Casing (TOC)

Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) 0.32
 Monument to ground surface (ft.) —

Datalogger type n/a
 Datalogger serial # n/a
 Measured cable length (ft.) n/a

- Lock present and operational
- Well name legible on outside of well
- Evidence of frost-jacking

Notes _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1/4	2	3	4	6	8
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

SAMPLE COLLECTION LOG

Project Number: 102599-008 Location: GST Page of
 Date: 10/31/2021
 Sampler: APW

Sample Number	Location	Sample Time	Depth Interval (ft)		Matrix Type	Sampling Method	Sample Type	PID Reading	Analyses
			top	bottom					
21GST-MW16-01	MW-16	0955		0.25	SB	G	ES	N/A	PFAS
21GST-MW16-02	↓	1000		3.8	↓	↓	↓	↓	↓
21GST-MW16-03	↓	1005		9.5	↓	↓	↓	↓	↓
21GST-MW16-04	↓	1015		13.5	↓	↓	↓	↓	↓
21GST-MW19-01	MW-19	1605		3	SB	G	ES	N/A	PFAS
————— 11/01/2021 —————									
21GST-MW19-02	MW-19	1030		48	SB	G	ES	N/A	PFAS
21GST-MW20-01	MW-20	1345		5	SB	G	ES	N/A	PFAS
21GST-MW20-10	↓	1335		5	↓	↓	FD	↓	↓
21GST-MW20-02	↓	1610		37'	↓	↓	ES	↓	↓

Matrix Type	Sampling Method	Sample Type
AR Air	B Baller/Coliwasa	ES Environmental sample
GW Groundwater	D Drill cuttings	ER Equipment rinsate
PR Product	G Grab sampling	FB Field blank
SB Subsurf. soil	H Hand auger	FD Field duplicate
SE Sediment	L Tube liner	FM Field measurement
SG Sludge	P Pump (liquid)	FR Field replicate
SS Surface soil	SS Split spoon	MD Matrix spike duplicate
SW Surface water	T Shelby tube	MS Matrix spike duplicate
WR Water	V Vacuum (gas)	TB Trip blank
	W Wipe sampling	

SAMPLE COLLECTION LOG

Project Number: 102599-008		Location: GST		Page		of			
Date: 10-31-2021									
Sampler: APW									
Sample Number	Location	Sample Time	Depth Interval (ft)		Matrix Type	Sampling Method	Sample Type	PID Reading	Analyses
			top	bottom					
21GST-SB003-01	SB-003	1135		0.25	SB	G	ES	0.5	GRO, BTEX, DRO, RRO, PAH, PFAS
21GST-SB003-02	↓	1140		3.8	↓	↓	↓	0.3	↓
21GST-SB003-03	↓	1150		9.5	↓	↓	↓	N/A	PFAS
21GST-SB004-01	SB-004	1105		0.25	SB	G	ES	0.5	GRO, BTEX, DRO, RRO, PAH, PFAS
21GST-SB004-02	↓	1110		3.8	↓	↓	↓	0.6	↓
21GST-SB004-03	↓	1120		9	↓	↓	↓	N/A	PFAS
21GST-SB006-01	SB-006	1230		0.25	SB	G	ES	N/A	PFAS
21GST-SB006-10	↓	1230		0.25	↓	↓	FD	↓	↓
21GST-SB006-02	↓	1240		3.6	↓	↓	ES	↓	↓
21GST-SB006-03	↓	1245		10	↓	↓	ES	↓	↓
21GST-SB008-01	SB-008	1305		0.5	SB	G	ES	N/A	PFAS
21GST-SB008-02	↓	1310		5.5	↓	↓	↓	↓	↓
21GST-SB008-03	↓	1315		10	↓	↓	↓	↓	↓
21GST-SB011-01	SB-011	1415		0.5	SB	G	ES	0.8	GRO, BTEX, DRO, RRO, PAH, PFAS
21GST-SB011-12	↓	1425		7.5	↓	↓	FD	1.9	↓
21GST-SB011-02	↓	1435		7.5	↓	↓	ES	N/A	↓
21GST-SB011-03	↓	1445		10	↓	↓	ES	N/A	PFAS
21GST-SB014-01	SB-014	1500		0.25	SB	G	ES	N/A	PFAS
21GST-SB014-02	↓	1505		3.5	↓	↓	↓	↓	↓
21GST-SB014-03	↓	1510		9.5	↓	↓	↓	↓	↓

Matrix Type		Sampling Method		Sample Type	
AR	Air	B	Bailer/Colliwasa	ES	Environmental sample
GW	Groundwater	D	Drill cuttings	ER	Equipment rinsate
PR	Product	G	Grab sampling	FB	Field blank
SB	Subsurf. soil	H	Hand auger	FD	Field duplicate
SE	Sediment	L	Tube liner	FM	Field measurement
SG	Sludge	P	Pump (liquid)	FR	Field replicate
SS	Surface soil	SS	Split spoon	MD	Matrix spike duplicate
SW	Surface water	T	Shelby tube	MS	Matrix spike duplicate
WR	Water	V	Vacuum (gas)	TB	Trip blank
		W	Wipe sampling		

SOIL SAMPLE COLLECTION LOG

Project Number: 102599-008 Project Name: DOT & PF Gustavus PFAS

Page 1 of 1

Sampler: KRF

Date	Sample ID	Location	Sample Time	Depth (ft)	Sample Type	PID Reading	Analyses
10/3/21	21GST-SS-030	Near DOT & PF Shop - near + Mel Mc (Jeff found drums)	13:49	SWF	ES	N/A	PFAS x 18 analytes
	21GST-SS-010	" - behind septic	13:54		ES		
	21GST-SS-031	" - Near boring - spa-fund site	13:59		ES		
	21GST-SS-033	"	13:45		FD		
	21GST-SS-009	Near DOT & PF shop door @ edge of asphalt	14:13		ES		
	21GST-SS-012	Behind DOT & PF	14:19		ES		
	21GST-SS-011	Beside DOT & PF where cistern will go	14:27		ES		
	21GST-SS-013	"	14:31		ES		
November 1, 2021 below this line							
	21GST-SS-032	Between Glen's ditch and duck pond outside gate.	9:48	SWF	ES	N/A	PFAS - 18 analytes
	21GST-SS-033		9:56		ES		
	21GST-SS-034	near blast zone of short runway, immediately off the pavement. Some paint chips in samples	9:59		ES		
	21GST-SS-004		10:16		ES		
	21GST-SS-003		10:19		ES		
	21GST-SS-103		10:09		FD		
	21GST-SS-002		10:36		ES		
	21GST-SS-001		10:28		ES		

logged
copy
KRF
10/3/21

Sample Type FS = Field screening measurement only ES = Environmental sample FD = Field duplicate TB = Trip blank

SAMPLE COLLECTION LOG

Project Number: 102599-008 Location: Gustavus Airport		Page 1 of 1																																																																										
Date: 10/29/2021																																																																												
Sampler: APW																																																																												
Sample Number	Location	Sample Time	Depth Interval (ft)		Matrix Type	Sampling Method	Sample Type	PID Reading	Analyses																																																																			
			top	bottom																																																																								
21GST-MW15-01	MW-15	1300		0.25'	SB	G	ES	N/A	PFAS x18																																																																			
21GST-MW15-02	↓	1305		8.5'	↓	↓	↓	↓	↓																																																																			
21GST-MW15-03	↓	1355		18'	↓	↓	↓	↓	↓																																																																			
21GST-MW15-04	↓	1410		28'	↓	↓	↓	↓	↓																																																																			
21GST-MW15-14	↓	1400		28'	↓	↓	FD	↓	↓																																																																			
21GST-MW15-05	↓	1435		39'	↓	↓	ES	↓	↓																																																																			
21GST-MW15-06	↓	1530		48'	↓	↓	↓	↓	↓																																																																			
— 10/30/2021 —																																																																												
21GST-SB002-01	SB-002	0935		0.25'	SB	G	ES	0.2	GRO, BTEX, DRO, RRO, PAH, PFAS																																																																			
21GST-SB002-02	↓	0950		4.5'	↓	↓	↓	0.1	↓																																																																			
21GST-SB002-03	↓	1000		9'	↓	↓	↓	N/A	PFAS																																																																			
21GST-SB002-04	↓	1010		13.5'	↓	↓	↓	N/A	↓																																																																			
21GST-SB001-01	SB-001	1030		0.25'	SB	G	ES	0.8	GRO, BTEX, DRO, RRO, PAH, PFAS																																																																			
21GST-SB001-02	↓	1040		4'	↓	↓	↓	0.5	↓																																																																			
21GST-SB001-03	↓	1050		8'	↓	↓	↓	N/A	PFAS																																																																			
21GST-SB001-04	↓	1100		14'	↓	↓	↓	N/A	↓																																																																			
21GST-SB009-01	SB-009	1135		0.25'	SB	G	ES	0.9	GRO, BTEX, DRO, RRO, PAH, PFAS																																																																			
21GST-SB009-10	↓	1125		0.25'	↓	↓	FD	0.9	↓																																																																			
21GST-SB009-02	↓	1150		4.5'	↓	↓	ES	0.8	↓																																																																			
21GST-SB009-03	↓	1200		9'	↓	↓	↓	N/A	PFAS																																																																			
21GST-SB009-04	↓	1205		13'	↓	↓	↓	N/A	↓																																																																			
<table border="0"> <thead> <tr> <th colspan="2">Matrix Type</th> <th colspan="2">Sampling Method</th> <th colspan="2">Sample Type</th> </tr> </thead> <tbody> <tr> <td>AR</td><td>Air</td> <td>B</td><td>Bailer/Colliwasa</td> <td>ES</td><td>Environmental sample</td> </tr> <tr> <td>GW</td><td>Groundwater</td> <td>D</td><td>Drill cuttings</td> <td>ER</td><td>Equipment rinseate</td> </tr> <tr> <td>PR</td><td>Product</td> <td>G</td><td>Grab sampling</td> <td>FB</td><td>Field blank</td> </tr> <tr> <td>SB</td><td>Subsurf. soil</td> <td>H</td><td>Hand auger</td> <td>FD</td><td>Field duplicate</td> </tr> <tr> <td>SE</td><td>Sediment</td> <td>L</td><td>Tube liner</td> <td>FM</td><td>Field measurement</td> </tr> <tr> <td>SG</td><td>Sludge</td> <td>P</td><td>Pump (liquid)</td> <td>FR</td><td>Field replicate</td> </tr> <tr> <td>SS</td><td>Surface soil</td> <td>SS</td><td>Split spoon</td> <td>MD</td><td>Matrix spike duplicate</td> </tr> <tr> <td>SW</td><td>Surface water</td> <td>T</td><td>Shelby tube</td> <td>MS</td><td>Matrix spike duplicate</td> </tr> <tr> <td>WR</td><td>Water</td> <td>V</td><td>Vacuum (gas)</td> <td>TB</td><td>Trip blank</td> </tr> <tr> <td></td><td></td> <td>W</td><td>Wipe sampling</td> <td></td><td></td> </tr> </tbody> </table>											Matrix Type		Sampling Method		Sample Type		AR	Air	B	Bailer/Colliwasa	ES	Environmental sample	GW	Groundwater	D	Drill cuttings	ER	Equipment rinseate	PR	Product	G	Grab sampling	FB	Field blank	SB	Subsurf. soil	H	Hand auger	FD	Field duplicate	SE	Sediment	L	Tube liner	FM	Field measurement	SG	Sludge	P	Pump (liquid)	FR	Field replicate	SS	Surface soil	SS	Split spoon	MD	Matrix spike duplicate	SW	Surface water	T	Shelby tube	MS	Matrix spike duplicate	WR	Water	V	Vacuum (gas)	TB	Trip blank			W	Wipe sampling		
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WR	Water	V	Vacuum (gas)	TB	Trip blank																																																																							
		W	Wipe sampling																																																																									

SAMPLE COLLECTION LOG

Project Number: 102599		Location: GST		Page 1 of 1																																																																							
Date: 10/27/2021																																																																											
Sampler: APW																																																																											
Sample Number	Location	Sample Time	Depth Interval (ft)		Matrix Type	Sampling Method	Sample Type	PID Reading	Analyses																																																																		
			top	bottom																																																																							
21GST-MW14-01	MW-14	1400		1'	SB	G	ES	N/A	PFAS x18																																																																		
21GST-MW14-10	↓	1350		1'	SB	G	FD	N/A	↓																																																																		
21GST-MW14-02	↓	1410		7'	SB	G	ES	N/A	↓																																																																		
21GST-MW14-03	↓	1425		17'	↓	↓	↓	↓	↓																																																																		
21GST-MW14-04	↓	1430		25'	↓	↓	↓	↓	↓																																																																		
21GST-MW14-05	↓	1500		34'	↓	↓	↓	↓	↓																																																																		
21GST-MW14-06	↓	1600		44'	↓	↓	↓	↓	↓																																																																		
— 10/28/2021 —																																																																											
21GST-MW18-01	MW-18	0955		0.5'	SB	G	ES	N/A	PFAS x18																																																																		
21GST-MW18-02	↓	1010		5'	SB	G	ES	N/A	↓																																																																		
21GST-MW18-12	↓	1000		5'	SB	G	FD	N/A	↓																																																																		
21GST-MW18-03	↓	1020		15'	SB	G	ES	N/A	↓																																																																		
21GST-MW18-04	↓	1110		25'	↓	↓	↓	↓	↓																																																																		
21GST-MW18-05	↓	1125		35'	↓	↓	↓	↓	↓																																																																		
21GST-MW18-06	↓	1210		45'	↓	↓	↓	↓	↓																																																																		
<table border="0"> <thead> <tr> <th colspan="2">Matrix Type</th> <th colspan="2">Sampling Method</th> <th colspan="2">Sample Type</th> </tr> </thead> <tbody> <tr> <td>AR</td><td>Air</td> <td>B</td><td>Bailer/Colliwasa</td> <td>ES</td><td>Environmental sample</td> </tr> <tr> <td>GW</td><td>Groundwater</td> <td>D</td><td>Drill cuttings</td> <td>ER</td><td>Equipment rinsate</td> </tr> <tr> <td>PR</td><td>Product</td> <td>G</td><td>Grab sampling</td> <td>FB</td><td>Field blank</td> </tr> <tr> <td>SB</td><td>Subsurf. soil</td> <td>H</td><td>Hand auger</td> <td>FD</td><td>Field duplicate</td> </tr> <tr> <td>SE</td><td>Sediment</td> <td>L</td><td>Tube liner</td> <td>FM</td><td>Field measurement</td> </tr> <tr> <td>SG</td><td>Sludge</td> <td>P</td><td>Pump (liquid)</td> <td>FR</td><td>Field replicate</td> </tr> <tr> <td>SS</td><td>Surface soil</td> <td>SS</td><td>Split spoon</td> <td>MD</td><td>Matrix spike duplicate</td> </tr> <tr> <td>SW</td><td>Surface water</td> <td>T</td><td>Shelby tube</td> <td>MS</td><td>Matrix spike duplicate</td> </tr> <tr> <td>WR</td><td>Water</td> <td>V</td><td>Vacuum (gas)</td> <td>TB</td><td>Trip blank</td> </tr> <tr> <td></td><td></td> <td>W</td><td>Wipe sampling</td> <td></td><td></td> </tr> </tbody> </table>										Matrix Type		Sampling Method		Sample Type		AR	Air	B	Bailer/Colliwasa	ES	Environmental sample	GW	Groundwater	D	Drill cuttings	ER	Equipment rinsate	PR	Product	G	Grab sampling	FB	Field blank	SB	Subsurf. soil	H	Hand auger	FD	Field duplicate	SE	Sediment	L	Tube liner	FM	Field measurement	SG	Sludge	P	Pump (liquid)	FR	Field replicate	SS	Surface soil	SS	Split spoon	MD	Matrix spike duplicate	SW	Surface water	T	Shelby tube	MS	Matrix spike duplicate	WR	Water	V	Vacuum (gas)	TB	Trip blank			W	Wipe sampling		
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WR	Water	V	Vacuum (gas)	TB	Trip blank																																																																						
		W	Wipe sampling																																																																								

SAMPLE COLLECTION LOG

Project Number: 102599 Location: Gustavus, AK Page 1 of 1
 Date: 10/24/2021
 Sampler: APW

Sample Number	Location	Sample Time	Depth Interval (ft)		Matrix Type	Sampling Method	Sample Type	PID Reading	Analyses
			top	bottom					
✓ 21GST-MW24-01	MW-24	1500		4'	SB	G	ES	N/A	PFAS x 18
✓ 21GST-MW24-02	MW-24	1650		28'	SB	G	ES	N/A	PFAS x 18
— 10/25/2021 —									
✓ 21GST-MW22-01	MW-22	1010		4.5'	SB	G	ES	N/A	PFAS x 18
✓ 21GST-MW22-02	MW-22	1220		40'	SB	G	ES	N/A	PFAS x 18
✓ 21GST-MW21-01	MW-21	1545		7.5'	SB	G	ES	N/A	PFAS x 18
✓ 21GST-MW21-02	MW-21	1735		42'	SB	G	ES	N/A	PFAS x 18

Matrix Type	Sampling Method	Sample Type
AR Air	B Baller/Colwasa	ES Environmental sample
GW Groundwater	D Drill cuttings	ER Equipment rinsate
PR Product	G Grab sampling	FB Field blank
SB Subsurf. soil	H Hand auger	FD Field duplicate
SE Sediment	L Tube liner	FM Field measurement
SG Sludge	P Pump (liquid)	FR Field replicate
SS Surface soil	SS Split spoon	MD Matrix spike duplicate
SW Surface water	T Shelby tube	MS Matrix spike duplicate
WR Water	V Vacuum (gas)	TB Trip blank
	W Wipe sampling	

SAMPLE COLLECTION LOG

Project Number: 102599		Location: Gustavus, AK		Page 1 of 1						
Date: 10/19/2021										
Sampler: Adam Wybarny										
Sample Number	Location	Sample Time	Depth Interval (ft)		Matrix Type	Sampling Method	Sample Type	PID Reading	Analyses	
			top	bottom						
21GST-MW13-01	MW-13	1110		2'	SB	G	ES	N/A	PFAS x 18	
21GST-MW13-02	↓	1140		9'	↓	↓	ES	↓	↓	
21GST-MW13-12	↓	1130		9'	↓	↓	FD	↓	↓	
21GST-MW13-03	↓	1300		20'	↓	↓	ES	↓	↓	
21GST-MW13-04	↓	1330		25'	↓	↓	↓	↓	↓	
21GST-MW13-05	↓	1410		30'	↓	↓	↓	↓	↓	
21GST-MW13-06	↓	1445		35'	↓	↓	↓	↓	↓	
21GST-MW13-07	↓	1645		43'	↓	↓	↓	↓	↓	
— 10/20/2021 —										
21GST-MW23-01	MW-23	1100		13'	SB	G	ES	N/A	PFAS x 18	
21GST-MW23-02	MW-23	1610		42'	SB	G	ES	N/A	PFAS x 18	
— 10/22/2021 —										
21GST-MW17-01	MW-17	1215		12'	SB	G	ES	N/A	PFAS x 18	
21GST-MW17-02	MW-17	1335		37'	SB	G	ES	N/A	PFAS x 18	
— 10/23/2021 —										
21GST-MW25-01	MW-25	0925		4'	SB	G	ES	N/A	PFAS x 18	
21GST-MW25-02	MW-25	1230		47'	SB	G	ES	N/A	PFAS x 18	
Matrix Type					Sampling Method			Sample Type		
AR	Air	B	Bailer/Colivassa	ES	Environmental sample					
GW	Groundwater	D	Drill cuttings	ER	Equipment rinseate					
PR	Product	G	Grab sampling	FB	Field blank					
SB	Subsurf. soil	H	Hand auger	FD	Field duplicate					
SE	Sediment	L	Tube liner	FM	Field measurement					
SG	Sludge	P	Pump (liquid)	FR	Field replicate					
SS	Surface soil	SS	Split spoon	MD	Matrix spike duplicate					
SW	Surface water	T	Shelby tube	MS	Matrix spike duplicate					
WR	Water	V	Vacuum (gas)	TB	Trip blank					
		W	Wipe sampling							

not submitted per PM direction

FIELD LOG OF BORING

DRILL COMPANY/DRILLER: <u>Discovery Drilling</u> DRILL RIG EQUIPMENT: <u>GeoProbe 6610 DT</u> DRILLING METHOD: <u>Direct Push</u> HAMMER TYPE: <u>Auto</u> ROD TYPE/DIA.: <u>2"</u> HAMMER WEIGHT: <u>N/A</u> HAMMER DROP: <u>N/A</u> CASING SIZE/TYPE: <u>1.5"</u> HOLE SIZE: <u>2"</u>	JOB NO: <u>102599-008</u> BORING NO: <u>SB-002</u> JOB NAME: <u>Gustavus DOT-2PF PFAS</u> LOGGED BY: <u>Adam Wylborny</u> LOCATION: <u>GST</u> ELEV.: _____ START DATE: <u>10/30/21</u> END DATE: <u>10/30/21</u> WEATHER DURING DRILLING: <u>Overcast 40°F wind <5mph</u>
---	--

SAMPLE DATA

TIME	SAMP. NO.	DEPTH	FROM	DRIVING RESISTANCE	L. REC.	DRILL ACTION	CONTACTS / GROUNDWATER	PID	ENV. SAMPLE	FIELD CLASSIFICATION
DATE	TYPE	DEPT.	TO	BLOWS / 6 INCH	# JARS					[density/consistency; color; slightly, minor, MAJOR, then trace constituents; moisture; structure; other; USCS classification (geology)]
0920	1	0'		/	4.2'			0.2	01	0'-1': Red-brown well graded sand, moist
10/30		5'		/	6				0.25'	1'-4.5': Light grey well graded sand, moist
↓	↓	↓		/	↓			0.1	02	4.5'-5.0': Light grey poorly-graded sand, wet
				/					4.5'	
0930	2	5'		/	5'				03	5'-8': Grey-brown poorly graded sand with woody debris, wet
10/30		10'		/	1				9'	8'-10': Dark grey to grey poorly graded sand with gravel and woody debris, wet
0940	3	10'		/	4.8'				04	10'-11.25': Grey-brown poorly graded sand, wet
10/30		15'		/	1				13.5'	11.25'-13.33': Dark grey to gray poorly graded sand with gravel, wet
↓	↓	↓		/	↓					13.33'-13.8': Grey silty sand, wet
				/						13.8'-15.0': Grey poorly graded sand with gravel, wet

SUMMARY FIELD LOG OF BORING

DEPTH		USCS CLASSIF.	GENERALIZED SOIL DESCRIPTION FOR DRAFTED GINT LOG
FROM	TO		

COMMENTS (i.e. materials used, visitors, problems, etc.):

GROUNDWATER DATA

WATER DEPTH	TIME	DATE
4.5'	0930	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.

OTHER: _____

BORING: SB-002 SHEET 1 OF 1

MONITORING WELL SAMPLING LOG

Owner/Client DOT + PF
 Location BUSPARVA
 Sampling Personnel VTX MSC
 Weather Conditions Overcast Air Temp. (°F) 40

Project No. 102599-008
 Date 10-27-21
 Well 2165T-TWP-1
 Time started 1050
 Time completed 1200

Sample No. 2165T-TWP-1 Time 1147
 Duplicate _____ Time _____
 Equipment Blank _____ Time _____

Pump Peri TT
 Purging Method portable / dedicated pump
 Pumping Start 1103
 Purge Rate (gal./min.) .2
 Pumping End 1147
 Pump Set Depth Below MP (ft.) 22
 KuriTec Tubing (ft.) -
 TruPoly Tubing (ft.) 30
.5 Silicon

Diameter and Type of Casing 1.25
 Approximate Total Depth of Well Below MP (ft.) 20
 Measured Total Depth of Well Below MP (ft.) 22.45 + 0.28 = 22.73
 Depth to Water Below MP (ft.) 8.8
 Depth to Ice (if frozen) Below MP (ft.) -
 Feet of Water in Well 13.93
 Gallons per foot .08
 Gallons in Well 1.11
 Purge Water Volume (gal.) 7
 Purge Water Disposal GAC

Monument Condition N/A
 Casing Condition N/A
 Wiring Condition -
 (dedicated pumps)

Measuring Point (MP) Top of Casing (TOC)

Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) _____
 Monument to ground surface (ft.) 2.5

Datalogger type n/a
 Datalogger serial # n/a
 Measured cable length (ft.) n/a

- Lock present and operational
- Well name legible on outside of well
- Evidence of frost-jacking

Notes _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1 1/4	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.
2165T-TWP-1

MONITORING WELL SAMPLING LOG

Owner/Client Greiner Do + PF
 Location Airport on-site
 Sampling Personnel MSC
 Weather Conditions Overcast Air Temp. (°F) 40

Project No. 102599-008
 Date 10-27-21
 Well 216ST-TWP-2
 Time started 1234
 Time completed 1351

Sample No. 216ST-TWP-2 Time 1345
 Duplicate - Time -
 Equipment Blank - Time -

Pump Perf TTT
 Purging Method portable / dedicated pump
 Pumping Start 1250
 Purge Rate (gal./min.) 0.2
 Pumping End 1345

Diameter and Type of Casing 08 1.25
 Approximate Total Depth of Well Below MP (ft.) 20
 Measured Total Depth of Well Below MP (ft.) 17.44 + .27 = 18.21
 Depth to Water Below MP (ft.) 4.55
 Depth to Ice (if frozen) Below MP (ft.) -
 Feet of Water in Well 13.66
 Gallons per foot 0.08
 Gallons in Well 1.09
 Purge Water Volume (gal.) 4
 Purge Water Disposal GAC

Pump Set Depth Below MP (ft.) 18
 KuriTec Tubing (ft.) ✓
 TruPoly Tubing (ft.) 23
0.5 silicon

Monument Condition N/A
 Casing Condition N/A
 Wiring Condition -
 (dedicated pumps)

Measuring Point (MP) Top of Casing (TOC)

Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tap measure

Top-of-casing to monument (ft.) -
 Monument to ground surface (ft.) 3.25

Datalogger type n/a
 Datalogger serial # n/a
 Measured cable length (ft.) n/a

- Lock present and operational
- Well name legible on outside of well
- Evidence of frost-jacking

Notes _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1 1/4	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.

216ST-TWP-2

MONITORING WELL SAMPLING LOG

Owner/Client DOT
 Location Clinton
 Sampling Personnel ASC
 Weather Conditions Partly cloudy Air Temp. (°F) 39

Project No. 102599-019
 Date 10-28-21
 Well 21GST-TWP-3
 Time started 9:46
 Time completed 10:37

Sample No. 21 GST-TWP-3 Time 10:27
 Duplicate 21 GST-TWP-103 Time 10:17
 Equipment Blank - Time -

Pump Per. A
 Purging Method portable / dedicated pump
 Pumping Start 10:07
 Purge Rate (gal./min.) 0.2
 Pumping End 10:27

Diameter and Type of Casing 1.25
 Approximate Total Depth of Well Below MP (ft.) 20
 Measured Total Depth of Well Below MP (ft.) 17.61 + .24 = 17.90
 Depth to Water Below MP (ft.) 4.81
 Depth to Ice (if frozen) Below MP (ft.) -
 Feet of Water in Well 13.09
 Gallons per foot .08
 Gallons in Well 1.05
 Purge Water Volume (gal.) 5
 Purge Water Disposal GAC

Pump Set Depth Below MP (ft.) 17.5
 KuriTec Tubing (ft.) -
 TruPoly Tubing (ft.) 25.5
0.5 Silicon

Monument Condition N/A

Casing Condition N/A

Wiring Condition -
 (dedicated pumps)

Measuring Point (MP) Top of Casing (TOC)

Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) -
 Monument to ground surface (ft.) 2.71

Datalogger type n/a
 Datalogger serial # n/a
 Measured cable length (ft.) n/a

- Lock present and operational
- Well name legible on outside of well
- Evidence of frost-jacking

Notes _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.000253	0.06	0.17	0.38	0.66	1.5	2.6

MONITORING WELL SAMPLING LOG

Owner/Client DOT
 Location CASTAVAL
 Sampling Personnel ASC
 Weather Conditions SPRINKLING Air Temp. (°F) 39

Project No. 102599-019
 Date 10-28-21
 Well 2165T-TWP-4
 Time started 1051
 Time completed 1135

Sample No. 2165T-TWP-4 Time 1150
 Duplicate - Time -
 Equipment Blank - Time -

Pump Peri A
 Purging Method portable / dedicated pump
 Pumping Start 1110
 Purge Rate (gal./min.) 0.2
 Pumping End 1130

Diameter and Type of Casing 2.125
 Approximate Total Depth of Well Below MP (ft.) 20
 Measured Total Depth of Well Below MP (ft.) 18.23L, 29 = 18.52
 Depth to Water Below MP (ft.) 10.64
 Depth to Ice (if frozen) Below MP (ft.) -
 Feet of Water in Well 7.88
 Gallons per foot .08
 Gallons in Well 0.63
 Purge Water Volume (gal.) 4.6
 Purge Water Disposal GAC

Pump Set Depth Below MP (ft.) 18
 KuriTec Tubing (ft.) -
 TruPoly Tubing (ft.) 24
0.5 Screen

Monument Condition N/A
 Casing Condition N/A
 Wiring Condition -
 (dedicated pumps)

Measuring Point (MP) Top of Casing (TOC) Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) -
 Monument to ground surface (ft.) 3.33

Datalogger type n/a
 Datalogger serial # n/a
 Measured cable length (ft.) n/a

- Lock present and operational
- Well name legible on outside of well
- Evidence of frost-jacking

Notes _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1/4	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. 2165T-TWP-4

MONITORING WELL SAMPLING LOG

Owner/Client DOT
 Location Castroville
 Sampling Personnel msc
 Weather Conditions Overcast Air Temp. (°F) 39

Project No. 102599-09
 Date 10-28-21
 Well 21GST-TWP-5
 Time started 11:37
 Time completed 12:16

Sample No. 21GST-TWP-5 Time 12:12
 Duplicate _____ Time _____
 Equipment Blank _____ Time _____

Pump Per A
 Purging Method portable / dedicated pump
 Pumping Start 11:50
 Purge Rate (gal./min.) 0.2
 Pumping End 12:12
 Pump Set Depth Below MP (ft.) _____
 KuriTec Tubing (ft.) _____
 TruPoly Tubing (ft.) _____

Diameter and Type of Casing 1.25
 Approximate Total Depth of Well Below MP (ft.) 20
 Measured Total Depth of Well Below MP (ft.) 15.90 + 2.29 = 16.19
 Depth to Water Below MP (ft.) 7.62
 Depth to Ice (if frozen) Below MP (ft.) _____
 Feet of Water in Well 8.57
 Gallons per foot 0.08
 Gallons in Well 0.69
 Purge Water Volume (gal.) 4.6
 Purge Water Disposal GAC

Monument Condition N/A
 Casing Condition N/A
 Wiring Condition _____
 (dedicated pumps) _____

Measuring Point (MP) Top of Casing (TOC)

Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) _____
 Monument to ground surface (ft.) 2.87

Datalogger type _____ n/a
 Datalogger serial # _____ n/a
 Measured cable length (ft.) _____ n/a

- Lock present and operational
- Well name legible on outside of well
- Evidence of frost-jacking _____

Notes _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1 1/4	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.
21GST-TWP-5

MONITORING WELL SAMPLING LOG

Owner/Client DOT
 Location Onstevens
 Sampling Personnel MSC
 Weather Conditions cloudy Air Temp. (°F) 37

Project No. 102599-019
 Date 10-30-21
 Well 2165T-TWP-6
 Time started 0912
 Time completed 1000

Sample No. 2165T-TWP-6 Time 0957
 Duplicate - Time -
 Equipment Blank - Time -

Pump Peri A
 Purging Method portable / dedicated pump
 Pumping Start 0926
 Purge Rate (gal./min.) 0.2
 Pumping End 0957
 Pump Set Depth Below MP (ft.) 18
 KuriTec Tubing (ft.) -
 TruPoly Tubing (ft.) 20
05 Silicon

Diameter and Type of Casing 1.25
 Approximate Total Depth of Well Below MP (ft.) 20
 Measured Total Depth of Well Below MP (ft.) 18.22 + .27 = 18.51
 Depth to Water Below MP (ft.) 5.37
 Depth to Ice (if frozen) Below MP (ft.) -
 Feet of Water in Well 13.14
 Gallons per foot 0.08
 Gallons in Well 1.05
 Purge Water Volume (gal.) 4.9
 Purge Water Disposal GAC

Monument Condition N/A
 Casing Condition N/A
 Wiring Condition -
 (dedicated pumps)

Measuring Point (MP) Top of Casing (TOC) Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure
 Top-of-casing to monument (ft.) - Datalogger type n/a
 Monument to ground surface (ft.) 3.29 Datalogger serial # n/a
 Measured cable length (ft.) n/a

- Lock present and operational
- Well name legible on outside of well
- Evidence of frost-jacking

Notes _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.000253	<u>0.08</u>	0.17	0.38	0.66	1.5	2.6

MONITORING WELL SAMPLING LOG

Owner/Client DOT
 Location Constance
 Sampling Personnel msc
 Weather Conditions Cloudy Air Temp. (°F) 39

Project No. 102599-019
 Date 10-30-21
 Well 216ST-TWP-7
 Time started 1001
 Time completed 1037

Sample No. 216ST-TWP-7 Time 1038
 Duplicate - Time -
 Equipment Blank - Time -

Pump Peri A
 Purging Method portable / dedicated pump
 Pumping Start 1015
 Purge Rate (gal./min.) 0.2
 Pumping End 1038

Diameter and Type of Casing 1.25
 Approximate Total Depth of Well Below MP (ft.) 20
 Measured Total Depth of Well Below MP (ft.) 17.33 + 29 = 17.62
 Depth to Water Below MP (ft.) 7.49
 Depth to Ice (if frozen) Below MP (ft.) -
 Feet of Water in Well 10.13
 Gallons per foot 0.09
 Gallons in Well 0.81
 Purge Water Volume (gal.) 4.9
 Purge Water Disposal GAC

Pump Set Depth Below MP (ft.) 17
 KuriTec Tubing (ft.) -
 TruPoly Tubing (ft.) -
0.5 silicon

Monument Condition N/A

Casing Condition N/A

Wiring Condition -
 (dedicated pumps)

Measuring Point (MP) Top of Casing (TOC)

Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) -
 Monument to ground surface (ft.) 3.29

Datalogger type n/a
 Datalogger serial # n/a
 Measured cable length (ft.) n/a

- Lock present and operational
- Well name legible on outside of well
- Evidence of frost-jacking _____

Notes _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1/4	2	3	4	6	8
Gallons per lineal foot	0.000253	<u>0.08</u>	0.17	0.38	0.66	1.5	2.6

MONITORING WELL SAMPLING LOG

Owner/Client DoT
 Location Castroville
 Sampling Personnel msc
 Weather Conditions cloudy Air Temp. (°F) 39

Project No. 102599-019
 Date 10-28-21
 Well 2165T-TWP-8
 Time started 1238
 Time completed 1329

Sample No. 2165T-TWP-8 Time 1322
 Duplicate - Time -
 Equipment Blank - Time -

Pump Peri A
 Purging Method portable / dedicated pump
 Pumping Start 1353
 Purge Rate (gal./min.) 12
 Pumping End 1322
 Pump Set Depth Below MP (ft.) 17.8
 KuriTec Tubing (ft.) -
 TruPoly Tubing (ft.) 25
0.5 silicon

Diameter and Type of Casing 1.25
 Approximate Total Depth of Well Below MP (ft.) 20
 Measured Total Depth of Well Below MP (ft.) 17.73 + 2.29 = 18.02
 Depth to Water Below MP (ft.) 6.99
 Depth to Ice (if frozen) Below MP (ft.) -
 Feet of Water in Well 11.03
 Gallons per foot 0.08
 Gallons in Well 0.9
 Purge Water Volume (gal.) 4.9
 Purge Water Disposal GAC

Monument Condition N/A
 Casing Condition N/A
 Wiring Condition -
 (dedicated pumps)

Measuring Point (MP) Top of Casing (TOC) Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) 28 2.87 Datalogger type n/a
 Monument to ground surface (ft.) 28 2.87 Datalogger serial # n/a
 Measured cable length (ft.) n/a

- Lock present and operational
- Well name legible on outside of well
- Evidence of frost-jacking

Notes _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1/4	2	3	4	6	8
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

MONITORING WELL SAMPLING LOG

Owner/Client DoT
 Location Gustavus
 Sampling Personnel MBC
 Weather Conditions Cloudy Air Temp. (°F) 37

Project No. 102579-017
 Date 10-30-21
 Well 2165T-TWP-9
 Time started 1044
 Time completed 1126

Sample No. 2165T-TWP-9 Time 1124
 Duplicate _____ Time _____
 Equipment Blank _____ Time _____

Pump Peri A
 Purging Method portable / dedicated pump
 Pumping Start 1101
 Purge Rate (gal./min.) 0.2
 Pumping End 1124
 Pump Set Depth Below MP (ft.) 18
 KuriTec Tubing (ft.) _____
 TruPoly Tubing (ft.) 200
0.5 Silicon

Diameter and Type of Casing 1.25
 Approximate Total Depth of Well Below MP (ft.) 20
 Measured Total Depth of Well Below MP (ft.) 7.93 + 2.29 = 10.22
 Depth to Water Below MP (ft.) 8.67
 Depth to Ice (if frozen) Below MP (ft.) _____
 Feet of Water in Well 9.53
 Gallons per foot 0.08
 Gallons in Well 0.76
 Purge Water Volume (gal.) 4.7
 Purge Water Disposal CAC

Monument Condition N/A
 Casing Condition N/A
 Wiring Condition _____
 (dedicated pumps) _____

Measuring Point (MP) Top of Casing (TOC) Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) _____
 Monument to ground surface (ft.) 4.13
 Datalogger type _____ n/a
 Datalogger serial # _____ n/a
 Measured cable length (ft.) _____ n/a

- Lock present and operational
- Well name legible on outside of well
- Evidence of frost-jacking

Notes _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.000253	<u>0.08</u>	0.17	0.38	0.66	1.5	2.6

MONITORING WELL SAMPLING LOG

Owner/Client DOT + PF
 Location Custards
 Sampling Personnel MSC
 Weather Conditions Raining Air Temp. (°F) 35

Project No. 108599-008
 Date 10-27-21
 Well 21GST-TWP-10
 Time started 1606
 Time completed 1702

Sample No. 21GST-TWP-10 Time 1654
 Duplicate - Time -
 Equipment Blank - Time -

Pump Pesi TTT
 Purging Method portable / dedicated pump
 Pumping Start 1631
 Purge Rate (gal./min.) 0.2
 Pumping End 1654

Diameter and Type of Casing 1.25
 Approximate Total Depth of Well Below MP (ft.) 20
 Measured Total Depth of Well Below MP (ft.) 17.39 + 2.7 = 20.09
 Depth to Water Below MP (ft.) 8.12
 Depth to Ice (if frozen) Below MP (ft.) -
 Feet of Water in Well 9.54
 Gallons per foot 0.08
 Gallons in Well 0.76
 Purge Water Volume (gal.) 3.5
 Purge Water Disposal GAL

Pump Set Depth Below MP (ft.) 17
 KuriTec Tubing (ft.) -
 TruPoly Tubing (ft.) 22
0.5 silicon tubing

Monument Condition N/A

Casing Condition N/A

Wiring Condition -
 (dedicated pumps)

Measuring Point (MP) Top of Casing (TOC) Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) - Datalogger type n/a
 Monument to ground surface (ft.) 5.70 Datalogger serial # n/a
 Measured cable length (ft.) n/a

- Lock present and operational
- Well name legible on outside of well
- Evidence of frost-jacking

Notes _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1 1/4	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.
21GST-TWP-10

MONITORING WELL SAMPLING LOG

Owner/Client DOT
 Location Gustavus
 Sampling Personnel MSC
 Weather Conditions Cloudy Air Temp. (°F) 39

Project No. 102599-019
 Date 10-30-21
 Well 21657-TWP-11
 Time started 1204
 Time completed 1244

Sample No. 21657-TWP-11 Time 1242
 Duplicate 21657-TWP-111 Time 1232
 Equipment Blank _____ Time _____

Pump Per: A
 Purging Method portable / dedicated pump
 Pumping Start 1223
 Purge Rate (gal./min.) 0.2
 Pumping End 1242

Diameter and Type of Casing 1.25
 Approximate Total Depth of Well Below MP (ft.) 20
 Measured Total Depth of Well Below MP (ft.) 18.92 + 29 = 18.71
 Depth to Water Below MP (ft.) 8.16
 Depth to Ice (if frozen) Below MP (ft.) _____
 Feet of Water in Well 10.55
 Gallons per foot 0.08
 Gallons in Well 0.84
 Purge Water Volume (gal.) 4.9
 Purge Water Disposal GAL

Pump Set Depth Below MP (ft.) 18.5
 KuriTec Tubing (ft.) _____
 TruPoly Tubing (ft.) 26.5
5 ft. in

Monument Condition N/A

Casing Condition N/A

Wiring Condition _____
 (dedicated pumps)

Measuring Point (MP) Top of Casing (TOC)

Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) _____
 Monument to ground surface (ft.) 3.60

Datalogger type n/a
 Datalogger serial # n/a
 Measured cable length (ft.) n/a

- Lock present and operational
- Well name legible on outside of well
- Evidence of frost-jacking _____

Notes _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1 1/4	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.

21657-TWP-11

MONITORING WELL SAMPLING LOG

Owner/Client DoT
 Location Gustavus
 Sampling Personnel MSL
 Weather Conditions Cloudy Air Temp. (°F) 39

Project No. 102599-019
 Date 10-30-21
 Well 216ST-TWP-12
 Time started 1254
 Time completed 1346

Sample No. 216ST-TWP-12 Time 1343
 Duplicate - Time -
 Equipment Blank - Time -

Pump Pari A
 Purging Method portable / dedicated pump
 Pumping Start 1315
 Purge Rate (gal./min.) 0.2
 Pumping End 1343

Diameter and Type of Casing 1.25
 Approximate Total Depth of Well Below MP (ft.) 20.15
 Measured Total Depth of Well Below MP (ft.) 0.91 + 29 = 13.20
 Depth to Water Below MP (ft.) 6.39
 Depth to Ice (if frozen) Below MP (ft.) -
 Feet of Water in Well 6.81
 Gallons per foot 0.08
 Gallons in Well 0.54
 Purge Water Volume (gal.) 5.1
 Purge Water Disposal GAC

Pump Set Depth Below MP (ft.) 13
 KuriTec Tubing (ft.) -
 TruPoly Tubing (ft.) 20
0.5 Silicon

Monument Condition N/A

Casing Condition N/A

Wiring Condition -
 (dedicated pumps)

Measuring Point (MP) Top of Casing (TOC)

Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) -
 Monument to ground surface (ft.) 3.30

Datalogger type n/a
 Datalogger serial # n/a
 Measured cable length (ft.) n/a

- Lock present and operational
- Well name legible on outside of well
- Evidence of frost-jacking _____

Notes _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1	2	3	4	6	8
Gallons per lineal foot	0.000253	<u>0.06</u>	0.17	0.38	0.66	1.5	2.6

Well No.
216ST-TWP-12

MONITORING WELL SAMPLING LOG

Owner/Client DOT & AF
 Location Custems
 Sampling Personnel VIT
 Weather Conditions clear Air Temp. (°F) 50

Project No. 102599-008
 Date 10/24/21
 Well TWP-13
 Time started 1400
 Time completed 1530

Sample No. 21GST-TWP-013 Time 1515
 Duplicate - Time -
 Equipment Blank - Time -

Pump per. pump
 Purging Method portable / dedicated pump
 Pumping Start 1430
 Purge Rate (gal./min.) 0.1
 Pumping End 1515

Diameter and Type of Casing 1 1/4 PVC
 Approximate Total Depth of Well Below MP (ft.) 20
 Measured Total Depth of Well Below MP (ft.) 17.75 + 0.28
 Depth to Water Below MP (ft.) 5.89
 Depth to Ice (if frozen) Below MP (ft.) -
 Feet of Water in Well 12.14
 Gallons per foot 0.08
 Gallons in Well 0.97
 Purge Water Volume (gal.) 4.5

Pump Set Depth Below MP (ft.) 18
 KuriTec Tubing (ft.) -
 TruPoly Tubing (ft.) 25

Purge Water Disposal GAC

Monument Condition n/a
 Casing Condition n/a
 Wiring Condition n/a
 (dedicated pumps)

Measuring Point (MP) Top of Casing (TOC)

Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) -
 Monument to ground surface (ft.) 3.1

Datalogger type n/a
 Datalogger serial # n/a
 Measured cable length (ft.) n/a

- Lock present and operational n/a
- Well name legible on outside of well n/a
- Evidence of frost-jacking n/a

Notes well developed prior to parameter collection

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1 1/4	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.
21GST-TWP-13

MONITORING WELL SAMPLING LOG

Owner/Client DOT & PF
 Location Gustavus
 Sampling Personnel VTY
 Weather Conditions clear Air Temp. (°F) 50

Project No. 102599-008
 Date 10/24/21
 Well 216ST-TWP-14
 Time started 1555
 Time completed 1700

Sample No. 216ST-TWP-14 Time 1642
 Duplicate 216ST-TWP-114 Time 1632
 Equipment Blank — Time —

Pump peri pump
 Purging Method portable / dedicated pump
 Pumping Start 1605
 Purge Rate (gal./min.) 0.14
 Pumping End 1642
 Pump Set Depth Below MP (ft.) 14
 KuriTec Tubing (ft.) —
 TruPoly Tubing (ft.) 20

Diameter and Type of Casing 1" PVC
 Approximate Total Depth of Well Below MP (ft.) 15
 Measured Total Depth of Well Below MP (ft.) 14.25 to 0.28
 Depth to Water Below MP (ft.) 5.09
 Depth to Ice (if frozen) Below MP (ft.) —
 Feet of Water in Well 9.44
 Gallons per foot 0.08
 Gallons in Well 0.8
 Purge Water Volume (gal.) 5
 Purge Water Disposal GAC

Monument Condition n/a
 Casing Condition n/a
 Wiring Condition n/a
 (dedicated pumps)

Measuring Point (MP) Top of Casing (TOC) Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) — Datalogger type n/a
 Monument to ground surface (ft.) 2.4 Datalogger serial # n/a
 Measured cable length (ft.) n/a

- Lock present and operational n/a
- Well name legible on outside of well n/a
- Evidence of frost-jacking n/a

Notes well developed prior to parameter collection

WELL CASING VOLUMES

Diameter of Well (ID-inches)	CMT	1/4	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.
Twp-14

MONITORING WELL SAMPLING LOG

Owner/Client DOT & PF
 Location Gustavus
 Sampling Personnel VTY, HSC
 Weather Conditions overcast Air Temp. (°F) 40

Project No. 102599-008
 Date 10/27/21
 Well TWP-15
 Time started 0910
 Time completed 1030

Sample No. 21GST-TWP-15 Time 1010
 Duplicate 21GST-TWP-115 Time 1000
 Equipment Blank — Time —

Pump port pump
 Purging Method portable / dedicated pump
 Pumping Start 0934
 Purge Rate (gal./min.) 0.2
 Pumping End 1010

Diameter and Type of Casing 1 1/4" PVC
 Approximate Total Depth of Well Below MP (ft.) 13
 Measured Total Depth of Well Below MP (ft.) 13.25 + 0.28
 Depth to Water Below MP (ft.) 4.93
 Depth to Ice (if frozen) Below MP (ft.) —
 Feet of Water in Well 8.6
 Gallons per foot 0.28
 Gallons in Well 0.7
 Purge Water Volume (gal.) 6.5
 Purge Water Disposal GAC

Pump Set Depth Below MP (ft.) 13
 KuriTec Tubing (ft.) —
 TruPoly Tubing (ft.) 20

Monument Condition n/a

Casing Condition good

Wiring Condition (dedicated pumps) /

Measuring Point (MP) Top of Casing (TOC)

Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) n/a
 Monument to ground surface (ft.) 3.5

Datalogger type n/a
 Datalogger serial # n/a
 Measured cable length (ft.) n/a

- Lock present and operational n/a
- Well name legible on outside of well n/a
- Evidence of frost-jacking n/a

Notes _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1 1/4	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.
21GST-TWP-15

WATER SUPPLY WELL SAMPLING LOG

Address Glacier Bay Construction Project Number 102599-008
 Owner/Occupant _____ Project Name Gustavus site characterization
 Mailing address SAME Date 10/26/21
 Telephone _____ Time 0800
 Sampling Personnel VTY

Sample Location outside spigot

Sample Number PW-016 Time 0838
 Duplicate _____ Time _____

Analysis PFASx18 Lab Test America

Purge Volume 3 gal/min x 28 min = 84 gal

0810 start

PARAMETERS [stabilization criteria]

Time	Temp. (°C) [± 0.5]	Conductivity (µS/cm) [± 3%]	pH (std. units) [± 0.1]	Water Clarity (visual)
0814	6.7	383.0	7.03	clear
0817	6.8	384.0	7.10	clear
0820	6.9	384.5	7.13	clear
0823	7.6	393.4	7.15	clear
0826	7.6	393.6	7.16	clear
0829	6.8	385.7	7.18	clear
0832	7.7	391.7	7.18	clear
0835	7.8	383.5	7.19	clear
0838	sample			

Notes: Sample collected from PW-016 instead of location TWP-016 due to owner's
desires not to install a TWP on their property, but to instead sample PW-016.

KRF

SOIL SAMPLE COLLECTION LOG

Project Number: 102599 Project Name: Gustavus DOT & PF PFAS

Sampler: APW

Date	Sample ID	Location	Sample Time	Depth (ft)	Sample Type	PID Reading	Analyses
10/17/21	21GST-SW-010		0915		ES	N/A	PFAS x 18
	- 21GST-SED-010		0920				
	21GST-SW-008	water level 0.25 ft bgs	0945				
	- 21GST-SED-008		0950				
	21GST-SW-024		1015				
	- 21GST-SED-024		1020				
	- 21GST-DPSED-024		1035		↓		
	21GST-SW-124		1005		FD		
	- 21GST-SED-124		1010				
	- 21GST-DPSED-124		1025		↓		
	21GST-SW-005	water level 0.5 ft bgs	1115		ES		
	- 21GST-SED-005		1130				
	21GST-SW-004	Dry No sample collected	N/A				
	- 21GST-SED-004		1135				
	21GST-SW-006	water level 0.5 ft bgs	1200				
	- 21GST-SED-006		1205				
	21GST-SW-007	water level 0.25 ft bgs	1220				
	- 21GST-SED-007		1225				
	21GST-SW-011		1240				
	- 21GST-SED-011		1245				
	- 21GST-DPSED-011		1255				
	21GST-SW-017		1315				
	- 21GST-SED-017		1320				
	- 21GST-DPSED-017		1330				
	21GST-SW-019		1345				
	- 21GST-SED-019		1350				
	21GST-SW-016		1405				
	- 21GST-SED-016		1410				
	21GST-SW-013		1440				
	- 21GST-SED-013		1445				
	21GST-SW-014		1500				
	- 21GST-SED-014		1505				
	21GST-SW-015		1515				
	- 21GST-SED-015		1520				
	21GST-SW-018		1540				
	- 21GST-SED-018		1545		↓		
	21GST-SW-118		1530		FD		
	- 21GST-SED-118		1535		↓		
	21GST-SW-020		1610		ES		
	- 21GST-SED-020		1615		↓		

Sample Type FS = Field screening measurement only ES = Environmental sample FD = Field duplicate TB = Trip blank

KRF

SOIL SAMPLE COLLECTION LOG

Project Number: 102599 Project Name: Gustavus DOT & PF PFAS
 Sampler: APW Page 2 of 2

Date	Sample ID	Location	Sample Time	Depth (ft)	Sample Type	PID Reading	Analyses
10/17/21	21GST-DPSED-020		1625		ES	N/A	PFAS x18
	21GST-SW-021		1645				
	21GST-SED-021		1650				
	21GST-DPSED-021		1700				
	21GST-SW-012		1720				
	21GST-SED-012		1725				
	21GST-EB-012		1740		EB		
10/18/21	21GST-SW-001		0900		ES	N/A	PFAS x18
	21GST-SW-002		0905				
	21GST-SW-003		0915				
	21GST-SW-022		0930				
	21GST-SED-022		0935				
	21GST-SW-009		1045				
	21GST-SED-009		1050				
	21GST-DPSED-009		1100				
	21GST-SW-023		1150				
	21GST-SED-023		1155				
	21GST-DPSED-023		1200				
	21GST-SW-030		1325				
	21GST-SED-030		1330				
	21GST-SW-028		1345				
	21GST-SED-028		1350				
	21GST-DPSED-028		1400				
	21GST-SW-029		1415				
	21GST-SED-029		1420				
	21GST-SW-027		1435				
	21GST-SED-027		1440				
	21GST-SW-127		1425			FD	
	21GST-SED-127		1430				
	21GST-SW-026		1500			ES	
	21GST-SED-026		1505				
	21GST-SW-025		1520				
21GST-SED-025		1525					
21GST-EB-025		1530			EB		
10/31/21	21GST-SW-031		1245		ES	N/A	
10/31/21	21GST-SW-131	> per local historian	1235		FD	N/A	

Sample Type FS = Field screening measurement only ES = Environmental 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

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 POP SUU•A•A^cæ^âA^A^Aæ]^Aã q}EAV@Aæ]^A æAã^câA^A^A@Aæ\A||!A^A@AædæE

*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

<u>Laboratory ID</u>	<u>Client Sample ID</u>	<u>Analytical Batch</u>	<u>Analyte</u>	<u>Reason</u>
8270D SIM (PAH)				
1647373	LABREFQC	XMS12997	Benzo[k]fluoranthene	RP
1647522	LABREFQC	XMS13000	2-Methylnaphthalene	SP
1647522	LABREFQC	XMS13000	Fluoranthene	SP

Manual Integration Reason Code Descriptions

Code	Description
O	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.

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 <http://www.sgs.com/en/Terms-and-Conditions.aspx>. Attention is drawn to the limitation of liability, indemnification 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.

Sample Summary

<u>Client Sample ID</u>	<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)
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)
21GST-SB011-12	1217257022	10/31/2021	11/02/2021	Soil/Solid (dry weight)
21GST-SB011-02	1217257023	10/31/2021	11/02/2021	Soil/Solid (dry weight)
Trip Blank	1217257024	10/30/2021	11/02/2021	Soil/Solid (dry weight)

<u>Method</u>	<u>Method Description</u>
8270D SIM (PAH)	8270 PAH SIM Semi-Volatiles GC/MS
AK102	Diesel/Residual Range Organics
AK103	Diesel/Residual Range Organics
AK101	Gasoline Range Organics (S)
SM21 2540G	Percent Solids SM2540G
SW8260D	Volatile Organic Compounds (S) FIELD EXT

Detectable Results Summary

Client Sample ID: 21GST-SB002-01 Lab Sample ID: 1217257001	<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Volatile Fuels	Gasoline Range Organics	2.21J	mg/kg
Client Sample ID: 21GST-SB002-02 Lab Sample ID: 1217257002	<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Volatile Fuels	Gasoline Range Organics	1.40J	mg/kg
Client Sample ID: 21GST-SB001-02 Lab Sample ID: 1217257004	<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Volatile Fuels	Gasoline Range Organics	1.45J	mg/kg
Client Sample ID: 21GST-SB009-01 Lab Sample ID: 1217257005	<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Volatile Fuels	Gasoline Range Organics	1.69J	mg/kg
Client Sample ID: 21GST-SB009-10 Lab Sample ID: 1217257006	<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Volatile Fuels	Gasoline Range Organics	1.24J	mg/kg
Client Sample ID: 21GST-SB009-02 Lab Sample ID: 1217257007	<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Volatile Fuels	Gasoline Range Organics	0.984J	mg/kg
Client Sample ID: 21GST-SB012-01 Lab Sample ID: 1217257008	<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Volatile Fuels	Gasoline Range Organics	1.47J	mg/kg
Client Sample ID: 21GST-SB013-02 Lab Sample ID: 1217257011	<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Volatile Fuels	Gasoline Range Organics	1.68J	mg/kg
Client Sample ID: 21GST-SB005-01 Lab Sample ID: 1217257012	<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Semivolatile Organic Fuels	Diesel Range Organics	15.7J	mg/kg
	Residual Range Organics	201	mg/kg
Volatile Fuels	Gasoline Range Organics	1.71J	mg/kg
Client Sample ID: 21GST-SB007-01 Lab Sample ID: 1217257014	<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Semivolatile Organic Fuels	Diesel Range Organics	26.3	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	<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Semivolatile Organic Fuels	Diesel Range Organics	10.4J	mg/kg
Volatile Fuels	Gasoline Range Organics	1.63J	mg/kg
Client Sample ID: 21GST-SB007-02 Lab Sample ID: 1217257016	<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Semivolatile Organic Fuels	Diesel Range Organics	13.0J	mg/kg
Volatile Fuels	Gasoline Range Organics	1.60J	mg/kg

Print Date: 11/22/2021 2:49:42PM

Detectable Results Summary

Client Sample ID: **21GST-SB003-01**

Lab Sample ID: 1217257017

Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	13.2J	mg/kg
Residual Range Organics	81.7J	mg/kg

Client Sample ID: **21GST-SB004-02**

Lab Sample ID: 1217257020

Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	21.2J	mg/kg

Client Sample ID: **21GST-SB011-01**

Lab Sample ID: 1217257021

Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	146	mg/kg
Residual Range Organics	2380	mg/kg

Client Sample ID: **21GST-SB011-02**

Lab Sample ID: 1217257023

Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Residual Range Organics	53.3J	mg/kg



Results of 21GST-SB002-01

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

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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



Results of 21GST-SB002-01

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

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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



Results of **21GST-SB002-01**

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	DL	Units	DF	Allowable Limits	Date Analyzed
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

Results of 21GST-SB002-01

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

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.0159 U	0.0317	0.00989	mg/kg	1		11/04/21 00:50
Ethylbenzene	0.0317 U	0.0634	0.0198	mg/kg	1		11/04/21 00:50
o-Xylene	0.0317 U	0.0634	0.0198	mg/kg	1		11/04/21 00:50
P & M -Xylene	0.0635 U	0.127	0.0380	mg/kg	1		11/04/21 00:50
Toluene	0.0317 U	0.0634	0.0198	mg/kg	1		11/04/21 00:50
Xylenes (total)	0.0950 U	0.190	0.0578	mg/kg	1		11/04/21 00:50
Surrogates							
1,2-Dichloroethane-D4 (surr)	103	71-136		%	1		11/04/21 00:50
4-Bromofluorobenzene (surr)	95.9	55-151		%	1		11/04/21 00:50
Toluene-d8 (surr)	102	85-116		%	1		11/04/21 00:50

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



Results of 21GST-SB002-02

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

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons and their surrogate compounds with associated quality and detection data.

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



Results of 21GST-SB002-02

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

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane (surr)).

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

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62 (surr)).

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



Results of 21GST-SB002-02

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

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.40 J	4.61	1.38	mg/kg	1		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



Results of 21GST-SB002-02

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

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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



Results of 21GST-SB001-01

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

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons and their detection results.

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



Results of 21GST-SB001-01

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

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
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



Results of 21GST-SB001-01

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>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
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



Results of **21GST-SB001-01**

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**

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.00890 U	0.0178	0.00555	mg/kg	1		11/04/21 01:21
Ethylbenzene	0.0178 U	0.0356	0.0111	mg/kg	1		11/04/21 01:21
o-Xylene	0.0178 U	0.0356	0.0111	mg/kg	1		11/04/21 01:21
P & M -Xylene	0.0356 U	0.0712	0.0214	mg/kg	1		11/04/21 01:21
Toluene	0.0178 U	0.0356	0.0111	mg/kg	1		11/04/21 01:21
Xylenes (total)	0.0535 U	0.107	0.0325	mg/kg	1		11/04/21 01:21
Surrogates							
1,2-Dichloroethane-D4 (surr)	99.7	71-136		%	1		11/04/21 01:21
4-Bromofluorobenzene (surr)	99.5	55-151		%	1		11/04/21 01:21
Toluene-d8 (surr)	102	85-116		%	1		11/04/21 01:21

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



Results of 21GST-SB001-02

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

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons and their surrogate compounds with associated quality and detection data.

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



Results of 21GST-SB001-02

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	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	11.5 U	23.0	10.3	mg/kg	1		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

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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



Results of **21GST-SB001-02**

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	DL	Units	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



Results of **21GST-SB001-02**

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**

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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



Results of 21GST-SB009-01

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

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons and their detection results.

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



Results of 21GST-SB009-01

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

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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



Results of **21GST-SB009-01**

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**

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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



Results of 21GST-SB009-01

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

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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



Results of 21GST-SB009-10

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

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons and their detection results.

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



Results of **21GST-SB009-10**

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>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
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>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
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



Results of **21GST-SB009-10**

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**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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



Results of **21GST-SB009-10**

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**

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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



Results of 21GST-SB009-02

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

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons and their detection results.

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



Results of 21GST-SB009-02

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

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane (surr)).

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

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62 (surr)).

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



Results of **21GST-SB009-02**

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**

Parameter	Result Qual	LOQ/CL	DL	Units	DF	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



Results of **21GST-SB009-02**

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**

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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



Results of 21GST-SB012-01

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

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons and their surrogate values.

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



Results of 21GST-SB012-01

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

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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



Results of **21GST-SB012-01**

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	DL	Units	DF	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



Results of **21GST-SB012-01**

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**

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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



Results of 21GST-SB012-02

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

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons and their surrogate compounds with associated quality and detection data.

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



Results of 21GST-SB012-02

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

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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



Results of **21GST-SB012-02**

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	DL	Units	DF	Allowable Limits	Date Analyzed
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

Results of 21GST-SB012-02

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

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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



Results of 21GST-SB013-01

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

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons and their surrogate compounds with associated values and analysis dates.

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



Results of **21GST-SB013-01**

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>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
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>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
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



Results of **21GST-SB013-01**

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**

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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



Results of 21GST-SB013-01

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

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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



Results of 21GST-SB013-02

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

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons and their detection results.

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



Results of **21GST-SB013-02**

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>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
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>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
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



Results of **21GST-SB013-02**

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**

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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

Results of 21GST-SB013-02

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

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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



Results of 21GST-SB005-01

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

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons and their surrogate compounds with associated values.

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



Results of 21GST-SB005-01

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	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	15.7 J	21.4	9.61	mg/kg	1		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

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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

Results of 21GST-SB005-01

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	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.71	J	5.42	1.62	mg/kg	1		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



Results of 21GST-SB005-01

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

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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



Results of 21GST-SB005-02

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

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons (PAHs) and their surrogate compounds with associated quality and detection data.

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



Results of **21GST-SB005-02**

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**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	11.9 U	23.8	10.7	mg/kg	1		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>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
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



Results of **21GST-SB005-02**

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**

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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



Results of **21GST-SB005-02**

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**

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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



Results of 21GST-SB007-01

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

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons and their surrogate compounds with associated quality and detection data.

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



Results of **21GST-SB007-01**

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>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
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

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable 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



Results of **21GST-SB007-01**

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**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	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



Results of **21GST-SB007-01**

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**

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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



Results of 21GST-SB007-10

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

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons and their surrogate compounds with associated quality and detection data.

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



Results of **21GST-SB007-10**

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>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	10.4 J	22.0	9.91	mg/kg	1		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>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
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



Results of **21GST-SB007-10**

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**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.63	J	5.07	1.52	mg/kg	1		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

Results of 21GST-SB007-10

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

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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



Results of 21GST-SB007-02

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

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons and their surrogate compounds with associated quality and detection data.

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



Results of 21GST-SB007-02

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	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	13.0 J	22.9	10.3	mg/kg	1		11/05/21 18:49
Surrogates							
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

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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



Results of 21GST-SB007-02

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>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
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



Results of **21GST-SB007-02**

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**

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.0130 U	0.0260	0.00812	mg/kg	1		11/04/21 20:37
Ethylbenzene	0.0260 U	0.0520	0.0162	mg/kg	1		11/04/21 20:37
o-Xylene	0.0260 U	0.0520	0.0162	mg/kg	1		11/04/21 20:37
P & M -Xylene	0.0520 U	0.104	0.0312	mg/kg	1		11/04/21 20:37
Toluene	0.0260 U	0.0520	0.0162	mg/kg	1		11/04/21 20:37
Xylenes (total)	0.0780 U	0.156	0.0474	mg/kg	1		11/04/21 20:37
Surrogates							
1,2-Dichloroethane-D4 (surr)	102	71-136		%	1		11/04/21 20:37
4-Bromofluorobenzene (surr)	102	55-151		%	1		11/04/21 20:37
Toluene-d8 (surr)	103	85-116		%	1		11/04/21 20:37

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



Results of 21GST-SB003-01

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

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons and their detection results.

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



Results of **21GST-SB003-01**

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>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
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

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable 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



Results of **21GST-SB003-01**

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**

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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

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

Results of 21GST-SB003-01

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

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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



Results of 21GST-SB003-02

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

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons and their surrogate values.

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



Results of **21GST-SB003-02**

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>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
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>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
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



Results of 21GST-SB003-02

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

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
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



Results of 21GST-SB003-02

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

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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



Results of 21GST-SB004-01

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

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons and their surrogate compounds with associated quality and detection data.

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



Results of 21GST-SB004-01

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

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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



Results of **21GST-SB004-01**

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>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
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



Results of **21GST-SB004-01**

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**

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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



Results of 21GST-SB004-02

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

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons and their surrogate compounds with associated quality and detection data.

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



Results of **21GST-SB004-02**

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>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
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>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
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



Results of **21GST-SB004-02**

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**

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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

Results of 21GST-SB004-02

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

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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



Results of 21GST-SB011-01

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

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons and their surrogate compounds with associated values.

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



Results of 21GST-SB011-01

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

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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



Results of **21GST-SB011-01**

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**

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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



Results of **21GST-SB011-01**

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**

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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



Results of 21GST-SB011-12

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

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons and their surrogate compounds with associated quality and detection data.

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



Results of 21GST-SB011-12

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	DL	Units	DF	Allowable 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

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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



Results of **21GST-SB011-12**

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**

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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



Results of **21GST-SB011-12**

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**

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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



Results of 21GST-SB011-02

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

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons and their surrogate compounds with associated quality and detection data.

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



Results of 21GST-SB011-02

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

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane (surr)).

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

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62 (surr)).

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

Results of 21GST-SB011-02

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

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	2.72 U	5.44	1.63	mg/kg	1		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



Results of 21GST-SB011-02

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

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	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

Method Blank

Blank ID: MB for HBN 1828034 [SPT/11427]

Blank Lab ID: 1645560

Matrix: Soil/Solid (dry weight)

QC for Samples:

1217257001, 1217257002, 1217257003, 1217257004, 1217257005, 1217257006, 1217257007, 1217257008

Results by SM21 2540G

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
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

Duplicate Sample Summary

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>	<u>RPD (%)</u>	<u>RPD CL</u>
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

Duplicate Sample Summary

Original Sample ID: 1217257001

Duplicate Sample ID: 1645562

QC for Samples:

1217257001, 1217257002, 1217257003, 1217257004, 1217257005, 1217257006, 1217257007

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>	<u>RPD (%)</u>	<u>RPD CL</u>
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

Duplicate Sample Summary

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>	<u>RPD (%)</u>	<u>RPD CL</u>
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



Method Blank

Blank ID: MB for HBN 1828113 [SPT/11428]
Blank Lab ID: 1645876

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>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
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

Duplicate Sample Summary

Original Sample ID: 1217250001

Duplicate Sample ID: 1645877

QC for Samples:

1217257009, 1217257010, 1217257011, 1217257012, 1217257013, 1217257014, 1217257015, 1217257016

Analysis Date: 11/03/2021 17:05

Matrix: Soil/Solid (dry weight)

Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
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

Duplicate Sample Summary

Original Sample ID: 1217257016
 Duplicate Sample ID: 1645878

Analysis Date: 11/03/2021 17:05
 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>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Solids	86.2	85.6	%	0.66	(< 15)

Batch Information

Analytical Batch: SPT11428
 Analytical Method: SM21 2540G
 Instrument:
 Analyst: TMM

Method Blank

Blank ID: MB for HBN 1828103 [VXX/38137]

Blank Lab ID: 1645813

QC for Samples:

1217257024

Matrix: Soil/Solid (dry weight)

Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Gasoline Range Organics	1.25U	2.50	0.750	mg/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

Blank Spike Summary

Blank Spike ID: LCS for HBN 1217257 [VXX38137]
 Blank Spike Lab ID: 1645814
 Date Analyzed: 11/03/2021 11:47

Spike Duplicate ID: LCSD for HBN 1217257 [VXX38137]
 Spike Duplicate Lab ID: 1645815
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1217257024

Results by AK101

Parameter	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
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	
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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



Method Blank

Blank ID: MB for HBN 1828104 [VXX/38138]
Blank Lab ID: 1645816

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

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Gasoline Range Organics	0.804J	2.50	0.750	mg/kg
Surrogates				
4-Bromofluorobenzene (surr)	91.3	50-150		%

Batch Information

Analytical Batch: VFC15927
Analytical Method: AK101
Instrument: Agilent 7890 PID/FID
Analyst: IJV
Analytical Date/Time: 11/3/2021 11:46:00PM

Prep Batch: VXX38138
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 2:50:03PM

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

Parameter	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Gasoline Range Organics	12.5	13.5	108	12.5	13.4	107	(60-120)	1.10	(< 20)

Surrogates

4-Bromofluorobenzene (surr)	1.25		99	1.25		99	(50-150)	0.20	
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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

Method Blank

Blank ID: MB for HBN 1828108 [VXX/38140]
 Blank Lab ID: 1645829

Matrix: Soil/Solid (dry weight)

QC for Samples:
 1217257001, 1217257002, 1217257003, 1217257004, 1217257005

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<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

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

Parameter	Blank Spike (mg/kg)			CL
	Spike	Result	Rec (%)	
Benzene	0.750	0.749	100	(77-121)
Ethylbenzene	0.750	0.762	102	(76-122)
o-Xylene	0.750	0.778	104	(77-123)
P & M -Xylene	1.50	1.53	102	(77-124)
Toluene	0.750	0.766	102	(77-121)
Xylenes (total)	2.25	2.31	103	(78-124)
Surrogates				
1,2-Dichloroethane-D4 (surr)	0.750		100	(71-136)
4-Bromofluorobenzene (surr)	0.750		91	(55-151)
Toluene-d8 (surr)	0.750		102	(85-116)

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:



Matrix Spike Summary

Original Sample ID: 1646307
MS Sample ID: 1646313 MS
MSD Sample ID: 1646314 MSD

Analysis Date: 11/03/2021 20:11
Analysis Date: 11/03/2021 18:39
Analysis Date: 11/03/2021 18:54
Matrix: Solid/Soil (Wet Weight)

QC for Samples: 1217257001, 1217257002, 1217257003, 1217257004, 1217257005

Results by SW8260D

Parameter	Sample	Matrix Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
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

Method Blank

Blank ID: MB for HBN 1828140 [VXX/38142]
 Blank Lab ID: 1646064

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

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<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
 Prep Initial Wt./Vol.: 50 g
 Prep Extract Vol: 25 mL

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)

Parameter	Spike	Result	Rec (%)	CL
Benzene	0.750	0.743	99	(77-121)
Ethylbenzene	0.750	0.749	100	(76-122)
o-Xylene	0.750	0.785	105	(77-123)
P & M -Xylene	1.50	1.52	101	(77-124)
Toluene	0.750	0.763	102	(77-121)
Xylenes (total)	2.25	2.30	102	(78-124)

Surrogates

1,2-Dichloroethane-D4 (surr)	0.750		100	(71-136)
4-Bromofluorobenzene (surr)	0.750		92	(55-151)
Toluene-d8 (surr)	0.750		103	(85-116)

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:

Matrix Spike Summary

Original Sample ID: 1646066
 MS Sample ID: 1646067 MS
 MSD Sample ID: 1646068 MSD

Analysis Date: 11/04/2021 19:05
 Analysis Date: 11/04/2021 16:15
 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

Parameter	Sample	Matrix Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
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



Method Blank

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

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Gasoline Range Organics	1.25U	2.50	0.750	mg/kg
Surrogates				
4-Bromofluorobenzene (surr)	87.2	50-150		%

Batch Information

Analytical Batch: VFC15930

Analytical Method: AK101

Instrument: Agilent 7890 PID/FID

Analyst: IJV

Analytical Date/Time: 11/4/2021 2:11:00PM

Prep Batch: VXX38144

Prep Method: SW5035A

Prep Date/Time: 11/4/2021 6:00:00AM

Prep Initial Wt./Vol.: 50 g

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

Parameter	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
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

Method Blank

Blank ID: MB for HBN 1828084 [XXX/45817]
 Blank Lab ID: 1645750

Matrix: Soil/Solid (dry weight)

QC for Samples:

1217257001, 1217257002, 1217257003, 1217257004, 1217257005, 1217257006, 1217257007, 1217257008, 1217257009, 1217257010

Results by AK102

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Diesel Range Organics	10.0U	20.0	9.00	mg/kg
Surrogates				
5a Androstane (surr)	103	60-120		%

Batch Information

Analytical Batch: XFC16134
 Analytical Method: AK102
 Instrument: Agilent 7890B R
 Analyst: IVM
 Analytical Date/Time: 11/4/2021 1:48:00PM

Prep Batch: XXX45817
 Prep Method: SW3550C
 Prep Date/Time: 11/4/2021 8:07:03AM
 Prep Initial Wt./Vol.: 30 g
 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

Parameter	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
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

Method Blank

Blank ID: MB for HBN 1828084 [XXX/45817]
 Blank Lab ID: 1645750

Matrix: Soil/Solid (dry weight)

QC for Samples:

1217257001, 1217257002, 1217257003, 1217257004, 1217257005, 1217257006, 1217257007, 1217257008, 1217257009, 1217257010

Results by AK103

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Residual Range Organics	50.0U	100	43.0	mg/kg
Surrogates				
n-Triacontane-d62 (surr)	99.6	60-120		%

Batch Information

Analytical Batch: XFC16134
 Analytical Method: AK103
 Instrument: Agilent 7890B R
 Analyst: IVM
 Analytical Date/Time: 11/4/2021 1:48:00PM

Prep Batch: XXX45817
 Prep Method: SW3550C
 Prep Date/Time: 11/4/2021 8:07:03AM
 Prep Initial Wt./Vol.: 30 g
 Prep Extract Vol: 5 mL

Print Date: 11/22/2021 2:50:27PM

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 AK103

Parameter	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
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

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)

Parameter	Results	LOQ/CL	DL	Units
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
 Prep Initial Wt./Vol.: 22.5 g
 Prep Extract Vol: 5 mL

Blank Spike Summary

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)

Parameter	Spike	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
 MS Sample ID: 1645767 MS
 MSD Sample ID: 1645768 MSD

Analysis Date: 11/11/2021 22:13
 Analysis Date: 11/11/2021 22:34
 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)

Parameter	Sample	Matrix Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
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

Method Blank

Blank ID: MB for HBN 1828137 [XXX/45824]
 Blank Lab ID: 1646046

Matrix: Soil/Solid (dry weight)

QC for Samples:

1217257011, 1217257012, 1217257013, 1217257014, 1217257015, 1217257016, 1217257017

Results by AK102

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Diesel Range Organics	10.0U	20.0	9.00	mg/kg
Surrogates				
5a Androstane (surr)	84.1	60-120		%

Batch Information

Analytical Batch: XFC16135
 Analytical Method: AK102
 Instrument: Agilent 7890B F
 Analyst: IVM
 Analytical Date/Time: 11/5/2021 2:08:00PM

Prep Batch: XXX45824
 Prep Method: SW3550C
 Prep Date/Time: 11/5/2021 9:44:10AM
 Prep Initial Wt./Vol.: 30 g
 Prep Extract Vol: 5 mL

Print Date: 11/22/2021 2:50:38PM

Blank Spike Summary

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

Parameter	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
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

Method Blank

Blank ID: MB for HBN 1828137 [XXX/45824]
Blank Lab ID: 1646046

Matrix: Soil/Solid (dry weight)

QC for Samples:

1217257011, 1217257012, 1217257013, 1217257014, 1217257015, 1217257016, 1217257017

Results by AK103

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Residual Range Organics	50.0U	100	43.0	mg/kg
Surrogates				
n-Triacontane-d62 (surr)	86.4	60-120		%

Batch Information

Analytical Batch: XFC16135
Analytical Method: AK103
Instrument: Agilent 7890B F
Analyst: IVM
Analytical Date/Time: 11/5/2021 2:08:00PM

Prep Batch: XXX45824
Prep Method: SW3550C
Prep Date/Time: 11/5/2021 9:44:10AM
Prep Initial Wt./Vol.: 30 g
Prep Extract Vol: 5 mL

Print Date: 11/22/2021 2:50:42PM

Blank Spike Summary

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 AK103

Parameter	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
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



Method Blank

Blank ID: MB for HBN 1828148 [XXX/45825]

Matrix: Soil/Solid (dry weight)

Blank Lab ID: 1646106

QC for Samples:

1217257013, 1217257014, 1217257015, 1217257016, 1217257017, 1217257018, 1217257019

Results by 8270D SIM (PAH)

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<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
 Prep Initial Wt./Vol.: 22.5 g
 Prep Extract Vol: 5 mL

Print Date: 11/22/2021 2:50:47PM

Blank Spike Summary

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)

Blank Spike (mg/kg)

Parameter	Spike	Result	Rec (%)	CL
1-Methylnaphthalene	0.111	0.107	97	(43-111)
2-Methylnaphthalene	0.111	0.109	98	(39-114)
Acenaphthene	0.111	0.107	96	(44-111)
Acenaphthylene	0.111	0.105	95	(39-116)
Anthracene	0.111	0.105	94	(50-114)
Benzo(a)Anthracene	0.111	0.109	98	(54-122)
Benzo[a]pyrene	0.111	0.101	91	(50-125)
Benzo[b]Fluoranthene	0.111	0.112	101	(53-128)
Benzo[g,h,i]perylene	0.111	0.107	97	(49-127)
Benzo[k]fluoranthene	0.111	0.114	102	(56-123)
Chrysene	0.111	0.112	101	(57-118)
Dibenzo[a,h]anthracene	0.111	0.110	99	(50-129)
Fluoranthene	0.111	0.114	103	(55-119)
Fluorene	0.111	0.109	98	(47-114)
Indeno[1,2,3-c,d] pyrene	0.111	0.109	98	(49-130)
Naphthalene	0.111	0.107	96	(38-111)
Phenanthrene	0.111	0.107	97	(49-113)
Pyrene	0.111	0.112	101	(55-117)
Surrogates				
2-Methylnaphthalene-d10 (surr)	0.111		100	(58-103)
Fluoranthene-d10 (surr)	0.111		102	(54-113)

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
 MS Sample ID: 1646294 MS
 MSD Sample ID: 1646295 MSD

Analysis Date: 11/16/2021 0:44
 Analysis Date: 11/16/2021 1:05
 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)

Parameter	Sample	Matrix Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
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

Method Blank

Blank ID: MB for HBN 1828375 [XXX/45846]
 Blank Lab ID: 1646826

Matrix: Soil/Solid (dry weight)

QC for Samples:
 1217257018, 1217257019, 1217257020, 1217257021, 1217257022, 1217257023

Results by AK102

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Diesel Range Organics	10.0U	20.0	9.00	mg/kg
Surrogates				
5a Androstane (surr)	89.8	60-120		%

Batch Information

Analytical Batch: XFC16147
 Analytical Method: AK102
 Instrument: Agilent 7890B R
 Analyst: IVM
 Analytical Date/Time: 11/12/2021 10:30:00AM

Prep Batch: XXX45846
 Prep Method: SW3550C
 Prep Date/Time: 11/11/2021 7:45:46AM
 Prep Initial Wt./Vol.: 30 g
 Prep Extract Vol: 5 mL

Print Date: 11/22/2021 2:50:52PM

Blank Spike Summary

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

Parameter	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
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

Method Blank

Blank ID: MB for HBN 1828375 [XXX/45846]
 Blank Lab ID: 1646826

Matrix: Soil/Solid (dry weight)

QC for Samples:
 1217257018, 1217257019, 1217257020, 1217257021, 1217257022, 1217257023

Results by AK103

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Residual Range Organics	50.0U	100	43.0	mg/kg
Surrogates				
n-Triacontane-d62 (surr)	87.8	60-120		%

Batch Information

Analytical Batch: XFC16147
 Analytical Method: AK103
 Instrument: Agilent 7890B R
 Analyst: IVM
 Analytical Date/Time: 11/12/2021 10:30:00AM

Prep Batch: XXX45846
 Prep Method: SW3550C
 Prep Date/Time: 11/11/2021 7:45:46AM
 Prep Initial Wt./Vol.: 30 g
 Prep Extract Vol: 5 mL

Blank Spike Summary

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

Parameter	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
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

Method Blank

Blank ID: MB for HBN 1828377 [XXX/45847]
 Blank Lab ID: 1646834

Matrix: Soil/Solid (dry weight)

QC for Samples:
 1217257020, 1217257021, 1217257022, 1217257023

Results by 8270D SIM (PAH)

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<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

Blank Spike Summary

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)

Blank Spike (mg/kg)

Parameter	Spike	Result	Rec (%)	CL
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:

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)

Parameter	Sample	Matrix Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
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										
2-Methylnaphthalene-d10 (surr)		0.111	0.102	92	0.110	0.0959	87	58-103	6.20	
Fluoranthene-d10 (surr)		0.111	0.103	93	0.110	0.0969	88	54-113	6.50	

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

Chain of Custody Record


575358  eurofins

Environment Testing
TestAmerica

Address: _____

Regulatory Program: DW NPDES RCRA Other:

TAL-8210


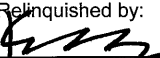
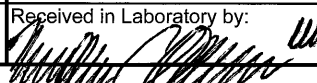
Client Contact		Project Manager: <u>Jenn Dunkling</u>		Site Contact: <u>Kristen Frey</u>		Date:		COC No:	
Company Name: <u>Shannon & Wilson, Inc.</u>		Tel/Email:		Lab Contact:		Carrier:		1 of 2 COCs	
Address:		Analysis Turnaround Time		<div style="display: flex; justify-content: space-around;"> GRD-AK101 DRORRD-AK102/103 BTEX-W 8260 PAA-SM 8270 </div> <div style="text-align: center; margin: 10px 0;">  <p style="font-size: 24px; font-weight: bold;">1217257</p> </div>		Sampler:		For Lab Use Only:	
City/State/Zip:		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS				Walk-in Client:		Lab Sampling:	
Phone:		TAT if different from Below _____				Job / SDG No.:			
Fax:		<input type="checkbox"/> 2 weeks							
Project Name: <u>SC Soils</u>		<input type="checkbox"/> 1 week							
Site:		<input type="checkbox"/> 2 days							
P O #		<input type="checkbox"/> 1 day							
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Sample Specific Notes:
- 21GST-SB002-01		10/20/21	0935	G	Soil	2			(1AB)
- 21GST-SB002-02			0950			2			(2AB)
- 21GST-SB001-01			1030			2			(3AB)
- 21GST-SB001-02			1040			2			(4AB)
- 21GST-SB009-01			1135			2			(5AB)
- 21GST-SB009-10			1125			2			(6AB)
- 21GST-SB009-02			1150			2			(7AB)
- 21GST-SB012-01			1325			2			(8AB)
- 21GST-SB012-02			1330			2			(9AB)
- 21GST-SB013-01			1430			2			(10AB)
- 21GST-SB013-02			1435			2			(11AB)
- 21GST-SB015-01		↓	1510	↓	↓	2			(12AB)
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other									
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.							Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)		
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown							<input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months		
Special Instructions/QC Requirements & Comments: <p style="text-align: center; font-size: 24px; font-weight: bold;">Profile # 347128 GM</p>									
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temp. (°C): Obs'd: _____		Corr'd: _____		Therm ID No.:	
Relinquished by: <u>[Signature]</u>		Company: <u>SAW</u>		Date/Time: <u>11-21 1300</u>		Received by: _____		Company: _____	
Relinquished by: _____		Company: _____		Date/Time: _____		Received by: _____		Company: _____	
Relinquished by: _____		Company: _____		Date/Time: _____		Received in Laboratory by: <u>[Signature]</u> MA		Company: <u>SGS</u>	

ANCI IFIRS 10 D60

Address: _____

Regulatory Program: DW NPDES RCRA Other:


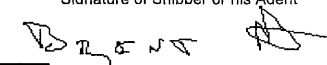
TAL-8210

Client Contact		Project Manager:		Site Contact:		Date:		COC No:		
Company Name:		Tel/Email:		Lab Contact:		Carrier:		2 of 2 COCs		
Address:		Analysis Turnaround Time		Filtered Sample (Y/N) Perform MS / MSD (Y/N) GRO-AK101 DEURO-AL102/103 BTEX-8260 PAH-8270		1217257 		Sampler:		
City/State/Zip:		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below _____						For Lab Use Only:		
Phone:		<input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day						Walk-in Client: <input type="checkbox"/>		
Fax:								Lab Sampling: <input type="checkbox"/>		
Project Name:								Job / SDG No.:		
Site:										
P O #										
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sample Specific Notes:			
21GST-SB005-02		10/30/21	1515	G	Soil	2	X	X	X	(13AB)
21GST-SB007-01			1600			2	X	X	X	(14AB)
21GST-SB007-10			1550			2	X	X	X	(15AB)
21GST-SB007-02			1605			2	X	X	X	(16AB)
21GST-SB003-01		10-31-21	1135			2	X	X	X	(17AB)
21GST-SB003-02			1140			2	X	X	X	(18AB)
21GST-SB004-01			1105			2	X	X	X	(19AB)
21GST-SB004-02			1110			2	X	X	X	(20AB)
21GST-SB011-01			1115			2	X	X	X	(21AB)
21GST-SB011-12			1425			2	X	X	X	(22AB)
21GST-SB011-02			1435			2	X	X	X	(22AB)
TRIP BLANK		10/21					X			(24AB) Yes, please include in report
Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4=HNO3, 5=NaOH, 6= Other										
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.					Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)					
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown					<input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months					
Special Instructions/QC Requirements & Comments:										
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:			Cooler Temp. (°C): Obs'd: _____		Corr'd: _____		Therm ID No.:	
Relinquished by: 		Company: SAW		Date/Time: 11-21 1000		Received by: _____		Company: _____		
Relinquished by: _____		Company: _____		Date/Time: _____		Received by: _____		Company: _____		
Relinquished by: _____		Company: _____		Date/Time: _____		Received in Laboratory by: 		Company: SAS		

027 JNU 9031 9843

Big C

027-9031 9843 11/2

Shipper's Name and Address Shannon and Wilson Inc 2355 Hill Rd Fairbanks, AK 99712 USA Tel: 907-479-0600		Shipper's Account Number 27400200733 Customer's ID Number 10926		Not Negotiable Air Waybill Issued By  P.O. BOX 68900 SEATTLE, WA 98168 800-225-2752 ALASKACARGO.COM				
Consignee's Name and Address SGS North America 200 W Potter Drive Anchorage, AK 99518 USA Tel: 907-562-2343		Consignee's Account Number 27400215947		Also notify Tel:				
Issuing Carrier's Agent and City Juneau		Accounting Information Shannon and Wilson Inc 2355 Hill Rd Fairbanks, AK 99712 USA SRN/SGSENVROSAMPL GoldStreak		10926				
Agent's IATA Code		Account No.		Declared Value For Carriage NVD				
Airport of Departure (Addr. of First Carrier) and Requested Routing Juneau		Airport of Destination Anchorage		Declared Value For Customs NCV				
To By First Carrier ANC Alaska Airlines		To / By		Currency USD PX				
Flight/Date AS 067/01		Flight/Date		WT/VAL X X				
Amount of Insurance XXX		Other X		Declared Value For Carriage NVD				
Handling Information STORE IN COOLER WHEN POSSIBLE NOA 907 562 2343								
SCI								
No of Pieces	Gross Weight	kg	lb	Commodity Item No.	Chargeable Weight	Rate / Charge	Total	Nature and Quantity of Goods (Incl. Dimensions or Volume)
2	86.0	L	Q		100.0		AS AGREED	ENVIRONMENTAL SAMPLE Dims: 25 x 13 x14 x 2
2	86.0						AS AGREED	GSX COL Volume: 5.266
Prepaid AS AGREED		Weight Charge Collect		Other Charges XBC 10.00				
Valuation Charge		Tax		Shipper certifies that the particulars on the face hereof are correct and that insofar as any part of the consignment contains dangerous goods, such part is properly described by name and is in proper condition for carriage by air according to the applicable Dangerous Goods Regulations. I consent to the inspection of this cargo.				
Total Other Charges Due Agent		Total Other Charges Due Carrier		For: Shannon and Wilson Inc Signature of Shipper or his Agent 				
Total Prepaid AS AGREED		Total Collect		<input checked="" type="checkbox"/> THIS SHIPMENT DOES NOT CONTAIN DANGEROUS GOODS <input type="checkbox"/> THIS SHIPMENT DOES CONTAIN DANGEROUS GOODS				
Executed On (Date) 01 Nov 2021 15:01		at (Place) Juneau		Signature of Issuing Carrier or its Agent Alaska Airlines				
						027-9031 9843		

Alert Expeditors Inc.

#414352

Citywide Delivery • 440-3351
8421 Flamingo Drive • Anchorage, Alaska 99502

Date 11-2-21

From Shannon-Wilson

To SGS Labs Inc

Collect Prepay Advance Charges

Job # JNU PO# AS-9031-9813

Samples X2

Shipped Signature [Signature]

Received By: [Signature] Total Charge



e-Sample Receipt Form

SGS Workorder #:

1217257



1 2 1 7 2 5 7

Review Criteria		Condition (Yes, No, N/A)	Exceptions Noted below	
Chain of Custody / Temperature Requirements		N/A	Exemption permitted if sampler hand carries/delivers.	
Were Custody Seals intact? Note # & location	Yes	1F,1B		
COC accompanied samples?	Yes			
DOD: Were samples received in COC corresponding coolers?	N/A			
<input type="checkbox"/> N/A **Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required Temperature blank compliant* (i.e., 0-6 °C after CF)?		Yes	Cooler ID: 1	@ 1.0 °C Therm. ID: D60
If samples received without a temperature blank, the "cooler temperature" will be documented instead & "COOLER TEMP" will be noted to the right. "ambient" or "chilled" will be noted if neither is available.			Cooler ID:	@ °C Therm. ID:
			Cooler ID:	@ °C Therm. ID:
			Cooler ID:	@ °C Therm. ID:
			Cooler ID:	@ °C Therm. ID:
*If >6°C, were samples collected <8 hours ago?		N/A		
If <0°C, were sample containers ice free?		N/A		
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.				
Holding Time / Documentation / Sample Condition Requirements		Note: Refer to form F-083 "Sample Guide" for specific holding times.		
Were samples received within holding time?	Yes			
Do samples match COC** (i.e., sample IDs, dates/times collected)?	Yes			
**Note: If times differ <1hr, record details & login per COC.				
***Note: If sample information on containers differs from COC, SGS will default to COC information				
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	Yes			
Were proper containers (type/mass/volume/preservative***) used?	Yes	N/A	***Exemption permitted for metals (e.g,200.8/6020B).	
Volatile / LL-Hg Requirements				
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	N/A			
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	N/A			
Were all soil VOAs field extracted with MeOH+BFB?	N/A			
Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.				
Additional notes (if applicable):				



Sample Containers and Preservatives

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1217257001-A	No Preservative Required	OK			
1217257001-B	Methanol field pres. 4 C	OK			
1217257002-A	No Preservative Required	OK			
1217257002-B	Methanol field pres. 4 C	OK			
1217257003-A	No Preservative Required	OK			
1217257003-B	Methanol field pres. 4 C	OK			
1217257004-A	No Preservative Required	OK			
1217257004-B	Methanol field pres. 4 C	OK			
1217257005-A	No Preservative Required	OK			
1217257005-B	Methanol field pres. 4 C	OK			
1217257006-A	No Preservative Required	OK			
1217257006-B	Methanol field pres. 4 C	OK			
1217257007-A	No Preservative Required	OK			
1217257007-B	Methanol field pres. 4 C	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	OK			
1217257024-B	Methanol field pres. 4 C	OK			

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 that 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

Completed By:

Justin Risley

Title:

Engineering Staff

Date:

November 24, 2021

Consultant Firm:

Shannon & Wilson, Inc.

Laboratory Name:

SGS

Laboratory Report Number:

1217257

Laboratory Report Date:

November 22, 2021

CS Site Name:

DOT&PF Gustavus Airport Statewide PFAS

ADEC File Number:

2569.38.033

Hazard Identification Number:

26981

1217257

Laboratory Report Date:

November 22, 2021

CS Site Name:

DOT&PF Gustavus Airport Statewide PFAS

Note: Any N/A or No box checked must have an explanation in the comments box.

1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

Yes No N/A 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 No N/A Comments:

Samples were not transferred to another “network” laboratory or sub-contracted to an alternate laboratory.

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 No N/A Comments:

3. 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:

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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 No N/A 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:

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 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 No N/A 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. Samples 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:

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

Yes No N/A 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 No N/A Comments:

ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?

Yes No N/A Comments:

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)

- i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

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 No N/A 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 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:

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 No N/A 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.

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:

MS/MSD samples were reported for methods 8270D SIM (PAH) and SW8260D.

ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?

Yes No N/A Comments:

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 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:

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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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.

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 No N/A 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; 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 21GST-SB005-02. 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 No N/A Comments:

See above.

iv. Data quality or usability affected?

Comments:

No; see above.

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e. Trip Blanks

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)

Yes No N/A 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 No N/A 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 No N/A Comments:

ii. Submitted blind to lab?

Yes No N/A 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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iii. Precision – All relative percent differences (RPD) less than specified project objectives?
(Recommended: 30% water, 50% soil)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where R_1 = Sample Concentration
 R_2 = Field Duplicate Concentration

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.

g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below)?

Yes No N/A Comments:

Samples for this project are not collected with reusable equipment, therefore a practical potential for equipment based cross-contamination does not exist.

i. All results less than LOQ and project specified objectives?

Yes No N/A Comments:

See above.

ii. If above LOQ or project specified objectives, what samples are affected?

Comments:

No samples affected; see above.

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iii. Data quality or usability affected?

Comments:

Data quality and/or usability were 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/qualifiers are required.

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:
11/5/2021 2:34:38 PM

David Alltucker, Project Manager I
(916)374-4383
David.Alltucker@Eurofinset.com

LINKS

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results through
TotalAccess

Have a Question?



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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Definitions/Glossary

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

Qualifiers

LCMS

Qualifier	Qualifier Description
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.

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.
⌘	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

Case Narrative

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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.

Detection Summary

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

Client Sample ID: 21GST-MW13-01

Lab Sample ID: 320-80903-1

No Detections.

Client Sample ID: 21GST-MW13-02

Lab Sample ID: 320-80903-2

No Detections.

Client Sample ID: 21GST-MW13-03

Lab Sample ID: 320-80903-3

No Detections.

Client Sample ID: 21GST-MW13-04

Lab Sample ID: 320-80903-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.047	J	0.26	0.038	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.093	J	0.26	0.057	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-MW13-05

Lab Sample ID: 320-80903-5

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-MW13-07

Lab Sample ID: 320-80903-6

No Detections.

Client Sample ID: 21GST-MW13-12

Lab Sample ID: 320-80903-7

No Detections.

Client Sample ID: 21GST-MW23-01

Lab Sample ID: 320-80903-8

No Detections.

Client Sample ID: 21GST-MW23-02

Lab Sample ID: 320-80903-9

No Detections.

Client Sample ID: 21GST-MW17-01

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-MW17-02

Lab Sample ID: 320-80903-11

No Detections.

Client Sample ID: 21GST-MW25-01

Lab Sample ID: 320-80903-12

No Detections.

Client Sample ID: 21GST-MW25-02

Lab Sample ID: 320-80903-13

No Detections.

Client Sample ID: 21GST-SED-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-SED-008

Lab Sample ID: 320-80903-15

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

Detection Summary

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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	✳	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	✳	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SED-124

Lab Sample ID: 320-80903-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	1.0	I	0.27	0.057	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

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

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.052	J	0.21	0.030	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.62	I	0.21	0.045	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

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

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.12	J	0.25	0.036	ug/Kg	1	✳	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)	0.31		0.26	0.038	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.5		0.26	0.056	ug/Kg	1	✳	EPA 537(Mod)	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

Detection Summary

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

Client Sample ID: 21GST-SED-019

Lab Sample ID: 320-80903-28

No Detections.

Client Sample ID: 21GST-SED-016

Lab Sample ID: 320-80903-29

No Detections.

Client Sample ID: 21GST-SED-013

Lab Sample ID: 320-80903-30

No Detections.

Client Sample ID: 21GST-SED-014

Lab Sample ID: 320-80903-31

No Detections.

Client Sample ID: 21GST-SED-015

Lab Sample ID: 320-80903-32

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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.059	J	0.35	0.040	ug/Kg	1		*	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SED-018

Lab Sample ID: 320-80903-33

No Detections.

Client Sample ID: 21GST-SED-118

Lab Sample ID: 320-80903-34

No Detections.

Client Sample ID: 21GST-SED-020

Lab Sample ID: 320-80903-35

No Detections.

Client Sample ID: 21GST-SED-021

Lab Sample ID: 320-80903-36

No Detections.

Client Sample ID: 21GST-DPSED-020

Lab Sample ID: 320-80903-37

No Detections.

Client Sample ID: 21GST-DPSED-021

Lab Sample ID: 320-80903-38

No Detections.

Client Sample ID: 21GST-SED-012

Lab Sample ID: 320-80903-39

No Detections.

Client Sample ID: 21GST-SED-022

Lab Sample ID: 320-80903-40

No Detections.

Client Sample ID: 21GST-SED-009

Lab Sample ID: 320-80903-41

No Detections.

Client Sample ID: 21GST-DPSED-009

Lab Sample ID: 320-80903-42

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

Detection Summary

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

Client Sample ID: 21GST-SED-023

Lab Sample ID: 320-80903-43

No Detections.

Client Sample ID: 21GST-DPSED-023

Lab Sample ID: 320-80903-44

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

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.26	J I	0.27	0.059	ug/Kg	1	⊛	EPA 537(Mod)	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

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.76	I	0.28	0.060	ug/Kg	1	⊛	EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

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		0.20	0.032	ug/Kg	☼	10/29/21 04:15	10/29/21 21:00	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.039	ug/Kg	☼	10/29/21 04:15	10/29/21 21:00	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.054	ug/Kg	☼	10/29/21 04:15	10/29/21 21:00	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.022	ug/Kg	☼	10/29/21 04:15	10/29/21 21:00	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.049	ug/Kg	☼	10/29/21 04:15	10/29/21 21:00	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.043	ug/Kg	☼	10/29/21 04:15	10/29/21 21:00	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.030	ug/Kg	☼	10/29/21 04:15	10/29/21 21:00	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.021	ug/Kg	☼	10/29/21 04:15	10/29/21 21:00	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.038	ug/Kg	☼	10/29/21 04:15	10/29/21 21:00	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.039	ug/Kg	☼	10/29/21 04:15	10/29/21 21:00	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.029	ug/Kg	☼	10/29/21 04:15	10/29/21 21:00	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.20	0.044	ug/Kg	☼	10/29/21 04:15	10/29/21 21:00	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg	☼	10/29/21 04:15	10/29/21 21:00	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.20	0.049	ug/Kg	☼	10/29/21 04:15	10/29/21 21:00	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.036	ug/Kg	☼	10/29/21 04:15	10/29/21 21:00	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.20	0.042	ug/Kg	☼	10/29/21 04:15	10/29/21 21:00	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.032	ug/Kg	☼	10/29/21 04:15	10/29/21 21:00	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.040	ug/Kg	☼	10/29/21 04:15	10/29/21 21:00	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	79		50 - 150	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	1
13C4 PFOA	95		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	1
13C2 PFDA	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	1
13C2 PFDoA	91		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	1
13C3 PFBS	98		50 - 150	10/29/21 04:15	10/29/21 21:00	1
18O2 PFHxS	85		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	1
d3-NMeFOSAA	87		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	1
13C3 HFPO-DA	79		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 Fac
Percent Moisture	6.8		0.1	0.1	%			10/28/21 12:18	1
Percent Solids	93.2		0.1	0.1	%			10/28/21 12:18	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

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		0.24	0.037	ug/Kg	☼	10/29/21 04:15	10/29/21 21:32	1
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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.24	0.027	ug/Kg	☼	10/29/21 04:15	10/29/21 21:32	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.24	0.057	ug/Kg	☼	10/29/21 04:15	10/29/21 21:32	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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
18O2 PFHxS	93		50 - 150	10/29/21 04:15	10/29/21 21:32	1
13C4 PFOS	103		50 - 150	10/29/21 04:15	10/29/21 21:32	1
d3-NMeFOSAA	95		50 - 150	10/29/21 04:15	10/29/21 21:32	1
d5-NEtFOSAA	88		50 - 150	10/29/21 04:15	10/29/21 21:32	1
13C3 HFPO-DA	82		50 - 150	10/29/21 04:15	10/29/21 21:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	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	%			10/28/21 12:18	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

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	☼	10/29/21 04:15	10/29/21 21:42	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.040	ug/Kg	☼	10/29/21 04:15	10/29/21 21:42	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.056	ug/Kg	☼	10/29/21 04:15	10/29/21 21:42	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.023	ug/Kg	☼	10/29/21 04:15	10/29/21 21:42	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.051	ug/Kg	☼	10/29/21 04:15	10/29/21 21:42	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.044	ug/Kg	☼	10/29/21 04:15	10/29/21 21:42	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.032	ug/Kg	☼	10/29/21 04:15	10/29/21 21:42	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.022	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	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.040	ug/Kg	☼	10/29/21 04:15	10/29/21 21:42	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21	0.031	ug/Kg	☼	10/29/21 04:15	10/29/21 21:42	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.21	0.046	ug/Kg	☼	10/29/21 04:15	10/29/21 21:42	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	☼	10/29/21 04:15	10/29/21 21:42	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.051	ug/Kg	☼	10/29/21 04:15	10/29/21 21:42	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.037	ug/Kg	☼	10/29/21 04:15	10/29/21 21:42	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.043	ug/Kg	☼	10/29/21 04:15	10/29/21 21:42	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.033	ug/Kg	☼	10/29/21 04:15	10/29/21 21:42	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.041	ug/Kg	☼	10/29/21 04:15	10/29/21 21:42	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	94		50 - 150	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	1
13C4 PFOA	101		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	1
13C2 PFDA	92		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	1
13C2 PFDoA	88		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	1
13C3 PFBS	104		50 - 150	10/29/21 04:15	10/29/21 21:42	1
18O2 PFHxS	99		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	1
d3-NMeFOSAA	93		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	1
13C3 HFPO-DA	94		50 - 150	10/29/21 04:15	10/29/21 21:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	11.7		0.1	0.1	%			10/28/21 12:18	1
Percent Solids	88.3		0.1	0.1	%			10/28/21 12:18	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

Client Sample ID: 21GST-MW13-04

Lab Sample ID: 320-80903-4

Date Collected: 10/19/21 13:30

Matrix: Solid

Date Received: 10/27/21 12:25

Percent Solids: 70.7

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		0.26	0.041	ug/Kg	☼	10/29/21 04:15	10/29/21 21:53	1
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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.26	0.030	ug/Kg	☼	10/29/21 04:15	10/29/21 21:53	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.26	0.063	ug/Kg	☼	10/29/21 04:15	10/29/21 21:53	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 150	10/29/21 04:15	10/29/21 21:53	1
13C3 PFBS	91		50 - 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 - 150	10/29/21 04:15	10/29/21 21:53	1
d3-NMeFOSAA	83		50 - 150	10/29/21 04:15	10/29/21 21:53	1
d5-NEtFOSAA	80		50 - 150	10/29/21 04:15	10/29/21 21:53	1
13C3 HFPO-DA	86		50 - 150	10/29/21 04:15	10/29/21 21:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	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 Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

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		0.20	0.031	ug/Kg	☼	10/29/21 04:15	10/29/21 22:03	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.038	ug/Kg	☼	10/29/21 04:15	10/29/21 22:03	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.053	ug/Kg	☼	10/29/21 04:15	10/29/21 22:03	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.022	ug/Kg	☼	10/29/21 04:15	10/29/21 22:03	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.048	ug/Kg	☼	10/29/21 04:15	10/29/21 22:03	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.042	ug/Kg	☼	10/29/21 04:15	10/29/21 22:03	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.030	ug/Kg	☼	10/29/21 04:15	10/29/21 22:03	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.021	ug/Kg	☼	10/29/21 04:15	10/29/21 22:03	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.037	ug/Kg	☼	10/29/21 04:15	10/29/21 22:03	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.038	ug/Kg	☼	10/29/21 04:15	10/29/21 22:03	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.029	ug/Kg	☼	10/29/21 04:15	10/29/21 22:03	1
Perfluorooctanesulfonic acid (PFOS)	0.10	J	0.20	0.043	ug/Kg	☼	10/29/21 04:15	10/29/21 22:03	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg	☼	10/29/21 04:15	10/29/21 22:03	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.20	0.048	ug/Kg	☼	10/29/21 04:15	10/29/21 22:03	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.035	ug/Kg	☼	10/29/21 04:15	10/29/21 22:03	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.20	0.041	ug/Kg	☼	10/29/21 04:15	10/29/21 22:03	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.031	ug/Kg	☼	10/29/21 04:15	10/29/21 22:03	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.039	ug/Kg	☼	10/29/21 04:15	10/29/21 22:03	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	80		50 - 150	10/29/21 04:15	10/29/21 22:03	1
13C4 PFHpA	88		50 - 150	10/29/21 04:15	10/29/21 22:03	1
13C4 PFOA	97		50 - 150	10/29/21 04:15	10/29/21 22:03	1
13C5 PFNA	97		50 - 150	10/29/21 04:15	10/29/21 22:03	1
13C2 PFDA	89		50 - 150	10/29/21 04:15	10/29/21 22:03	1
13C2 PFUnA	96		50 - 150	10/29/21 04:15	10/29/21 22:03	1
13C2 PFDoA	98		50 - 150	10/29/21 04:15	10/29/21 22:03	1
13C2 PFTeDA	100		50 - 150	10/29/21 04:15	10/29/21 22:03	1
13C3 PFBS	95		50 - 150	10/29/21 04:15	10/29/21 22:03	1
18O2 PFHxS	87		50 - 150	10/29/21 04:15	10/29/21 22:03	1
13C4 PFOS	97		50 - 150	10/29/21 04:15	10/29/21 22:03	1
d3-NMeFOSAA	86		50 - 150	10/29/21 04:15	10/29/21 22:03	1
d5-NEtFOSAA	92		50 - 150	10/29/21 04:15	10/29/21 22:03	1
13C3 HFPO-DA	96		50 - 150	10/29/21 04:15	10/29/21 22:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	8.4		0.1	0.1	%			10/28/21 12:18	1
Percent Solids	91.6		0.1	0.1	%			10/28/21 12:18	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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 for QSM 5.3, Table B-15

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 22:13	1
Perfluoroheptanoic acid (PFHpA)	ND		0.25	0.048	ug/Kg	☼	10/29/21 04:15	10/29/21 22:13	1
Perfluorooctanoic acid (PFOA)	ND		0.25	0.067	ug/Kg	☼	10/29/21 04:15	10/29/21 22:13	1
Perfluorononanoic acid (PFNA)	ND		0.25	0.028	ug/Kg	☼	10/29/21 04:15	10/29/21 22:13	1
Perfluorodecanoic acid (PFDA)	ND		0.25	0.061	ug/Kg	☼	10/29/21 04:15	10/29/21 22:13	1
Perfluoroundecanoic acid (PFUnA)	ND		0.25	0.053	ug/Kg	☼	10/29/21 04:15	10/29/21 22:13	1
Perfluorododecanoic acid (PFDoA)	ND		0.25	0.038	ug/Kg	☼	10/29/21 04:15	10/29/21 22:13	1
Perfluorotridecanoic acid (PFTriA)	ND		0.25	0.027	ug/Kg	☼	10/29/21 04:15	10/29/21 22:13	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.25	0.047	ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.25	0.029	ug/Kg	☼	10/29/21 04:15	10/29/21 22:13	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.25	0.061	ug/Kg	☼	10/29/21 04:15	10/29/21 22:13	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 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 - 150	10/29/21 04:15	10/29/21 22:13	1
13C3 PFBS	102		50 - 150	10/29/21 04:15	10/29/21 22:13	1
18O2 PFHxS	90		50 - 150	10/29/21 04:15	10/29/21 22:13	1
13C4 PFOS	99		50 - 150	10/29/21 04:15	10/29/21 22:13	1
d3-NMeFOSAA	90		50 - 150	10/29/21 04:15	10/29/21 22:13	1
d5-NEtFOSAA	87		50 - 150	10/29/21 04:15	10/29/21 22:13	1
13C3 HFPO-DA	92		50 - 150	10/29/21 04:15	10/29/21 22:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	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 Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

Client Sample ID: 21GST-MW13-12

Lab Sample ID: 320-80903-7

Date Collected: 10/19/21 11:30

Matrix: Solid

Date Received: 10/27/21 12:25

Percent Solids: 81.5

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	0.036	ug/Kg	☼	10/29/21 04:15	10/29/21 22:45	1
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.045	ug/Kg	☼	10/29/21 04:15	10/29/21 22:45	1
Perfluorooctanoic acid (PFOA)	ND		0.23	0.062	ug/Kg	☼	10/29/21 04:15	10/29/21 22:45	1
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	1
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	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.025	ug/Kg	☼	10/29/21 04:15	10/29/21 22:45	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.043	ug/Kg	☼	10/29/21 04:15	10/29/21 22:45	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.045	ug/Kg	☼	10/29/21 04:15	10/29/21 22:45	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.23	0.034	ug/Kg	☼	10/29/21 04:15	10/29/21 22:45	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.23	0.050	ug/Kg	☼	10/29/21 04:15	10/29/21 22:45	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.23	0.027	ug/Kg	☼	10/29/21 04:15	10/29/21 22:45	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.23	0.056	ug/Kg	☼	10/29/21 04:15	10/29/21 22:45	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.23	0.041	ug/Kg	☼	10/29/21 04:15	10/29/21 22:45	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23	0.048	ug/Kg	☼	10/29/21 04:15	10/29/21 22:45	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.23	0.036	ug/Kg	☼	10/29/21 04:15	10/29/21 22:45	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.046	ug/Kg	☼	10/29/21 04:15	10/29/21 22:45	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	88		50 - 150	10/29/21 04:15	10/29/21 22:45	1
13C4 PFHpA	91		50 - 150	10/29/21 04:15	10/29/21 22:45	1
13C4 PFOA	96		50 - 150	10/29/21 04:15	10/29/21 22:45	1
13C5 PFNA	97		50 - 150	10/29/21 04:15	10/29/21 22:45	1
13C2 PFDA	94		50 - 150	10/29/21 04:15	10/29/21 22:45	1
13C2 PFUnA	93		50 - 150	10/29/21 04:15	10/29/21 22:45	1
13C2 PFDoA	97		50 - 150	10/29/21 04:15	10/29/21 22:45	1
13C2 PFTeDA	99		50 - 150	10/29/21 04:15	10/29/21 22:45	1
13C3 PFBS	103		50 - 150	10/29/21 04:15	10/29/21 22:45	1
18O2 PFHxS	91		50 - 150	10/29/21 04:15	10/29/21 22:45	1
13C4 PFOS	100		50 - 150	10/29/21 04:15	10/29/21 22:45	1
d3-NMeFOSAA	85		50 - 150	10/29/21 04:15	10/29/21 22:45	1
d5-NEtFOSAA	87		50 - 150	10/29/21 04:15	10/29/21 22:45	1
13C3 HFPO-DA	103		50 - 150	10/29/21 04:15	10/29/21 22:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	18.5		0.1	0.1	%			10/28/21 12:18	1
Percent Solids	81.5		0.1	0.1	%			10/28/21 12:18	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

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		0.24	0.038	ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.24	0.028	ug/Kg	☼	10/29/21 04:15	10/29/21 22:55	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.24	0.058	ug/Kg	☼	10/29/21 04:15	10/29/21 22:55	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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
18O2 PFHxS	86		50 - 150	10/29/21 04:15	10/29/21 22:55	1
13C4 PFOS	96		50 - 150	10/29/21 04:15	10/29/21 22:55	1
d3-NMeFOSAA	94		50 - 150	10/29/21 04:15	10/29/21 22:55	1
d5-NEtFOSAA	90		50 - 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	Result	Qualifier	RL	MDL	Unit	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	%			10/28/21 12:18	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

Client Sample ID: 21GST-MW23-02

Lab Sample ID: 320-80903-9

Date Collected: 10/20/21 16:10

Matrix: Solid

Date Received: 10/27/21 12:25

Percent Solids: 73.6

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		0.25	0.039	ug/Kg	☼	10/29/21 04:15	10/29/21 23:05	1
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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.25	0.029	ug/Kg	☼	10/29/21 04:15	10/29/21 23:05	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.25	0.061	ug/Kg	☼	10/29/21 04:15	10/29/21 23:05	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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
18O2 PFHxS	92		50 - 150	10/29/21 04:15	10/29/21 23:05	1
13C4 PFOS	95		50 - 150	10/29/21 04:15	10/29/21 23:05	1
d3-NMeFOSAA	92		50 - 150	10/29/21 04:15	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 04:15	10/29/21 23:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	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	%			10/28/21 12:18	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

Client Sample ID: 21GST-MW17-01

Lab Sample ID: 320-80903-10

Date Collected: 10/22/21 12:15

Matrix: Solid

Date Received: 10/27/21 12:25

Percent Solids: 78.1

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		0.24	0.037	ug/Kg	☼	10/29/21 04:15	10/29/21 23:16	1
Perfluoroheptanoic acid (PFHpA)	ND		0.24	0.046	ug/Kg	☼	10/29/21 04:15	10/29/21 23:16	1
Perfluorooctanoic acid (PFOA)	ND		0.24	0.064	ug/Kg	☼	10/29/21 04:15	10/29/21 23:16	1
Perfluorononanoic acid (PFNA)	ND		0.24	0.027	ug/Kg	☼	10/29/21 04:15	10/29/21 23:16	1
Perfluorodecanoic acid (PFDA)	ND		0.24	0.058	ug/Kg	☼	10/29/21 04:15	10/29/21 23:16	1
Perfluoroundecanoic acid (PFUnA)	ND		0.24	0.051	ug/Kg	☼	10/29/21 04:15	10/29/21 23:16	1
Perfluorododecanoic acid (PFDoA)	ND		0.24	0.036	ug/Kg	☼	10/29/21 04:15	10/29/21 23:16	1
Perfluorotridecanoic acid (PFTriA)	ND		0.24	0.025	ug/Kg	☼	10/29/21 04:15	10/29/21 23:16	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.24	0.045	ug/Kg	☼	10/29/21 04:15	10/29/21 23:16	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.24	0.046	ug/Kg	☼	10/29/21 04:15	10/29/21 23:16	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.24	0.035	ug/Kg	☼	10/29/21 04:15	10/29/21 23:16	1
Perfluorooctanesulfonic acid (PFOS)	0.094	J	0.24	0.052	ug/Kg	☼	10/29/21 04:15	10/29/21 23:16	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.24	0.028	ug/Kg	☼	10/29/21 04:15	10/29/21 23:16	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.24	0.058	ug/Kg	☼	10/29/21 04:15	10/29/21 23:16	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.24	0.042	ug/Kg	☼	10/29/21 04:15	10/29/21 23:16	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.24	0.049	ug/Kg	☼	10/29/21 04:15	10/29/21 23:16	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.24	0.037	ug/Kg	☼	10/29/21 04:15	10/29/21 23:16	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.24	0.047	ug/Kg	☼	10/29/21 04:15	10/29/21 23:16	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	94		50 - 150	10/29/21 04:15	10/29/21 23:16	1
13C4 PFHpA	96		50 - 150	10/29/21 04:15	10/29/21 23:16	1
13C4 PFOA	99		50 - 150	10/29/21 04:15	10/29/21 23:16	1
13C5 PFNA	99		50 - 150	10/29/21 04:15	10/29/21 23:16	1
13C2 PFDA	94		50 - 150	10/29/21 04:15	10/29/21 23:16	1
13C2 PFUnA	93		50 - 150	10/29/21 04:15	10/29/21 23:16	1
13C2 PFDoA	95		50 - 150	10/29/21 04:15	10/29/21 23:16	1
13C2 PFTeDA	98		50 - 150	10/29/21 04:15	10/29/21 23:16	1
13C3 PFBS	100		50 - 150	10/29/21 04:15	10/29/21 23:16	1
18O2 PFHxS	92		50 - 150	10/29/21 04:15	10/29/21 23:16	1
13C4 PFOS	98		50 - 150	10/29/21 04:15	10/29/21 23:16	1
d3-NMeFOSAA	98		50 - 150	10/29/21 04:15	10/29/21 23:16	1
d5-NEtFOSAA	95		50 - 150	10/29/21 04:15	10/29/21 23:16	1
13C3 HFPO-DA	91		50 - 150	10/29/21 04:15	10/29/21 23:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	21.9		0.1	0.1	%			10/28/21 12:18	1
Percent Solids	78.1		0.1	0.1	%			10/28/21 12:18	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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 for QSM 5.3, Table B-15

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 23:26	1
Perfluoroheptanoic acid (PFHpA)	ND		0.25	0.048	ug/Kg	☼	10/29/21 04:15	10/29/21 23:26	1
Perfluorooctanoic acid (PFOA)	ND		0.25	0.066	ug/Kg	☼	10/29/21 04:15	10/29/21 23:26	1
Perfluorononanoic acid (PFNA)	ND		0.25	0.028	ug/Kg	☼	10/29/21 04:15	10/29/21 23:26	1
Perfluorodecanoic acid (PFDA)	ND		0.25	0.060	ug/Kg	☼	10/29/21 04:15	10/29/21 23:26	1
Perfluoroundecanoic acid (PFUnA)	ND		0.25	0.053	ug/Kg	☼	10/29/21 04:15	10/29/21 23:26	1
Perfluorododecanoic acid (PFDoA)	ND		0.25	0.038	ug/Kg	☼	10/29/21 04:15	10/29/21 23:26	1
Perfluorotridecanoic acid (PFTriA)	ND		0.25	0.026	ug/Kg	☼	10/29/21 04:15	10/29/21 23:26	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.25	0.046	ug/Kg	☼	10/29/21 04:15	10/29/21 23:26	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.25	0.048	ug/Kg	☼	10/29/21 04:15	10/29/21 23:26	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.25	0.036	ug/Kg	☼	10/29/21 04:15	10/29/21 23:26	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.25	0.054	ug/Kg	☼	10/29/21 04:15	10/29/21 23:26	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.25	0.029	ug/Kg	☼	10/29/21 04:15	10/29/21 23:26	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.25	0.060	ug/Kg	☼	10/29/21 04:15	10/29/21 23:26	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 150	10/29/21 04:15	10/29/21 23:26	1
13C3 PFBS	101		50 - 150	10/29/21 04:15	10/29/21 23:26	1
18O2 PFHxS	90		50 - 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 - 150	10/29/21 04:15	10/29/21 23:26	1
13C3 HFPO-DA	91		50 - 150	10/29/21 04:15	10/29/21 23:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	24.2		0.1	0.1	%			10/28/21 12:18	1
Percent Solids	75.8		0.1	0.1	%			10/28/21 12:18	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

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	☼	10/29/21 04:15	10/29/21 23:37	1
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.043	ug/Kg	☼	10/29/21 04:15	10/29/21 23:37	1
Perfluorooctanoic acid (PFOA)	ND		0.23	0.060	ug/Kg	☼	10/29/21 04:15	10/29/21 23:37	1
Perfluorononanoic acid (PFNA)	ND		0.23	0.025	ug/Kg	☼	10/29/21 04:15	10/29/21 23:37	1
Perfluorodecanoic acid (PFDA)	ND		0.23	0.054	ug/Kg	☼	10/29/21 04:15	10/29/21 23:37	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.048	ug/Kg	☼	10/29/21 04:15	10/29/21 23:37	1
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.034	ug/Kg	☼	10/29/21 04:15	10/29/21 23:37	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.024	ug/Kg	☼	10/29/21 04:15	10/29/21 23:37	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.042	ug/Kg	☼	10/29/21 04:15	10/29/21 23:37	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.043	ug/Kg	☼	10/29/21 04:15	10/29/21 23:37	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.23	0.033	ug/Kg	☼	10/29/21 04:15	10/29/21 23:37	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.23	0.049	ug/Kg	☼	10/29/21 04:15	10/29/21 23:37	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.23	0.026	ug/Kg	☼	10/29/21 04:15	10/29/21 23:37	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.23	0.054	ug/Kg	☼	10/29/21 04:15	10/29/21 23:37	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.23	0.040	ug/Kg	☼	10/29/21 04:15	10/29/21 23:37	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23	0.046	ug/Kg	☼	10/29/21 04:15	10/29/21 23:37	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.23	0.035	ug/Kg	☼	10/29/21 04:15	10/29/21 23:37	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.044	ug/Kg	☼	10/29/21 04:15	10/29/21 23:37	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	87		50 - 150	10/29/21 04:15	10/29/21 23:37	1
13C4 PFHpA	94		50 - 150	10/29/21 04:15	10/29/21 23:37	1
13C4 PFOA	101		50 - 150	10/29/21 04:15	10/29/21 23:37	1
13C5 PFNA	101		50 - 150	10/29/21 04:15	10/29/21 23:37	1
13C2 PFDA	101		50 - 150	10/29/21 04:15	10/29/21 23:37	1
13C2 PFUnA	99		50 - 150	10/29/21 04:15	10/29/21 23:37	1
13C2 PFDoA	95		50 - 150	10/29/21 04:15	10/29/21 23:37	1
13C2 PFTeDA	104		50 - 150	10/29/21 04:15	10/29/21 23:37	1
13C3 PFBS	103		50 - 150	10/29/21 04:15	10/29/21 23:37	1
18O2 PFHxS	92		50 - 150	10/29/21 04:15	10/29/21 23:37	1
13C4 PFOS	98		50 - 150	10/29/21 04:15	10/29/21 23:37	1
d3-NMeFOSAA	99		50 - 150	10/29/21 04:15	10/29/21 23:37	1
d5-NEtFOSAA	101		50 - 150	10/29/21 04:15	10/29/21 23:37	1
13C3 HFPO-DA	88		50 - 150	10/29/21 04:15	10/29/21 23:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	19.5		0.1	0.1	%			10/28/21 12:18	1
Percent Solids	80.5		0.1	0.1	%			10/28/21 12:18	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

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	0.036	ug/Kg	☼	10/28/21 18:22	10/30/21 04:48	1
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.044	ug/Kg	☼	10/28/21 18:22	10/30/21 04:48	1
Perfluorooctanoic acid (PFOA)	ND		0.23	0.062	ug/Kg	☼	10/28/21 18:22	10/30/21 04:48	1
Perfluorononanoic acid (PFNA)	ND		0.23	0.026	ug/Kg	☼	10/28/21 18:22	10/30/21 04:48	1
Perfluorodecanoic acid (PFDA)	ND		0.23	0.056	ug/Kg	☼	10/28/21 18:22	10/30/21 04:48	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.049	ug/Kg	☼	10/28/21 18:22	10/30/21 04:48	1
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.035	ug/Kg	☼	10/28/21 18:22	10/30/21 04:48	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.024	ug/Kg	☼	10/28/21 18:22	10/30/21 04:48	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.043	ug/Kg	☼	10/28/21 18:22	10/30/21 04:48	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.044	ug/Kg	☼	10/28/21 18:22	10/30/21 04:48	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.23	0.034	ug/Kg	☼	10/28/21 18:22	10/30/21 04:48	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.23	0.050	ug/Kg	☼	10/28/21 18:22	10/30/21 04:48	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.23	0.027	ug/Kg	☼	10/28/21 18:22	10/30/21 04:48	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.23	0.056	ug/Kg	☼	10/28/21 18:22	10/30/21 04:48	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.23	0.041	ug/Kg	☼	10/28/21 18:22	10/30/21 04:48	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23	0.048	ug/Kg	☼	10/28/21 18:22	10/30/21 04:48	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.23	0.036	ug/Kg	☼	10/28/21 18:22	10/30/21 04:48	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.045	ug/Kg	☼	10/28/21 18:22	10/30/21 04:48	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	128		50 - 150	10/28/21 18:22	10/30/21 04:48	1
13C4 PFHpA	126		50 - 150	10/28/21 18:22	10/30/21 04:48	1
13C4 PFOA	135		50 - 150	10/28/21 18:22	10/30/21 04:48	1
13C5 PFNA	125		50 - 150	10/28/21 18:22	10/30/21 04:48	1
13C2 PFDA	124		50 - 150	10/28/21 18:22	10/30/21 04:48	1
13C2 PFUnA	122		50 - 150	10/28/21 18:22	10/30/21 04:48	1
13C2 PFDoA	131		50 - 150	10/28/21 18:22	10/30/21 04:48	1
13C2 PFTeDA	137		50 - 150	10/28/21 18:22	10/30/21 04:48	1
13C3 PFBS	137		50 - 150	10/28/21 18:22	10/30/21 04:48	1
18O2 PFHxS	122		50 - 150	10/28/21 18:22	10/30/21 04:48	1
13C4 PFOS	127		50 - 150	10/28/21 18:22	10/30/21 04:48	1
d3-NMeFOSAA	122		50 - 150	10/28/21 18:22	10/30/21 04:48	1
d5-NEtFOSAA	122		50 - 150	10/28/21 18:22	10/30/21 04:48	1
13C3 HFPO-DA	117		50 - 150	10/28/21 18:22	10/30/21 04:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	20.8		0.1	0.1	%			10/28/21 12:18	1
Percent Solids	79.2		0.1	0.1	%			10/28/21 12:18	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

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		0.26	0.040	ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.26	0.029	ug/Kg	☼	10/28/21 11:53	10/30/21 00:39	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.26	0.061	ug/Kg	☼	10/28/21 11:53	10/30/21 00:39	1
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosafuoro-3-oxaundecane-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 - 150	10/28/21 11:53	10/30/21 00:39	1
13C3 PFBS	109		50 - 150	10/28/21 11:53	10/30/21 00:39	1
18O2 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 - 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
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

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

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		0.24	0.038	ug/Kg	☼	10/28/21 11:53	10/30/21 01:10	1
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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.24	0.028	ug/Kg	☼	10/28/21 11:53	10/30/21 01:10	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.24	0.058	ug/Kg	☼	10/28/21 11:53	10/30/21 01:10	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 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 - 150	10/28/21 11:53	10/30/21 01:10	1
13C3 PFBS	107		50 - 150	10/28/21 11:53	10/30/21 01:10	1
18O2 PFHxS	94		50 - 150	10/28/21 11:53	10/30/21 01:10	1
13C4 PFOS	105		50 - 150	10/28/21 11:53	10/30/21 01:10	1
d3-NMeFOSAA	107		50 - 150	10/28/21 11:53	10/30/21 01:10	1
d5-NEtFOSAA	104		50 - 150	10/28/21 11:53	10/30/21 01:10	1
13C3 HFPO-DA	95		50 - 150	10/28/21 11:53	10/30/21 01:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	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	%			10/28/21 12:18	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

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		0.24	0.037	ug/Kg	☼	10/28/21 11:53	10/30/21 01:21	1
Perfluoroheptanoic acid (PFHpA)	ND		0.24	0.045	ug/Kg	☼	10/28/21 11:53	10/30/21 01:21	1
Perfluorooctanoic acid (PFOA)	ND		0.24	0.063	ug/Kg	☼	10/28/21 11:53	10/30/21 01:21	1
Perfluorononanoic acid (PFNA)	ND		0.24	0.026	ug/Kg	☼	10/28/21 11:53	10/30/21 01:21	1
Perfluorodecanoic acid (PFDA)	ND		0.24	0.057	ug/Kg	☼	10/28/21 11:53	10/30/21 01:21	1
Perfluoroundecanoic acid (PFUnA)	ND		0.24	0.050	ug/Kg	☼	10/28/21 11:53	10/30/21 01:21	1
Perfluorododecanoic acid (PFDoA)	ND		0.24	0.036	ug/Kg	☼	10/28/21 11:53	10/30/21 01:21	1
Perfluorotridecanoic acid (PFTriA)	ND		0.24	0.025	ug/Kg	☼	10/28/21 11:53	10/30/21 01:21	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.24	0.044	ug/Kg	☼	10/28/21 11:53	10/30/21 01:21	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.24	0.045	ug/Kg	☼	10/28/21 11:53	10/30/21 01:21	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.24	0.034	ug/Kg	☼	10/28/21 11:53	10/30/21 01:21	1
Perfluorooctanesulfonic acid (PFOS)	0.15	J I	0.24	0.051	ug/Kg	☼	10/28/21 11:53	10/30/21 01:21	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.24	0.027	ug/Kg	☼	10/28/21 11:53	10/30/21 01:21	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.24	0.057	ug/Kg	☼	10/28/21 11:53	10/30/21 01:21	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.24	0.041	ug/Kg	☼	10/28/21 11:53	10/30/21 01:21	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.24	0.049	ug/Kg	☼	10/28/21 11:53	10/30/21 01:21	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.24	0.037	ug/Kg	☼	10/28/21 11:53	10/30/21 01:21	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.24	0.046	ug/Kg	☼	10/28/21 11:53	10/30/21 01:21	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	92		50 - 150	10/28/21 11:53	10/30/21 01:21	1
13C4 PFHpA	98		50 - 150	10/28/21 11:53	10/30/21 01:21	1
13C4 PFOA	105		50 - 150	10/28/21 11:53	10/30/21 01:21	1
13C5 PFNA	98		50 - 150	10/28/21 11:53	10/30/21 01:21	1
13C2 PFDA	96		50 - 150	10/28/21 11:53	10/30/21 01:21	1
13C2 PFUnA	87		50 - 150	10/28/21 11:53	10/30/21 01:21	1
13C2 PFDoA	79		50 - 150	10/28/21 11:53	10/30/21 01:21	1
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	1
18O2 PFHxS	95		50 - 150	10/28/21 11:53	10/30/21 01:21	1
13C4 PFOS	101		50 - 150	10/28/21 11:53	10/30/21 01:21	1
d3-NMeFOSAA	93		50 - 150	10/28/21 11:53	10/30/21 01:21	1
d5-NEtFOSAA	92		50 - 150	10/28/21 11:53	10/30/21 01:21	1
13C3 HFPO-DA	99		50 - 150	10/28/21 11:53	10/30/21 01:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	25.6		0.1	0.1	%			10/28/21 12:18	1
Percent Solids	74.4		0.1	0.1	%			10/28/21 12:18	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

Client Sample ID: 21GST-DPSED-024

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

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	0.036	ug/Kg	☼	10/28/21 11:53	10/30/21 01:31	1
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.044	ug/Kg	☼	10/28/21 11:53	10/30/21 01:31	1
Perfluorooctanoic acid (PFOA)	ND		0.23	0.062	ug/Kg	☼	10/28/21 11:53	10/30/21 01:31	1
Perfluorononanoic acid (PFNA)	ND		0.23	0.026	ug/Kg	☼	10/28/21 11:53	10/30/21 01:31	1
Perfluorodecanoic acid (PFDA)	ND		0.23	0.056	ug/Kg	☼	10/28/21 11:53	10/30/21 01:31	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.049	ug/Kg	☼	10/28/21 11:53	10/30/21 01:31	1
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.035	ug/Kg	☼	10/28/21 11:53	10/30/21 01:31	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.024	ug/Kg	☼	10/28/21 11:53	10/30/21 01:31	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.043	ug/Kg	☼	10/28/21 11:53	10/30/21 01:31	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.044	ug/Kg	☼	10/28/21 11:53	10/30/21 01:31	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.23	0.034	ug/Kg	☼	10/28/21 11:53	10/30/21 01:31	1
Perfluorooctanesulfonic acid (PFOS)	0.47	I	0.23	0.050	ug/Kg	☼	10/28/21 11:53	10/30/21 01:31	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.23	0.027	ug/Kg	☼	10/28/21 11:53	10/30/21 01:31	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.23	0.056	ug/Kg	☼	10/28/21 11:53	10/30/21 01:31	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.23	0.041	ug/Kg	☼	10/28/21 11:53	10/30/21 01:31	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23	0.048	ug/Kg	☼	10/28/21 11:53	10/30/21 01:31	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.23	0.036	ug/Kg	☼	10/28/21 11:53	10/30/21 01:31	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.045	ug/Kg	☼	10/28/21 11:53	10/30/21 01:31	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	94		50 - 150	10/28/21 11:53	10/30/21 01:31	1
13C4 PFHpA	99		50 - 150	10/28/21 11:53	10/30/21 01:31	1
13C4 PFOA	106		50 - 150	10/28/21 11:53	10/30/21 01:31	1
13C5 PFNA	104		50 - 150	10/28/21 11:53	10/30/21 01:31	1
13C2 PFDA	100		50 - 150	10/28/21 11:53	10/30/21 01:31	1
13C2 PFUnA	91		50 - 150	10/28/21 11:53	10/30/21 01:31	1
13C2 PFDoA	95		50 - 150	10/28/21 11:53	10/30/21 01:31	1
13C2 PFTeDA	91		50 - 150	10/28/21 11:53	10/30/21 01:31	1
13C3 PFBS	109		50 - 150	10/28/21 11:53	10/30/21 01:31	1
18O2 PFHxS	97		50 - 150	10/28/21 11:53	10/30/21 01:31	1
13C4 PFOS	105		50 - 150	10/28/21 11:53	10/30/21 01:31	1
d3-NMeFOSAA	109		50 - 150	10/28/21 11:53	10/30/21 01:31	1
d5-NEtFOSAA	109		50 - 150	10/28/21 11:53	10/30/21 01:31	1
13C3 HFPO-DA	90		50 - 150	10/28/21 11:53	10/30/21 01:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	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 Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

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		0.27	0.041	ug/Kg	☼	10/28/21 11:53	10/30/21 01:42	1
Perfluoroheptanoic acid (PFHpA)	ND		0.27	0.051	ug/Kg	☼	10/28/21 11:53	10/30/21 01:42	1
Perfluorooctanoic acid (PFOA)	ND		0.27	0.071	ug/Kg	☼	10/28/21 11:53	10/30/21 01:42	1
Perfluorononanoic acid (PFNA)	ND		0.27	0.029	ug/Kg	☼	10/28/21 11:53	10/30/21 01:42	1
Perfluorodecanoic acid (PFDA)	ND		0.27	0.064	ug/Kg	☼	10/28/21 11:53	10/30/21 01:42	1
Perfluoroundecanoic acid (PFUnA)	ND		0.27	0.056	ug/Kg	☼	10/28/21 11:53	10/30/21 01:42	1
Perfluorododecanoic acid (PFDoA)	ND		0.27	0.040	ug/Kg	☼	10/28/21 11:53	10/30/21 01:42	1
Perfluorotridecanoic acid (PFTriA)	ND		0.27	0.028	ug/Kg	☼	10/28/21 11:53	10/30/21 01:42	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.27	0.049	ug/Kg	☼	10/28/21 11:53	10/30/21 01:42	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.27	0.051	ug/Kg	☼	10/28/21 11:53	10/30/21 01:42	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.27	0.039	ug/Kg	☼	10/28/21 11:53	10/30/21 01:42	1
Perfluorooctanesulfonic acid (PFOS)	1.0	I	0.27	0.057	ug/Kg	☼	10/28/21 11:53	10/30/21 01:42	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.27	0.031	ug/Kg	☼	10/28/21 11:53	10/30/21 01:42	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.27	0.064	ug/Kg	☼	10/28/21 11:53	10/30/21 01:42	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.27	0.047	ug/Kg	☼	10/28/21 11:53	10/30/21 01:42	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.27	0.055	ug/Kg	☼	10/28/21 11:53	10/30/21 01:42	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.27	0.041	ug/Kg	☼	10/28/21 11:53	10/30/21 01:42	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.27	0.052	ug/Kg	☼	10/28/21 11:53	10/30/21 01:42	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	86		50 - 150	10/28/21 11:53	10/30/21 01:42	1
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	1
13C2 PFDA	102		50 - 150	10/28/21 11:53	10/30/21 01:42	1
13C2 PFUnA	100		50 - 150	10/28/21 11:53	10/30/21 01:42	1
13C2 PFDoA	100		50 - 150	10/28/21 11:53	10/30/21 01:42	1
13C2 PFTeDA	109		50 - 150	10/28/21 11:53	10/30/21 01:42	1
13C3 PFBS	104		50 - 150	10/28/21 11:53	10/30/21 01:42	1
18O2 PFHxS	94		50 - 150	10/28/21 11:53	10/30/21 01:42	1
13C4 PFOS	104		50 - 150	10/28/21 11:53	10/30/21 01:42	1
d3-NMeFOSAA	113		50 - 150	10/28/21 11:53	10/30/21 01:42	1
d5-NEtFOSAA	111		50 - 150	10/28/21 11:53	10/30/21 01:42	1
13C3 HFPO-DA	88		50 - 150	10/28/21 11:53	10/30/21 01:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	26.2		0.1	0.1	%			10/28/21 12:18	1
Percent Solids	73.8		0.1	0.1	%			10/28/21 12:18	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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 for QSM 5.3, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.25	0.039	ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.25	0.029	ug/Kg	☼	10/28/21 11:53	10/30/21 01:52	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.25	0.061	ug/Kg	☼	10/28/21 11:53	10/30/21 01:52	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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
18O2 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	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	24.2		0.1	0.1	%			10/28/21 12:18	1
Percent Solids	75.8		0.1	0.1	%			10/28/21 12:18	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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 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	☼	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	1
Perfluorooctanoic acid (PFOA)	ND		0.23	0.060	ug/Kg	☼	10/28/21 11:53	10/30/21 02:23	1
Perfluorononanoic acid (PFNA)	ND		0.23	0.025	ug/Kg	☼	10/28/21 11:53	10/30/21 02:23	1
Perfluorodecanoic acid (PFDA)	ND		0.23	0.055	ug/Kg	☼	10/28/21 11:53	10/30/21 02:23	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.048	ug/Kg	☼	10/28/21 11:53	10/30/21 02:23	1
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	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.042	ug/Kg	☼	10/28/21 11:53	10/30/21 02:23	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.043	ug/Kg	☼	10/28/21 11:53	10/30/21 02:23	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.23	0.033	ug/Kg	☼	10/28/21 11:53	10/30/21 02:23	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.23	0.049	ug/Kg	☼	10/28/21 11:53	10/30/21 02:23	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.23	0.026	ug/Kg	☼	10/28/21 11:53	10/30/21 02:23	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.23	0.055	ug/Kg	☼	10/28/21 11:53	10/30/21 02:23	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.23	0.040	ug/Kg	☼	10/28/21 11:53	10/30/21 02:23	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23	0.047	ug/Kg	☼	10/28/21 11:53	10/30/21 02:23	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.23	0.035	ug/Kg	☼	10/28/21 11:53	10/30/21 02:23	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.044	ug/Kg	☼	10/28/21 11:53	10/30/21 02:23	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	93		50 - 150	10/28/21 11:53	10/30/21 02:23	1
13C4 PFHpA	94		50 - 150	10/28/21 11:53	10/30/21 02:23	1
13C4 PFOA	105		50 - 150	10/28/21 11:53	10/30/21 02:23	1
13C5 PFNA	108		50 - 150	10/28/21 11:53	10/30/21 02:23	1
13C2 PFDA	100		50 - 150	10/28/21 11:53	10/30/21 02:23	1
13C2 PFUnA	93		50 - 150	10/28/21 11:53	10/30/21 02:23	1
13C2 PFDoA	96		50 - 150	10/28/21 11:53	10/30/21 02:23	1
13C2 PFTeDA	95		50 - 150	10/28/21 11:53	10/30/21 02:23	1
13C3 PFBS	102		50 - 150	10/28/21 11:53	10/30/21 02:23	1
18O2 PFHxS	97		50 - 150	10/28/21 11:53	10/30/21 02:23	1
13C4 PFOS	103		50 - 150	10/28/21 11:53	10/30/21 02:23	1
d3-NMeFOSAA	117		50 - 150	10/28/21 11:53	10/30/21 02:23	1
d5-NEtFOSAA	105		50 - 150	10/28/21 11:53	10/30/21 02:23	1
13C3 HFPO-DA	91		50 - 150	10/28/21 11:53	10/30/21 02:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	18.2		0.1	0.1	%			10/28/21 12:18	1
Percent Solids	81.8		0.1	0.1	%			10/28/21 12:18	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

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	0.032	ug/Kg	☼	10/28/21 11:53	10/30/21 02:34	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.039	ug/Kg	☼	10/28/21 11:53	10/30/21 02:34	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.055	ug/Kg	☼	10/28/21 11:53	10/30/21 02:34	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.023	ug/Kg	☼	10/28/21 11:53	10/30/21 02:34	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.050	ug/Kg	☼	10/28/21 11:53	10/30/21 02:34	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.043	ug/Kg	☼	10/28/21 11:53	10/30/21 02:34	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.031	ug/Kg	☼	10/28/21 11:53	10/30/21 02:34	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.022	ug/Kg	☼	10/28/21 11:53	10/30/21 02:34	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.038	ug/Kg	☼	10/28/21 11:53	10/30/21 02:34	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.039	ug/Kg	☼	10/28/21 11:53	10/30/21 02:34	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21	0.030	ug/Kg	☼	10/28/21 11:53	10/30/21 02:34	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.21	0.044	ug/Kg	☼	10/28/21 11:53	10/30/21 02:34	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	☼	10/28/21 11:53	10/30/21 02:34	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.050	ug/Kg	☼	10/28/21 11:53	10/30/21 02:34	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.036	ug/Kg	☼	10/28/21 11:53	10/30/21 02:34	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.042	ug/Kg	☼	10/28/21 11:53	10/30/21 02:34	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.032	ug/Kg	☼	10/28/21 11:53	10/30/21 02:34	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.040	ug/Kg	☼	10/28/21 11:53	10/30/21 02:34	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	96		50 - 150	10/28/21 11:53	10/30/21 02:34	1
13C4 PFHpA	101		50 - 150	10/28/21 11:53	10/30/21 02:34	1
13C4 PFOA	111		50 - 150	10/28/21 11:53	10/30/21 02:34	1
13C5 PFNA	111		50 - 150	10/28/21 11:53	10/30/21 02:34	1
13C2 PFDA	110		50 - 150	10/28/21 11:53	10/30/21 02:34	1
13C2 PFUnA	100		50 - 150	10/28/21 11:53	10/30/21 02:34	1
13C2 PFDoA	104		50 - 150	10/28/21 11:53	10/30/21 02:34	1
13C2 PFTeDA	111		50 - 150	10/28/21 11:53	10/30/21 02:34	1
13C3 PFBS	114		50 - 150	10/28/21 11:53	10/30/21 02:34	1
18O2 PFHxS	99		50 - 150	10/28/21 11:53	10/30/21 02:34	1
13C4 PFOS	109		50 - 150	10/28/21 11:53	10/30/21 02:34	1
d3-NMeFOSAA	113		50 - 150	10/28/21 11:53	10/30/21 02:34	1
d5-NEtFOSAA	113		50 - 150	10/28/21 11:53	10/30/21 02:34	1
13C3 HFPO-DA	99		50 - 150	10/28/21 11:53	10/30/21 02:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	12.9		0.1	0.1	%			10/28/21 12:18	1
Percent Solids	87.1		0.1	0.1	%			10/28/21 12:18	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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 for QSM 5.3, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.21	0.032	ug/Kg	☼	10/28/21 11:53	10/30/21 02:44	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.039	ug/Kg	☼	10/28/21 11:53	10/30/21 02:44	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.055	ug/Kg	☼	10/28/21 11:53	10/30/21 02:44	1
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 (PFHxS)	0.052	J	0.21	0.030	ug/Kg	☼	10/28/21 11:53	10/30/21 02:44	1
Perfluorooctanesulfonic acid (PFOS)	0.62	I	0.21	0.045	ug/Kg	☼	10/28/21 11:53	10/30/21 02:44	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	☼	10/28/21 11:53	10/30/21 02:44	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.050	ug/Kg	☼	10/28/21 11:53	10/30/21 02:44	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.036	ug/Kg	☼	10/28/21 11:53	10/30/21 02:44	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.043	ug/Kg	☼	10/28/21 11:53	10/30/21 02:44	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.032	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 - 150	10/28/21 11:53	10/30/21 02:44	1
13C2 PFUnA	88		50 - 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	1
13C2 PFTeDA	92		50 - 150	10/28/21 11:53	10/30/21 02:44	1
13C3 PFBS	110		50 - 150	10/28/21 11:53	10/30/21 02:44	1
18O2 PFHxS	97		50 - 150	10/28/21 11:53	10/30/21 02:44	1
13C4 PFOS	107		50 - 150	10/28/21 11:53	10/30/21 02:44	1
d3-NMeFOSAA	82		50 - 150	10/28/21 11:53	10/30/21 02:44	1
d5-NEtFOSAA	84		50 - 150	10/28/21 11:53	10/30/21 02:44	1
13C3 HFPO-DA	94		50 - 150	10/28/21 11:53	10/30/21 02:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	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	%			10/28/21 12:18	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

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	0.036	ug/Kg	☼	10/28/21 11:53	10/30/21 02:55	1
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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.23	0.027	ug/Kg	☼	10/28/21 11:53	10/30/21 02:55	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.23	0.056	ug/Kg	☼	10/28/21 11:53	10/30/21 02:55	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 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 - 150	10/28/21 11:53	10/30/21 02:55	1
13C3 PFBS	103		50 - 150	10/28/21 11:53	10/30/21 02:55	1
18O2 PFHxS	90		50 - 150	10/28/21 11:53	10/30/21 02:55	1
13C4 PFOS	101		50 - 150	10/28/21 11:53	10/30/21 02:55	1
d3-NMeFOSAA	110		50 - 150	10/28/21 11:53	10/30/21 02:55	1
d5-NEtFOSAA	111		50 - 150	10/28/21 11:53	10/30/21 02:55	1
13C3 HFPO-DA	92		50 - 150	10/28/21 11:53	10/30/21 02:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	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

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

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		0.25	0.038	ug/Kg	☼	10/28/21 11:53	10/30/21 03:05	1
Perfluoroheptanoic acid (PFHpA)	ND		0.25	0.047	ug/Kg	☼	10/28/21 11:53	10/30/21 03:05	1
Perfluorooctanoic acid (PFOA)	ND		0.25	0.065	ug/Kg	☼	10/28/21 11:53	10/30/21 03:05	1
Perfluorononanoic acid (PFNA)	ND		0.25	0.027	ug/Kg	☼	10/28/21 11:53	10/30/21 03:05	1
Perfluorodecanoic acid (PFDA)	ND		0.25	0.059	ug/Kg	☼	10/28/21 11:53	10/30/21 03:05	1
Perfluoroundecanoic acid (PFUnA)	ND		0.25	0.052	ug/Kg	☼	10/28/21 11:53	10/30/21 03:05	1
Perfluorododecanoic acid (PFDoA)	ND		0.25	0.037	ug/Kg	☼	10/28/21 11:53	10/30/21 03:05	1
Perfluorotridecanoic acid (PFTriA)	ND		0.25	0.026	ug/Kg	☼	10/28/21 11:53	10/30/21 03:05	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.25	0.046	ug/Kg	☼	10/28/21 11:53	10/30/21 03:05	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.25	0.047	ug/Kg	☼	10/28/21 11:53	10/30/21 03:05	1
Perfluorohexanesulfonic acid (PFHxS)	0.12	J	0.25	0.036	ug/Kg	☼	10/28/21 11:53	10/30/21 03:05	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.25	0.053	ug/Kg	☼	10/28/21 11:53	10/30/21 03:05	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.25	0.028	ug/Kg	☼	10/28/21 11:53	10/30/21 03:05	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.25	0.059	ug/Kg	☼	10/28/21 11:53	10/30/21 03:05	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.25	0.043	ug/Kg	☼	10/28/21 11:53	10/30/21 03:05	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.051	ug/Kg	☼	10/28/21 11:53	10/30/21 03:05	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.25	0.038	ug/Kg	☼	10/28/21 11:53	10/30/21 03:05	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.25	0.048	ug/Kg	☼	10/28/21 11:53	10/30/21 03:05	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	90		50 - 150	10/28/21 11:53	10/30/21 03:05	1
13C4 PFHpA	95		50 - 150	10/28/21 11:53	10/30/21 03:05	1
13C4 PFOA	106		50 - 150	10/28/21 11:53	10/30/21 03:05	1
13C5 PFNA	111		50 - 150	10/28/21 11:53	10/30/21 03:05	1
13C2 PFDA	97		50 - 150	10/28/21 11:53	10/30/21 03:05	1
13C2 PFUnA	93		50 - 150	10/28/21 11:53	10/30/21 03:05	1
13C2 PFDoA	91		50 - 150	10/28/21 11:53	10/30/21 03:05	1
13C2 PFTeDA	96		50 - 150	10/28/21 11:53	10/30/21 03:05	1
13C3 PFBS	107		50 - 150	10/28/21 11:53	10/30/21 03:05	1
18O2 PFHxS	96		50 - 150	10/28/21 11:53	10/30/21 03:05	1
13C4 PFOS	106		50 - 150	10/28/21 11:53	10/30/21 03:05	1
d3-NMeFOSAA	113		50 - 150	10/28/21 11:53	10/30/21 03:05	1
d5-NEtFOSAA	102		50 - 150	10/28/21 11:53	10/30/21 03:05	1
13C3 HFPO-DA	90		50 - 150	10/28/21 11:53	10/30/21 03:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	26.7		0.1	0.1	%			10/28/21 12:18	1
Percent Solids	73.3		0.1	0.1	%			10/28/21 12:18	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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 for QSM 5.3, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.22	0.034	ug/Kg	☼	10/28/21 11:53	10/30/21 03:16	1
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.042	ug/Kg	☼	10/28/21 11:53	10/30/21 03:16	1
Perfluorooctanoic acid (PFOA)	ND		0.22	0.058	ug/Kg	☼	10/28/21 11:53	10/30/21 03:16	1
Perfluorononanoic acid (PFNA)	ND		0.22	0.024	ug/Kg	☼	10/28/21 11:53	10/30/21 03:16	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.053	ug/Kg	☼	10/28/21 11:53	10/30/21 03:16	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.046	ug/Kg	☼	10/28/21 11:53	10/30/21 03:16	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.033	ug/Kg	☼	10/28/21 11:53	10/30/21 03:16	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.023	ug/Kg	☼	10/28/21 11:53	10/30/21 03:16	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.041	ug/Kg	☼	10/28/21 11:53	10/30/21 03:16	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.042	ug/Kg	☼	10/28/21 11:53	10/30/21 03:16	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.22	0.032	ug/Kg	☼	10/28/21 11:53	10/30/21 03:16	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.22	0.047	ug/Kg	☼	10/28/21 11:53	10/30/21 03:16	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.22	0.025	ug/Kg	☼	10/28/21 11:53	10/30/21 03:16	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.22	0.053	ug/Kg	☼	10/28/21 11:53	10/30/21 03:16	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.22	0.038	ug/Kg	☼	10/28/21 11:53	10/30/21 03:16	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22	0.045	ug/Kg	☼	10/28/21 11:53	10/30/21 03:16	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.22	0.034	ug/Kg	☼	10/28/21 11:53	10/30/21 03:16	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.043	ug/Kg	☼	10/28/21 11:53	10/30/21 03:16	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	97		50 - 150	10/28/21 11:53	10/30/21 03:16	1
13C4 PFHpA	107		50 - 150	10/28/21 11:53	10/30/21 03:16	1
13C4 PFOA	111		50 - 150	10/28/21 11:53	10/30/21 03:16	1
13C5 PFNA	111		50 - 150	10/28/21 11:53	10/30/21 03:16	1
13C2 PFDA	101		50 - 150	10/28/21 11:53	10/30/21 03:16	1
13C2 PFUnA	104		50 - 150	10/28/21 11:53	10/30/21 03:16	1
13C2 PFDoA	103		50 - 150	10/28/21 11:53	10/30/21 03:16	1
13C2 PFTeDA	107		50 - 150	10/28/21 11:53	10/30/21 03:16	1
13C3 PFBS	106		50 - 150	10/28/21 11:53	10/30/21 03:16	1
18O2 PFHxS	100		50 - 150	10/28/21 11:53	10/30/21 03:16	1
13C4 PFOS	117		50 - 150	10/28/21 11:53	10/30/21 03:16	1
d3-NMeFOSAA	121		50 - 150	10/28/21 11:53	10/30/21 03:16	1
d5-NEtFOSAA	119		50 - 150	10/28/21 11:53	10/30/21 03:16	1
13C3 HFPO-DA	96		50 - 150	10/28/21 11:53	10/30/21 03:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	16.1		0.1	0.1	%			10/28/21 12:18	1
Percent Solids	83.9		0.1	0.1	%			10/28/21 12:18	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

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)	0.093	J	0.26	0.040	ug/Kg	☼	10/28/21 11:53	10/30/21 03:26	1
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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.26	0.030	ug/Kg	☼	10/28/21 11:53	10/30/21 03:26	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.26	0.063	ug/Kg	☼	10/28/21 11:53	10/30/21 03:26	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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
18O2 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 - 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	Result	Qualifier	RL	MDL	Unit	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

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

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)	0.090	J	0.23	0.035	ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.23	0.026	ug/Kg	☼	10/28/21 11:53	10/30/21 03:36	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.23	0.054	ug/Kg	☼	10/28/21 11:53	10/30/21 03:36	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 150	10/28/21 11:53	10/30/21 03:36	1
13C3 PFBS	102		50 - 150	10/28/21 11:53	10/30/21 03:36	1
18O2 PFHxS	91		50 - 150	10/28/21 11:53	10/30/21 03:36	1
13C4 PFOS	103		50 - 150	10/28/21 11:53	10/30/21 03:36	1
d3-NMeFOSAA	113		50 - 150	10/28/21 11:53	10/30/21 03:36	1
d5-NEtFOSAA	103		50 - 150	10/28/21 11:53	10/30/21 03:36	1
13C3 HFPO-DA	91		50 - 150	10/28/21 11:53	10/30/21 03:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	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

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

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		0.24	0.037	ug/Kg	☼	10/28/21 11:53	10/30/21 03:47	1
Perfluoroheptanoic acid (PFHpA)	ND		0.24	0.045	ug/Kg	☼	10/28/21 11:53	10/30/21 03:47	1
Perfluorooctanoic acid (PFOA)	ND		0.24	0.063	ug/Kg	☼	10/28/21 11:53	10/30/21 03:47	1
Perfluorononanoic acid (PFNA)	ND		0.24	0.026	ug/Kg	☼	10/28/21 11:53	10/30/21 03:47	1
Perfluorodecanoic acid (PFDA)	ND		0.24	0.057	ug/Kg	☼	10/28/21 11:53	10/30/21 03:47	1
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	1
Perfluorotridecanoic acid (PFTriA)	ND		0.24	0.025	ug/Kg	☼	10/28/21 11:53	10/30/21 03:47	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.24	0.044	ug/Kg	☼	10/28/21 11:53	10/30/21 03:47	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.24	0.045	ug/Kg	☼	10/28/21 11:53	10/30/21 03:47	1
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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.24	0.027	ug/Kg	☼	10/28/21 11:53	10/30/21 03:47	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.24	0.057	ug/Kg	☼	10/28/21 11:53	10/30/21 03:47	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.24	0.041	ug/Kg	☼	10/28/21 11:53	10/30/21 03:47	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.24	0.048	ug/Kg	☼	10/28/21 11:53	10/30/21 03:47	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.24	0.037	ug/Kg	☼	10/28/21 11:53	10/30/21 03:47	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.24	0.046	ug/Kg	☼	10/28/21 11:53	10/30/21 03:47	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	94		50 - 150	10/28/21 11:53	10/30/21 03:47	1
13C4 PFHpA	96		50 - 150	10/28/21 11:53	10/30/21 03:47	1
13C4 PFOA	108		50 - 150	10/28/21 11:53	10/30/21 03:47	1
13C5 PFNA	103		50 - 150	10/28/21 11:53	10/30/21 03:47	1
13C2 PFDA	99		50 - 150	10/28/21 11:53	10/30/21 03:47	1
13C2 PFUnA	96		50 - 150	10/28/21 11:53	10/30/21 03:47	1
13C2 PFDoA	96		50 - 150	10/28/21 11:53	10/30/21 03:47	1
13C2 PFTeDA	99		50 - 150	10/28/21 11:53	10/30/21 03:47	1
13C3 PFBS	104		50 - 150	10/28/21 11:53	10/30/21 03:47	1
18O2 PFHxS	93		50 - 150	10/28/21 11:53	10/30/21 03:47	1
13C4 PFOS	106		50 - 150	10/28/21 11:53	10/30/21 03:47	1
d3-NMeFOSAA	109		50 - 150	10/28/21 11:53	10/30/21 03:47	1
d5-NEtFOSAA	108		50 - 150	10/28/21 11:53	10/30/21 03:47	1
13C3 HFPO-DA	95		50 - 150	10/28/21 11:53	10/30/21 03:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	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

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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 for QSM 5.3, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.26	0.040	ug/Kg	☼	10/28/21 11:53	10/30/21 03:57	1
Perfluoroheptanoic acid (PFHpA)	ND		0.26	0.049	ug/Kg	☼	10/28/21 11:53	10/30/21 03:57	1
Perfluorooctanoic acid (PFOA)	ND		0.26	0.069	ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.26	0.030	ug/Kg	☼	10/28/21 11:53	10/30/21 03:57	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.26	0.062	ug/Kg	☼	10/28/21 11:53	10/30/21 03:57	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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
18O2 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	Result	Qualifier	RL	MDL	Unit	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

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

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		0.46	0.071	ug/Kg	☼	10/28/21 11:53	10/30/21 04:28	1
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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.46	0.053	ug/Kg	☼	10/28/21 11:53	10/30/21 04:28	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.46	0.11	ug/Kg	☼	10/28/21 11:53	10/30/21 04:28	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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
18O2 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	Result	Qualifier	RL	MDL	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	%			10/28/21 12:18	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

Client Sample ID: 21GST-SED-014

Lab Sample ID: 320-80903-31

Date Collected: 10/17/21 15:05

Matrix: Solid

Date Received: 10/27/21 12:25

Percent Solids: 70.6

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		0.26	0.041	ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.26	0.030	ug/Kg	☼	10/28/21 11:53	10/30/21 04:39	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.26	0.063	ug/Kg	☼	10/28/21 11:53	10/30/21 04:39	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.26	0.046	ug/Kg	☼	10/28/21 11:53	10/30/21 04:39	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.26	0.054	ug/Kg	☼	10/28/21 11:53	10/30/21 04:39	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.26	0.041	ug/Kg	☼	10/28/21 11:53	10/30/21 04:39	1
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
18O2 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	MDL	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	%			10/28/21 12:18	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

Client Sample ID: 21GST-SED-015

Lab Sample ID: 320-80903-32

Date Collected: 10/17/21 15:20

Matrix: Solid

Date Received: 10/27/21 12:25

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	1
Perfluoroheptanoic acid (PFHpA)	ND		0.35	0.066	ug/Kg	☼	10/28/21 11:53	10/30/21 04:49	1
Perfluorooctanoic acid (PFOA)	ND		0.35	0.092	ug/Kg	☼	10/28/21 11:53	10/30/21 04:49	1
Perfluorononanoic acid (PFNA)	ND		0.35	0.038	ug/Kg	☼	10/28/21 11:53	10/30/21 04:49	1
Perfluorodecanoic acid (PFDA)	ND		0.35	0.083	ug/Kg	☼	10/28/21 11:53	10/30/21 04:49	1
Perfluoroundecanoic acid (PFUnA)	ND		0.35	0.073	ug/Kg	☼	10/28/21 11:53	10/30/21 04:49	1
Perfluorododecanoic acid (PFDoA)	ND		0.35	0.052	ug/Kg	☼	10/28/21 11:53	10/30/21 04:49	1
Perfluorotridecanoic acid (PFTriA)	ND		0.35	0.036	ug/Kg	☼	10/28/21 11:53	10/30/21 04:49	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.35	0.064	ug/Kg	☼	10/28/21 11:53	10/30/21 04:49	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.35	0.066	ug/Kg	☼	10/28/21 11:53	10/30/21 04:49	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.35	0.050	ug/Kg	☼	10/28/21 11:53	10/30/21 04:49	1
Perfluorooctanesulfonic acid (PFOS)	0.92	I	0.35	0.074	ug/Kg	☼	10/28/21 11:53	10/30/21 04:49	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.059	J	0.35	0.040	ug/Kg	☼	10/28/21 11:53	10/30/21 04:49	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.35	0.083	ug/Kg	☼	10/28/21 11:53	10/30/21 04:49	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.35	0.061	ug/Kg	☼	10/28/21 11:53	10/30/21 04:49	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.35	0.071	ug/Kg	☼	10/28/21 11:53	10/30/21 04:49	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.35	0.054	ug/Kg	☼	10/28/21 11:53	10/30/21 04:49	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.35	0.068	ug/Kg	☼	10/28/21 11:53	10/30/21 04:49	1

Isotope Dilution	%Recovery	Qualifier	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 - 150	10/28/21 11:53	10/30/21 04:49	1
13C4 PFOA	106		50 - 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 - 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 - 150	10/28/21 11:53	10/30/21 04:49	1
13C3 PFBS	104		50 - 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 - 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 - 150	10/28/21 11:53	10/30/21 04:49	1

General Chemistry

Analyte	Result	Qualifier	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

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

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		0.27	0.042	ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.27	0.031	ug/Kg	☼	10/28/21 11:53	10/30/21 05:00	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.27	0.065	ug/Kg	☼	10/28/21 11:53	10/30/21 05:00	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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
18O2 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

Analyte	Result	Qualifier	RL	MDL	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 Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

Client Sample ID: 21GST-SED-118

Lab Sample ID: 320-80903-34

Date Collected: 10/17/21 15:35

Matrix: Solid

Date Received: 10/27/21 12:25

Percent Solids: 72.5

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		0.26	0.041	ug/Kg	☼	10/28/21 18:22	10/30/21 05:19	1
Perfluoroheptanoic acid (PFHpA)	ND		0.26	0.050	ug/Kg	☼	10/28/21 18:22	10/30/21 05:19	1
Perfluorooctanoic acid (PFOA)	ND		0.26	0.070	ug/Kg	☼	10/28/21 18:22	10/30/21 05:19	1
Perfluorononanoic acid (PFNA)	ND		0.26	0.029	ug/Kg	☼	10/28/21 18:22	10/30/21 05:19	1
Perfluorodecanoic acid (PFDA)	ND		0.26	0.064	ug/Kg	☼	10/28/21 18:22	10/30/21 05:19	1
Perfluoroundecanoic acid (PFUnA)	ND		0.26	0.056	ug/Kg	☼	10/28/21 18:22	10/30/21 05:19	1
Perfluorododecanoic acid (PFDoA)	ND		0.26	0.040	ug/Kg	☼	10/28/21 18:22	10/30/21 05:19	1
Perfluorotridecanoic acid (PFTriA)	ND		0.26	0.028	ug/Kg	☼	10/28/21 18:22	10/30/21 05:19	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.26	0.049	ug/Kg	☼	10/28/21 18:22	10/30/21 05:19	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.26	0.050	ug/Kg	☼	10/28/21 18:22	10/30/21 05:19	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.26	0.038	ug/Kg	☼	10/28/21 18:22	10/30/21 05:19	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.26	0.057	ug/Kg	☼	10/28/21 18:22	10/30/21 05:19	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.26	0.030	ug/Kg	☼	10/28/21 18:22	10/30/21 05:19	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.26	0.064	ug/Kg	☼	10/28/21 18:22	10/30/21 05:19	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.26	0.046	ug/Kg	☼	10/28/21 18:22	10/30/21 05:19	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.26	0.054	ug/Kg	☼	10/28/21 18:22	10/30/21 05:19	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.26	0.041	ug/Kg	☼	10/28/21 18:22	10/30/21 05:19	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.26	0.052	ug/Kg	☼	10/28/21 18:22	10/30/21 05:19	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	109		50 - 150	10/28/21 18:22	10/30/21 05:19	1
13C4 PFHpA	118		50 - 150	10/28/21 18:22	10/30/21 05:19	1
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
18O2 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	1
13C3 HFPO-DA	105		50 - 150	10/28/21 18:22	10/30/21 05:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	27.5		0.1	0.1	%			10/28/21 12:18	1
Percent Solids	72.5		0.1	0.1	%			10/28/21 12:18	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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 for QSM 5.3, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.22	0.035	ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.22	0.026	ug/Kg	☼	10/28/21 18:22	10/30/21 05:29	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.22	0.054	ug/Kg	☼	10/28/21 18:22	10/30/21 05:29	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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
18O2 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

Analyte	Result	Qualifier	RL	MDL	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 Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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 for QSM 5.3, Table B-15

Analyte	Result	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	1
Perfluorooctanoic acid (PFOA)	ND		0.25	0.067	ug/Kg	☼	10/28/21 18:22	10/30/21 05:39	1
Perfluorononanoic acid (PFNA)	ND		0.25	0.028	ug/Kg	☼	10/28/21 18:22	10/30/21 05:39	1
Perfluorodecanoic acid (PFDA)	ND		0.25	0.061	ug/Kg	☼	10/28/21 18:22	10/30/21 05:39	1
Perfluoroundecanoic acid (PFUnA)	ND		0.25	0.053	ug/Kg	☼	10/28/21 18:22	10/30/21 05:39	1
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	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.25	0.047	ug/Kg	☼	10/28/21 18:22	10/30/21 05:39	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.25	0.048	ug/Kg	☼	10/28/21 18:22	10/30/21 05:39	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.25	0.037	ug/Kg	☼	10/28/21 18:22	10/30/21 05:39	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.25	0.054	ug/Kg	☼	10/28/21 18:22	10/30/21 05:39	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.25	0.029	ug/Kg	☼	10/28/21 18:22	10/30/21 05:39	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.25	0.061	ug/Kg	☼	10/28/21 18:22	10/30/21 05:39	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.25	0.044	ug/Kg	☼	10/28/21 18:22	10/30/21 05:39	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.052	ug/Kg	☼	10/28/21 18:22	10/30/21 05:39	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.25	0.039	ug/Kg	☼	10/28/21 18:22	10/30/21 05:39	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.25	0.049	ug/Kg	☼	10/28/21 18:22	10/30/21 05:39	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	113		50 - 150	10/28/21 18:22	10/30/21 05:39	1
13C4 PFHpA	118		50 - 150	10/28/21 18:22	10/30/21 05:39	1
13C4 PFOA	128		50 - 150	10/28/21 18:22	10/30/21 05:39	1
13C5 PFNA	118		50 - 150	10/28/21 18:22	10/30/21 05:39	1
13C2 PFDA	118		50 - 150	10/28/21 18:22	10/30/21 05:39	1
13C2 PFUnA	121		50 - 150	10/28/21 18:22	10/30/21 05:39	1
13C2 PFDoA	128		50 - 150	10/28/21 18:22	10/30/21 05:39	1
13C2 PFTeDA	135		50 - 150	10/28/21 18:22	10/30/21 05:39	1
13C3 PFBS	140		50 - 150	10/28/21 18:22	10/30/21 05:39	1
18O2 PFHxS	119		50 - 150	10/28/21 18:22	10/30/21 05:39	1
13C4 PFOS	114		50 - 150	10/28/21 18:22	10/30/21 05:39	1
d3-NMeFOSAA	115		50 - 150	10/28/21 18:22	10/30/21 05:39	1
d5-NEtFOSAA	122		50 - 150	10/28/21 18:22	10/30/21 05:39	1
13C3 HFPO-DA	106		50 - 150	10/28/21 18:22	10/30/21 05:39	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	25.6		0.1	0.1	%			10/28/21 12:18	1
Percent Solids	74.4		0.1	0.1	%			10/28/21 12:18	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

Client Sample ID: 21GST-DPSED-020

Lab Sample ID: 320-80903-37

Date Collected: 10/17/21 16:25

Matrix: Solid

Date Received: 10/27/21 12:25

Percent Solids: 76.3

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		0.25	0.039	ug/Kg	☼	10/28/21 18:22	10/30/21 05:49	1
Perfluoroheptanoic acid (PFHpA)	ND		0.25	0.047	ug/Kg	☼	10/28/21 18:22	10/30/21 05:49	1
Perfluorooctanoic acid (PFOA)	ND		0.25	0.066	ug/Kg	☼	10/28/21 18:22	10/30/21 05:49	1
Perfluorononanoic acid (PFNA)	ND		0.25	0.027	ug/Kg	☼	10/28/21 18:22	10/30/21 05:49	1
Perfluorodecanoic acid (PFDA)	ND		0.25	0.060	ug/Kg	☼	10/28/21 18:22	10/30/21 05:49	1
Perfluoroundecanoic acid (PFUnA)	ND		0.25	0.052	ug/Kg	☼	10/28/21 18:22	10/30/21 05:49	1
Perfluorododecanoic acid (PFDoA)	ND		0.25	0.037	ug/Kg	☼	10/28/21 18:22	10/30/21 05:49	1
Perfluorotridecanoic acid (PFTriA)	ND		0.25	0.026	ug/Kg	☼	10/28/21 18:22	10/30/21 05:49	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.25	0.046	ug/Kg	☼	10/28/21 18:22	10/30/21 05:49	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.25	0.047	ug/Kg	☼	10/28/21 18:22	10/30/21 05:49	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.25	0.036	ug/Kg	☼	10/28/21 18:22	10/30/21 05:49	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.25	0.054	ug/Kg	☼	10/28/21 18:22	10/30/21 05:49	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.25	0.029	ug/Kg	☼	10/28/21 18:22	10/30/21 05:49	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.25	0.060	ug/Kg	☼	10/28/21 18:22	10/30/21 05:49	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.25	0.044	ug/Kg	☼	10/28/21 18:22	10/30/21 05:49	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.051	ug/Kg	☼	10/28/21 18:22	10/30/21 05:49	1
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid	ND		0.25	0.039	ug/Kg	☼	10/28/21 18:22	10/30/21 05:49	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.25	0.049	ug/Kg	☼	10/28/21 18:22	10/30/21 05:49	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	97		50 - 150	10/28/21 18:22	10/30/21 05:49	1
13C4 PFHpA	105		50 - 150	10/28/21 18:22	10/30/21 05:49	1
13C4 PFOA	104		50 - 150	10/28/21 18:22	10/30/21 05:49	1
13C5 PFNA	101		50 - 150	10/28/21 18:22	10/30/21 05:49	1
13C2 PFDA	103		50 - 150	10/28/21 18:22	10/30/21 05:49	1
13C2 PFUnA	104		50 - 150	10/28/21 18:22	10/30/21 05:49	1
13C2 PFDoA	110		50 - 150	10/28/21 18:22	10/30/21 05:49	1
13C2 PFTeDA	110		50 - 150	10/28/21 18:22	10/30/21 05:49	1
13C3 PFBS	115		50 - 150	10/28/21 18:22	10/30/21 05:49	1
18O2 PFHxS	96		50 - 150	10/28/21 18:22	10/30/21 05:49	1
13C4 PFOS	98		50 - 150	10/28/21 18:22	10/30/21 05:49	1
d3-NMeFOSAA	97		50 - 150	10/28/21 18:22	10/30/21 05:49	1
d5-NEtFOSAA	96		50 - 150	10/28/21 18:22	10/30/21 05:49	1
13C3 HFPO-DA	99		50 - 150	10/28/21 18:22	10/30/21 05:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	23.7		0.1	0.1	%			10/28/21 12:18	1
Percent Solids	76.3		0.1	0.1	%			10/28/21 12:18	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

Client Sample ID: 21GST-DPSED-021

Lab Sample ID: 320-80903-38

Date Collected: 10/17/21 17:00

Matrix: Solid

Date Received: 10/27/21 12:25

Percent Solids: 77.8

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		0.24	0.036	ug/Kg	☼	10/28/21 18:22	10/30/21 05:59	1
Perfluoroheptanoic acid (PFHpA)	ND		0.24	0.045	ug/Kg	☼	10/28/21 18:22	10/30/21 05:59	1
Perfluorooctanoic acid (PFOA)	ND		0.24	0.062	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	0.051	ug/Kg	☼	10/28/21 18:22	10/30/21 05:59	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.24	0.027	ug/Kg	☼	10/28/21 18:22	10/30/21 05:59	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.24	0.056	ug/Kg	☼	10/28/21 18:22	10/30/21 05:59	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.24	0.041	ug/Kg	☼	10/28/21 18:22	10/30/21 05:59	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.24	0.048	ug/Kg	☼	10/28/21 18:22	10/30/21 05:59	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.24	0.036	ug/Kg	☼	10/28/21 18:22	10/30/21 05:59	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
18O2 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	%			10/28/21 12:18	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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 for QSM 5.3, Table B-15

Analyte	Result	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 06:30	1
Perfluoroheptanoic acid (PFHpA)	ND		0.25	0.048	ug/Kg	☼	10/28/21 18:22	10/30/21 06:30	1
Perfluorooctanoic acid (PFOA)	ND		0.25	0.066	ug/Kg	☼	10/28/21 18:22	10/30/21 06:30	1
Perfluorononanoic acid (PFNA)	ND		0.25	0.028	ug/Kg	☼	10/28/21 18:22	10/30/21 06:30	1
Perfluorodecanoic acid (PFDA)	ND		0.25	0.060	ug/Kg	☼	10/28/21 18:22	10/30/21 06:30	1
Perfluoroundecanoic acid (PFUnA)	ND		0.25	0.053	ug/Kg	☼	10/28/21 18:22	10/30/21 06:30	1
Perfluorododecanoic acid (PFDoA)	ND		0.25	0.038	ug/Kg	☼	10/28/21 18:22	10/30/21 06:30	1
Perfluorotridecanoic acid (PFTriA)	ND		0.25	0.026	ug/Kg	☼	10/28/21 18:22	10/30/21 06:30	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.25	0.046	ug/Kg	☼	10/28/21 18:22	10/30/21 06:30	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.25	0.048	ug/Kg	☼	10/28/21 18:22	10/30/21 06:30	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.25	0.036	ug/Kg	☼	10/28/21 18:22	10/30/21 06:30	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.25	0.054	ug/Kg	☼	10/28/21 18:22	10/30/21 06:30	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.25	0.029	ug/Kg	☼	10/28/21 18:22	10/30/21 06:30	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.25	0.060	ug/Kg	☼	10/28/21 18:22	10/30/21 06:30	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.25	0.044	ug/Kg	☼	10/28/21 18:22	10/30/21 06:30	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.051	ug/Kg	☼	10/28/21 18:22	10/30/21 06:30	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.25	0.039	ug/Kg	☼	10/28/21 18:22	10/30/21 06:30	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.25	0.049	ug/Kg	☼	10/28/21 18:22	10/30/21 06:30	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	90		50 - 150	10/28/21 18:22	10/30/21 06:30	1
13C4 PFHpA	96		50 - 150	10/28/21 18:22	10/30/21 06:30	1
13C4 PFOA	103		50 - 150	10/28/21 18:22	10/30/21 06:30	1
13C5 PFNA	93		50 - 150	10/28/21 18:22	10/30/21 06:30	1
13C2 PFDA	103		50 - 150	10/28/21 18:22	10/30/21 06:30	1
13C2 PFUnA	101		50 - 150	10/28/21 18:22	10/30/21 06:30	1
13C2 PFDoA	95		50 - 150	10/28/21 18:22	10/30/21 06:30	1
13C2 PFTeDA	106		50 - 150	10/28/21 18:22	10/30/21 06:30	1
13C3 PFBS	96		50 - 150	10/28/21 18:22	10/30/21 06:30	1
18O2 PFHxS	86		50 - 150	10/28/21 18:22	10/30/21 06:30	1
13C4 PFOS	95		50 - 150	10/28/21 18:22	10/30/21 06:30	1
d3-NMeFOSAA	91		50 - 150	10/28/21 18:22	10/30/21 06:30	1
d5-NEtFOSAA	96		50 - 150	10/28/21 18:22	10/30/21 06:30	1
13C3 HFPO-DA	91		50 - 150	10/28/21 18:22	10/30/21 06:30	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	%			10/28/21 12:18	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

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		0.24	0.037	ug/Kg	☼	10/28/21 18:22	10/30/21 06:40	1
Perfluoroheptanoic acid (PFHpA)	ND		0.24	0.045	ug/Kg	☼	10/28/21 18:22	10/30/21 06:40	1
Perfluorooctanoic acid (PFOA)	ND		0.24	0.063	ug/Kg	☼	10/28/21 18:22	10/30/21 06:40	1
Perfluorononanoic acid (PFNA)	ND		0.24	0.026	ug/Kg	☼	10/28/21 18:22	10/30/21 06:40	1
Perfluorodecanoic acid (PFDA)	ND		0.24	0.057	ug/Kg	☼	10/28/21 18:22	10/30/21 06:40	1
Perfluoroundecanoic acid (PFUnA)	ND		0.24	0.050	ug/Kg	☼	10/28/21 18:22	10/30/21 06:40	1
Perfluorododecanoic acid (PFDoA)	ND		0.24	0.035	ug/Kg	☼	10/28/21 18:22	10/30/21 06:40	1
Perfluorotridecanoic acid (PFTriA)	ND		0.24	0.025	ug/Kg	☼	10/28/21 18:22	10/30/21 06:40	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.24	0.044	ug/Kg	☼	10/28/21 18:22	10/30/21 06:40	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.24	0.045	ug/Kg	☼	10/28/21 18:22	10/30/21 06:40	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.24	0.034	ug/Kg	☼	10/28/21 18:22	10/30/21 06:40	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.24	0.051	ug/Kg	☼	10/28/21 18:22	10/30/21 06:40	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.24	0.027	ug/Kg	☼	10/28/21 18:22	10/30/21 06:40	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.24	0.057	ug/Kg	☼	10/28/21 18:22	10/30/21 06:40	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.24	0.041	ug/Kg	☼	10/28/21 18:22	10/30/21 06:40	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.24	0.049	ug/Kg	☼	10/28/21 18:22	10/30/21 06:40	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.24	0.037	ug/Kg	☼	10/28/21 18:22	10/30/21 06:40	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.24	0.046	ug/Kg	☼	10/28/21 18:22	10/30/21 06:40	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	109		50 - 150	10/28/21 18:22	10/30/21 06:40	1
13C4 PFHpA	125		50 - 150	10/28/21 18:22	10/30/21 06:40	1
13C4 PFOA	122		50 - 150	10/28/21 18:22	10/30/21 06:40	1
13C5 PFNA	111		50 - 150	10/28/21 18:22	10/30/21 06:40	1
13C2 PFDA	118		50 - 150	10/28/21 18:22	10/30/21 06:40	1
13C2 PFUnA	119		50 - 150	10/28/21 18:22	10/30/21 06:40	1
13C2 PFDoA	129		50 - 150	10/28/21 18:22	10/30/21 06:40	1
13C2 PFTeDA	130		50 - 150	10/28/21 18:22	10/30/21 06:40	1
13C3 PFBS	114		50 - 150	10/28/21 18:22	10/30/21 06:40	1
18O2 PFHxS	108		50 - 150	10/28/21 18:22	10/30/21 06:40	1
13C4 PFOS	109		50 - 150	10/28/21 18:22	10/30/21 06:40	1
d3-NMeFOSAA	111		50 - 150	10/28/21 18:22	10/30/21 06:40	1
d5-NEtFOSAA	119		50 - 150	10/28/21 18:22	10/30/21 06:40	1
13C3 HFPO-DA	112		50 - 150	10/28/21 18:22	10/30/21 06:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	23.6		0.1	0.1	%			10/28/21 12:18	1
Percent Solids	76.4		0.1	0.1	%			10/28/21 12:18	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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 for QSM 5.3, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.25	0.038	ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.25	0.028	ug/Kg	☼	10/28/21 18:22	10/30/21 06:50	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.25	0.059	ug/Kg	☼	10/28/21 18:22	10/30/21 06:50	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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
18O2 PFHxS	98		50 - 150	10/28/21 18:22	10/30/21 06:50	1
13C4 PFOS	98		50 - 150	10/28/21 18:22	10/30/21 06:50	1
d3-NMeFOSAA	99		50 - 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	10/28/21 18:22	10/30/21 06:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	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	%			10/28/21 12:18	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

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		0.25	0.039	ug/Kg	☼	10/28/21 18:22	10/30/21 07:00	1
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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.25	0.029	ug/Kg	☼	10/28/21 18:22	10/30/21 07:00	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.25	0.060	ug/Kg	☼	10/28/21 18:22	10/30/21 07:00	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.25	0.044	ug/Kg	☼	10/28/21 18:22	10/30/21 07:00	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.051	ug/Kg	☼	10/28/21 18:22	10/30/21 07:00	1
11-Chloroeicosadecafluoro-3-oxaundecane-1-sulfonic acid	ND		0.25	0.039	ug/Kg	☼	10/28/21 18:22	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	1
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
18O2 PFHxS	96		50 - 150	10/28/21 18:22	10/30/21 07:00	1
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 - 150	10/28/21 18:22	10/30/21 07:00	1
13C3 HFPO-DA	92		50 - 150	10/28/21 18:22	10/30/21 07:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	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

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

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		0.30	0.047	ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.30	0.035	ug/Kg	☼	10/28/21 18:22	10/30/21 07:10	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.30	0.072	ug/Kg	☼	10/28/21 18:22	10/30/21 07:10	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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	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
18O2 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	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	35.8		0.1	0.1	%			10/28/21 12:18	1
Percent Solids	64.2		0.1	0.1	%			10/28/21 12:18	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

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		0.25	0.039	ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.25	0.029	ug/Kg	☼	10/28/21 18:22	10/30/21 07:20	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.25	0.060	ug/Kg	☼	10/28/21 18:22	10/30/21 07:20	1
9-Chlorohexadecafluoro-3-oxanonane-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	0.052	ug/Kg	☼	10/28/21 18:22	10/30/21 07:20	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.25	0.039	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

Isotope 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 - 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
18O2 PFHxS	95		50 - 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	10/28/21 18:22	10/30/21 07:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	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	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

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		0.26	0.040	ug/Kg	☼	10/28/21 18:22	10/30/21 07:30	1
Perfluoroheptanoic acid (PFHpA)	ND		0.26	0.050	ug/Kg	☼	10/28/21 18:22	10/30/21 07:30	1
Perfluorooctanoic acid (PFOA)	ND		0.26	0.069	ug/Kg	☼	10/28/21 18:22	10/30/21 07:30	1
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	1
Perfluoroundecanoic acid (PFUnA)	ND		0.26	0.055	ug/Kg	☼	10/28/21 18:22	10/30/21 07:30	1
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	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.26	0.048	ug/Kg	☼	10/28/21 18:22	10/30/21 07:30	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.26	0.050	ug/Kg	☼	10/28/21 18:22	10/30/21 07:30	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.26	0.038	ug/Kg	☼	10/28/21 18:22	10/30/21 07:30	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.26	0.056	ug/Kg	☼	10/28/21 18:22	10/30/21 07:30	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.26	0.030	ug/Kg	☼	10/28/21 18:22	10/30/21 07:30	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.26	0.063	ug/Kg	☼	10/28/21 18:22	10/30/21 07:30	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.26	0.046	ug/Kg	☼	10/28/21 18:22	10/30/21 07:30	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.26	0.054	ug/Kg	☼	10/28/21 18:22	10/30/21 07:30	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.26	0.040	ug/Kg	☼	10/28/21 18:22	10/30/21 07:30	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.26	0.051	ug/Kg	☼	10/28/21 18:22	10/30/21 07:30	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	85		50 - 150	10/28/21 18:22	10/30/21 07:30	1
13C4 PFHpA	91		50 - 150	10/28/21 18:22	10/30/21 07:30	1
13C4 PFOA	101		50 - 150	10/28/21 18:22	10/30/21 07:30	1
13C5 PFNA	93		50 - 150	10/28/21 18:22	10/30/21 07:30	1
13C2 PFDA	97		50 - 150	10/28/21 18:22	10/30/21 07:30	1
13C2 PFUnA	98		50 - 150	10/28/21 18:22	10/30/21 07:30	1
13C2 PFDoA	98		50 - 150	10/28/21 18:22	10/30/21 07:30	1
13C2 PFTeDA	104		50 - 150	10/28/21 18:22	10/30/21 07:30	1
13C3 PFBS	100		50 - 150	10/28/21 18:22	10/30/21 07:30	1
18O2 PFHxS	84		50 - 150	10/28/21 18:22	10/30/21 07:30	1
13C4 PFOS	93		50 - 150	10/28/21 18:22	10/30/21 07:30	1
d3-NMeFOSAA	92		50 - 150	10/28/21 18:22	10/30/21 07:30	1
d5-NEtFOSAA	100		50 - 150	10/28/21 18:22	10/30/21 07:30	1
13C3 HFPO-DA	88		50 - 150	10/28/21 18:22	10/30/21 07:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	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	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

Client Sample ID: 21GST-SED-028

Lab Sample ID: 320-80903-46

Date Collected: 10/18/21 13:50

Matrix: Solid

Date Received: 10/27/21 12:25

Percent Solids: 21.5

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		0.90	0.14	ug/Kg	☼	10/28/21 18:22	10/30/21 07:40	1
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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.90	0.10	ug/Kg	☼	10/28/21 18:22	10/30/21 07:40	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.90	0.22	ug/Kg	☼	10/28/21 18:22	10/30/21 07:40	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 150	10/28/21 18:22	10/30/21 07:40	1
13C3 PFBS	102		50 - 150	10/28/21 18:22	10/30/21 07:40	1
18O2 PFHxS	90		50 - 150	10/28/21 18:22	10/30/21 07:40	1
13C4 PFOS	90		50 - 150	10/28/21 18:22	10/30/21 07:40	1
d3-NMeFOSAA	96		50 - 150	10/28/21 18:22	10/30/21 07:40	1
d5-NEtFOSAA	97		50 - 150	10/28/21 18:22	10/30/21 07:40	1
13C3 HFPO-DA	96		50 - 150	10/28/21 18:22	10/30/21 07:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	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	%			10/28/21 12:18	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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 for QSM 5.3, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.31	0.047	ug/Kg	☼	10/28/21 18:22	10/30/21 07:51	1
Perfluoroheptanoic acid (PFHpA)	ND		0.31	0.058	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.31	0.035	ug/Kg	☼	10/28/21 18:22	10/30/21 07:51	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.31	0.073	ug/Kg	☼	10/28/21 18:22	10/30/21 07:51	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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
18O2 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

Analyte	Result	Qualifier	RL	MDL	Unit	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 Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

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		0.28	0.044	ug/Kg	☼	10/28/21 18:22	10/30/21 08:01	1
Perfluoroheptanoic acid (PFHpA)	ND		0.28	0.054	ug/Kg	☼	10/28/21 18:22	10/30/21 08:01	1
Perfluorooctanoic acid (PFOA)	ND		0.28	0.075	ug/Kg	☼	10/28/21 18:22	10/30/21 08:01	1
Perfluorononanoic acid (PFNA)	ND		0.28	0.031	ug/Kg	☼	10/28/21 18:22	10/30/21 08:01	1
Perfluorodecanoic acid (PFDA)	ND		0.28	0.068	ug/Kg	☼	10/28/21 18:22	10/30/21 08:01	1
Perfluoroundecanoic acid (PFUnA)	ND		0.28	0.060	ug/Kg	☼	10/28/21 18:22	10/30/21 08:01	1
Perfluorododecanoic acid (PFDoA)	ND		0.28	0.043	ug/Kg	☼	10/28/21 18:22	10/30/21 08:01	1
Perfluorotridecanoic acid (PFTriA)	ND		0.28	0.030	ug/Kg	☼	10/28/21 18:22	10/30/21 08:01	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.28	0.052	ug/Kg	☼	10/28/21 18:22	10/30/21 08:01	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.28	0.054	ug/Kg	☼	10/28/21 18:22	10/30/21 08:01	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.28	0.041	ug/Kg	☼	10/28/21 18:22	10/30/21 08:01	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.28	0.061	ug/Kg	☼	10/28/21 18:22	10/30/21 08:01	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.28	0.033	ug/Kg	☼	10/28/21 18:22	10/30/21 08:01	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.28	0.068	ug/Kg	☼	10/28/21 18:22	10/30/21 08:01	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.28	0.050	ug/Kg	☼	10/28/21 18:22	10/30/21 08:01	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.28	0.058	ug/Kg	☼	10/28/21 18:22	10/30/21 08:01	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.28	0.044	ug/Kg	☼	10/28/21 18:22	10/30/21 08:01	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.28	0.055	ug/Kg	☼	10/28/21 18:22	10/30/21 08:01	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	75		50 - 150	10/28/21 18:22	10/30/21 08:01	1
13C4 PFHpA	82		50 - 150	10/28/21 18:22	10/30/21 08:01	1
13C4 PFOA	85		50 - 150	10/28/21 18:22	10/30/21 08:01	1
13C5 PFNA	87		50 - 150	10/28/21 18:22	10/30/21 08:01	1
13C2 PFDA	87		50 - 150	10/28/21 18:22	10/30/21 08:01	1
13C2 PFUnA	88		50 - 150	10/28/21 18:22	10/30/21 08:01	1
13C2 PFDoA	85		50 - 150	10/28/21 18:22	10/30/21 08:01	1
13C2 PFTeDA	88		50 - 150	10/28/21 18:22	10/30/21 08:01	1
13C3 PFBS	82		50 - 150	10/28/21 18:22	10/30/21 08:01	1
18O2 PFHxS	72		50 - 150	10/28/21 18:22	10/30/21 08:01	1
13C4 PFOS	79		50 - 150	10/28/21 18:22	10/30/21 08:01	1
d3-NMeFOSAA	80		50 - 150	10/28/21 18:22	10/30/21 08:01	1
d5-NEtFOSAA	88		50 - 150	10/28/21 18:22	10/30/21 08:01	1
13C3 HFPO-DA	77		50 - 150	10/28/21 18:22	10/30/21 08:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	31.2		0.1	0.1	%			10/28/21 12:18	1
Percent Solids	68.8		0.1	0.1	%			10/28/21 12:18	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

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		0.27	0.042	ug/Kg	☼	10/28/21 18:22	10/30/21 08:31	1
Perfluoroheptanoic acid (PFHpA)	ND		0.27	0.052	ug/Kg	☼	10/28/21 18:22	10/30/21 08:31	1
Perfluorooctanoic acid (PFOA)	ND		0.27	0.073	ug/Kg	☼	10/28/21 18:22	10/30/21 08:31	1
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	1
Perfluorotridecanoic acid (PFTriA)	ND		0.27	0.029	ug/Kg	☼	10/28/21 18:22	10/30/21 08:31	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.27	0.051	ug/Kg	☼	10/28/21 18:22	10/30/21 08:31	1
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	J I	0.27	0.059	ug/Kg	☼	10/28/21 18:22	10/30/21 08:31	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.27	0.031	ug/Kg	☼	10/28/21 18:22	10/30/21 08:31	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.27	0.066	ug/Kg	☼	10/28/21 18:22	10/30/21 08:31	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.27	0.048	ug/Kg	☼	10/28/21 18:22	10/30/21 08:31	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.27	0.056	ug/Kg	☼	10/28/21 18:22	10/30/21 08:31	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.27	0.042	ug/Kg	☼	10/28/21 18:22	10/30/21 08:31	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.27	0.053	ug/Kg	☼	10/28/21 18:22	10/30/21 08:31	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	84		50 - 150	10/28/21 18:22	10/30/21 08:31	1
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	1
13C5 PFNA	94		50 - 150	10/28/21 18:22	10/30/21 08:31	1
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	1
13C2 PFDoA	102		50 - 150	10/28/21 18:22	10/30/21 08:31	1
13C2 PFTeDA	106		50 - 150	10/28/21 18:22	10/30/21 08:31	1
13C3 PFBS	96		50 - 150	10/28/21 18:22	10/30/21 08:31	1
18O2 PFHxS	82		50 - 150	10/28/21 18:22	10/30/21 08:31	1
13C4 PFOS	90		50 - 150	10/28/21 18:22	10/30/21 08:31	1
d3-NMeFOSAA	89		50 - 150	10/28/21 18:22	10/30/21 08:31	1
d5-NEtFOSAA	87		50 - 150	10/28/21 18:22	10/30/21 08:31	1
13C3 HFPO-DA	90		50 - 150	10/28/21 18:22	10/30/21 08:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	29.7		0.1	0.1	%			10/28/21 12:18	1
Percent Solids	70.3		0.1	0.1	%			10/28/21 12:18	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

Percent Solids: 75.3

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		0.25	0.039	ug/Kg	☼	10/28/21 18:22	10/30/21 08:41	1
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	J I	0.25	0.054	ug/Kg	☼	10/28/21 18:22	10/30/21 08:41	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.25	0.029	ug/Kg	☼	10/28/21 18:22	10/30/21 08:41	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.25	0.061	ug/Kg	☼	10/28/21 18:22	10/30/21 08:41	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.25	0.044	ug/Kg	☼	10/28/21 18:22	10/30/21 08:41	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.052	ug/Kg	☼	10/28/21 18:22	10/30/21 08:41	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		0.25	0.039	ug/Kg	☼	10/28/21 18:22	10/30/21 08:41	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
18O2 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	10/28/21 18:22	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	Result	Qualifier	RL	MDL	Unit	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

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

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		0.25	0.038	ug/Kg	☼	10/28/21 18:22	10/30/21 08:51	1
Perfluoroheptanoic acid (PFHpA)	ND		0.25	0.047	ug/Kg	☼	10/28/21 18:22	10/30/21 08:51	1
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	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.25	0.047	ug/Kg	☼	10/28/21 18:22	10/30/21 08:51	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.25	0.036	ug/Kg	☼	10/28/21 18:22	10/30/21 08:51	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.25	0.053	ug/Kg	☼	10/28/21 18:22	10/30/21 08:51	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.25	0.028	ug/Kg	☼	10/28/21 18:22	10/30/21 08:51	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.25	0.059	ug/Kg	☼	10/28/21 18:22	10/30/21 08:51	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.25	0.043	ug/Kg	☼	10/28/21 18:22	10/30/21 08:51	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.050	ug/Kg	☼	10/28/21 18:22	10/30/21 08:51	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.25	0.038	ug/Kg	☼	10/28/21 18:22	10/30/21 08:51	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.25	0.048	ug/Kg	☼	10/28/21 18:22	10/30/21 08:51	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	108		50 - 150	10/28/21 18:22	10/30/21 08:51	1
13C4 PFHpA	114		50 - 150	10/28/21 18:22	10/30/21 08:51	1
13C4 PFOA	116		50 - 150	10/28/21 18:22	10/30/21 08:51	1
13C5 PFNA	111		50 - 150	10/28/21 18:22	10/30/21 08:51	1
13C2 PFDA	110		50 - 150	10/28/21 18:22	10/30/21 08:51	1
13C2 PFUnA	121		50 - 150	10/28/21 18:22	10/30/21 08:51	1
13C2 PFDoA	121		50 - 150	10/28/21 18:22	10/30/21 08:51	1
13C2 PFTeDA	122		50 - 150	10/28/21 18:22	10/30/21 08:51	1
13C3 PFBS	112		50 - 150	10/28/21 18:22	10/30/21 08:51	1
18O2 PFHxS	103		50 - 150	10/28/21 18:22	10/30/21 08:51	1
13C4 PFOS	104		50 - 150	10/28/21 18:22	10/30/21 08:51	1
d3-NMeFOSAA	104		50 - 150	10/28/21 18:22	10/30/21 08:51	1
d5-NEtFOSAA	108		50 - 150	10/28/21 18:22	10/30/21 08:51	1
13C3 HFPO-DA	102		50 - 150	10/28/21 18:22	10/30/21 08:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	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	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

Percent Solids: 69.1

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		0.28	0.043	ug/Kg	☼	10/28/21 18:22	10/30/21 09:02	1
Perfluoroheptanoic acid (PFHpA)	ND		0.28	0.053	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	0.059	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	I	0.28	0.060	ug/Kg	☼	10/28/21 18:22	10/30/21 09:02	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.28	0.032	ug/Kg	☼	10/28/21 18:22	10/30/21 09:02	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.28	0.067	ug/Kg	☼	10/28/21 18:22	10/30/21 09:02	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.28	0.049	ug/Kg	☼	10/28/21 18:22	10/30/21 09:02	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.28	0.057	ug/Kg	☼	10/28/21 18:22	10/30/21 09:02	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.28	0.043	ug/Kg	☼	10/28/21 18:22	10/30/21 09:02	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.28	0.054	ug/Kg	☼	10/28/21 18:22	10/30/21 09:02	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	92		50 - 150	10/28/21 18:22	10/30/21 09:02	1
13C4 PFHpA	100		50 - 150	10/28/21 18:22	10/30/21 09:02	1
13C4 PFOA	107		50 - 150	10/28/21 18:22	10/30/21 09:02	1
13C5 PFNA	100		50 - 150	10/28/21 18:22	10/30/21 09:02	1
13C2 PFDA	100		50 - 150	10/28/21 18:22	10/30/21 09:02	1
13C2 PFUnA	98		50 - 150	10/28/21 18:22	10/30/21 09:02	1
13C2 PFDoA	105		50 - 150	10/28/21 18:22	10/30/21 09:02	1
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	1
18O2 PFHxS	87		50 - 150	10/28/21 18:22	10/30/21 09:02	1
13C4 PFOS	97		50 - 150	10/28/21 18:22	10/30/21 09:02	1
d3-NMeFOSAA	101		50 - 150	10/28/21 18:22	10/30/21 09:02	1
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	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	30.9		0.1	0.1	%			10/28/21 12:18	1
Percent Solids	69.1		0.1	0.1	%			10/28/21 12:18	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

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFHxA (50-150)	C4PFHA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)	PFDoA (50-150)	PFTDA (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
320-80903-13	21GST-MW25-02	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	111	110	119	108	113	109	119	130
320-80903-14	21GST-SED-010	95	102	110	107	101	95	89	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
320-80903-40	21GST-SED-022	109	125	122	111	118	119	129	130
320-80903-41	21GST-SED-009	100	102	112	103	104	105	109	111
320-80903-42	21GST-DPSED-009	93	100	109	99	101	103	106	117
320-80903-43	21GST-SED-023	86	93	100	94	98	103	102	108

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

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFHxA (50-150)	C4PFHA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)	PFDaA (50-150)	PFTDA (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-127	92	100	107	100	100	98	105	107
LCS 320-537957/2-A	Lab Control Sample	96	96	102	99	100	96	93	102
LCS 320-538091/2-A	Lab Control Sample	109	111	118	115	110	110	113	116
LCS 320-538118/2-A	Lab Control Sample	83	87	97	96	89	84	94	99
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

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	C3PFBS (50-150)	PFHxS (50-150)	PFOS (50-150)	d3NMFOS (50-150)	d5NEFOS (50-150)	HFPODA (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	101	109	116	117	96

Eurofins TestAmerica, Sacramento

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

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)					
		C3PFBS (50-150)	PFHxS (50-150)	PFOS (50-150)	d3NMFOS (50-150)	d5NEFOS (50-150)	HFPODA (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

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

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg		10/28/21 11:53	10/30/21 00:18	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.20	0.048	ug/Kg		10/28/21 11:53	10/30/21 00:18	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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

Isotope Dilution	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
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
18O2 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
Prep Batch: 537957

Analyte	Spike Added	LCS Result	LCS 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
Perfluorooctanoic acid (PFOA)	2.00	1.89		ug/Kg		94	69 - 133
Perfluorononanoic acid (PFNA)	2.00	2.11		ug/Kg		106	72 - 129

Eurofins TestAmerica, Sacramento

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: LCS 320-537957/2-A
Matrix: Solid
Analysis Batch: 538667

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 537957

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorodecanoic acid (PFDA)	2.00	1.95		ug/Kg		98	69 - 133
Perfluoroundecanoic acid (PFUnA)	2.00	2.00		ug/Kg		100	64 - 136
Perfluorododecanoic acid (PFDoA)	2.00	2.06		ug/Kg		103	69 - 135
Perfluorotridecanoic acid (PFTriA)	2.00	2.00		ug/Kg		100	66 - 139
Perfluorotetradecanoic acid (PFTeA)	2.00	1.79		ug/Kg		90	69 - 133
Perfluorobutanesulfonic acid (PFBS)	1.77	1.47		ug/Kg		83	72 - 128
Perfluorohexanesulfonic acid (PFHxS)	1.82	1.73		ug/Kg		95	67 - 130
Perfluorooctanesulfonic acid (PFOS)	1.86	1.66		ug/Kg		89	68 - 136
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	1.67		ug/Kg		83	63 - 144
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	1.86		ug/Kg		93	61 - 139
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	1.86	1.67		ug/Kg		89	75 - 135
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	2.00	2.19		ug/Kg		110	77 - 137
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	1.88	1.56		ug/Kg		83	76 - 136
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.88	1.73		ug/Kg		92	79 - 139

Isotope Dilution	LCS		Limits
	%Recovery	Qualifier	
13C2 PFHxA	96		50 - 150
13C4 PFHpA	96		50 - 150
13C4 PFOA	102		50 - 150
13C5 PFNA	99		50 - 150
13C2 PFDA	100		50 - 150
13C2 PFUnA	96		50 - 150
13C2 PFDoA	93		50 - 150
13C2 PFTeDA	102		50 - 150
13C3 PFBS	105		50 - 150
18O2 PFHxS	92		50 - 150
13C4 PFOS	102		50 - 150
d3-NMeFOSAA	112		50 - 150
d5-NEtFOSAA	103		50 - 150
13C3 HFPO-DA	90		50 - 150

Lab Sample ID: 320-80903-14 MS
Matrix: Solid
Analysis Batch: 538667

Client Sample ID: 21GST-SED-010
Prep Type: Total/NA
Prep Batch: 537957

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorohexanoic acid (PFHxA)	ND		2.59	2.61		ug/Kg	⊛	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

Eurofins TestAmerica, Sacramento

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: 320-80903-14 MS

Matrix: Solid

Analysis Batch: 538667

Client Sample ID: 21GST-SED-010

Prep Type: Total/NA

Prep Batch: 537957

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%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	I	ug/Kg	⊛	105	68 - 136
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.59	2.44		ug/Kg	⊛	94	63 - 144
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.59	2.25		ug/Kg	⊛	87	61 - 139
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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

Isotope Dilution	%Recovery	MS Qualifier	MS 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
18O2 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

Analysis Batch: 538667

Client Sample ID: 21GST-SED-010

Prep Type: Total/NA

Prep Batch: 537957

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorohexanoic acid (PFHxA)	ND		2.41	2.49		ug/Kg	⊛	103	70 - 132	5	30
Perfluoroheptanoic acid (PFHpA)	ND		2.41	2.38		ug/Kg	⊛	99	71 - 131	7	30

Eurofins TestAmerica, Sacramento

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: 320-80903-14 MSD

Matrix: Solid

Analysis Batch: 538667

Client Sample ID: 21GST-SED-010

Prep Type: Total/NA

Prep Batch: 537957

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.41	2.16		ug/Kg	*	90	63 - 144	12	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.41	2.13		ug/Kg	*	88	61 - 139	5	30
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosafuoro-3-oxaundecane-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

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C2 PFHxA	96		50 - 150
13C4 PFHpA	104		50 - 150
13C4 PFOA	109		50 - 150
13C5 PFNA	112		50 - 150
13C2 PFDA	103		50 - 150
13C2 PFUnA	98		50 - 150
13C2 PFDoA	93		50 - 150
13C2 PFTeDA	93		50 - 150
13C3 PFBS	110		50 - 150
18O2 PFHxS	96		50 - 150
13C4 PFOS	109		50 - 150
d3-NMeFOSAA	106		50 - 150
d5-NEtFOSAA	100		50 - 150
13C3 HFPO-DA	95		50 - 150

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	MB Result	MB 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

Eurolins TestAmerica, Sacramento

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: MB 320-538091/1-A
Matrix: Solid
Analysis Batch: 538358

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 538091

Analyte	MB Result	MB 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	0.053	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg		10/28/21 18:22	10/30/21 04:28	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.20	0.048	ug/Kg		10/28/21 18:22	10/30/21 04:28	1
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosfluoro-3-oxaundecane-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

Isotope Dilution	MB %Recovery	MB 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
18O2 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 - 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

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 538091

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%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

Eurofins TestAmerica, Sacramento

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: LCS 320-538091/2-A
Matrix: Solid
Analysis Batch: 538358

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 538091

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoroundecanoic acid (PFUnA)	2.00	1.90		ug/Kg		95	64 - 136
Perfluorododecanoic acid (PFDoA)	2.00	1.92		ug/Kg		96	69 - 135
Perfluorotridecanoic acid (PFTriA)	2.00	2.04		ug/Kg		102	66 - 139
Perfluorotetradecanoic acid (PFTeA)	2.00	1.81		ug/Kg		91	69 - 133
Perfluorobutanesulfonic acid (PFBS)	1.77	1.43		ug/Kg		81	72 - 128
Perfluorohexanesulfonic acid (PFHxS)	1.82	1.62		ug/Kg		89	67 - 130
Perfluorooctanesulfonic acid (PFOS)	1.86	1.66		ug/Kg		89	68 - 136
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	1.82		ug/Kg		91	63 - 144
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	1.94		ug/Kg		97	61 - 139
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	1.86	1.70		ug/Kg		91	75 - 135
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	2.00	1.93		ug/Kg		97	77 - 137
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	1.88	1.79		ug/Kg		95	76 - 136
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.88	1.76		ug/Kg		94	79 - 139

Isotope Dilution	LCS		Limits
	%Recovery	Qualifier	
13C2 PFHxA	109		50 - 150
13C4 PFHpA	111		50 - 150
13C4 PFOA	118		50 - 150
13C5 PFNA	115		50 - 150
13C2 PFDA	110		50 - 150
13C2 PFUnA	110		50 - 150
13C2 PFDoA	113		50 - 150
13C2 PFTeDA	116		50 - 150
13C3 PFBS	120		50 - 150
18O2 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
Analysis Batch: 538358

Client Sample ID: 21GST-MW25-02
Prep Type: Total/NA
Prep Batch: 538091

Analyte	Sample Result	Sample Qualifier	Spike Added	MS		Unit	D	%Rec	%Rec. Limits
				Result	Qualifier				
Perfluorohexanoic acid (PFHxA)	ND		2.43	2.38		ug/Kg	☼	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

Eurofins TestAmerica, Sacramento

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: 320-80903-13 MS

Matrix: Solid

Analysis Batch: 538358

Client Sample ID: 21GST-MW25-02

Prep Type: Total/NA

Prep Batch: 538091

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.43	2.40		ug/Kg	✳	99	63 - 144
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.43	2.28		ug/Kg	✳	94	61 - 139
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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

Isotope Dilution	MS %Recovery	MS 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
18O2 PFHxS	125		50 - 150
13C4 PFOS	129		50 - 150
d3-NMeFOSAA	119		50 - 150
d5-NEtFOSAA	121		50 - 150
13C3 HFPO-DA	119		50 - 150

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorohexanoic acid (PFHxA)	ND		2.32	2.19		ug/Kg	✳	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

Eurofins TestAmerica, Sacramento

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: 320-80903-13 MSD

Matrix: Solid

Analysis Batch: 538358

Client Sample ID: 21GST-MW25-02

Prep Type: Total/NA

Prep Batch: 538091

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier						
Perfluorononanoic acid (PFNA)	ND		2.32	2.30		ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.32	1.99		ug/Kg	☼	86	63 - 144	19	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.32	2.20		ug/Kg	☼	95	61 - 139	4	30
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosafuoro-3-oxaundecane-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

Isotope Dilution	MSD	MSD	Limits
	%Recovery	Qualifier	
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
18O2 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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.031	ug/Kg		10/29/21 04:15	10/29/21 20:40	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.038	ug/Kg		10/29/21 04:15	10/29/21 20:40	1

Eurofins TestAmerica, Sacramento

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: MB 320-538118/1-A
Matrix: Solid
Analysis Batch: 538662

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 538118

Analyte	MB Result	MB 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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg		10/29/21 04:15	10/29/21 20:40	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.20	0.048	ug/Kg		10/29/21 04:15	10/29/21 20:40	1
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosfluoro-3-oxaundecane-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

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	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
18O2 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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%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 (PFUnA)	2.00	2.12		ug/Kg		106	64 - 136

Eurofins TestAmerica, Sacramento

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: LCS 320-538118/2-A
Matrix: Solid
Analysis Batch: 538662

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 538118

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorododecanoic acid (PFDoA)	2.00	1.96		ug/Kg		98	69 - 135
Perfluorotridecanoic acid (PFTriA)	2.00	1.96		ug/Kg		98	66 - 139
Perfluorotetradecanoic acid (PFTeA)	2.00	1.77		ug/Kg		88	69 - 133
Perfluorobutanesulfonic acid (PFBS)	1.77	1.47		ug/Kg		83	72 - 128
Perfluorohexanesulfonic acid (PFHxS)	1.82	1.72		ug/Kg		94	67 - 130
Perfluorooctanesulfonic acid (PFOS)	1.86	1.73		ug/Kg		93	68 - 136
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	1.73		ug/Kg		87	63 - 144
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	1.83		ug/Kg		92	61 - 139
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	1.86	1.73		ug/Kg		93	75 - 135
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	2.00	2.10		ug/Kg		105	77 - 137
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	1.88	1.70		ug/Kg		90	76 - 136
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.88	1.81		ug/Kg		96	79 - 139

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
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
18O2 PFHxS	86		50 - 150
13C4 PFOS	94		50 - 150
d3-NMeFOSAA	89		50 - 150
d5-NEtFOSAA	89		50 - 150
13C3 HFPO-DA	92		50 - 150

Lab Sample ID: 320-80903-1 MS
Matrix: Solid
Analysis Batch: 538662

Client Sample ID: 21GST-MW13-01
Prep Type: Total/NA
Prep Batch: 538118

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec. Limits
				Result	Qualifier				
Perfluorohexanoic acid (PFHxA)	ND		1.99	2.01		ug/Kg	⊛	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

Eurofins TestAmerica, Sacramento

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 MS
Matrix: Solid
Analysis Batch: 538662

Client Sample ID: 21GST-MW13-01
Prep Type: Total/NA
Prep Batch: 538118

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoroundecanoic acid (PFUnA)	ND		1.99	2.03		ug/Kg	☼	102	64 - 136
Perfluorododecanoic acid (PFDoA)	ND		1.99	1.96		ug/Kg	☼	99	69 - 135
Perfluorotridecanoic acid (PFTriA)	ND		1.99	1.94		ug/Kg	☼	98	66 - 139
Perfluorotetradecanoic acid (PFTeA)	ND		1.99	1.85		ug/Kg	☼	93	69 - 133
Perfluorobutanesulfonic acid (PFBS)	ND		1.76	1.53		ug/Kg	☼	87	72 - 128
Perfluorohexanesulfonic acid (PFHxS)	ND		1.81	1.65		ug/Kg	☼	91	67 - 130
Perfluorooctanesulfonic acid (PFOS)	ND		1.85	1.87		ug/Kg	☼	101	68 - 136
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.99	1.79		ug/Kg	☼	90	63 - 144
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		1.99	1.73		ug/Kg	☼	87	61 - 139
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.86	1.80		ug/Kg	☼	97	75 - 135
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		1.99	2.09		ug/Kg	☼	105	77 - 137
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		1.88	1.61		ug/Kg	☼	86	76 - 136
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.88	1.70		ug/Kg	☼	91	79 - 139

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
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
13C2 PFDoA	91		50 - 150
13C2 PFTeDA	90		50 - 150
13C3 PFBS	102		50 - 150
18O2 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

Lab Sample ID: 320-80903-1 MSD
Matrix: Solid
Analysis Batch: 538662

Client Sample ID: 21GST-MW13-01
Prep Type: Total/NA
Prep Batch: 538118

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	%Rec. Limits	RPD	
				Result	Qualifier					RPD	Limit
Perfluorohexanoic acid (PFHxA)	ND		2.05	2.06		ug/Kg	☼	101	70 - 132	2	30
Perfluoroheptanoic acid (PFHpA)	ND		2.05	2.11		ug/Kg	☼	103	71 - 131	6	30
Perfluorooctanoic acid (PFOA)	ND		2.05	1.84		ug/Kg	☼	90	69 - 133	1	30
Perfluorononanoic acid (PFNA)	ND		2.05	1.94		ug/Kg	☼	95	72 - 129	6	30

Eurofins TestAmerica, Sacramento

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
Matrix: Solid
Analysis Batch: 538662

Client Sample ID: 21GST-MW13-01
Prep Type: Total/NA
Prep Batch: 538118

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorodecanoic acid (PFDA)	ND		2.05	1.98		ug/Kg	⊛	97	69 - 133	2	30
Perfluoroundecanoic acid (PFUnA)	ND		2.05	1.91		ug/Kg	⊛	93	64 - 136	6	30
Perfluorododecanoic acid (PFDoA)	ND		2.05	2.08		ug/Kg	⊛	101	69 - 135	6	30
Perfluorotridecanoic acid (PFTriA)	ND		2.05	1.99		ug/Kg	⊛	97	66 - 139	3	30
Perfluorotetradecanoic acid (PFTeA)	ND		2.05	1.73		ug/Kg	⊛	84	69 - 133	7	30
Perfluorobutanesulfonic acid (PFBS)	ND		1.81	1.53		ug/Kg	⊛	85	72 - 128	0	30
Perfluorohexanesulfonic acid (PFHxS)	ND		1.86	1.66		ug/Kg	⊛	89	67 - 130	1	30
Perfluorooctanesulfonic acid (PFOS)	ND		1.90	1.82		ug/Kg	⊛	96	68 - 136	3	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.05	1.78		ug/Kg	⊛	87	63 - 144	0	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.05	2.11		ug/Kg	⊛	103	61 - 139	20	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.91	1.74		ug/Kg	⊛	91	75 - 135	3	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		2.05	2.07		ug/Kg	⊛	101	77 - 137	1	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		1.93	1.59		ug/Kg	⊛	83	76 - 136	1	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.93	1.72		ug/Kg	⊛	89	79 - 139	1	30

Isotope Dilution	MSD %Recovery	MSD 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 - 150
18O2 PFHxS	87		50 - 150
13C4 PFOS	96		50 - 150
d3-NMeFOSAA	88		50 - 150
d5-NEtFOSAA	88		50 - 150
13C3 HFPO-DA	84		50 - 150

Method: D 2216 - Percent Moisture

Lab Sample ID: 320-80903-1 DU
Matrix: Solid
Analysis Batch: 537918

Client Sample ID: 21GST-MW13-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Moisture	6.8		9.0	F3	%		25	20

Eurofins TestAmerica, Sacramento

QC Sample Results

Client: Shannon & Wilson, Inc
 Project/Site: SG Soils WO#1

Job ID: 320-80903-1

Method: D 2216 - Percent Moisture (Continued)

Lab Sample ID: 320-80903-1 DU
Matrix: Solid
Analysis Batch: 537918

Client Sample ID: 21GST-MW13-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Solids	93.2		91.0		%		2	20

Lab Sample ID: 320-80903-20 DU
Matrix: Solid
Analysis Batch: 537919

Client Sample ID: 21GST-SED-005
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	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
Matrix: Solid
Analysis Batch: 537920

Client Sample ID: 21GST-SED-012
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Moisture	22.2		24.4		%		9	20
Percent Solids	77.8		75.6		%		3	20

QC Association Summary

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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	

Eurofins TestAmerica, Sacramento

QC Association Summary

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-80903-1	21GST-MW13-01	Total/NA	Solid	EPA 537(Mod)	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

Eurofins TestAmerica, Sacramento

QC Association Summary

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	

Eurofins TestAmerica, Sacramento

QC Association Summary

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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	
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

QC Association Summary

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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Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

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			537918	10/28/21 12:18	TCS	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.28 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

Lab Sample ID: 320-80903-2

Date Collected: 10/19/21 11:40

Matrix: Solid

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	Analysis	D 2216		1			537918	10/28/21 12:18	TCS	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.23 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

Lab Sample ID: 320-80903-3

Date Collected: 10/19/21 13:00

Matrix: Solid

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	Analysis	D 2216		1			537918	10/28/21 12:18	TCS	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.35 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

Lab Sample ID: 320-80903-4

Date Collected: 10/19/21 13:30

Matrix: Solid

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	Analysis	D 2216		1			537918	10/28/21 12:18	TCS	TAL SAC

Eurofins TestAmerica, Sacramento

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

Client Sample ID: 21GST-MW13-04

Lab Sample ID: 320-80903-4

Date Collected: 10/19/21 13:30

Matrix: Solid

Date Received: 10/27/21 12:25

Percent Solids: 70.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.36 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 Sample ID: 320-80903-5

Date Collected: 10/19/21 14:10

Matrix: Solid

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	Analysis	D 2216		1			537918	10/28/21 12:18	TCS	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.50 g	10.0 mL	538118	10/29/21 04:15	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538662	10/29/21 22:03	RS1	TAL SAC

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

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			537918	10/28/21 12:18	TCS	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.11 g	10.0 mL	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

Lab Sample ID: 320-80903-7

Date Collected: 10/19/21 11:30

Matrix: Solid

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	Analysis	D 2216		1			537918	10/28/21 12:18	TCS	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.23 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

Date Received: 10/27/21 12:25

Lab Sample ID: 320-80903-8

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			537918	10/28/21 12:18	TCS	TAL SAC

Client Sample ID: 21GST-MW23-01

Date Collected: 10/20/21 10:35

Date Received: 10/27/21 12:25

Lab Sample ID: 320-80903-8

Matrix: Solid

Percent Solids: 81.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.05 g	10.0 mL	538118	10/29/21 04:15	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538662	10/29/21 22:55	RS1	TAL SAC

Client Sample ID: 21GST-MW23-02

Date Collected: 10/20/21 16:10

Date Received: 10/27/21 12:25

Lab Sample ID: 320-80903-9

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			537918	10/28/21 12:18	TCS	TAL SAC

Client Sample ID: 21GST-MW23-02

Date Collected: 10/20/21 16:10

Date Received: 10/27/21 12:25

Lab Sample ID: 320-80903-9

Matrix: Solid

Percent Solids: 73.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.34 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

Date Collected: 10/22/21 12:15

Date Received: 10/27/21 12:25

Lab Sample ID: 320-80903-10

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			537918	10/28/21 12:18	TCS	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

Client Sample ID: 21GST-MW17-01

Lab Sample ID: 320-80903-10

Date Collected: 10/22/21 12:15

Matrix: Solid

Date Received: 10/27/21 12:25

Percent Solids: 78.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.31 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

Lab Sample ID: 320-80903-11

Date Collected: 10/22/21 13:35

Matrix: Solid

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	Analysis	D 2216		1			537918	10/28/21 12:18	TCS	TAL SAC

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

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

Lab Sample ID: 320-80903-12

Date Collected: 10/23/21 09:25

Matrix: Solid

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	Analysis	D 2216		1			537918	10/28/21 12:18	TCS	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.49 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

Lab Sample ID: 320-80903-13

Date Collected: 10/23/21 12:30

Matrix: Solid

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	Analysis	D 2216		1			537918	10/28/21 12:18	TCS	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.43 g	10.0 mL	538091	10/28/21 18:22	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538358	10/30/21 04:48	S1M	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

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			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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.23 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

Date Collected: 10/17/21 09:50

Matrix: Solid

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	Analysis	D 2216		1			537918	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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.56 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

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

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			537918	10/28/21 12:18	TCS	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.68 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

Lab Sample ID: 320-80903-17

Date Collected: 10/17/21 10:35

Matrix: Solid

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	Analysis	D 2216		1			537918	10/28/21 12:18	TCS	TAL SAC

Client Sample ID: 21GST-DPSED-024

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.70 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

Lab Sample ID: 320-80903-18

Date Collected: 10/17/21 10:10

Matrix: Solid

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	Analysis	D 2216		1			537918	10/28/21 12:18	TCS	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.07 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

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			537918	10/28/21 12:18	TCS	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.18 g	10.0 mL	537957	10/28/21 11:53	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538667	10/30/21 01:52	RS1	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

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

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.36 g	10.0 mL	537957	10/28/21 11:53	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538667	10/30/21 02:23	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

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

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.55 g	10.0 mL	537957	10/28/21 11:53	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538667	10/30/21 02:34	RS1	TAL SAC

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

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

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.44 g	10.0 mL	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

Lab Sample ID: 320-80903-23

Date Collected: 10/17/21 12:25

Matrix: Solid

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	Analysis	D 2216		1			537919	10/28/21 12:18	TCS	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.39 g	10.0 mL	537957	10/28/21 11:53	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538667	10/30/21 02:55	RS1	TAL SAC

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

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

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.52 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

Lab Sample ID: 320-80903-25

Date Collected: 10/17/21 12:55

Matrix: Solid

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	Analysis	D 2216		1			537919	10/28/21 12:18	TCS	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.43 g	10.0 mL	537957	10/28/21 11:53	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538667	10/30/21 03:16	RS1	TAL SAC

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

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

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.09 g	10.0 mL	537957	10/28/21 11:53	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538667	10/30/21 03:26	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

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

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.53 g	10.0 mL	537957	10/28/21 11:53	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538667	10/30/21 03:36	RS1	TAL SAC

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

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

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.66 g	10.0 mL	537957	10/28/21 11:53	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538667	10/30/21 03:47	RS1	TAL SAC

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

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

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

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	537957	10/28/21 11:53	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538667	10/30/21 03:57	RS1	TAL SAC

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

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

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.63 g	10.0 mL	537957	10/28/21 11:53	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538667	10/30/21 04:28	RS1	TAL SAC

Client Sample ID: 21GST-SED-014

Lab Sample ID: 320-80903-31

Date Collected: 10/17/21 15:05

Matrix: Solid

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	Analysis	D 2216		1			537919	10/28/21 12:18	TCS	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

Client Sample ID: 21GST-SED-014

Lab Sample ID: 320-80903-31

Date Collected: 10/17/21 15:05

Matrix: Solid

Date Received: 10/27/21 12:25

Percent Solids: 70.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.41 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

Lab Sample ID: 320-80903-32

Date Collected: 10/17/21 15:20

Matrix: Solid

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	Analysis	D 2216		1			537919	10/28/21 12:18	TCS	TAL SAC

Client Sample ID: 21GST-SED-015

Lab Sample ID: 320-80903-32

Date Collected: 10/17/21 15:20

Matrix: Solid

Date Received: 10/27/21 12:25

Percent Solids: 52.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.54 g	10.0 mL	537957	10/28/21 11:53	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538667	10/30/21 04:49	RS1	TAL SAC

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

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

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.45 g	10.0 mL	537957	10/28/21 11:53	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538667	10/30/21 05:00	RS1	TAL SAC

Client Sample ID: 21GST-SED-118

Lab Sample ID: 320-80903-34

Date Collected: 10/17/21 15:35

Matrix: Solid

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	Analysis	D 2216		1			537919	10/28/21 12:18	TCS	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

Client Sample ID: 21GST-SED-118

Lab Sample ID: 320-80903-34

Date Collected: 10/17/21 15:35

Matrix: Solid

Date Received: 10/27/21 12:25

Percent Solids: 72.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.21 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

Lab Sample ID: 320-80903-35

Date Collected: 10/17/21 16:15

Matrix: Solid

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	Analysis	D 2216		1			537919	10/28/21 12:18	TCS	TAL SAC

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

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

Lab Sample ID: 320-80903-36

Date Collected: 10/17/21 16:50

Matrix: Solid

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	Analysis	D 2216		1			537919	10/28/21 12:18	TCS	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.30 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

Lab Sample ID: 320-80903-37

Date Collected: 10/17/21 16:25

Matrix: Solid

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	Analysis	D 2216		1			537919	10/28/21 12:18	TCS	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

Client Sample ID: 21GST-DPSED-020

Lab Sample ID: 320-80903-37

Date Collected: 10/17/21 16:25

Matrix: Solid

Date Received: 10/27/21 12:25

Percent Solids: 76.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.26 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

Lab Sample ID: 320-80903-38

Date Collected: 10/17/21 17:00

Matrix: Solid

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	Analysis	D 2216		1			537919	10/28/21 12:18	TCS	TAL SAC

Client Sample ID: 21GST-DPSED-021

Lab Sample ID: 320-80903-38

Date Collected: 10/17/21 17:00

Matrix: Solid

Date Received: 10/27/21 12:25

Percent Solids: 77.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.46 g	10.0 mL	538091	10/28/21 18:22	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538358	10/30/21 05:59	S1M	TAL SAC

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

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			537920	10/28/21 12:18	TCS	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.13 g	10.0 mL	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

Lab Sample ID: 320-80903-40

Date Collected: 10/18/21 09:35

Matrix: Solid

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	Analysis	D 2216		1			537920	10/28/21 12:18	TCS	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.53 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

Lab Sample ID: 320-80903-41

Date Collected: 10/18/21 10:50

Matrix: Solid

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	Analysis	D 2216		1			537920	10/28/21 12:18	TCS	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.13 g	10.0 mL	538091	10/28/21 18:22	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538358	10/30/21 06:50	S1M	TAL SAC

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

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			537920	10/28/21 12:18	TCS	TAL SAC

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

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	538091	10/28/21 18:22	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538358	10/30/21 07:00	S1M	TAL SAC

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

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			537920	10/28/21 12:18	TCS	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.19 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

Lab Sample ID: 320-80903-44

Date Collected: 10/18/21 12:00

Matrix: Solid

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	Analysis	D 2216		1			537920	10/28/21 12:18	TCS	TAL SAC

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

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	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

Lab Sample ID: 320-80903-45

Date Collected: 10/18/21 13:30

Matrix: Solid

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	Analysis	D 2216		1			537920	10/28/21 12:18	TCS	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.18 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

Lab Sample ID: 320-80903-46

Date Collected: 10/18/21 13:50

Matrix: Solid

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	Analysis	D 2216		1			537920	10/28/21 12:18	TCS	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

Client Sample ID: 21GST-SED-028

Lab Sample ID: 320-80903-46

Date Collected: 10/18/21 13:50

Matrix: Solid

Date Received: 10/27/21 12:25

Percent Solids: 21.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.18 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

Lab Sample ID: 320-80903-47

Date Collected: 10/18/21 14:00

Matrix: Solid

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	Analysis	D 2216		1			537920	10/28/21 12:18	TCS	TAL SAC

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

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	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

Lab Sample ID: 320-80903-48

Date Collected: 10/18/21 14:20

Matrix: Solid

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	Analysis	D 2216		1			537920	10/28/21 12:18	TCS	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.13 g	10.0 mL	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

Lab Sample ID: 320-80903-49

Date Collected: 10/18/21 14:40

Matrix: Solid

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	Analysis	D 2216		1			537920	10/28/21 12:18	TCS	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.20 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

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			537920	10/28/21 12:18	TCS	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

Percent Solids: 75.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.26 g	10.0 mL	538091	10/28/21 18:22	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538358	10/30/21 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

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			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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.49 g	10.0 mL	538091	10/28/21 18:22	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538358	10/30/21 08:51	S1M	TAL SAC

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

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			537920	10/28/21 12:18	TCS	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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

Percent Solids: 69.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.18 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

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

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	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24

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

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

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Method Summary

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

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



Sample Summary

Client: Shannon & Wilson, Inc
Project/Site: SG Soils WO#1

Job ID: 320-80903-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-80903-1	21GST-MW13-01	Solid	10/19/21 11:10	10/27/21 12:25
320-80903-2	21GST-MW13-02	Solid	10/19/21 11:40	10/27/21 12:25
320-80903-3	21GST-MW13-03	Solid	10/19/21 13:00	10/27/21 12:25
320-80903-4	21GST-MW13-04	Solid	10/19/21 13:30	10/27/21 12:25
320-80903-5	21GST-MW13-05	Solid	10/19/21 14:10	10/27/21 12:25
320-80903-6	21GST-MW13-07	Solid	10/19/21 16:45	10/27/21 12:25
320-80903-7	21GST-MW13-12	Solid	10/19/21 11:30	10/27/21 12:25
320-80903-8	21GST-MW23-01	Solid	10/20/21 10:35	10/27/21 12:25
320-80903-9	21GST-MW23-02	Solid	10/20/21 16:10	10/27/21 12:25
320-80903-10	21GST-MW17-01	Solid	10/22/21 12:15	10/27/21 12:25
320-80903-11	21GST-MW17-02	Solid	10/22/21 13:35	10/27/21 12:25
320-80903-12	21GST-MW25-01	Solid	10/23/21 09:25	10/27/21 12:25
320-80903-13	21GST-MW25-02	Solid	10/23/21 12:30	10/27/21 12:25
320-80903-14	21GST-SED-010	Solid	10/17/21 09:20	10/27/21 12:25
320-80903-15	21GST-SED-008	Solid	10/17/21 09:50	10/27/21 12:25
320-80903-16	21GST-SED-024	Solid	10/17/21 10:20	10/27/21 12:25
320-80903-17	21GST-DPSED-024	Solid	10/17/21 10:35	10/27/21 12:25
320-80903-18	21GST-SED-124	Solid	10/17/21 10:10	10/27/21 12:25
320-80903-19	21GST-DPSED-124	Solid	10/17/21 10:25	10/27/21 12:25
320-80903-20	21GST-SED-005	Solid	10/17/21 11:20	10/27/21 12:25
320-80903-21	21GST-SED-004	Solid	10/17/21 11:35	10/27/21 12:25
320-80903-22	21GST-SED-006	Solid	10/17/21 12:05	10/27/21 12:25
320-80903-23	21GST-SED-007	Solid	10/17/21 12:25	10/27/21 12:25
320-80903-24	21GST-SED-011	Solid	10/17/21 12:45	10/27/21 12:25
320-80903-25	21GST-DPSED-011	Solid	10/17/21 12:55	10/27/21 12:25
320-80903-26	21GST-SED-017	Solid	10/17/21 13:20	10/27/21 12:25
320-80903-27	21GST-DPSED-017	Solid	10/17/21 13:30	10/27/21 12:25
320-80903-28	21GST-SED-019	Solid	10/17/21 13:50	10/27/21 12:25
320-80903-29	21GST-SED-016	Solid	10/17/21 14:10	10/27/21 12:25
320-80903-30	21GST-SED-013	Solid	10/17/21 14:45	10/27/21 12:25
320-80903-31	21GST-SED-014	Solid	10/17/21 15:05	10/27/21 12:25
320-80903-32	21GST-SED-015	Solid	10/17/21 15:20	10/27/21 12:25
320-80903-33	21GST-SED-018	Solid	10/17/21 15:45	10/27/21 12:25
320-80903-34	21GST-SED-118	Solid	10/17/21 15:35	10/27/21 12:25
320-80903-35	21GST-SED-020	Solid	10/17/21 16:15	10/27/21 12:25
320-80903-36	21GST-SED-021	Solid	10/17/21 16:50	10/27/21 12:25
320-80903-37	21GST-DPSED-020	Solid	10/17/21 16:25	10/27/21 12:25
320-80903-38	21GST-DPSED-021	Solid	10/17/21 17:00	10/27/21 12:25
320-80903-39	21GST-SED-012	Solid	10/17/21 17:25	10/27/21 12:25
320-80903-40	21GST-SED-022	Solid	10/18/21 09:35	10/27/21 12:25
320-80903-41	21GST-SED-009	Solid	10/18/21 10:50	10/27/21 12:25
320-80903-42	21GST-DPSED-009	Solid	10/18/21 11:00	10/27/21 12:25
320-80903-43	21GST-SED-023	Solid	10/18/21 11:55	10/27/21 12:25
320-80903-44	21GST-DPSED-023	Solid	10/18/21 12:00	10/27/21 12:25
320-80903-45	21GST-SED-030	Solid	10/18/21 13:30	10/27/21 12:25
320-80903-46	21GST-SED-028	Solid	10/18/21 13:50	10/27/21 12:25
320-80903-47	21GST-DPSED-028	Solid	10/18/21 14:00	10/27/21 12:25
320-80903-48	21GST-SED-029	Solid	10/18/21 14:20	10/27/21 12:25
320-80903-49	21GST-SED-027	Solid	10/18/21 14:40	10/27/21 12:25
320-80903-50	21GST-SED-026	Solid	10/18/21 15:05	10/27/21 12:25
320-80903-51	21GST-SED-025	Solid	10/18/21 15:25	10/27/21 12:25
320-80903-52	21GST-SED-127	Solid	10/18/21 14:30	10/27/21 12:25



CHAIN-OF-CUSTODY RECORD

Analytical Methods (include preservative if used)

Turn Around Time:
 Normal Rush
 Please Specify _____

Quote No: _____
J-Flags: Yes No

PPS X 18 analytes (537)									
Total Number of Containers									

Sample Identity	Lab No.	Time	Date Sampled							Remarks/Matrix Composition/Grab? Sample Containers
21GST-MW13-01		1110	10/19/21	X					1	Soil
21GST-MW13-01										
21GST-MW13-02		1140							1	Soil
21GST-MW13-03		1300								
21GST-MW13-04		1330								
21GST-MW13-05		1410								
21GST-MW13-07		1645								
21GST-MW13-12		1130								
21GST-MW23-01		1035	10/20/21							
21GST-MW23-02		1610								



Project Information
 Number: 102599-008
 Name: SG Soils WO#1
 Contact: Kristen
 Ongoing Project? Yes No
 Sampler: APW

Sample Receipt
 Total No. of Containers: 52
 COC Seals/Intact? Y/N/NA _____
 Received Good Cond./Cold _____
 Temp: _____
 Delivery Method: _____

Relinquished By: 1.
 Signature: _____ Time: 14:00
 Printed Name: Kristen Freiburger Date: 10/24/21
 Company: S&W

Relinquished By: 2.
 Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Relinquished By: 3.
 Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Notes:

Received By: 1.
 Signature: _____ Time: 12:05
 Printed Name: David Hr Date: 10/27/21
 Company: EET-sac

Received By: 2.
 Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Received By: 3.
 Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
 Yellow - w/shipment - for consignee files
 Pink - Shannon & Wilson - job file

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CHAIN-OF-CUSTODY RECORD

Analytical Methods (include preservative if used)

Turn Around Time:
 Normal Rush
 Please Specify _____

Quote No: _____

J-Flags: Yes No

PFAS X 18 analytes (537) MS							Total Number of Containers	Remarks/Matrix Composition/Grab? Sample Containers

Sample Identity	Lab No.	Time	Date Sampled																
21GST-MW17-01		1215	10/27/21	X															Soil
21GST-MW17-02		1335																	
21GST-MW25-01		0925	10/23/21																
21GST-MW25-02		1230																	
21GST-SED-010		920	10/17/21																
21GST-SED-008	950 →	980																	
21GST-SED-124		950																	
21GST-SED																			
21GST-SED-024		10:20	10/20	X															Soil
21GST-PPSED-024		10:35	10/25	X															Soil

Project Information

Number: 102594-008
 Name: SC Soils WO#1
 Contact: Kristen
 Ongoing Project? Yes No
 Sampler: APW

Sample Receipt

Total No. of Containers: 52
 COC Seals/Intact? Y/N/NA
 Received Good Cond./Cold
 Temp:
 Delivery Method:

Relinquished By: 1.

Signature: _____ Time: 1400
 Printed Name: Kristen Freiburger Date: 10/24/21
 Company: S&W

Relinquished By: 2.

Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Relinquished By: 3.

Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Notes:

Received By: 1.

Signature: _____ Time: 12:25
 Printed Name: David Hr Date: 10/27/21
 Company: BET-Son

Received By: 2.

Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Received By: 3.

Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
 Yellow - w/shipment - for consignee files
 Pink - Shannon & Wilson - job file

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11/5/2021



CHAIN-OF-CUSTODY RECORD

Analytical Methods (include preservative if used)

Turn Around Time:
 Normal Rush
 Please Specify _____

Quote No: _____

J-Flags: Yes No

PFAS-18 analytes	Total Number of Containers	

Sample Identity	Lab No.	Time	Date Sampled	Analytical Methods						Total Number of Containers	Remarks/Matrix Composition/Grab? Sample Containers
21GST-SED-124		1010	10/17/21	X							Soil
21GST-DPSED-124		1025									
21GST-SED-005		1120									
21GST-SED-004		1135									
21GST-SED-006		1205									
21GST-SED-007		1225									
21GST-SED-011		1245									
21GST-DPSED-011		1255									
21GST-SED-017		1320									
21GST-DPSED-017		1330									

Project Information
 Number: 102599-008
 Name: SC Soils w/ #1
 Contact: Kristen
 Ongoing Project? Yes No
 Sampler: APW

Sample Receipt
 Total No. of Containers: 52
 COC Seals/Intact? Y/N/NA _____
 Received Good Cond./Cold _____
 Temp: _____
 Delivery Method: _____

Relinquished By: 1.
 Signature: _____ Time: 1400
 Printed Name: Kristen Fralinger Date: 10/24/21
 Company: S&W

Relinquished By: 2.
 Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Relinquished By: 3.
 Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Notes:

Received By: 1.
 Signature: _____ Time: 1425
 Printed Name: David He Date: 10/24/21
 Company: EBT-Su

Received By: 2.
 Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Received By: 3.
 Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
 Yellow - w/shipment - for consignee files
 Pink - Shannon & Wilson - job file

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11/5/2021



CHAIN-OF-CUSTODY RECORD

Analytical Methods (include preservative if used)

Turn Around Time:
 Normal Rush
 Please Specify _____

Quote No: _____

J-Flags: Yes No

Sample Identity	Lab No.	Time	Date Sampled	Analytical Methods (include preservative if used)					Total Number of Containers	Remarks/Matrix Composition/Grab? Sample Containers
21GST-SED-019		1350	10/17/21	PFAS-18 analytes					1	Soil
21GST-SED-016		1410								
21GST-SED-013		1445								
21GST-SED-014		1505								
21GST-SED-015		1520								
21GST-SED-018		1545								
21GST-SED-118		1535								
21GST-SED-020		1615								
21GST-SED-021		1650								
21GST-SED										

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Project Information
 Number: 102599-008
 Name: SC Soils #1
 Contact: Kristen
 Ongoing Project? Yes No
 Sampler: APW

Sample Receipt
 Total No. of Containers: 52
 COC Seals/Intact? Y/N/NA _____
 Received Good Cond./Cold _____
 Temp: _____
 Delivery Method: _____

Relinquished By: 1.
 Signature: _____ Time: 1400
 Printed Name: Kristen Freiberger
 Date: 10/24/21
 Company: _____

Relinquished By: 2.
 Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Relinquished By: 3.
 Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Notes:

Received By: 1.
 Signature: _____ Time: 10:25
 Printed Name: David Her
 Date: 10/27/21
 Company: ERT-Son

Received By: 2.
 Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Received By: 3.
 Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
 Yellow - w/shipment - for consignee files
 Pink - Shannon & Wilson - job file

11/5/2021



CHAIN-OF-CUSTODY RECORD

Laboratory _____
 Attn: _____

Analytical Methods (include preservative if used)

Turn Around Time:

Normal Rush

Please Specify _____

Quote No: _____

J-Flags: Yes No

PFAS - 18 analytes	Total Number of Containers	

Sample Identity	Lab No.	Time	Date Sampled	Analytical Methods						Total Number of Containers	Remarks/Matrix Composition/Grab? Sample Containers
21GST-DPSED-020		1625	10/17/21	X						1	Soil
21GST-DPSED-021		1700	↓	X							
21GST-SED-012		1725	↓	X							
21GST-SED-022		0935	10/18/21	X							
21GST-SED-009		1650	10/18/21	X							
21GST-DPSED											
21GST-DPSED-009		1100	10/18/21	X						1	Soil
21GST-SED-023		1155	↓	X							
21GST-DPSED-023		1200	↓	X							
21GST-SED-030		1330	↓	X							

Project Information

Number: 162599-008

Name: SC Soils w/ #1

Contact: Kristen

Ongoing Project? Yes No

Sampler: ADW

Sample Receipt

Total No. of Containers: SZ

COC Seals/Intact? Y/N/NA

Received Good Cond./Cold

Temp:

Delivery Method:

Relinquished By: 1.

Signature: [Signature] Time: 1400

Printed Name: Kristen Freiburger Date: 10/24/21

Company: SW

Relinquished By: 2.

Signature: _____ Time: _____

Printed Name: _____ Date: _____

Company: _____

Relinquished By: 3.

Signature: _____ Time: _____

Printed Name: _____ Date: _____

Company: _____

Notes:

Received By: 1.

Signature: [Signature] Time: _____

Printed Name: David Her Date: 10/27/21

Company: BET-Sou

Received By: 2.

Signature: _____ Time: _____

Printed Name: _____ Date: _____

Company: _____

Received By: 3.

Signature: _____ Time: _____

Printed Name: _____ Date: _____

Company: _____

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
 Yellow - w/shipment - for consignee files
 Pink - Shannon & Wilson - job file



CHAIN-OF-CUSTODY RECORD

Analytical Methods (include preservative if used)

Turn Around Time:
 Normal Rush
Please Specify

Quote No:

J-Flags: Yes No

PFAS-18 analytes

Total Number of Containers

Remarks/Matrix Composition/Grab? Sample Containers

Sample Identity	Lab No.	Time	Date Sampled																					
21 GST-SED-028		1350	10/18/21	X																				
21 GST-DBSED-028		1400		X																				
21 GST-SED-029		1420		X																				
21 GST-SED-027		1440		X																				
21 GST-SED-026		1505		X																				
21 GST-SED-025		1525		X																				
21 GST-SED-127		1430	10/18/21	X																				

Project Information
Number: 102599-008
Name: SC Soils 100#1
Contact: Kristen
Ongoing Project? Yes No
Sampler: APW

Sample Receipt
Total No. of Containers: 52
COC Seals/Intact? Y/N/NA
Received Good Cond./Cold
Temp:
Delivery Method:

Relinquished By: 1.
Signature: [Signature] Time: 1400
Printed Name: Kristen Freiburger Date: 10/24/21
Company: SWW

Relinquished By: 2.
Signature: _____ Time: _____
Printed Name: _____ Date: _____
Company: _____

Relinquished By: 3.
Signature: _____ Time: _____
Printed Name: _____ Date: _____
Company: _____

Notes:

Received By: 1.
Signature: [Signature] Time: 1225
Printed Name: David Her Date: 10/27/21
Company: BET Sae

Received By: 2.
Signature: _____ Time: _____
Printed Name: _____ Date: _____
Company: _____

Received By: 3.
Signature: _____ Time: _____
Printed Name: _____ Date: _____
Company: _____

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
Yellow - w/shipment - for consignee files
Pink - Shannon & Wilson - job file



Login Sample Receipt Checklist

Client: Shannon & Wilson, Inc

Job Number: 320-80903-1

Login Number: 80903

List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Her, David A

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	159067/1519066/1503337/1503336/1503338/1519065
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

Laboratory Report Date:

Note: Any N/A or No box checked must have an explanation in the comments box.

1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform 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)

a. CoC information completed, signed, and dated (including released/received by)?

Yes No N/A Comments:

b. Correct analyses requested?

Yes No N/A Comments:

3. 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.

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 No N/A 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?

Yes No N/A Comments:

- 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 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. *21GST-MW13-01* (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. Samples 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:

--

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 objectives?

Yes No N/A 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.

Laboratory Report Date:

iv. 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.

v. Data quality or usability affected?

Comments:

The data quality/usability is not affected.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

Yes No N/A 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 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 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:

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 No N/A Comments:

Qualification of the data was not required; see above.

Laboratory Report Date:

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

The data quality/usability was not affected.

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:

ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?

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 limits and project specified objectives, if applicable?

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 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 No N/A Comments:

Qualification was not required; see above.

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 No N/A 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:

iii. Do the sample results with failed surrogate/IDA recoveries have data flags? If so, are the data flags clearly defined?

Yes No N/A 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

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)

Yes No N/A 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 No N/A Comments:

See above.

Laboratory Report Date:

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 No N/A Comments:

ii. Submitted blind to lab?

Yes No N/A Comments:

The field duplicate pairs *21GST-SED-024 / 21GST-SED-124*, *21GST-SED-018 / 21GST-SED-118*, *21GST-DPSED-024 / 21GST-DPSED-124*, and *21GST-MW13-02 / 21GST-MW13-12* were submitted with this work order.

iii. Precision – All relative percent differences (RPD) less than specified project objectives?
(Recommended: 30% water, 50% soil)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where R_1 = Sample Concentration
 R_2 = Field Duplicate Concentration

Yes No N/A Comments:

The relative precision demonstrated between the detected results of the field duplicate samples were within the recommended DQO of 50% for all analytes except PFOS in the pairs *21GST-SED-024 / 21GST-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:

These PFOS results of samples *21GST-SED-024*, *21GST-SED-124*, *21GST-DPSED-024*, and *21GST-DPSED-124* are considered estimated and have been flagged 'J' for detected and 'UJ' for not-detected concentrations in the table and analytical database to denote the uncertainty.

g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below)?

Yes No N/A Comments:

Project samples were not collected with reusable equipment, so the prospect of foreign contaminants being introduced through equipment contamination is not plausible.

Laboratory Report Date:

i. All results less than LOQ and project specified objectives?

Yes No N/A 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.

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



Authorized for release by:
11/8/2021 12:47:00 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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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

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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

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).

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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Detection Summary

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

Client Sample ID: 21GST-SW-010

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	1		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	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)	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	Dil 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	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	5.9		1.9	0.56	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.59	J	1.9	0.24	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	3.7		1.9	0.82	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.2	J	1.9	0.19	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	48		1.9	0.55	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

Detection Summary

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

Client Sample ID: 21GST-SW-011 (Continued)

Lab Sample ID: 320-80911-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	67		1.9	0.52	ng/L	1		EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SW-017

Lab Sample ID: 320-80911-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	32		2.0	0.58	ng/L	1		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	J	1.9	0.54	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	4.2		1.9	0.51	ng/L	1		EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SW-016

Lab Sample ID: 320-80911-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	15		2.0	0.58	ng/L	1		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	0.20	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	31		2.0	0.57	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	160		2.0	0.54	ng/L	1		EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SW-013

Lab Sample ID: 320-80911-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	30		1.9	0.56	ng/L	1		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
Perfluorooctanesulfonic acid (PFOS)	260		1.9	0.52	ng/L	1		EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SW-014

Lab Sample ID: 320-80911-13

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-015

Lab Sample ID: 320-80911-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	11		1.9	0.56	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

Detection Summary

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

Client Sample ID: 21GST-SW-015 (Continued)

Lab Sample ID: 320-80911-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluoroheptanoic acid (PFHpA)	2.8		1.9	0.24	ng/L	1		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	1		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

Detection Summary

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

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	1.7	J	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

Lab Sample ID: 320-80911-26

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

Lab Sample ID: 320-80911-27

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

Lab Sample ID: 320-80911-28

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

Lab Sample ID: 320-80911-29

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluoroheptanoic acid (PFHpA)	0.41	J	1.9	0.24	ng/L	1		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

Lab Sample ID: 320-80911-30

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

Lab Sample ID: 320-80911-31

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	4.0		1.9	0.56	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
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

Detection Summary

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

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	1		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	1		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.

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

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

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)	28		1.9	0.56	ng/L		10/29/21 03:11	10/30/21 06:34	1
Perfluoroheptanoic acid (PFHpA)	9.8		1.9	0.24	ng/L		10/29/21 03:11	10/30/21 06:34	1
Perfluorooctanoic acid (PFOA)	5.2		1.9	0.83	ng/L		10/29/21 03:11	10/30/21 06:34	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		10/29/21 03:11	10/30/21 06:34	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		10/29/21 03:11	10/30/21 06:34	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		10/29/21 03:11	10/30/21 06:34	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		10/29/21 03:11	10/30/21 06:34	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.3	ng/L		10/29/21 03:11	10/30/21 06:34	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.71	ng/L		10/29/21 03:11	10/30/21 06:34	1
Perfluorobutanesulfonic acid (PFBS)	1.4	J	1.9	0.19	ng/L		10/29/21 03:11	10/30/21 06:34	1
Perfluorohexanesulfonic acid (PFHxS)	40		1.9	0.55	ng/L		10/29/21 03:11	10/30/21 06:34	1
Perfluorooctanesulfonic acid (PFOS)	270		1.9	0.53	ng/L		10/29/21 03:11	10/30/21 06:34	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.9	1.2	ng/L		10/29/21 03:11	10/30/21 06:34	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.9	1.3	ng/L		10/29/21 03:11	10/30/21 06:34	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.9	0.23	ng/L		10/29/21 03:11	10/30/21 06:34	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.9	1.5	ng/L		10/29/21 03:11	10/30/21 06:34	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		1.9	0.31	ng/L		10/29/21 03:11	10/30/21 06:34	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.39	ng/L		10/29/21 03:11	10/30/21 06:34	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	80		50 - 150				10/29/21 03:11	10/30/21 06:34	1
13C4 PFHpA	83		50 - 150				10/29/21 03:11	10/30/21 06:34	1
13C4 PFOA	94		50 - 150				10/29/21 03:11	10/30/21 06:34	1
13C5 PFNA	89		50 - 150				10/29/21 03:11	10/30/21 06:34	1
13C2 PFDA	89		50 - 150				10/29/21 03:11	10/30/21 06:34	1
13C2 PFUnA	86		50 - 150				10/29/21 03:11	10/30/21 06:34	1
13C2 PFDoA	83		50 - 150				10/29/21 03:11	10/30/21 06:34	1
13C2 PFTeDA	84		50 - 150				10/29/21 03:11	10/30/21 06:34	1
13C3 PFBS	94		50 - 150				10/29/21 03:11	10/30/21 06:34	1
18O2 PFHxS	86		50 - 150				10/29/21 03:11	10/30/21 06:34	1
13C4 PFOS	87		50 - 150				10/29/21 03:11	10/30/21 06:34	1
d3-NMeFOSAA	96		50 - 150				10/29/21 03:11	10/30/21 06:34	1
d5-NEtFOSAA	93		50 - 150				10/29/21 03:11	10/30/21 06:34	1
13C3 HFPO-DA	79		50 - 150				10/29/21 03:11	10/30/21 06:34	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

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

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		1.9	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.8	1.1	ng/L		10/29/21 03:11	10/30/21 06:44	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.8	1.2	ng/L		10/29/21 03:11	10/30/21 06:44	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 150	10/29/21 03:11	10/30/21 06:44	1
13C3 PFBS	43	*5-	50 - 150	10/29/21 03:11	10/30/21 06:44	1
18O2 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 - 150	10/29/21 03:11	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 - 150	10/29/21 03:11	10/30/21 06:44	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

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 for QSM 5.3, Table B-15

Analyte	Result	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	ng/L		10/29/21 03:11	10/30/21 06:54	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.8	1.1	ng/L		10/29/21 03:11	10/30/21 06:54	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.8	1.2	ng/L		10/29/21 03:11	10/30/21 06:54	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 150	10/29/21 03:11	10/30/21 06:54	1
18O2 PFHxS	78		50 - 150	10/29/21 03:11	10/30/21 06:54	1
13C4 PFOS	82		50 - 150	10/29/21 03:11	10/30/21 06:54	1
d3-NMeFOSAA	76		50 - 150	10/29/21 03:11	10/30/21 06:54	1
d5-NEtFOSAA	77		50 - 150	10/29/21 03:11	10/30/21 06:54	1
13C3 HFPO-DA	73		50 - 150	10/29/21 03:11	10/30/21 06:54	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

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

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)	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	0.55	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.9	1.2	ng/L		10/29/21 03:11	10/30/21 07:05	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.9	1.3	ng/L		10/29/21 03:11	10/30/21 07:05	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.9	0.23	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-Chloroeicosafuoro-3-oxaundecane-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 - 150				10/29/21 03:11	10/30/21 07:05	1
13C3 PFBS	85		50 - 150				10/29/21 03:11	10/30/21 07:05	1
18O2 PFHxS	79		50 - 150				10/29/21 03:11	10/30/21 07:05	1
13C4 PFOS	87		50 - 150				10/29/21 03:11	10/30/21 07:05	1
d3-NMeFOSAA	96		50 - 150				10/29/21 03:11	10/30/21 07:05	1
d5-NEtFOSAA	97		50 - 150				10/29/21 03:11	10/30/21 07:05	1
13C3 HFPO-DA	85		50 - 150				10/29/21 03:11	10/30/21 07:05	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

Client Sample ID: 21GST-SW-005

Lab Sample ID: 320-80911-5

Date Collected: 10/17/21 11:15

Matrix: Water

Date Received: 10/27/21 12:25

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		1.9	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.8	1.2	ng/L		10/29/21 03:11	10/30/21 07:15	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.8	1.2	ng/L		10/29/21 03:11	10/30/21 07:15	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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
18O2 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 - 150	10/29/21 03:11	10/30/21 07:15	1
d5-NEtFOSAA	60		50 - 150	10/29/21 03:11	10/30/21 07:15	1
13C3 HFPO-DA	48	*5-	50 - 150	10/29/21 03:11	10/30/21 07:15	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

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

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		1.9	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-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	ND		4.7	1.1	ng/L		10/29/21 03:11	10/30/21 07:26	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	ND		4.7	1.2	ng/L		10/29/21 03:11	10/30/21 07:26	1
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosafuoro-3-oxaundecane-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	Limits	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		50 - 150	10/29/21 03:11	10/30/21 07:26	1
18O2 PFHxS	84		50 - 150	10/29/21 03:11	10/30/21 07:26	1
13C4 PFOS	86		50 - 150	10/29/21 03:11	10/30/21 07:26	1
d3-NMeFOSAA	87		50 - 150	10/29/21 03:11	10/30/21 07:26	1
d5-NEtFOSAA	83		50 - 150	10/29/21 03:11	10/30/21 07:26	1
13C3 HFPO-DA	79		50 - 150	10/29/21 03:11	10/30/21 07:26	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

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

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		1.9	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.8	1.2	ng/L		10/29/21 03:11	10/30/21 07:36	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.8	1.2	ng/L		10/29/21 03:11	10/30/21 07:36	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 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 - 150	10/29/21 03:11	10/30/21 07:36	1
13C2 PFDoA	38	*5-	50 - 150	10/29/21 03:11	10/30/21 07:36	1
13C2 PFTeDA	34	*5-	50 - 150	10/29/21 03:11	10/30/21 07:36	1
13C3 PFBS	47	*5-	50 - 150	10/29/21 03:11	10/30/21 07:36	1
18O2 PFHxS	42	*5-	50 - 150	10/29/21 03:11	10/30/21 07:36	1
13C4 PFOS	41	*5-	50 - 150	10/29/21 03:11	10/30/21 07:36	1
d3-NMeFOSAA	49	*5-	50 - 150	10/29/21 03:11	10/30/21 07:36	1
d5-NEtFOSAA	48	*5-	50 - 150	10/29/21 03:11	10/30/21 07:36	1
13C3 HFPO-DA	44	*5-	50 - 150	10/29/21 03:11	10/30/21 07:36	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

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

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)	5.9		1.9	0.56	ng/L		10/29/21 03:11	10/30/21 08:07	1
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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.8	1.2	ng/L		10/29/21 03:11	10/30/21 08:07	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.8	1.3	ng/L		10/29/21 03:11	10/30/21 08:07	1
9-Chlorohexadecafluoro-3-oxanonane-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	1.5	ng/L		10/29/21 03:11	10/30/21 08:07	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		1.9	0.31	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	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	82		50 - 150				10/29/21 03:11	10/30/21 08:07	1
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	1
18O2 PFHxS	78		50 - 150				10/29/21 03:11	10/30/21 08:07	1
13C4 PFOS	87		50 - 150				10/29/21 03:11	10/30/21 08:07	1
d3-NMeFOSAA	102		50 - 150				10/29/21 03:11	10/30/21 08:07	1
d5-NEtFOSAA	102		50 - 150				10/29/21 03:11	10/30/21 08:07	1
13C3 HFPO-DA	78		50 - 150				10/29/21 03:11	10/30/21 08:07	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

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

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)	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 (PFBS)	2.1		2.0	0.20	ng/L		10/29/21 03:11	10/30/21 08:18	1
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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		5.0	1.2	ng/L		10/29/21 03:11	10/30/21 08:18	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		5.0	1.3	ng/L		10/29/21 03:11	10/30/21 08:18	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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				10/29/21 03:11	10/30/21 08:18	1
13C4 PFHpA	86		50 - 150				10/29/21 03:11	10/30/21 08:18	1
13C4 PFOA	95		50 - 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 - 150				10/29/21 03:11	10/30/21 08:18	1
13C2 PFUnA	84		50 - 150				10/29/21 03:11	10/30/21 08:18	1
13C2 PFDoA	79		50 - 150				10/29/21 03:11	10/30/21 08:18	1
13C2 PFTeDA	73		50 - 150				10/29/21 03:11	10/30/21 08:18	1
13C3 PFBS	102		50 - 150				10/29/21 03:11	10/30/21 08:18	1
18O2 PFHxS	83		50 - 150				10/29/21 03:11	10/30/21 08:18	1
13C4 PFOS	87		50 - 150				10/29/21 03:11	10/30/21 08:18	1
d3-NMeFOSAA	91		50 - 150				10/29/21 03:11	10/30/21 08:18	1
d5-NEtFOSAA	88		50 - 150				10/29/21 03:11	10/30/21 08:18	1
13C3 HFPO-DA	81		50 - 150				10/29/21 03:11	10/30/21 08:18	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

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

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		1.9	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	1
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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.8	1.1	ng/L		10/29/21 03:11	10/30/21 08:28	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.8	1.2	ng/L		10/29/21 03:11	10/30/21 08:28	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	88		50 - 150	10/29/21 03:11	10/30/21 08:28	1
13C4 PFHpA	92		50 - 150	10/29/21 03:11	10/30/21 08:28	1
13C4 PFOA	97		50 - 150	10/29/21 03:11	10/30/21 08:28	1
13C5 PFNA	100		50 - 150	10/29/21 03:11	10/30/21 08:28	1
13C2 PFDA	94		50 - 150	10/29/21 03:11	10/30/21 08:28	1
13C2 PFUnA	91		50 - 150	10/29/21 03:11	10/30/21 08:28	1
13C2 PFDoA	92		50 - 150	10/29/21 03:11	10/30/21 08:28	1
13C2 PFTeDA	91		50 - 150	10/29/21 03:11	10/30/21 08:28	1
13C3 PFBS	102		50 - 150	10/29/21 03:11	10/30/21 08:28	1
18O2 PFHxS	89		50 - 150	10/29/21 03:11	10/30/21 08:28	1
13C4 PFOS	94		50 - 150	10/29/21 03:11	10/30/21 08:28	1
d3-NMeFOSAA	107		50 - 150	10/29/21 03:11	10/30/21 08:28	1
d5-NEtFOSAA	100		50 - 150	10/29/21 03:11	10/30/21 08:28	1
13C3 HFPO-DA	86		50 - 150	10/29/21 03:11	10/30/21 08:28	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

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

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)	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	0.54	ng/L		10/29/21 03:11	10/30/21 08:38	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		5.0	1.2	ng/L		10/29/21 03:11	10/30/21 08:38	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		5.0	1.3	ng/L		10/29/21 03:11	10/30/21 08:38	1
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosafuoro-3-oxaundecane-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
18O2 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 - 150	10/29/21 03:11	10/30/21 08:38	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

Client Sample ID: 21GST-SW-013

Lab Sample ID: 320-80911-12

Date Collected: 10/17/21 14:40

Matrix: Water

Date Received: 10/27/21 12:25

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)	30		1.9	0.56	ng/L		10/29/21 03:11	10/30/21 08:49	1
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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.8	1.1	ng/L		10/29/21 03:11	10/30/21 08:49	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.8	1.2	ng/L		10/29/21 03:11	10/30/21 08:49	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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	1
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	1
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	1
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
18O2 PFHxS	86		50 - 150				10/29/21 03:11	10/30/21 08:49	1
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 - 150				10/29/21 03:11	10/30/21 08:49	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

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

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)	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		10/29/21 03:11	10/30/21 08:59	1
Perfluorohexanesulfonic acid (PFHxS)	5.2		2.0	0.56	ng/L		10/29/21 03:11	10/30/21 08:59	1
Perfluorooctanesulfonic acid (PFOS)	42		2.0	0.53	ng/L		10/29/21 03:11	10/30/21 08:59	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.9	1.2	ng/L		10/29/21 03:11	10/30/21 08:59	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.9	1.3	ng/L		10/29/21 03:11	10/30/21 08:59	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		2.0	0.24	ng/L		10/29/21 03:11	10/30/21 08:59	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.9	1.5	ng/L		10/29/21 03:11	10/30/21 08:59	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		2.0	0.31	ng/L		10/29/21 03:11	10/30/21 08:59	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	0.39	ng/L		10/29/21 03:11	10/30/21 08:59	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	88		50 - 150				10/29/21 03:11	10/30/21 08:59	1
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	1
13C2 PFDoA	93		50 - 150				10/29/21 03:11	10/30/21 08:59	1
13C2 PFTeDA	93		50 - 150				10/29/21 03:11	10/30/21 08:59	1
13C3 PFBS	98		50 - 150				10/29/21 03:11	10/30/21 08:59	1
18O2 PFHxS	83		50 - 150				10/29/21 03:11	10/30/21 08:59	1
13C4 PFOS	92		50 - 150				10/29/21 03:11	10/30/21 08:59	1
d3-NMeFOSAA	105		50 - 150				10/29/21 03:11	10/30/21 08:59	1
d5-NEtFOSAA	97		50 - 150				10/29/21 03:11	10/30/21 08:59	1
13C3 HFPO-DA	85		50 - 150				10/29/21 03:11	10/30/21 08:59	1

Client Sample Results

Client: Shannon & Wilson, Inc
 Project/Site: SC Surface Water

Job ID: 320-80911-1

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

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)	11		1.9	0.56	ng/L		10/29/21 03:11	10/30/21 09:10	1
Perfluoroheptanoic acid (PFHpA)	2.8		1.9	0.24	ng/L		10/29/21 03:11	10/30/21 09:10	1
Perfluorooctanoic acid (PFOA)	3.3		1.9	0.83	ng/L		10/29/21 03:11	10/30/21 09:10	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		10/29/21 03:11	10/30/21 09:10	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		10/29/21 03:11	10/30/21 09:10	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		10/29/21 03:11	10/30/21 09:10	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.54	ng/L		10/29/21 03:11	10/30/21 09:10	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.3	ng/L		10/29/21 03:11	10/30/21 09:10	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.71	ng/L		10/29/21 03:11	10/30/21 09:10	1
Perfluorobutanesulfonic acid (PFBS)	2.4		1.9	0.19	ng/L		10/29/21 03:11	10/30/21 09:10	1
Perfluorohexanesulfonic acid (PFHxS)	25		1.9	0.56	ng/L		10/29/21 03:11	10/30/21 09:10	1
Perfluorooctanesulfonic acid (PFOS)	220		1.9	0.53	ng/L		10/29/21 03:11	10/30/21 09:10	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.9	1.2	ng/L		10/29/21 03:11	10/30/21 09:10	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.9	1.3	ng/L		10/29/21 03:11	10/30/21 09:10	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.9	0.23	ng/L		10/29/21 03:11	10/30/21 09:10	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.9	1.5	ng/L		10/29/21 03:11	10/30/21 09:10	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		1.9	0.31	ng/L		10/29/21 03:11	10/30/21 09:10	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.39	ng/L		10/29/21 03:11	10/30/21 09:10	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	85		50 - 150				10/29/21 03:11	10/30/21 09:10	1
13C4 PFHpA	85		50 - 150				10/29/21 03:11	10/30/21 09:10	1
13C4 PFOA	91		50 - 150				10/29/21 03:11	10/30/21 09:10	1
13C5 PFNA	90		50 - 150				10/29/21 03:11	10/30/21 09:10	1
13C2 PFDA	88		50 - 150				10/29/21 03:11	10/30/21 09:10	1
13C2 PFUnA	75		50 - 150				10/29/21 03:11	10/30/21 09:10	1
13C2 PFDoA	59		50 - 150				10/29/21 03:11	10/30/21 09:10	1
13C2 PFTeDA	49	*5-	50 - 150				10/29/21 03:11	10/30/21 09:10	1
13C3 PFBS	94		50 - 150				10/29/21 03:11	10/30/21 09:10	1
18O2 PFHxS	85		50 - 150				10/29/21 03:11	10/30/21 09:10	1
13C4 PFOS	88		50 - 150				10/29/21 03:11	10/30/21 09:10	1
d3-NMeFOSAA	86		50 - 150				10/29/21 03:11	10/30/21 09:10	1
d5-NEtFOSAA	82		50 - 150				10/29/21 03:11	10/30/21 09:10	1
13C3 HFPO-DA	87		50 - 150				10/29/21 03:11	10/30/21 09:10	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

Client Sample ID: 21GST-SW-018

Lab Sample ID: 320-80911-15

Date Collected: 10/17/21 15:40

Matrix: Water

Date Received: 10/27/21 12:25

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		1.9	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.8	1.2	ng/L		10/29/21 03:11	10/30/21 09:20	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.8	1.3	ng/L		10/29/21 03:11	10/30/21 09:20	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 150	10/29/21 03:11	10/30/21 09:20	1
13C2 PFDA	98		50 - 150	10/29/21 03:11	10/30/21 09:20	1
13C2 PFUnA	102		50 - 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	1
13C2 PFTeDA	104		50 - 150	10/29/21 03:11	10/30/21 09:20	1
13C3 PFBS	110		50 - 150	10/29/21 03:11	10/30/21 09:20	1
18O2 PFHxS	95		50 - 150	10/29/21 03:11	10/30/21 09:20	1
13C4 PFOS	105		50 - 150	10/29/21 03:11	10/30/21 09:20	1
d3-NMeFOSAA	105		50 - 150	10/29/21 03:11	10/30/21 09:20	1
d5-NEtFOSAA	101		50 - 150	10/29/21 03:11	10/30/21 09:20	1
13C3 HFPO-DA	95		50 - 150	10/29/21 03:11	10/30/21 09:20	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

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

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		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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.9	1.2	ng/L		10/29/21 03:11	10/30/21 09:31	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.9	1.3	ng/L		10/29/21 03:11	10/30/21 09:31	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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
18O2 PFHxS	92		50 - 150	10/29/21 03:11	10/30/21 09:31	1
13C4 PFOS	100		50 - 150	10/29/21 03:11	10/30/21 09:31	1
d3-NMeFOSAA	101		50 - 150	10/29/21 03:11	10/30/21 09:31	1
d5-NEtFOSAA	100		50 - 150	10/29/21 03:11	10/30/21 09:31	1
13C3 HFPO-DA	83		50 - 150	10/29/21 03:11	10/30/21 09:31	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

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

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)	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	0.53	ng/L		10/29/21 03:11	10/30/21 09:41	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	ND		4.9	1.2	ng/L		10/29/21 03:11	10/30/21 09:41	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	ND		4.9	1.3	ng/L		10/29/21 03:11	10/30/21 09:41	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		2.0	0.24	ng/L		10/29/21 03:11	10/30/21 09:41	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.9	1.5	ng/L		10/29/21 03:11	10/30/21 09:41	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		2.0	0.31	ng/L		10/29/21 03:11	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
18O2 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
d3-NMeFOSAA	104		50 - 150	10/29/21 03:11	10/30/21 09:41	1
d5-NEtFOSAA	105		50 - 150	10/29/21 03:11	10/30/21 09:41	1
13C3 HFPO-DA	92		50 - 150	10/29/21 03:11	10/30/21 09:41	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

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

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)	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	0.55	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.9	1.2	ng/L		10/29/21 03:11	10/30/21 10:12	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.9	1.3	ng/L		10/29/21 03:11	10/30/21 10:12	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.9	0.23	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-oxaundecane-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 - 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 - 150				10/29/21 03:11	10/30/21 10:12	1
13C2 PFTeDA	97		50 - 150				10/29/21 03:11	10/30/21 10:12	1
13C3 PFBS	101		50 - 150				10/29/21 03:11	10/30/21 10:12	1
18O2 PFHxS	85		50 - 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 - 150				10/29/21 03:11	10/30/21 10:12	1
d5-NEtFOSAA	102		50 - 150				10/29/21 03:11	10/30/21 10:12	1
13C3 HFPO-DA	88		50 - 150				10/29/21 03:11	10/30/21 10:12	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

Client Sample ID: 21GST-SW-012

Lab Sample ID: 320-80911-19

Date Collected: 10/17/21 17:20

Matrix: Water

Date Received: 10/27/21 12:25

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		1.9	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.8	1.2	ng/L		10/29/21 03:11	10/30/21 10:23	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.8	1.3	ng/L		10/29/21 03:11	10/30/21 10:23	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 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 - 150	10/29/21 03:11	10/30/21 10:23	1
13C3 PFBS	97		50 - 150	10/29/21 03:11	10/30/21 10:23	1
18O2 PFHxS	83		50 - 150	10/29/21 03:11	10/30/21 10:23	1
13C4 PFOS	96		50 - 150	10/29/21 03:11	10/30/21 10:23	1
d3-NMeFOSAA	101		50 - 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	10/29/21 03:11	10/30/21 10:23	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

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

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		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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.9	1.2	ng/L		10/29/21 03:11	10/30/21 10:33	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.9	1.3	ng/L		10/29/21 03:11	10/30/21 10:33	1
9-Chlorohexadecafluoro-3-oxanonane-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	1.5	ng/L		10/29/21 03:11	10/30/21 10:33	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		2.0	0.32	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 - 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 - 150	10/29/21 03:11	10/30/21 10:33	1
13C3 PFBS	101		50 - 150	10/29/21 03:11	10/30/21 10:33	1
18O2 PFHxS	90		50 - 150	10/29/21 03:11	10/30/21 10:33	1
13C4 PFOS	97		50 - 150	10/29/21 03:11	10/30/21 10:33	1
d3-NMeFOSAA	106		50 - 150	10/29/21 03:11	10/30/21 10:33	1
d5-NEtFOSAA	112		50 - 150	10/29/21 03:11	10/30/21 10:33	1
13C3 HFPO-DA	88		50 - 150	10/29/21 03:11	10/30/21 10:33	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

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

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		1.9	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.8	1.2	ng/L		10/29/21 12:41	10/30/21 22:09	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.8	1.3	ng/L		10/29/21 12:41	10/30/21 22:09	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.9	0.23	ng/L		10/29/21 12:41	10/30/21 22:09	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.9	1.5	ng/L		10/29/21 12:41	10/30/21 22:09	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		1.9	0.31	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 - 150	10/29/21 12:41	10/30/21 22:09	1
13C3 PFBS	70		50 - 150	10/29/21 12:41	10/30/21 22:09	1
18O2 PFHxS	57		50 - 150	10/29/21 12:41	10/30/21 22:09	1
13C4 PFOS	57		50 - 150	10/29/21 12:41	10/30/21 22:09	1
d3-NMeFOSAA	72		50 - 150	10/29/21 12:41	10/30/21 22:09	1
d5-NEtFOSAA	77		50 - 150	10/29/21 12:41	10/30/21 22:09	1
13C3 HFPO-DA	56		50 - 150	10/29/21 12:41	10/30/21 22:09	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

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

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		1.9	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.8	1.2	ng/L		10/29/21 12:41	10/30/21 22:37	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.8	1.3	ng/L		10/29/21 12:41	10/30/21 22:37	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 150	10/29/21 12:41	10/30/21 22:37	1
13C5 PFNA	72		50 - 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 - 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 - 150	10/29/21 12:41	10/30/21 22:37	1
13C3 PFBS	72		50 - 150	10/29/21 12:41	10/30/21 22:37	1
18O2 PFHxS	71		50 - 150	10/29/21 12:41	10/30/21 22:37	1
13C4 PFOS	63		50 - 150	10/29/21 12:41	10/30/21 22:37	1
d3-NMeFOSAA	81		50 - 150	10/29/21 12:41	10/30/21 22:37	1
d5-NEtFOSAA	87		50 - 150	10/29/21 12:41	10/30/21 22:37	1
13C3 HFPO-DA	72		50 - 150	10/29/21 12:41	10/30/21 22:37	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

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

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		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	0.53	ng/L		10/29/21 12:41	10/30/21 22:46	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.9	1.2	ng/L		10/29/21 12:41	10/30/21 22:46	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.9	1.3	ng/L		10/29/21 12:41	10/30/21 22:46	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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	Qualifier	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 - 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 - 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 - 150	10/29/21 12:41	10/30/21 22:46	1
13C3 PFBS	92		50 - 150	10/29/21 12:41	10/30/21 22:46	1
18O2 PFHxS	86		50 - 150	10/29/21 12:41	10/30/21 22:46	1
13C4 PFOS	85		50 - 150	10/29/21 12:41	10/30/21 22:46	1
d3-NMeFOSAA	95		50 - 150	10/29/21 12:41	10/30/21 22:46	1
d5-NEtFOSAA	109		50 - 150	10/29/21 12:41	10/30/21 22:46	1
13C3 HFPO-DA	83		50 - 150	10/29/21 12:41	10/30/21 22:46	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

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

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		1.9	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.8	1.2	ng/L		10/29/21 12:41	10/30/21 22:55	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.8	1.2	ng/L		10/29/21 12:41	10/30/21 22:55	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 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 - 150	10/29/21 12:41	10/30/21 22:55	1
13C3 PFBS	71		50 - 150	10/29/21 12:41	10/30/21 22:55	1
18O2 PFHxS	65		50 - 150	10/29/21 12:41	10/30/21 22:55	1
13C4 PFOS	67		50 - 150	10/29/21 12:41	10/30/21 22:55	1
d3-NMeFOSAA	77		50 - 150	10/29/21 12:41	10/30/21 22:55	1
d5-NEtFOSAA	83		50 - 150	10/29/21 12:41	10/30/21 22:55	1
13C3 HFPO-DA	63		50 - 150	10/29/21 12:41	10/30/21 22:55	1

Client Sample Results

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

Date Collected: 10/18/21 10:45

Matrix: Water

Date Received: 10/27/21 12:25

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)	1.7	J	1.9	0.56	ng/L		10/29/21 12:41	10/30/21 23:04	1
Perfluoroheptanoic acid (PFHpA)	1.1	J	1.9	0.24	ng/L		10/29/21 12:41	10/30/21 23:04	1
Perfluorooctanoic acid (PFOA)	1.1	J	1.9	0.82	ng/L		10/29/21 12:41	10/30/21 23:04	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		10/29/21 12:41	10/30/21 23:04	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		10/29/21 12:41	10/30/21 23:04	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		10/29/21 12:41	10/30/21 23:04	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		10/29/21 12:41	10/30/21 23:04	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.3	ng/L		10/29/21 12:41	10/30/21 23:04	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.70	ng/L		10/29/21 12:41	10/30/21 23:04	1
Perfluorobutanesulfonic acid (PFBS)	0.31	J	1.9	0.19	ng/L		10/29/21 12:41	10/30/21 23:04	1
Perfluorohexanesulfonic acid (PFHxS)	7.7		1.9	0.55	ng/L		10/29/21 12:41	10/30/21 23:04	1
Perfluorooctanesulfonic acid (PFOS)	6.7		1.9	0.52	ng/L		10/29/21 12:41	10/30/21 23:04	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.8	1.2	ng/L		10/29/21 12:41	10/30/21 23:04	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.8	1.3	ng/L		10/29/21 12:41	10/30/21 23:04	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.9	0.23	ng/L		10/29/21 12:41	10/30/21 23:04	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.9	1.4	ng/L		10/29/21 12:41	10/30/21 23:04	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		1.9	0.31	ng/L		10/29/21 12:41	10/30/21 23:04	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.39	ng/L		10/29/21 12:41	10/30/21 23:04	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	65		50 - 150				10/29/21 12:41	10/30/21 23:04	1
13C4 PFHpA	67		50 - 150				10/29/21 12:41	10/30/21 23:04	1
13C4 PFOA	72		50 - 150				10/29/21 12:41	10/30/21 23:04	1
13C5 PFNA	68		50 - 150				10/29/21 12:41	10/30/21 23:04	1
13C2 PFDA	73		50 - 150				10/29/21 12:41	10/30/21 23:04	1
13C2 PFUnA	73		50 - 150				10/29/21 12:41	10/30/21 23:04	1
13C2 PFDoA	76		50 - 150				10/29/21 12:41	10/30/21 23:04	1
13C2 PFTeDA	56		50 - 150				10/29/21 12:41	10/30/21 23:04	1
13C3 PFBS	69		50 - 150				10/29/21 12:41	10/30/21 23:04	1
18O2 PFHxS	71		50 - 150				10/29/21 12:41	10/30/21 23:04	1
13C4 PFOS	68		50 - 150				10/29/21 12:41	10/30/21 23:04	1
d3-NMeFOSAA	84		50 - 150				10/29/21 12:41	10/30/21 23:04	1
d5-NEtFOSAA	90		50 - 150				10/29/21 12:41	10/30/21 23:04	1
13C3 HFPO-DA	63		50 - 150				10/29/21 12:41	10/30/21 23:04	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

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

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)	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	0.54	ng/L		10/29/21 12:41	10/30/21 23:13	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		5.0	1.2	ng/L		10/29/21 12:41	10/30/21 23:13	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		5.0	1.3	ng/L		10/29/21 12:41	10/30/21 23:13	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		2.0	0.24	ng/L		10/29/21 12:41	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-oxaundecane-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	1
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 - 150				10/29/21 12:41	10/30/21 23:13	1
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
18O2 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 - 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 - 150				10/29/21 12:41	10/30/21 23:13	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

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

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		1.9	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.8	1.1	ng/L		10/29/21 12:41	10/30/21 23:22	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.8	1.2	ng/L		10/29/21 12:41	10/30/21 23:22	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 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 - 150	10/29/21 12:41	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 - 150	10/29/21 12:41	10/30/21 23:22	1
13C3 PFBS	70		50 - 150	10/29/21 12:41	10/30/21 23:22	1
18O2 PFHxS	65		50 - 150	10/29/21 12:41	10/30/21 23:22	1
13C4 PFOS	67		50 - 150	10/29/21 12:41	10/30/21 23:22	1
d3-NMeFOSAA	76		50 - 150	10/29/21 12:41	10/30/21 23:22	1
d5-NEtFOSAA	84		50 - 150	10/29/21 12:41	10/30/21 23:22	1
13C3 HFPO-DA	64		50 - 150	10/29/21 12:41	10/30/21 23:22	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

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

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)	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		5.0	1.2	ng/L		10/29/21 12:41	11/03/21 04:02	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		5.0	1.3	ng/L		10/29/21 12:41	11/03/21 04:02	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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	1
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
18O2 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 - 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 - 150				10/29/21 12:41	11/03/21 04:02	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

Client Sample ID: 21GST-SW-029

Lab Sample ID: 320-80911-29

Date Collected: 10/18/21 14:15

Matrix: Water

Date Received: 10/27/21 12:25

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		1.9	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.8	1.1	ng/L		10/29/21 12:41	10/30/21 23:41	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.8	1.2	ng/L		10/29/21 12:41	10/30/21 23:41	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 150	10/29/21 12:41	10/30/21 23:41	1
13C3 PFBS	83		50 - 150	10/29/21 12:41	10/30/21 23:41	1
18O2 PFHxS	75		50 - 150	10/29/21 12:41	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 - 150	10/29/21 12:41	10/30/21 23:41	1
d5-NEtFOSAA	107		50 - 150	10/29/21 12:41	10/30/21 23:41	1
13C3 HFPO-DA	73		50 - 150	10/29/21 12:41	10/30/21 23:41	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

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

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)	2.1		1.9	0.55	ng/L		10/29/21 12:41	10/30/21 23:50	1
Perfluoroheptanoic acid (PFHpA)	1.3	J	1.9	0.24	ng/L		10/29/21 12:41	10/30/21 23:50	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.81	ng/L		10/29/21 12:41	10/30/21 23:50	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		10/29/21 12:41	10/30/21 23:50	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		10/29/21 12:41	10/30/21 23:50	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		10/29/21 12:41	10/30/21 23:50	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		10/29/21 12:41	10/30/21 23:50	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		10/29/21 12:41	10/30/21 23:50	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.70	ng/L		10/29/21 12:41	10/30/21 23:50	1
Perfluorobutanesulfonic acid (PFBS)	0.28	J	1.9	0.19	ng/L		10/29/21 12:41	10/30/21 23:50	1
Perfluorohexanesulfonic acid (PFHxS)	3.8		1.9	0.54	ng/L		10/29/21 12:41	10/30/21 23:50	1
Perfluorooctanesulfonic acid (PFOS)	41		1.9	0.52	ng/L		10/29/21 12:41	10/30/21 23:50	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.8	1.1	ng/L		10/29/21 12:41	10/30/21 23:50	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.8	1.2	ng/L		10/29/21 12:41	10/30/21 23:50	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.9	0.23	ng/L		10/29/21 12:41	10/30/21 23:50	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.8	1.4	ng/L		10/29/21 12:41	10/30/21 23:50	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		1.9	0.31	ng/L		10/29/21 12:41	10/30/21 23:50	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.38	ng/L		10/29/21 12:41	10/30/21 23:50	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	62		50 - 150				10/29/21 12:41	10/30/21 23:50	1
13C4 PFHpA	63		50 - 150				10/29/21 12:41	10/30/21 23:50	1
13C4 PFOA	68		50 - 150				10/29/21 12:41	10/30/21 23:50	1
13C5 PFNA	63		50 - 150				10/29/21 12:41	10/30/21 23:50	1
13C2 PFDA	67		50 - 150				10/29/21 12:41	10/30/21 23:50	1
13C2 PFUnA	67		50 - 150				10/29/21 12:41	10/30/21 23:50	1
13C2 PFDoA	64		50 - 150				10/29/21 12:41	10/30/21 23:50	1
13C2 PFTeDA	52		50 - 150				10/29/21 12:41	10/30/21 23:50	1
13C3 PFBS	64		50 - 150				10/29/21 12:41	10/30/21 23:50	1
18O2 PFHxS	56		50 - 150				10/29/21 12:41	10/30/21 23:50	1
13C4 PFOS	59		50 - 150				10/29/21 12:41	10/30/21 23:50	1
d3-NMeFOSAA	75		50 - 150				10/29/21 12:41	10/30/21 23:50	1
d5-NEtFOSAA	79		50 - 150				10/29/21 12:41	10/30/21 23:50	1
13C3 HFPO-DA	58		50 - 150				10/29/21 12:41	10/30/21 23:50	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

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

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)	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	0.52	ng/L		10/29/21 12:41	10/30/21 23:59	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.8	1.2	ng/L		10/29/21 12:41	10/30/21 23:59	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.8	1.2	ng/L		10/29/21 12:41	10/30/21 23:59	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 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 - 150				10/29/21 12:41	10/30/21 23:59	1
18O2 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				10/29/21 12:41	10/30/21 23:59	1
d5-NEtFOSAA	70		50 - 150				10/29/21 12:41	10/30/21 23:59	1
13C3 HFPO-DA	55		50 - 150				10/29/21 12:41	10/30/21 23:59	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

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

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)	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.7	1.1	ng/L		10/29/21 12:41	10/31/21 00:26	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.7	1.2	ng/L		10/29/21 12:41	10/31/21 00:26	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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				10/29/21 12:41	10/31/21 00:26	1
13C4 PFHpA	75		50 - 150				10/29/21 12:41	10/31/21 00:26	1
13C4 PFOA	80		50 - 150				10/29/21 12:41	10/31/21 00:26	1
13C5 PFNA	78		50 - 150				10/29/21 12:41	10/31/21 00:26	1
13C2 PFDA	69		50 - 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 - 150				10/29/21 12:41	10/31/21 00:26	1
13C2 PFTeDA	60		50 - 150				10/29/21 12:41	10/31/21 00:26	1
13C3 PFBS	72		50 - 150				10/29/21 12:41	10/31/21 00:26	1
18O2 PFHxS	69		50 - 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 - 150				10/29/21 12:41	10/31/21 00:26	1
d5-NEtFOSAA	87		50 - 150				10/29/21 12:41	10/31/21 00:26	1
13C3 HFPO-DA	73		50 - 150				10/29/21 12:41	10/31/21 00:26	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

Client Sample ID: 21GST-EB-025

Lab Sample ID: 320-80911-33

Date Collected: 10/18/21 15:30

Matrix: Water

Date Received: 10/27/21 12:25

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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.6	1.1	ng/L		10/29/21 12:41	10/31/21 00:35	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.6	1.2	ng/L		10/29/21 12:41	10/31/21 00:35	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 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 - 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 - 150	10/29/21 12:41	10/31/21 00:35	1
13C3 PFBS	67		50 - 150	10/29/21 12:41	10/31/21 00:35	1
18O2 PFHxS	60		50 - 150	10/29/21 12:41	10/31/21 00:35	1
13C4 PFOS	61		50 - 150	10/29/21 12:41	10/31/21 00:35	1
d3-NMeFOSAA	77		50 - 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 - 150	10/29/21 12:41	10/31/21 00:35	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

Client Sample ID: 21GST-SW-127

Lab Sample ID: 320-80911-34

Date Collected: 10/18/21 14:25

Matrix: Water

Date Received: 10/27/21 12:25

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)	3.5		1.9	0.55	ng/L		10/29/21 12:41	10/31/21 00:45	1
Perfluoroheptanoic acid (PFHpA)	2.1		1.9	0.24	ng/L		10/29/21 12:41	10/31/21 00:45	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.81	ng/L		10/29/21 12:41	10/31/21 00:45	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		10/29/21 12:41	10/31/21 00:45	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		10/29/21 12:41	10/31/21 00:45	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		10/29/21 12:41	10/31/21 00:45	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.52	ng/L		10/29/21 12:41	10/31/21 00:45	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		10/29/21 12:41	10/31/21 00:45	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.69	ng/L		10/29/21 12:41	10/31/21 00:45	1
Perfluorobutanesulfonic acid (PFBS)	0.30	J	1.9	0.19	ng/L		10/29/21 12:41	10/31/21 00:45	1
Perfluorohexanesulfonic acid (PFHxS)	4.1		1.9	0.54	ng/L		10/29/21 12:41	10/31/21 00:45	1
Perfluorooctanesulfonic acid (PFOS)	57		1.9	0.51	ng/L		10/29/21 12:41	10/31/21 00:45	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.8	1.1	ng/L		10/29/21 12:41	10/31/21 00:45	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.8	1.2	ng/L		10/29/21 12:41	10/31/21 00:45	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.9	0.23	ng/L		10/29/21 12:41	10/31/21 00:45	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.8	1.4	ng/L		10/29/21 12:41	10/31/21 00:45	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		1.9	0.30	ng/L		10/29/21 12:41	10/31/21 00:45	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.38	ng/L		10/29/21 12:41	10/31/21 00:45	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	88		50 - 150				10/29/21 12:41	10/31/21 00:45	1
13C4 PFHpA	92		50 - 150				10/29/21 12:41	10/31/21 00:45	1
13C4 PFOA	99		50 - 150				10/29/21 12:41	10/31/21 00:45	1
13C5 PFNA	89		50 - 150				10/29/21 12:41	10/31/21 00:45	1
13C2 PFDA	87		50 - 150				10/29/21 12:41	10/31/21 00:45	1
13C2 PFUnA	84		50 - 150				10/29/21 12:41	10/31/21 00:45	1
13C2 PFDoA	87		50 - 150				10/29/21 12:41	10/31/21 00:45	1
13C2 PFTeDA	73		50 - 150				10/29/21 12:41	10/31/21 00:45	1
13C3 PFBS	88		50 - 150				10/29/21 12:41	10/31/21 00:45	1
18O2 PFHxS	81		50 - 150				10/29/21 12:41	10/31/21 00:45	1
13C4 PFOS	82		50 - 150				10/29/21 12:41	10/31/21 00:45	1
d3-NMeFOSAA	97		50 - 150				10/29/21 12:41	10/31/21 00:45	1
d5-NEtFOSAA	105		50 - 150				10/29/21 12:41	10/31/21 00:45	1
13C3 HFPO-DA	80		50 - 150				10/29/21 12:41	10/31/21 00:45	1

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFHxA (50-150)	C4PFHA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)	PFDoA (50-150)	PFTDA (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

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)					
		C3PFBS (50-150)	PFHxS (50-150)	PFOS (50-150)	d3NMFOS (50-150)	d5NEFOS (50-150)	HFPODA (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-

Eurofins TestAmerica, Sacramento

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

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)					
		C3PFBS (50-150)	PFHxS (50-150)	PFOS (50-150)	d3NMFOS (50-150)	d5NEFOS (50-150)	HFPODA (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 = 18O2 PFHxS
- PFOS = 13C4 PFOS
- d3NMFOS = d3-NMeFOSAA
- d5NEFOS = d5-NEtFOSAA
- HFPODA = 13C3 HFPO-DA

QC Sample Results

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		5.0	1.2	ng/L		10/29/21 03:11	10/30/21 06:02	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		5.0	1.3	ng/L		10/29/21 03:11	10/30/21 06:02	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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

Isotope Dilution	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
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
18O2 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
Prep Batch: 538117

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
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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QC Sample Results

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)

Lab Sample ID: LCS 320-538117/2-A
Matrix: Water
Analysis Batch: 538672

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 538117

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorodecanoic acid (PFDA)	40.0	36.5		ng/L		91	71 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	39.5		ng/L		99	69 - 133
Perfluorododecanoic acid (PFDoA)	40.0	38.9		ng/L		97	72 - 134
Perfluorotridecanoic acid (PFTriA)	40.0	39.0		ng/L		98	65 - 144
Perfluorotetradecanoic acid (PFTeA)	40.0	34.6		ng/L		87	71 - 132
Perfluorobutanesulfonic acid (PFBS)	35.4	29.7		ng/L		84	72 - 130
Perfluorohexanesulfonic acid (PFHxS)	36.4	35.0		ng/L		96	68 - 131
Perfluorooctanesulfonic acid (PFOS)	37.1	33.7		ng/L		91	65 - 140
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	35.7		ng/L		89	65 - 136
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	38.7		ng/L		97	61 - 135
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	37.3	34.5		ng/L		92	77 - 137
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	40.0	42.6		ng/L		106	72 - 132
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	37.7	31.6		ng/L		84	76 - 136
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	37.7	34.5		ng/L		92	81 - 141

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
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
18O2 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

Lab Sample ID: LCSD 320-538117/3-A
Matrix: Water
Analysis Batch: 538672

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 538117

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	
								RPD	Limit
Perfluorohexanoic acid (PFHxA)	40.0	39.3		ng/L		98	72 - 129	1	30
Perfluoroheptanoic acid (PFHpA)	40.0	39.2		ng/L		98	72 - 130	1	30
Perfluorooctanoic acid (PFOA)	40.0	37.3		ng/L		93	71 - 133	3	30

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QC Sample Results

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)

Lab Sample ID: LCSD 320-538117/3-A
Matrix: Water
Analysis Batch: 538672

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 538117

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	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 (PFUnA)	40.0	39.9		ng/L		100	69 - 133	1	30
Perfluorododecanoic acid (PFDoA)	40.0	38.6		ng/L		97	72 - 134	1	30
Perfluorotridecanoic acid (PFTriA)	40.0	41.6		ng/L		104	65 - 144	6	30
Perfluorotetradecanoic acid (PFTeA)	40.0	35.7		ng/L		89	71 - 132	3	30
Perfluorobutanesulfonic acid (PFBS)	35.4	29.6		ng/L		84	72 - 130	0	30
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.4		ng/L		94	68 - 131	2	30
Perfluorooctanesulfonic acid (PFOS)	37.1	35.5		ng/L		96	65 - 140	5	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	36.8		ng/L		92	65 - 136	3	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	42.7		ng/L		107	61 - 135	10	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	37.3	36.1		ng/L		97	77 - 137	5	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	40.0	43.4		ng/L		108	72 - 132	2	30
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	37.7	34.1		ng/L		91	76 - 136	8	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	37.7	34.0		ng/L		90	81 - 141	2	30

Isotope Dilution	LCSD		Limits
	%Recovery	Qualifier	
13C2 PFHxA	95		50 - 150
13C4 PFHpA	100		50 - 150
13C4 PFOA	102		50 - 150
13C5 PFNA	105		50 - 150
13C2 PFDA	101		50 - 150
13C2 PFUnA	105		50 - 150
13C2 PFDoA	100		50 - 150
13C2 PFTeDA	105		50 - 150
13C3 PFBS	106		50 - 150
18O2 PFHxS	93		50 - 150
13C4 PFOS	105		50 - 150
d3-NMeFOSAA	112		50 - 150
d5-NEtFOSAA	101		50 - 150
13C3 HFPO-DA	100		50 - 150

Lab Sample ID: LCS 320-538280/2-A
Matrix: Water
Analysis Batch: 538508

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 538280

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%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

Eurofins TestAmerica, Sacramento

QC Sample Results

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)

Lab Sample ID: LCS 320-538280/2-A
Matrix: Water
Analysis Batch: 538508

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 538280

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%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 (PFUnA)	40.0	31.9		ng/L		80	69 - 133
Perfluorododecanoic acid (PFDoA)	40.0	39.0		ng/L		97	72 - 134
Perfluorotridecanoic acid (PFTriA)	40.0	34.8		ng/L		87	65 - 144
Perfluorotetradecanoic acid (PFTeA)	40.0	37.9		ng/L		95	71 - 132
Perfluorobutanesulfonic acid (PFBS)	35.4	28.9		ng/L		82	72 - 130
Perfluorohexanesulfonic acid (PFHxS)	36.4	32.9		ng/L		90	68 - 131
Perfluorooctanesulfonic acid (PFOS)	37.1	33.0		ng/L		89	65 - 140
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	40.0	32.3		ng/L		81	65 - 136
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	40.0	31.0		ng/L		78	61 - 135
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	37.3	35.2		ng/L		94	77 - 137
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	40.0	40.7		ng/L		102	72 - 132
11-Chloroeicosadecafluoro-3-oxadecane-1-sulfonic acid	37.7	35.3		ng/L		94	76 - 136
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	37.7	37.4		ng/L		99	81 - 141

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
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
18O2 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

Lab Sample ID: LCSD 320-538280/3-A
Matrix: Water
Analysis Batch: 538508

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 538280

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorohexanoic acid (PFHxA)	40.0	38.1		ng/L		95	72 - 129	2	30

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QC Sample Results

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)

Lab Sample ID: LCSD 320-538280/3-A
Matrix: Water
Analysis Batch: 538508

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 538280

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	32.3		ng/L		81	65 - 136	0	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	34.4		ng/L		86	61 - 135	10	30
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-1-sulfonic acid	37.7	40.3		ng/L		107	76 - 136	13	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	37.7	42.3		ng/L		112	81 - 141	12	30

Isotope Dilution	LCSD		Limits
	%Recovery	Qualifier	
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 - 150
13C2 PFDoA	88		50 - 150
13C2 PFTeDA	74		50 - 150
13C3 PFBS	90		50 - 150
18O2 PFHxS	80		50 - 150
13C4 PFOS	80		50 - 150
d3-NMeFOSAA	98		50 - 150
d5-NEtFOSAA	98		50 - 150
13C3 HFPO-DA	86		50 - 150

QC Association Summary

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

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	
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

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QC Association Summary

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

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

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared 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

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			263 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

Matrix: Water

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			261.7 mL	10.0 mL	538117	10/29/21 03:11	EG	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538672	10/30/21 06:54	RS1	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			257.3 mL	10.0 mL	538117	10/29/21 03:11	EG	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538672	10/30/21 07:05	RS1	TAL SAC

Client Sample ID: 21GST-SW-005

Lab Sample ID: 320-80911-5

Date Collected: 10/17/21 11:15

Matrix: Water

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			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

Date Collected: 10/17/21 12:00

Matrix: Water

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			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

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			260.7 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

Lab Sample ID: 320-80911-8

Date Collected: 10/17/21 12:40

Matrix: Water

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			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

Matrix: Water

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			249 mL	10.0 mL	538117	10/29/21 03:11	EG	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538672	10/30/21 08:18	RS1	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			262.7 mL	10.0 mL	538117	10/29/21 03:11	EG	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538672	10/30/21 08:28	RS1	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared 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

Lab Sample ID: 320-80911-12

Date Collected: 10/17/21 14:40

Matrix: Water

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			261.2 mL	10.0 mL	538117	10/29/21 03:11	EG	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538672	10/30/21 08:49	RS1	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			254.3 mL	10.0 mL	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

Lab Sample ID: 320-80911-14

Date Collected: 10/17/21 15:15

Matrix: Water

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			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

Lab Sample ID: 320-80911-15

Date Collected: 10/17/21 15:40

Matrix: Water

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			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

Lab Sample ID: 320-80911-16

Date Collected: 10/17/21 15:30

Matrix: Water

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			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

Lab Sample ID: 320-80911-17

Date Collected: 10/17/21 16:10

Matrix: Water

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

Lab Sample ID: 320-80911-18

Date Collected: 10/17/21 16:45

Matrix: Water

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			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

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

Client Sample ID: 21GST-SW-012

Lab Sample ID: 320-80911-19

Date Collected: 10/17/21 17:20

Matrix: Water

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			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

Lab Sample ID: 320-80911-20

Date Collected: 10/17/21 17:10

Matrix: Water

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			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

Lab Sample ID: 320-80911-21

Date Collected: 10/18/21 09:00

Matrix: Water

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			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

Lab Sample ID: 320-80911-22

Date Collected: 10/18/21 09:05

Matrix: Water

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			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

Lab Sample ID: 320-80911-23

Date Collected: 10/18/21 09:15

Matrix: Water

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

Lab Sample ID: 320-80911-24

Date Collected: 10/18/21 09:30

Matrix: Water

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			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

Lab Chronicle

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

Date Collected: 10/18/21 10:45

Matrix: Water

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			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

Lab Sample ID: 320-80911-26

Date Collected: 10/18/21 11:50

Matrix: Water

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			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

Lab Sample ID: 320-80911-27

Date Collected: 10/18/21 13:25

Matrix: Water

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			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

Lab Sample ID: 320-80911-28

Date Collected: 10/18/21 13:45

Matrix: Water

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			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

Lab Sample ID: 320-80911-29

Date Collected: 10/18/21 14:15

Matrix: Water

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			262.4 mL	10.0 mL	538280	10/29/21 12:41	KJW	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			538508	10/30/21 23:41	RS1	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared 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

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			260.4 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

Date Collected: 10/18/21 15:20

Matrix: Water

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			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

Client Sample ID: 21GST-EB-025

Lab Sample ID: 320-80911-33

Date Collected: 10/18/21 15:30

Matrix: Water

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			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

Date Collected: 10/18/21 14:25

Matrix: Water

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			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

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	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24

1

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Method Summary

Client: Shannon & Wilson, Inc
Project/Site: SC Surface Water

Job ID: 320-80911-1

Method	Method Description	Protocol	Laboratory
EPA 537(Mod) 3535	PFAS for QSM 5.3, Table B-15 Solid-Phase Extraction (SPE)	EPA SW846	TAL SAC 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 Surface Water

Job ID: 320-80911-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-80911-1	21GST-SW-010	Water	10/17/21 09:15	10/27/21 12:25
320-80911-2	21GST-SW-008	Water	10/17/21 09:45	10/27/21 12:25
320-80911-3	21GST-SW-024	Water	10/17/21 10:15	10/27/21 12:25
320-80911-4	21GST-SW-124	Water	10/17/21 10:05	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
320-80911-18	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	10/18/21 13:45	10/27/21 12:25
320-80911-29	21GST-SW-029	Water	10/18/21 14:15	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	10/18/21 15:00	10/27/21 12:25
320-80911-32	21GST-SW-025	Water	10/18/21 15:20	10/27/21 12:25
320-80911-33	21GST-EB-025	Water	10/18/21 15:30	10/27/21 12:25
320-80911-34	21GST-SW-127	Water	10/18/21 14:25	10/27/21 12:25

CHAIN-OF-CUSTODY RECORD

Analytical Methods (include preservative if used)

Turn Around Time:
 Normal Rush
 Please Specify _____

Quote No: _____

J-Flags: Yes No

PFAS 18 analytes

Total Number of Containers

Sample Identity	Lab No.	Time	Date Sampled					Total Number of Containers	Remarks/Matrix Composition/Grab? Sample Containers
21GST-SW-010		915	10/17/21	X				2	Water
21GST-SW-008		945		X					
21GST-SW-024		1015		X					
21GST-SW-124		1005		X					
21GST-SW-005		1115		X					
21GST-SW-004									
21GST-SW-006		1200		X					
21GST-SW-007		1220		X					
21GST-SW-011		1240		X					
21GST-SW-017		1315		X					



Project Information
 Number: 102599-008
 Name: SC Surface Water
 Contact: Kristen
 Ongoing Project? Yes No
 Sampler: APW

Sample Receipt
 Total No. of Containers: 68
 COC Seals/Intact? Y/N/NA _____
 Received Good Cond./Cold _____
 Temp: _____
 Delivery Method: goldstreak

Relinquished By: 1.
 Signature: [Signature] Time: 1400
 Printed Name: Veselina Jakomov Date: 10/24/21
 Company: Shannon & Wilson

Relinquished By: 2.
 Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Relinquished By: 3.
 Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Notes:

Received By:
 Signature: [Signature] Time: 1225
 Printed Name: David Hu Date: 10/24/21
 Company: EETSA

Received By: 2.
 Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Received By: 3.
 Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
 Yellow - w/shipment - for consignee files
 Pink - Shannon & Wilson - job file

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11/8/2021



CHAIN-OF-CUSTODY RECORD

Laboratory Ecology
 Attn: _____

Analytical Methods (include preservative if used)

Turn Around Time:

Normal Rush

Please Specify

Quote No: _____

J-Flags: Yes No

PFAS - 18 analytes

Sample Identity	Lab No.	Time	Date Sampled	Analytical Methods					Total Number of Containers	Remarks/Matrix Composition/Grab? Sample Containers
21GST-SW-019		1345	10/17/21	X					2	water
21GST-SW-016		1405		X						
21GST-SW-013		1440		X						
21GST-SW-014		1500		X						
21GST-SW-015		1515		X						
21GST-SW-018		1540		X						
21GST-SW-118		1530		X						
21GST-SW-020		1610		X						
21GST-SW-021		1645		X						
21GST-SW-012		1720		X						

Project Information

Number: 102599-008

Name: SC Surface water

Contact: Kristen

Ongoing Project? Yes No

Sampler: APW

Sample Receipt

Total No. of Containers: 68

COC Seals/Intact? Y/N/NA

Received Good Cond./Cold

Temp:

Delivery Method: goldstreak

Relinquished By: 1.

Signature: [Signature] Time: 1400

Printed Name: Veselina Yakimova Date: 10/24/21

Company: Shannon & Wilson

Relinquished By: 2.

Signature: _____ Time: _____

Printed Name: _____ Date: _____

Company: _____

Relinquished By: 3.

Signature: _____ Time: _____

Printed Name: _____ Date: _____

Company: _____

Notes:

Received By: 1.

Signature: [Signature] Time: 1205

Printed Name: David Date: 10/21/21

Company: ETI-Son

Received By: 2.

Signature: _____ Time: _____

Printed Name: _____ Date: _____

Company: _____

Received By: 3.

Signature: _____ Time: _____

Printed Name: _____ Date: _____

Company: _____

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
 Yellow - w/shipment - for consignee files
 Pink - Shannon & Wilson - job file

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11/8/2021



CHAIN-OF-CUSTODY RECORD

Analytical Methods (include preservative if used)

Turn Around Time:
 Normal Rush
 Please Specify

Quote No: _____

J-Flags: Yes No

PFAS - 18 analytes

Sample Identity	Lab No.	Time	Date Sampled	Analytical Methods					Total Number of Containers	Remarks/Matrix Composition/Grab? Sample Containers
21GST-EB-012		1740	10/17/21	X						
21GST-SW-001		900	10/18/21	X						
21GST-SW-002		905		X						
21GST-SW-003		915		X						
21GST-SW-022		930		X						
21GST-SW-009		1045		X						
21GST-SW-023		1150		X						
21GST-SW-030		1325		X						
21GST-SW-028		1345		X						
21GST-SW-029		1415		X						

Project Information		Sample Receipt		Relinquished By: 1.		Relinquished By: 2.		Relinquished By: 3.	
Number: <u>102599-008</u>		Total No. of Containers: <u>68</u>		Signature: <u>[Signature]</u> Time: <u>1400</u>		Signature: _____ Time: _____		Signature: _____ Time: _____	
Name: <u>SC Surface water</u>		COC Seals/Intact? Y/N/NA		Printed Name: <u>Veselin Jankovic</u> Date: <u>10/14/21</u>		Printed Name: _____ Date: _____		Printed Name: _____ Date: _____	
Contact: <u>Kristen</u>		Received Good Cond./Cold		Company: <u>Shannon & Wilson</u>		Company: _____		Company: _____	
Ongoing Project? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Temp:		Received By: <u>[Signature]</u> Time: <u>1200</u>		Received By: 2.		Received By: 3.	
Sampler: <u>APW</u>		Delivery Method: <u>goldstreak</u>		Printed Name: <u>David Hr</u> Date: <u>10/17/21</u>		Printed Name: _____ Date: _____		Printed Name: _____ Date: _____	
Notes:				Company: <u>EWB-Su</u>		Company: _____		Company: _____	

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
 Yellow - w/shipment - for consignee files
 Pink - Shannon & Wilson - job file



CHAIN-OF-CUSTODY RECORD

Analytical Methods (include preservative if used)

Turn Around Time:
 Normal Rush
 Please Specify

Quote No: _____

J-Flags: Yes No

Sample Identity	Lab No.	Time	Date Sampled	Analytical Methods (include preservative if used)					Total Number of Containers	Remarks/Matrix Composition/Grab? Sample Containers
21GST-SW-027		1435	10/18/21	X					2	water
21GST-SW-027		1430								
21GST-SW-026		1500	10/18/21	X						
21GST-SW-025		1520		X						
21GST-EB-025		1530		X						
21GST-SW-127		1425		X						

10/18/21
PFAS - 18 analytes

Project Information
 Number: 102599-008
 Name: SC Surface water
 Contact: Kristen
 Ongoing Project? Yes No
 Sampler: ADW

Sample Receipt
 Total No. of Containers: 68
 COC Seals/Intact? Y/N/NA
 Received Good Cond./Cold
 Temp:
 Delivery Method: Goldstream

Relinquished By: 1.
 Signature: *[Signature]* Time: 1400
 Printed Name: Veselina Yakimova Date: 10/24/21
 Company: Shannon & Wilson

Relinquished By: 2.
 Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Relinquished By: 3.
 Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Notes:

Received By: 1.
 Signature: *[Signature]* Time: 1725
 Printed Name: David H Date: 10/27/21
 Company: EET-Son

Received By: 2.
 Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Received By: 3.
 Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
 Yellow - w/shipment - for consignee files
 Pink - Shannon & Wilson - job file

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11/8/2021



Login Sample Receipt Checklist

Client: Shannon & Wilson, Inc

Job Number: 320-80911-1

Login Number: 80911

List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Her, David A

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	1519066/1519067/1503337/1503336/105338/1519065
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 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

Laboratory Report Date:

Note: Any N/A or No box checked must have an explanation in the comments box.

1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform all of 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)

a. CoC information completed, signed, and dated (including released/received by)?

Yes No N/A Comments:

b. Correct analyses requested?

Yes No N/A Comments:

3. 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.

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 No N/A 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 No N/A 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*.

Laboratory 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 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 case narrative does not note an effect on data quality/usability.

5. Samples 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:

Laboratory Report Date:

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 No N/A 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.

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 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 sample.

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.

v. Data quality or usability affected?

Comments:

The data quality/usability is not affected.

Laboratory Report Date:

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

- i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

Yes No N/A Comments:

- ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

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 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.

- 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.

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:

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 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 limits and project specified objectives, if applicable?

Yes No N/A 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 No N/A 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.

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 No N/A 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 *21GST-SW-005*.

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 No N/A 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.

Laboratory Report Date:

e. Trip Blanks

- i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples?
(If not, enter explanation below.)

Yes No N/A 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 No N/A 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 No N/A 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.

Laboratory Report Date:

- iii. Precision – All relative percent differences (RPD) less than specified project objectives?
(Recommended: 30% water, 50% soil)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where R_1 = Sample Concentration
 R_2 = 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-127* 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.

- i. All results less than LOQ and project specified objectives?

Yes No N/A Comments:

- ii. If above LOQ or project specified objectives, what samples are affected?

Comments:

None; target PFAS were not detected in the equipment blank sample.

- iii. Data quality or usability affected?

Comments:

The data quality/usability is not affected.

Laboratory Report Date:

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

Yes No N/A Comments:

No additional data flags/qualifiers were required.

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



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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results through
TotalAccess

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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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Definitions/Glossary

Client: Shannon & Wilson, Inc
Project/Site: SC Soil

Job ID: 320-81054-1

Qualifiers

LCMS

Qualifier	Qualifier Description
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.
α	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

Case Narrative

Client: Shannon & Wilson, Inc
Project/Site: SC Soil

Job ID: 320-81054-1

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.



Detection Summary

Client: Shannon & Wilson, Inc
Project/Site: SC Soil

Job ID: 320-81054-1

Client Sample ID: 21GST-MW22-01

Lab Sample ID: 320-81054-1

No Detections.

Client Sample ID: 21GST-MW22-02

Lab Sample ID: 320-81054-2

No Detections.

Client Sample ID: 21GST-MW24-01

Lab Sample ID: 320-81054-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorotetradecanoic acid (PFTeA)	0.042	J	0.21	0.039	ug/Kg	1	⊛	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-MW24-02

Lab Sample ID: 320-81054-4

No Detections.

Client Sample ID: 21GST-MW21-01

Lab Sample ID: 320-81054-5

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.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soil

Job ID: 320-81054-1

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 for QSM 5.3, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.23	0.036	ug/Kg	☼	11/02/21 18:31	11/03/21 20:12	1
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.044	ug/Kg	☼	11/02/21 18:31	11/03/21 20:12	1
Perfluorooctanoic acid (PFOA)	ND		0.23	0.062	ug/Kg	☼	11/02/21 18:31	11/03/21 20:12	1
Perfluorononanoic acid (PFNA)	ND		0.23	0.026	ug/Kg	☼	11/02/21 18:31	11/03/21 20:12	1
Perfluorodecanoic acid (PFDA)	ND		0.23	0.056	ug/Kg	☼	11/02/21 18:31	11/03/21 20:12	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.049	ug/Kg	☼	11/02/21 18:31	11/03/21 20:12	1
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.035	ug/Kg	☼	11/02/21 18:31	11/03/21 20:12	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.024	ug/Kg	☼	11/02/21 18:31	11/03/21 20:12	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.043	ug/Kg	☼	11/02/21 18:31	11/03/21 20:12	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.044	ug/Kg	☼	11/02/21 18:31	11/03/21 20:12	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.23	0.034	ug/Kg	☼	11/02/21 18:31	11/03/21 20:12	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.23	0.050	ug/Kg	☼	11/02/21 18:31	11/03/21 20:12	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.23	0.027	ug/Kg	☼	11/02/21 18:31	11/03/21 20:12	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.23	0.041	ug/Kg	☼	11/02/21 18:31	11/03/21 20:12	1
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-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		0.23	0.036	ug/Kg	☼	11/02/21 18:31	11/03/21 20:12	1
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 - 150	11/02/21 18:31	11/03/21 20:12	1
13C3 PFBS	133		50 - 150	11/02/21 18:31	11/03/21 20:12	1
18O2 PFHxS	96		50 - 150	11/02/21 18:31	11/03/21 20:12	1
13C4 PFOS	111		50 - 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	11/02/21 18:31	11/03/21 20:12	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-ethylperfluorooctanesulfonamidoacetic 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	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	19.8		0.1	0.1	%			11/01/21 16:00	1
Percent Solids	80.2		0.1	0.1	%			11/01/21 16:00	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soil

Job ID: 320-81054-1

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

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	☼	11/02/21 18:31	11/03/21 20:43	1
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.043	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	0.025	ug/Kg	☼	11/02/21 18:31	11/03/21 20:43	1
Perfluorodecanoic acid (PFDA)	ND		0.23	0.055	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	0.024	ug/Kg	☼	11/02/21 18:31	11/03/21 20:43	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.042	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	0.033	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.23	0.026	ug/Kg	☼	11/02/21 18:31	11/03/21 20:43	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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	1
13C5 PFNA	105		50 - 150	11/02/21 18:31	11/03/21 20:43	1
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
18O2 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	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.23	0.055	ug/Kg	☼	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	11/02/21 18:31	11/05/21 05:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	17.7		0.1	0.1	%			11/01/21 16:00	1
Percent Solids	82.3		0.1	0.1	%			11/01/21 16:00	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soil

Job ID: 320-81054-1

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

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	☼	11/02/21 18:31	11/03/21 20:53	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.041	ug/Kg	☼	11/02/21 18:31	11/03/21 20:53	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.057	ug/Kg	☼	11/02/21 18:31	11/03/21 20:53	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.023	ug/Kg	☼	11/02/21 18:31	11/03/21 20:53	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.051	ug/Kg	☼	11/02/21 18:31	11/03/21 20:53	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.045	ug/Kg	☼	11/02/21 18:31	11/03/21 20:53	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.032	ug/Kg	☼	11/02/21 18:31	11/03/21 20:53	1
Perfluorotridecanoic acid (PFTrIA)	ND		0.21	0.022	ug/Kg	☼	11/02/21 18:31	11/03/21 20:53	1
Perfluorotetradecanoic acid (PFTeA)	0.042	J	0.21	0.039	ug/Kg	☼	11/02/21 18:31	11/03/21 20:53	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.041	ug/Kg	☼	11/02/21 18:31	11/03/21 20:53	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21	0.031	ug/Kg	☼	11/02/21 18:31	11/03/21 20:53	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.21	0.046	ug/Kg	☼	11/02/21 18:31	11/03/21 20:53	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.025	ug/Kg	☼	11/02/21 18:31	11/03/21 20:53	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.037	ug/Kg	☼	11/02/21 18:31	11/03/21 20:53	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.044	ug/Kg	☼	11/02/21 18:31	11/03/21 20:53	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.033	ug/Kg	☼	11/02/21 18:31	11/03/21 20:53	1
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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	104		50 - 150	11/02/21 18:31	11/03/21 20:53	1
13C4 PFHpA	92		50 - 150	11/02/21 18:31	11/03/21 20:53	1
13C4 PFOA	103		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	1
13C2 PFDA	104		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	1
13C2 PFDoA	128		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	1
13C3 PFBS	112		50 - 150	11/02/21 18:31	11/03/21 20:53	1
18O2 PFHxS	92		50 - 150	11/02/21 18:31	11/03/21 20:53	1
13C4 PFOS	105		50 - 150	11/02/21 18:31	11/03/21 20:53	1
d3-NMeFOSAA	124		50 - 150	11/02/21 18:31	11/03/21 20:53	1
13C3 HFPO-DA	89		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-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.051	ug/Kg	☼	11/02/21 18:31	11/05/21 06:08	1
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
d5-NEtFOSAA	98		50 - 150	11/02/21 18:31	11/05/21 06:08	1			

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	11.4		0.1	0.1	%			11/01/21 16:00	1
Percent Solids	88.6		0.1	0.1	%			11/01/21 16:00	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soil

Job ID: 320-81054-1

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 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	☼	11/02/21 18:31	11/03/21 21:04	1
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.043	ug/Kg	☼	11/02/21 18:31	11/03/21 21:04	1
Perfluorooctanoic acid (PFOA)	ND		0.23	0.060	ug/Kg	☼	11/02/21 18:31	11/03/21 21:04	1
Perfluorononanoic acid (PFNA)	ND		0.23	0.025	ug/Kg	☼	11/02/21 18:31	11/03/21 21:04	1
Perfluorodecanoic acid (PFDA)	ND		0.23	0.055	ug/Kg	☼	11/02/21 18:31	11/03/21 21:04	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.048	ug/Kg	☼	11/02/21 18:31	11/03/21 21:04	1
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.034	ug/Kg	☼	11/02/21 18:31	11/03/21 21:04	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.024	ug/Kg	☼	11/02/21 18:31	11/03/21 21:04	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.042	ug/Kg	☼	11/02/21 18:31	11/03/21 21:04	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.043	ug/Kg	☼	11/02/21 18:31	11/03/21 21:04	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.23	0.033	ug/Kg	☼	11/02/21 18:31	11/03/21 21:04	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.23	0.049	ug/Kg	☼	11/02/21 18:31	11/03/21 21:04	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.23	0.026	ug/Kg	☼	11/02/21 18:31	11/03/21 21:04	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.23	0.040	ug/Kg	☼	11/02/21 18:31	11/03/21 21:04	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23	0.047	ug/Kg	☼	11/02/21 18:31	11/03/21 21:04	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		0.23	0.035	ug/Kg	☼	11/02/21 18:31	11/03/21 21:04	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.044	ug/Kg	☼	11/02/21 18:31	11/03/21 21:04	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	110		50 - 150	11/02/21 18:31	11/03/21 21:04	1
13C4 PFHpA	104		50 - 150	11/02/21 18:31	11/03/21 21:04	1
13C4 PFOA	98		50 - 150	11/02/21 18:31	11/03/21 21:04	1
13C5 PFNA	96		50 - 150	11/02/21 18:31	11/03/21 21:04	1
13C2 PFDA	100		50 - 150	11/02/21 18:31	11/03/21 21:04	1
13C2 PFUnA	103		50 - 150	11/02/21 18:31	11/03/21 21:04	1
13C2 PFDoA	105		50 - 150	11/02/21 18:31	11/03/21 21:04	1
13C2 PFTeDA	105		50 - 150	11/02/21 18:31	11/03/21 21:04	1
13C3 PFBS	125		50 - 150	11/02/21 18:31	11/03/21 21:04	1
18O2 PFHxS	93		50 - 150	11/02/21 18:31	11/03/21 21:04	1
13C4 PFOS	95		50 - 150	11/02/21 18:31	11/03/21 21:04	1
d3-NMeFOSAA	112		50 - 150	11/02/21 18:31	11/03/21 21:04	1
13C3 HFPO-DA	97		50 - 150	11/02/21 18:31	11/03/21 21:04	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-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.23	0.055	ug/Kg	☼	11/02/21 18:31	11/05/21 06:19	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	94		50 - 150	11/02/21 18:31	11/05/21 06:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	15.7		0.1	0.1	%			11/01/21 16:00	1
Percent Solids	84.3		0.1	0.1	%			11/01/21 16:00	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soil

Job ID: 320-81054-1

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

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		0.24	0.037	ug/Kg	☼	11/02/21 18:31	11/03/21 21:14	1
Perfluoroheptanoic acid (PFHpA)	ND		0.24	0.045	ug/Kg	☼	11/02/21 18:31	11/03/21 21:14	1
Perfluorooctanoic acid (PFOA)	ND		0.24	0.063	ug/Kg	☼	11/02/21 18:31	11/03/21 21:14	1
Perfluorononanoic acid (PFNA)	ND		0.24	0.026	ug/Kg	☼	11/02/21 18:31	11/03/21 21:14	1
Perfluorodecanoic acid (PFDA)	ND		0.24	0.057	ug/Kg	☼	11/02/21 18:31	11/03/21 21:14	1
Perfluoroundecanoic acid (PFUnA)	ND		0.24	0.050	ug/Kg	☼	11/02/21 18:31	11/03/21 21:14	1
Perfluorododecanoic acid (PFDoA)	ND		0.24	0.036	ug/Kg	☼	11/02/21 18:31	11/03/21 21:14	1
Perfluorotridecanoic acid (PFTriA)	ND		0.24	0.025	ug/Kg	☼	11/02/21 18:31	11/03/21 21:14	1
Perfluorotetradecanoic acid (PFTeA)	0.046	J	0.24	0.044	ug/Kg	☼	11/02/21 18:31	11/03/21 21:14	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.24	0.045	ug/Kg	☼	11/02/21 18:31	11/03/21 21:14	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.24	0.035	ug/Kg	☼	11/02/21 18:31	11/03/21 21:14	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.24	0.051	ug/Kg	☼	11/02/21 18:31	11/03/21 21:14	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.24	0.027	ug/Kg	☼	11/02/21 18:31	11/03/21 21:14	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.24	0.042	ug/Kg	☼	11/02/21 18:31	11/03/21 21:14	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.24	0.049	ug/Kg	☼	11/02/21 18:31	11/03/21 21:14	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.24	0.037	ug/Kg	☼	11/02/21 18:31	11/03/21 21:14	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.24	0.047	ug/Kg	☼	11/02/21 18:31	11/03/21 21:14	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	124		50 - 150	11/02/21 18:31	11/03/21 21:14	1
13C4 PFHpA	108		50 - 150	11/02/21 18:31	11/03/21 21:14	1
13C4 PFOA	107		50 - 150	11/02/21 18:31	11/03/21 21:14	1
13C5 PFNA	98		50 - 150	11/02/21 18:31	11/03/21 21:14	1
13C2 PFDA	109		50 - 150	11/02/21 18:31	11/03/21 21:14	1
13C2 PFUnA	116		50 - 150	11/02/21 18:31	11/03/21 21:14	1
13C2 PFDoA	117		50 - 150	11/02/21 18:31	11/03/21 21:14	1
13C2 PFTeDA	109		50 - 150	11/02/21 18:31	11/03/21 21:14	1
13C3 PFBS	122		50 - 150	11/02/21 18:31	11/03/21 21:14	1
18O2 PFHxS	97		50 - 150	11/02/21 18:31	11/03/21 21:14	1
13C4 PFOS	103		50 - 150	11/02/21 18:31	11/03/21 21:14	1
d3-NMeFOSAA	129		50 - 150	11/02/21 18:31	11/03/21 21:14	1
13C3 HFPO-DA	112		50 - 150	11/02/21 18:31	11/03/21 21:14	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-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.24	0.057	ug/Kg	☼	11/02/21 18:31	11/05/21 06:29	1
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
d5-NEtFOSAA	104		50 - 150	11/02/21 18:31	11/05/21 06:29	1			

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	18.6		0.1	0.1	%			11/01/21 16:00	1
Percent Solids	81.4		0.1	0.1	%			11/01/21 16:00	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soil

Job ID: 320-81054-1

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

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		0.26	0.041	ug/Kg	☼	11/02/21 18:31	11/03/21 21:24	1
Perfluoroheptanoic acid (PFHpA)	ND		0.26	0.050	ug/Kg	☼	11/02/21 18:31	11/03/21 21:24	1
Perfluorooctanoic acid (PFOA)	ND		0.26	0.069	ug/Kg	☼	11/02/21 18:31	11/03/21 21:24	1
Perfluorononanoic acid (PFNA)	ND		0.26	0.029	ug/Kg	☼	11/02/21 18:31	11/03/21 21:24	1
Perfluorodecanoic acid (PFDA)	ND		0.26	0.063	ug/Kg	☼	11/02/21 18:31	11/03/21 21:24	1
Perfluoroundecanoic acid (PFUnA)	ND		0.26	0.055	ug/Kg	☼	11/02/21 18:31	11/03/21 21:24	1
Perfluorododecanoic acid (PFDoA)	ND		0.26	0.039	ug/Kg	☼	11/02/21 18:31	11/03/21 21:24	1
Perfluorotridecanoic acid (PFTriA)	ND		0.26	0.027	ug/Kg	☼	11/02/21 18:31	11/03/21 21:24	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.26	0.048	ug/Kg	☼	11/02/21 18:31	11/03/21 21:24	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.26	0.050	ug/Kg	☼	11/02/21 18:31	11/03/21 21:24	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.26	0.038	ug/Kg	☼	11/02/21 18:31	11/03/21 21:24	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.26	0.056	ug/Kg	☼	11/02/21 18:31	11/03/21 21:24	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.26	0.030	ug/Kg	☼	11/02/21 18:31	11/03/21 21:24	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.26	0.046	ug/Kg	☼	11/02/21 18:31	11/03/21 21:24	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.26	0.054	ug/Kg	☼	11/02/21 18:31	11/03/21 21:24	1
11-Chloroeicosafuoro-3-oxaundecane-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	1
13C5 PFNA	118		50 - 150	11/02/21 18:31	11/03/21 21:24	1
13C2 PFDA	111		50 - 150	11/02/21 18:31	11/03/21 21:24	1
13C2 PFUnA	119		50 - 150	11/02/21 18:31	11/03/21 21:24	1
13C2 PFDoA	133		50 - 150	11/02/21 18:31	11/03/21 21:24	1
13C2 PFTeDA	119		50 - 150	11/02/21 18:31	11/03/21 21:24	1
13C3 PFBS	143		50 - 150	11/02/21 18:31	11/03/21 21:24	1
18O2 PFHxS	108		50 - 150	11/02/21 18:31	11/03/21 21:24	1
13C4 PFOS	113		50 - 150	11/02/21 18:31	11/03/21 21:24	1
d3-NMeFOSAA	144		50 - 150	11/02/21 18:31	11/03/21 21:24	1
13C3 HFPO-DA	113		50 - 150	11/02/21 18:31	11/03/21 21:24	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-ethylperfluorooctanesulfonamidoacetic 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	11/05/21 06:39	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	25.3		0.1	0.1	%			11/01/21 16:00	1
Percent Solids	74.7		0.1	0.1	%			11/01/21 16:00	1

Eurofins TestAmerica, Sacramento

Isotope Dilution Summary

Client: Shannon & Wilson, Inc
Project/Site: SC Soil

Job ID: 320-81054-1

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFHxA (50-150)	C4PFHA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)	PFDaA (50-150)	PFTDA (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

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)				
		C3PFBS (50-150)	PFHxS (50-150)	PFOS (50-150)	d3NMFOS (50-150)	HFPODA (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
- PFDaA = 13C2 PFDaA
- 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

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)
		d5NEFOS (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

Eurofins TestAmerica, Sacramento

Isotope Dilution Summary

Client: Shannon & Wilson, Inc
Project/Site: SC Soil

Job ID: 320-81054-1

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)

Lab Sample ID	Client Sample ID	d5NEFOS (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
LCS 320-539413/2-A - RA	Lab Control Sample	88
MB 320-539413/1-A - RA	Method Blank	105

Surrogate Legend

d5NEFOS = d5-NEtFOSAA

QC Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soil

Job ID: 320-81054-1

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

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 539413

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg		11/02/21 18:31	11/03/21 19:51	1
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosfluoro-3-oxaundecane-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

Isotope Dilution	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C2 PFHxA	110		50 - 150	11/02/21 18:31	11/03/21 19:51	1
13C4 PFHpA	100		50 - 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 - 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 - 150	11/02/21 18:31	11/03/21 19:51	1
18O2 PFHxS	99		50 - 150	11/02/21 18:31	11/03/21 19:51	1
13C4 PFOS	105		50 - 150	11/02/21 18:31	11/03/21 19:51	1
d3-NMeFOSAA	130		50 - 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
Prep Type: Total/NA
Prep Batch: 539413

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	Limits
		Result	Qualifier				
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 (PFUnA)	2.00	1.77		ug/Kg		89	64 - 136

Eurofins TestAmerica, Sacramento

QC Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soil

Job ID: 320-81054-1

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: LCS 320-539413/2-A
Matrix: Solid
Analysis Batch: 539660

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 539413

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	1.78		ug/Kg		89	63 - 144
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C2 PFHxA	100		50 - 150
13C4 PFHpA	94		50 - 150
13C4 PFOA	95		50 - 150
13C5 PFNA	98		50 - 150
13C2 PFDA	105		50 - 150
13C2 PFUnA	108		50 - 150
13C2 PFDoA	105		50 - 150
13C2 PFTeDA	111		50 - 150
13C3 PFBS	117		50 - 150
18O2 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
Analysis Batch: 539660

Client Sample ID: 21GST-MW22-01
Prep Type: Total/NA
Prep Batch: 539413

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%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

Eurofins TestAmerica, Sacramento

QC Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soil

Job ID: 320-81054-1

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: 320-81054-1 MS
Matrix: Solid
Analysis Batch: 539660

Client Sample ID: 21GST-MW22-01
Prep Type: Total/NA
Prep Batch: 539413

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorotridecanoic acid (PFTriA)	ND		2.29	2.21		ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.29	2.17		ug/Kg	☼	95	63 - 144
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroheicosafluoro-3-oxadecane-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

Isotope Dilution	%Recovery	MS Qualifier	MS Limits
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	129		50 - 150
13C3 PFBS	119		50 - 150
18O2 PFHxS	95		50 - 150
13C4 PFOS	103		50 - 150
d3-NMeFOSAA	124		50 - 150
13C3 HFPO-DA	102		50 - 150

Lab Sample ID: 320-81054-1 MSD
Matrix: Solid
Analysis Batch: 539660

Client Sample ID: 21GST-MW22-01
Prep Type: Total/NA
Prep Batch: 539413

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorohexanoic acid (PFHxA)	ND		2.41	2.04		ug/Kg	☼	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 (PFUnA)	ND		2.41	2.21		ug/Kg	☼	92	64 - 136	2	30
Perfluorododecanoic acid (PFDoA)	ND		2.41	2.13		ug/Kg	☼	88	69 - 135	2	30
Perfluorotridecanoic acid (PFTriA)	ND		2.41	2.19		ug/Kg	☼	91	66 - 139	1	30

Eurofins TestAmerica, Sacramento

QC Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soil

Job ID: 320-81054-1

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: 320-81054-1 MSD
Matrix: Solid
Analysis Batch: 539660

Client Sample ID: 21GST-MW22-01
Prep Type: Total/NA
Prep Batch: 539413

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorotetradecanoic acid (PFTeA)	ND		2.41	2.07		ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.41	2.09		ug/Kg	☼	87	63 - 144	3	30
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-1-sulfonic acid	ND		2.27	2.12		ug/Kg	☼	93	76 - 136	4	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.27	2.13		ug/Kg	☼	94	79 - 139	6	30

Isotope Dilution	MSD %Recovery	MSD 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
18O2 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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) - RA	ND		0.20	0.048	ug/Kg		11/02/21 18:31	11/05/21 05:06	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA - RA	105		50 - 150	11/02/21 18:31	11/05/21 05:06	1

Eurofins TestAmerica, Sacramento

QC Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soil

Job ID: 320-81054-1

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
N-ethylperfluorooctanesulfonami doacetic acid (NEtFOSAA) - RA	2.00	1.68		ug/Kg		84	61 - 139
Isotope Dilution		LCS %Recovery	LCS Qualifier				Limits
d5-NEtFOSAA - RA		88					50 - 150

Lab Sample ID: 320-81054-1 MS
Matrix: Solid
Analysis Batch: 540057

Client Sample ID: 21GST-MW22-01
Prep Type: Total/NA
Prep Batch: 539413

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
N-ethylperfluorooctanesulfonami doacetic acid (NEtFOSAA) - RA	ND		2.29	1.96		ug/Kg	⊛	86	61 - 139
Isotope Dilution		MS %Recovery		MS Qualifier					Limits
d5-NEtFOSAA - RA		107							50 - 150

Lab Sample ID: 320-81054-1 MSD
Matrix: Solid
Analysis Batch: 540057

Client Sample ID: 21GST-MW22-01
Prep Type: Total/NA
Prep Batch: 539413

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
N-ethylperfluorooctanesulfonami doacetic acid (NEtFOSAA) - RA	ND		2.41	2.18		ug/Kg	⊛	91	61 - 139	11	30
Isotope Dilution		MSD %Recovery		MSD Qualifier					Limits		RPD Limit
d5-NEtFOSAA - RA		93							50 - 150		

Method: D 2216 - Percent Moisture

Lab Sample ID: 320-81054-1 DU
Matrix: Solid
Analysis Batch: 538967

Client Sample ID: 21GST-MW22-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Percent Moisture	19.8		19.1		%		3	20
Percent Solids	80.2		80.9		%		0.8	20

QC Association Summary

Client: Shannon & Wilson, Inc
Project/Site: SC Soil

Job ID: 320-81054-1

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	
320-81054-3	21GST-MW24-01	Total/NA	Solid	SHAKE	
320-81054-4 - RA	21GST-MW24-02	Total/NA	Solid	SHAKE	
320-81054-4	21GST-MW24-02	Total/NA	Solid	SHAKE	
320-81054-5 - RA	21GST-MW21-01	Total/NA	Solid	SHAKE	
320-81054-5	21GST-MW21-01	Total/NA	Solid	SHAKE	
320-81054-6 - RA	21GST-MW21-02	Total/NA	Solid	SHAKE	
320-81054-6	21GST-MW21-02	Total/NA	Solid	SHAKE	
MB 320-539413/1-A - RA	Method Blank	Total/NA	Solid	SHAKE	
MB 320-539413/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-539413/2-A - RA	Lab Control Sample	Total/NA	Solid	SHAKE	
LCS 320-539413/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
320-81054-1 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
Project/Site: SC Soil

Job ID: 320-81054-1

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	

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soil

Job ID: 320-81054-1

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

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			538967	11/01/21 16:00	TCS	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE	RA		5.35 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 05:27	AF	TAL SAC
Total/NA	Prep	SHAKE			5.35 g	10.0 mL	539413	11/02/21 18:31	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			539660	11/03/21 20:12	D1R	TAL SAC

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

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			538967	11/01/21 16:00	TCS	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE	RA		5.32 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 05:58	AF	TAL SAC
Total/NA	Prep	SHAKE			5.32 g	10.0 mL	539413	11/02/21 18:31	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			539660	11/03/21 20:43	D1R	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

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			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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared 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

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soil

Job ID: 320-81054-1

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

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			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
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

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			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	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE	RA		5.15 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 06:29	AF	TAL SAC
Total/NA	Prep	SHAKE			5.15 g	10.0 mL	539413	11/02/21 18:31	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			539660	11/03/21 21:14	D1R	TAL SAC

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

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			538967	11/01/21 16:00	TCS	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared 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

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soil

Job ID: 320-81054-1

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 Soil

Job ID: 320-81054-1

Laboratory: Eurofins TestAmerica, Sacramento

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24

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

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

Method Summary

Client: 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



Sample Summary

Client: Shannon & Wilson, Inc
Project/Site: SC Soil

Job ID: 320-81054-1

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

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CHAIN-OF-CUSTODY RECORD

Analytical Methods (include preservative if used)

Turn Around Time:
 Normal Rush
 Please Specify

Quote No:

MSA Number:

J-Flags: Yes No

PFAS - 18 analytes
537M

Total Number of Containers

Sample Identity	Lab No.	Time	Date Sampled							Remarks/Matrix Composition/Grab? Sample Containers
21GST-MW22-01		1010	10/25/21	X						Soil
21GST-MW22-02		1220	↓	X						
21GST-MW24-01		1500	10/24/21	X						
21GST-MW24-02		1650	↓	X						
21GST-MW21-01		1545	10/25/21	X						Soil
21GST-MW21-02		1735	↓	X						



Project Information

Number: 102599-008
 Name: SE soil
 Contact: Kristen
 Ongoing Project? Yes No
 Sampler: APW

Sample Receipt

Total No. of Containers: 6
 COC Seals/Intact? Y/N/NA
 Received Good Cond./Cold
 Temp:
 Delivery Method: goldstreak

Relinquished By: 1.

Signature: [Signature] Time: 0800
 Printed Name: Veselina Yakimova Date: 10/28/21
 Company: Shannon & Wilson

Relinquished By: 2.

Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Relinquished By: 3.

Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Notes:

Received By: 1.

Signature: [Signature] Time: 1557
 Printed Name: Salida Oron Date: 10/28/21
 Company: EEIS

Received By: 2.

Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Received By: 3.

Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
 Yellow - w/shipment - for consignee files
 Pink - Shannon & Wilson - job file



Login Sample Receipt Checklist

Client: Shannon & Wilson, Inc

Job Number: 320-81054-1

Login Number: 81054

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.	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

Laboratory Report Date:

Note: Any N/A or No box checked must have an explanation in the comments box.

1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform 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)

a. CoC information completed, signed, and dated (including released/received by)?

Yes No N/A Comments:

b. Correct analyses requested?

Yes No N/A Comments:

3. 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 noted the samples arrived in good condition.

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 No N/A 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. 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:

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 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:

Per the case narrative, the sample results were not affected by the transition mass ratio failure exhibited by the CCVL.

5. Samples Results

- a. Correct analyses performed/reported as requested on COC?

Yes No N/A Comments:

Laboratory Report Date:

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/usability is 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 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 No N/A Comments:

Qualification was not required; see above.

v. Data quality or usability affected?

Comments:

The data quality/usability is not affected.

Laboratory Report Date:

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

- i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

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 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 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:

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 No N/A 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.

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:

- ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?

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 limits and project specified objectives, if applicable?

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 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 No N/A 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

- i. Are surrogate/IDA recoveries reported for organic analyses – field, QC and laboratory samples?

Yes No N/A Comments:

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 No N/A Comments:

- iii. Do the sample results with failed surrogate/IDA recoveries have data flags? If so, are the data flags clearly defined?

Yes No N/A 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

- i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)

Yes No N/A 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 No N/A 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 was not affected.

Laboratory Report Date:

f. Field Duplicate

- i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes No N/A Comments:

Field duplicates were not submitted with this work order. However, field duplicate samples were collected at the frequency required by the project specifications.

- ii. Submitted blind to lab?

Yes No N/A Comments:

See above.

- iii. Precision – All relative percent differences (RPD) less than specified project objectives? (Recommended: 30% water, 50% soil)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where R_1 = Sample Concentration
 R_2 = Field Duplicate Concentration

Yes No N/A Comments:

See above.

- iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

The data quality/usability was not affected.

- g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below)?

Yes No N/A 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 No N/A 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 was not affected.

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



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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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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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.
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.
α	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

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).

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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Detection Summary

Client: Shannon & Wilson, Inc
Project/Site: SC water(MWs)

Job ID: 320-81055-1

Client Sample ID: MW-23-20

Lab Sample ID: 320-81055-1

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	1		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	D	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.

Eurofins TestAmerica, Sacramento

Detection Summary

Client: Shannon & Wilson, Inc
Project/Site: SC water(MWs)

Job ID: 320-81055-1

Client Sample ID: 21GST-TWP-114

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	1		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	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	3.8		1.9	0.56	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.9	I	1.9	0.24	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	4.2		1.9	0.82	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.5	J	1.9	0.55	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC water(MWs)

Job ID: 320-81055-1

Client Sample ID: MW-23-20

Lab Sample ID: 320-81055-1

Date Collected: 10/24/21 16:50

Matrix: Water

Date Received: 10/29/21 15:04

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)	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.7	1.1	ng/L		11/03/21 12:12	11/04/21 16:37	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.7	1.2	ng/L		11/03/21 12:12	11/04/21 16:37	1
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosafuoro-3-oxaundecane-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 - 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 - 150	11/03/21 12:12	11/04/21 16:37	1
13C2 PFUnA	68		50 - 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	11/03/21 12:12	11/04/21 16:37	1
13C3 PFBS	81		50 - 150	11/03/21 12:12	11/04/21 16:37	1
18O2 PFHxS	90		50 - 150	11/03/21 12:12	11/04/21 16:37	1
13C4 PFOS	79		50 - 150	11/03/21 12:12	11/04/21 16:37	1
d3-NMeFOSAA	65		50 - 150	11/03/21 12:12	11/04/21 16:37	1
d5-NEtFOSAA	66		50 - 150	11/03/21 12:12	11/04/21 16:37	1
13C3 HFPO-DA	69		50 - 150	11/03/21 12:12	11/04/21 16:37	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC water(MWs)

Job ID: 320-81055-1

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

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		1.9	0.55	ng/L		11/03/21 12:12	11/04/21 16:48	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.24	ng/L		11/03/21 12:12	11/04/21 16:48	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.81	ng/L		11/03/21 12:12	11/04/21 16:48	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		11/03/21 12:12	11/04/21 16:48	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.29	ng/L		11/03/21 12:12	11/04/21 16:48	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		11/03/21 12:12	11/04/21 16:48	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.52	ng/L		11/03/21 12:12	11/04/21 16:48	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		11/03/21 12:12	11/04/21 16:48	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.69	ng/L		11/03/21 12:12	11/04/21 16:48	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.19	ng/L		11/03/21 12:12	11/04/21 16:48	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	0.54	ng/L		11/03/21 12:12	11/04/21 16:48	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	0.51	ng/L		11/03/21 12:12	11/04/21 16:48	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.8	1.1	ng/L		11/03/21 12:12	11/04/21 16:48	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.8	1.2	ng/L		11/03/21 12:12	11/04/21 16:48	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.9	0.23	ng/L		11/03/21 12:12	11/04/21 16:48	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.8	1.4	ng/L		11/03/21 12:12	11/04/21 16:48	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		1.9	0.30	ng/L		11/03/21 12:12	11/04/21 16:48	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.38	ng/L		11/03/21 12:12	11/04/21 16:48	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	32	*5-	50 - 150	11/03/21 12:12	11/04/21 16:48	1
13C4 PFHpA	33	*5-	50 - 150	11/03/21 12:12	11/04/21 16:48	1
13C4 PFOA	51		50 - 150	11/03/21 12:12	11/04/21 16:48	1
13C5 PFNA	34	*5-	50 - 150	11/03/21 12:12	11/04/21 16:48	1
13C2 PFDA	45	*5-	50 - 150	11/03/21 12:12	11/04/21 16:48	1
13C2 PFUnA	39	*5-	50 - 150	11/03/21 12:12	11/04/21 16:48	1
13C2 PFDoA	47	*5-	50 - 150	11/03/21 12:12	11/04/21 16:48	1
13C2 PFTeDA	47	*5-	50 - 150	11/03/21 12:12	11/04/21 16:48	1
13C3 PFBS	43	*5-	50 - 150	11/03/21 12:12	11/04/21 16:48	1
18O2 PFHxS	49	*5-	50 - 150	11/03/21 12:12	11/04/21 16:48	1
13C4 PFOS	46	*5-	50 - 150	11/03/21 12:12	11/04/21 16:48	1
d3-NMeFOSAA	33	*5-	50 - 150	11/03/21 12:12	11/04/21 16:48	1
d5-NEtFOSAA	37	*5-	50 - 150	11/03/21 12:12	11/04/21 16:48	1
13C3 HFPO-DA	34	*5-	50 - 150	11/03/21 12:12	11/04/21 16:48	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC water(MWs)

Job ID: 320-81055-1

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

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		1.9	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.8	1.2	ng/L		11/03/21 12:12	11/04/21 16:58	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.8	1.3	ng/L		11/03/21 12:12	11/04/21 16:58	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.9	0.23	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-oxaundecane-1-sulfonic acid	ND		1.9	0.31	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
18O2 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
13C3 HFPO-DA	34	*5-	50 - 150	11/03/21 12:12	11/04/21 16:58	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC water(MWs)

Job ID: 320-81055-1

Client Sample ID: MW-9-10

Lab Sample ID: 320-81055-4

Date Collected: 10/25/21 18:01

Matrix: Water

Date Received: 10/29/21 15:04

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		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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.9	1.2	ng/L		11/03/21 12:12	11/04/21 17:08	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.9	1.3	ng/L		11/03/21 12:12	11/04/21 17:08	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		2.0	0.24	ng/L		11/03/21 12:12	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-Chloroeicosadecafluoro-3-oxaundecane-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 - 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 - 150	11/03/21 12:12	11/04/21 17:08	1
13C3 PFBS	66		50 - 150	11/03/21 12:12	11/04/21 17:08	1
18O2 PFHxS	67		50 - 150	11/03/21 12:12	11/04/21 17:08	1
13C4 PFOS	65		50 - 150	11/03/21 12:12	11/04/21 17:08	1
d3-NMeFOSAA	58		50 - 150	11/03/21 12:12	11/04/21 17:08	1
d5-NEtFOSAA	61		50 - 150	11/03/21 12:12	11/04/21 17:08	1
13C3 HFPO-DA	51		50 - 150	11/03/21 12:12	11/04/21 17:08	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC water(MWs)

Job ID: 320-81055-1

Client Sample ID: MW-17-20

Lab Sample ID: 320-81055-5

Date Collected: 10/26/21 12:58

Matrix: Water

Date Received: 10/29/21 15:04

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)	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.9	1.2	ng/L		11/03/21 12:12	11/04/21 17:19	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.9	1.3	ng/L		11/03/21 12:12	11/04/21 17:19	1
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosafuoro-3-oxaundecane-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
Isotope Dilution	%Recovery	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
18O2 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 Sample Results

Client: Shannon & Wilson, Inc
 Project/Site: SC water(MWs)

Job ID: 320-81055-1

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 for QSM 5.3, Table B-15

Analyte	Result	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.8	1.2	ng/L		11/03/21 12:12	11/04/21 17:29	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.8	1.3	ng/L		11/03/21 12:12	11/04/21 17:29	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 150	11/03/21 12:12	11/04/21 17:29	1
13C3 PFBS	59		50 - 150	11/03/21 12:12	11/04/21 17:29	1
18O2 PFHxS	70		50 - 150	11/03/21 12:12	11/04/21 17:29	1
13C4 PFOS	67		50 - 150	11/03/21 12:12	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 - 150	11/03/21 12:12	11/04/21 17:29	1
13C3 HFPO-DA	46	*5-	50 - 150	11/03/21 12:12	11/04/21 17:29	1

Client Sample Results

Client: Shannon & Wilson, Inc
 Project/Site: SC water(MWs)

Job ID: 320-81055-1

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

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		1.9	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	0.50	ng/L		11/03/21 12:12	11/04/21 17:40	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.7	1.1	ng/L		11/03/21 12:12	11/04/21 17:40	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.7	1.2	ng/L		11/03/21 12:12	11/04/21 17:40	1
9-Chlorohexadecafluoro-3-oxanonane-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	1.4	ng/L		11/03/21 12:12	11/04/21 17:40	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		1.9	0.30	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	1
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	1
13C2 PFDA	80		50 - 150	11/03/21 12:12	11/04/21 17:40	1
13C2 PFUnA	74		50 - 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	1
13C2 PFTeDA	116		50 - 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
18O2 PFHxS	90		50 - 150	11/03/21 12:12	11/04/21 17:40	1
13C4 PFOS	78		50 - 150	11/03/21 12:12	11/04/21 17:40	1
d3-NMeFOSAA	61		50 - 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	1
13C3 HFPO-DA	58		50 - 150	11/03/21 12:12	11/04/21 17:40	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC water(MWs)

Job ID: 320-81055-1

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

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)	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.8	1.1	ng/L		11/03/21 12:12	11/04/21 18:11	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.8	1.2	ng/L		11/03/21 12:12	11/04/21 18:11	1
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosafuoro-3-oxaundecane-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
18O2 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 - 150	11/03/21 12:12	11/04/21 18:11	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC water(MWs)

Job ID: 320-81055-1

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

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)	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-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	ND		5.0	1.2	ng/L		11/03/21 12:12	11/04/21 18:21	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	ND		5.0	1.3	ng/L		11/03/21 12:12	11/04/21 18:21	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 150	11/03/21 12:12	11/04/21 18:21	1
13C2 PFUnA	86		50 - 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 - 150	11/03/21 12:12	11/04/21 18:21	1
13C3 PFBS	83		50 - 150	11/03/21 12:12	11/04/21 18:21	1
18O2 PFHxS	93		50 - 150	11/03/21 12:12	11/04/21 18:21	1
13C4 PFOS	91		50 - 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 - 150	11/03/21 12:12	11/04/21 18:21	1
13C3 HFPO-DA	73		50 - 150	11/03/21 12:12	11/04/21 18:21	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC water(MWs)

Job ID: 320-81055-1

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

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)	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		5.0	1.2	ng/L		11/03/21 12:12	11/04/21 18:31	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		5.0	1.3	ng/L		11/03/21 12:12	11/04/21 18:31	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 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 - 150	11/03/21 12:12	11/04/21 18:31	1
13C2 PFUnA	57		50 - 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 - 150	11/03/21 12:12	11/04/21 18:31	1
13C3 PFBS	56		50 - 150	11/03/21 12:12	11/04/21 18:31	1
18O2 PFHxS	66		50 - 150	11/03/21 12:12	11/04/21 18:31	1
13C4 PFOS	60		50 - 150	11/03/21 12:12	11/04/21 18:31	1
d3-NMeFOSAA	53		50 - 150	11/03/21 12:12	11/04/21 18:31	1
d5-NEtFOSAA	57		50 - 150	11/03/21 12:12	11/04/21 18:31	1
13C3 HFPO-DA	48	*5-	50 - 150	11/03/21 12:12	11/04/21 18:31	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC water(MWs)

Job ID: 320-81055-1

Client Sample ID: PW-016

Lab Sample ID: 320-81055-11

Date Collected: 10/26/21 08:38

Matrix: Water

Date Received: 10/29/21 15:04

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)	3.8		1.9	0.56	ng/L		11/03/21 12:06	11/04/21 13:30	1
Perfluoroheptanoic acid (PFHpA)	1.9	I	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.8	1.2	ng/L		11/03/21 12:06	11/04/21 13:30	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.8	1.3	ng/L		11/03/21 12:06	11/04/21 13:30	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 150	11/03/21 12:06	11/04/21 13:30	1
13C4 PFOA	70		50 - 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 - 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	11/03/21 12:06	11/04/21 13:30	1
13C2 PFTeDA	67		50 - 150	11/03/21 12:06	11/04/21 13:30	1
13C3 PFBS	61		50 - 150	11/03/21 12:06	11/04/21 13:30	1
18O2 PFHxS	64		50 - 150	11/03/21 12:06	11/04/21 13:30	1
13C4 PFOS	59		50 - 150	11/03/21 12:06	11/04/21 13:30	1
d3-NMeFOSAA	47	*5-	50 - 150	11/03/21 12:06	11/04/21 13:30	1
d5-NEtFOSAA	46	*5-	50 - 150	11/03/21 12:06	11/04/21 13:30	1
13C3 HFPO-DA	52		50 - 150	11/03/21 12:06	11/04/21 13:30	1

Isotope Dilution Summary

Client: Shannon & Wilson, Inc
Project/Site: SC water(MWs)

Job ID: 320-81055-1

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFHxA (50-150)	C4PFHA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)	PFDoA (50-150)	PFTDA (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)

Lab Sample ID	Client Sample ID	C3PFBS (50-150)	PFHxS (50-150)	PFOS (50-150)	d3NMFOS (50-150)	d5NEFOS (50-150)	HFPODA (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
LCS 320-539611/2-A	Lab Control Sample	88	82	79	67	69	70
LCSD 320-539600/3-A	Lab Control Sample Dup	75	80	65	54	50	60
LCSD 320-539611/3-A	Lab Control Sample Dup	118	117	116	106	102	99
MB 320-539600/1-A	Method Blank	104	109	98	83	85	90
MB 320-539611/1-A	Method Blank	78	86	77	81	78	70

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

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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QC Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC water(MWs)

Job ID: 320-81055-1

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		11/03/21 12:06	11/04/21 12:59	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		11/03/21 12:06	11/04/21 12:59	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		11/03/21 12:06	11/04/21 12:59	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		11/03/21 12:06	11/04/21 12:59	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		11/03/21 12:06	11/04/21 12:59	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		11/03/21 12:06	11/04/21 12:59	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		11/03/21 12:06	11/04/21 12:59	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		11/03/21 12:06	11/04/21 12:59	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.73	ng/L		11/03/21 12:06	11/04/21 12:59	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		11/03/21 12:06	11/04/21 12:59	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.57	ng/L		11/03/21 12:06	11/04/21 12:59	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		11/03/21 12:06	11/04/21 12:59	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		5.0	1.2	ng/L		11/03/21 12:06	11/04/21 12:59	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		5.0	1.3	ng/L		11/03/21 12:06	11/04/21 12:59	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		2.0	0.24	ng/L		11/03/21 12:06	11/04/21 12:59	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		4.0	1.5	ng/L		11/03/21 12:06	11/04/21 12:59	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		2.0	0.32	ng/L		11/03/21 12:06	11/04/21 12:59	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	0.40	ng/L		11/03/21 12:06	11/04/21 12:59	1

Isotope Dilution	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
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
18O2 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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
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

QC Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC water(MWs)

Job ID: 320-81055-1

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorodecanoic acid (PFDA)	40.0	38.0		ng/L		95	71 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	39.1		ng/L		98	69 - 133
Perfluorododecanoic acid (PFDoA)	40.0	38.8		ng/L		97	72 - 134
Perfluorotridecanoic acid (PFTriA)	40.0	42.5		ng/L		106	65 - 144
Perfluorotetradecanoic acid (PFTeA)	40.0	38.0		ng/L		95	71 - 132
Perfluorobutanesulfonic acid (PFBS)	35.4	28.5		ng/L		81	72 - 130
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.1		ng/L		94	68 - 131
Perfluorooctanesulfonic acid (PFOS)	37.1	35.5		ng/L		96	65 - 140
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	34.8		ng/L		87	65 - 136
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	37.4		ng/L		93	61 - 135
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	37.3	33.6		ng/L		90	77 - 137
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	40.0	35.5		ng/L		89	72 - 132
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	37.7	38.7		ng/L		103	76 - 136
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	37.7	35.6		ng/L		95	81 - 141

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
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
18O2 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
Analysis Batch: 539954

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 539600

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.		RPD Limit
							Limits	RPD	
Perfluorohexanoic acid (PFHxA)	40.0	35.5		ng/L		89	72 - 129	6	30
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

Eurofins TestAmerica, Sacramento

QC Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC water(MWs)

Job ID: 320-81055-1

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	33.6		ng/L		84	65 - 136	3	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	40.2		ng/L		101	61 - 135	7	30
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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

Isotope Dilution	LCSD		Limits
	%Recovery	Qualifier	
13C2 PFHxA	62		50 - 150
13C4 PFHpA	58		50 - 150
13C4 PFOA	70		50 - 150
13C5 PFNA	57		50 - 150
13C2 PFDA	59		50 - 150
13C2 PFUnA	60		50 - 150
13C2 PFDoA	65		50 - 150
13C2 PFTeDA	71		50 - 150
13C3 PFBS	75		50 - 150
18O2 PFHxS	80		50 - 150
13C4 PFOS	65		50 - 150
d3-NMeFOSAA	54		50 - 150
d5-NEtFOSAA	50		50 - 150
13C3 HFPO-DA	60		50 - 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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		11/03/21 12:12	11/04/21 16:06	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		11/03/21 12:12	11/04/21 16:06	1

Eurofins TestAmerica, Sacramento

QC Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC water(MWs)

Job ID: 320-81055-1

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		11/03/21 12:12	11/04/21 16:06	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		11/03/21 12:12	11/04/21 16:06	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		11/03/21 12:12	11/04/21 16:06	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		11/03/21 12:12	11/04/21 16:06	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		11/03/21 12:12	11/04/21 16:06	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		11/03/21 12:12	11/04/21 16:06	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.73	ng/L		11/03/21 12:12	11/04/21 16:06	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		11/03/21 12:12	11/04/21 16:06	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.57	ng/L		11/03/21 12:12	11/04/21 16:06	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		11/03/21 12:12	11/04/21 16:06	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		5.0	1.2	ng/L		11/03/21 12:12	11/04/21 16:06	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		5.0	1.3	ng/L		11/03/21 12:12	11/04/21 16:06	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		2.0	0.24	ng/L		11/03/21 12:12	11/04/21 16:06	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		4.0	1.5	ng/L		11/03/21 12:12	11/04/21 16:06	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		2.0	0.32	ng/L		11/03/21 12:12	11/04/21 16:06	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	0.40	ng/L		11/03/21 12:12	11/04/21 16:06	1

Isotope Dilution	MB %Recovery	MB 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
18O2 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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%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 (PFUnA)	40.0	41.3		ng/L		103	69 - 133

Eurofins TestAmerica, Sacramento

QC Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC water(MW's)

Job ID: 320-81055-1

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorododecanoic acid (PFDoA)	40.0	37.9		ng/L		95	72 - 134
Perfluorotridecanoic acid (PFTriA)	40.0	43.9		ng/L		110	65 - 144
Perfluorotetradecanoic acid (PFTeA)	40.0	38.1		ng/L		95	71 - 132
Perfluorobutanesulfonic acid (PFBS)	35.4	25.6		ng/L		72	72 - 130
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.5		ng/L		95	68 - 131
Perfluorooctanesulfonic acid (PFOS)	37.1	31.4		ng/L		85	65 - 140
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	39.0		ng/L		97	65 - 136
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	38.3		ng/L		96	61 - 135
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	37.3	32.7		ng/L		88	77 - 137
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	40.0	34.9		ng/L		87	72 - 132
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	37.7	37.4		ng/L		99	76 - 136
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	37.7	34.1		ng/L		90	81 - 141

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
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
18O2 PFHxS	82		50 - 150
13C4 PFOS	79		50 - 150
d3-NMeFOSAA	67		50 - 150
d5-NEtFOSAA	69		50 - 150
13C3 HFPO-DA	70		50 - 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
Prep Batch: 539611

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	
								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

Eurofins TestAmerica, Sacramento

QC Sample Results

Client: Shannon & Wilson, Inc
 Project/Site: SC water(MWs)

Job ID: 320-81055-1

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: LCSD 320-539611/3-A
Matrix: Water
Analysis Batch: 540478

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 539611

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluoroundecanoic acid (PFUnA)	40.0	40.7		ng/L		102	69 - 133	2	30
Perfluorododecanoic acid (PFDoA)	40.0	39.6		ng/L		99	72 - 134	4	30
Perfluorotridecanoic acid (PFTriA)	40.0	40.4		ng/L		101	65 - 144	8	30
Perfluorotetradecanoic acid (PFTeA)	40.0	40.2		ng/L		101	71 - 132	5	30
Perfluorobutanesulfonic acid (PFBS)	35.4	29.0		ng/L		82	72 - 130	13	30
Perfluorohexanesulfonic acid (PFHxS)	36.4	33.4		ng/L		92	68 - 131	3	30
Perfluorooctanesulfonic acid (PFOS)	37.1	33.3		ng/L		90	65 - 140	6	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	34.7		ng/L		87	65 - 136	12	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	39.0		ng/L		97	61 - 135	2	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	37.3	34.4		ng/L		92	77 - 137	5	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	40.0	40.5		ng/L		101	72 - 132	15	30
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	37.7	35.0		ng/L		93	76 - 136	7	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	37.7	34.2		ng/L		91	81 - 141	0	30

Isotope Dilution	LCSD		Limits
	%Recovery	Qualifier	
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
18O2 PFHxS	117		50 - 150
13C4 PFOS	116		50 - 150
d3-NMeFOSAA	106		50 - 150
d5-NEtFOSAA	102		50 - 150
13C3 HFPO-DA	99		50 - 150

QC Association Summary

Client: Shannon & Wilson, Inc
Project/Site: SC water(MWs)

Job ID: 320-81055-1

LCMS

Prep Batch: 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

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81055-11	PW-016	Total/NA	Water	EPA 537(Mod)	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
LCSD 320-539611/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	539611

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC water(MWs)

Job ID: 320-81055-1

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			266.3 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

Date Collected: 10/25/21 14:39

Date Received: 10/29/21 15:04

Lab Sample ID: 320-81055-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			263 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

Date Collected: 10/25/21 14:29

Date Received: 10/29/21 15:04

Lab Sample ID: 320-81055-3

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			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

Date Received: 10/29/21 15:04

Lab Sample ID: 320-81055-4

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			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

Date Received: 10/29/21 15:04

Lab Sample ID: 320-81055-5

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			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

Date Received: 10/29/21 15:04

Lab Sample ID: 320-81055-6

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			259.1 mL	10.0 mL	539611	11/03/21 12:12	KJW	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			540030	11/04/21 17:29	S1M	TAL SAC

Eurofins TestAmerica, Sacramento

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC water(MWs)

Job ID: 320-81055-1

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

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 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

Lab Sample ID: 320-81055-8

Date Collected: 10/24/21 15:15

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	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

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	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

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	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

Lab Sample ID: 320-81055-11

Date Collected: 10/26/21 08:38

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	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

Accreditation/Certification Summary

Client: Shannon & Wilson, Inc
Project/Site: SC water(MWs)

Job ID: 320-81055-1

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

1

2

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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) 3535	PFAS for QSM 5.3, Table B-15 Solid-Phase Extraction (SPE)	EPA SW846	TAL SAC 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)

Job ID: 320-81055-1

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
320-81055-2	MW-23-50	Water	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
320-81055-9	21GST-TWP-14	Water	10/24/21 16:42	10/29/21 15:04
320-81055-10	21GST-TWP-114	Water	10/24/21 16:32	10/29/21 15:04
320-81055-11	PW-016	Water	10/26/21 08:38	10/29/21 15:04

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- 11
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- 13
- 14
- 15

CHAIN-OF-CUSTODY RECORD

Analytical Methods (include preservative if used)

Turn Around Time:
 Normal Rush
 Please Specify

Quote No:

MSA Number:

J-Flags: Yes No

PFAS-16 analytes (537)

Total Number of Containers

Sample Identity	Lab No.	Time	Date Sampled							Remarks/Matrix Composition/Grab? Sample Containers
MW-23-20		1650	10-24-21	X						Grandwater ↓ ↓ ↓ ↓ ↓ ↓ ↓
MW-23-50		1439	10-25-21	X						
MW-123-50		1429	↓	X						
MW-9-10		1801	↓	X						
MW-17-20		1258	10/26/21	X						
MW-17-40		1459	↓	X						
MW-117-40		1444	↓	X						
21GST-TWP-13		1515	10/24/21	X						
21GST-TWP-14		1642	↓	X						
21GST-TWP-114		1632	↓	X						



Project Information
 Number: 102599-008
 Name: SC water (MWs)
 Contact: Kristen
 Ongoing Project? Yes No
 Sampler: JKR

Sample Receipt
 Total No. of Containers: 22
 COC Seals/Intact? Y/N/NA
 Received Good Cond /Cold
 Temp:
 Delivery Method: goldstream

Relinquished By: 1.
 Signature: [Signature] Time: 0800
 Printed Name: Vesalica Jakimova Date: 10/28/21
 Company: Shannon & Wilson

Relinquished By: 2.
 Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Relinquished By: 3.
 Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Notes:

Received By: 1.
 Signature: [Signature] Time: 1244
 Printed Name: Sally [unclear] Date: 10/31
 Company: ES&S

Received By: 2.
 Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Received By: 3.
 Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
 Yellow - w/shipment - for consignee files
 Pink - Shannon & Wilson - job file





2355 Hill Road
Fairbanks, AK 99709
(907) 479-0600

www.shannonwilson.com

CHAIN-OF-CUSTODY RECORD

Page 2 of 2
Laboratory Test America
Attn: David Accucker

Analytical Methods (include preservative if used)

Turn Around Time:
 Normal Rush
 Please Specify

Quote No:
MSA Number:
J-Flags: Yes No

PFAS-18 analytes (537)

Sample Identity	Lab No.	Time	Date Sampled	Analytical Methods					Total Number of Containers	Remarks/Matrix Composition/Grab? Sample Containers
PW-016		0838	10/24/21	X					2	groundwater 5 + Trioua

Project Information
 Number: 102599-008
 Name: SE wester
 Contact: Kristen
 Ongoing Project? Yes No
 Sampler: SKR

Sample Receipt
 Total No. of Containers: 22
 COC Seals/Intact? Y/N/NA
 Received Good Cond./Cold
 Temp:
 Delivery Method: goldstreak

Relinquished By: 1.
 Signature: [Signature] Time: 0800
 Printed Name: Veselina Jakimova Date: 10/24/21
 Company: Shannon & Wilson

Relinquished By: 2.
 Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Relinquished By: 3.
 Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Notes:

Received By: 1.
 Signature: [Signature] Time: 1501
 Printed Name: Solomon Date: 10/24/21
 Company: EEIS

Received By: 2.
 Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Received By: 3.
 Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
 Yellow - w/shipment - for consignee files
 Pink - Shannon & Wilson - job file

No. _____



Page 34 of 35

11/12/2021

Login Sample Receipt Checklist

Client: Shannon & Wilson, Inc

Job Number: 320-81055-1

Login Number: 81055

List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Cahill, Nicholas P

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	

Laboratory Report Date:

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

Yes No N/A Comments:

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

Laboratory Report Date:

Note: Any N/A or No box checked must have an explanation in the comments box.

1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform all of 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)

a. CoC information completed, signed, and dated (including released/received by)?

Yes No N/A Comments:

b. Correct analyses requested?

Yes No N/A Comments:

3. 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:

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.

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 No N/A Comments:

There were no discrepancies noted in the sample receipt documentation.

- e. Data quality or usability affected?

Comments:

The data quality/usability is not affected.

4. Case Narrative

- a. Present and understandable?

Yes No N/A 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.

Laboratory Report Date:

b. Discrepancies, errors, or QC failures identified by the lab?

Yes No N/A Comments:

Method 3535: The sample *PW-016* 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: *MW-23-20*, *MW-9-10*, *MW-17-20*, *21GST-TWP-14* and *21GST-TWP-114*.

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: *MW-23-50*, *MW-123-50*, *MW-17-40*, and *MW-117-40*.

Method 3535: During the solid phase extraction process, the following samples contained non-settleable particulates which clogged the solid phase extraction column: *MW-23-20*, *MW-23-50*, and *MW-123-50*.

Method 3535: The extract for samples *MW-17-40* and *MW-117-40* exhibited a yellow hue after final voluming.

c. Were all corrective actions documented?

Yes No N/A 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. Samples 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:

Laboratory Report Date:

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 No N/A 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. 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 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 No N/A 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.

Laboratory Report Date:

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

- i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

Yes No N/A Comments:

- ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

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 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.

- 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.

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:

A MS/MSD was not analyzed with this work order; however, the laboratory analyzed LCS and LCSD samples to assess laboratory accuracy and precision.

- ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?

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 limits and project specified objectives, if applicable?

Yes No N/A 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 No N/A 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

- i. Are surrogate/IDA recoveries reported for organic analyses – field, QC and laboratory samples?

Yes No N/A Comments:

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 No N/A 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 *MW-123-50*.

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 *MW-17-40*.

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 *PW-016*.

- iii. Do the sample results with failed surrogate/IDA recoveries have data flags? If so, are the data flags clearly defined?

Yes No N/A Comments:

All target PFAS results except PFOA are affected by low IDA recovery in sample *MW-23-50*. 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 *MW-123-50* 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 *MW-17-40* 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.

Laboratory Report Date:

e. Trip Blanks

- i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples?
(If not, enter explanation below.)

Yes No N/A 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 No N/A 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 and/or usability was not affected; see above.

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 No N/A 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.

Laboratory Report Date:

- iii. Precision – All relative percent differences (RPD) less than specified project objectives?
(Recommended: 30% water, 50% soil)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where R_1 = Sample Concentration
 R_2 = Field Duplicate Concentration

Yes No N/A 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 No N/A 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 No N/A 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:

The data quality/usability is not affected.

Laboratory Report Date:

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

Yes No N/A 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.

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



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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Definitions/Glossary

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Qualifiers

LCMS

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.
α	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

Case Narrative

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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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Detection Summary

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SS-023

Lab Sample ID: 320-81254-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorononanoic acid (PFNA)	0.033	J	0.21	0.023	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.091	J I	0.21	0.046	ug/Kg	1	☒	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SS-029

Lab Sample ID: 320-81254-2

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	☒	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SS-028

Lab Sample ID: 320-81254-3

No Detections.

Client Sample ID: 21GST-SS-027

Lab Sample ID: 320-81254-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.11	J I	0.20	0.043	ug/Kg	1	☒	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SS-026

Lab Sample ID: 320-81254-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorotridecanoic acid (PFTriA)	0.085	J I	0.26	0.027	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.13	J I	0.26	0.056	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	0.086	J	0.26	0.062	ug/Kg	1	☒	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SS-126

Lab Sample ID: 320-81254-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorononanoic acid (PFNA)	0.033	J	0.25	0.027	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorotridecanoic acid (PFTriA)	0.26	I	0.25	0.026	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.23	J I	0.25	0.053	ug/Kg	1	☒	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SS-025

Lab Sample ID: 320-81254-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.087	J	0.20	0.043	ug/Kg	1	☒	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SS-024

Lab Sample ID: 320-81254-8

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	J I	0.22	0.048	ug/Kg	1	☒	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SS-022

Lab Sample ID: 320-81254-9

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.

Eurofins TestAmerica, Sacramento

Detection Summary

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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	1	☼	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	4.0		0.22	0.042	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
N-methylperfluorooctanesulfonamidoacetic 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	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.65		0.22	0.034	ug/Kg	1	☼	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-methylperfluorooctanesulfonamidoacetic 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	1	☼	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.

Eurofins TestAmerica, Sacramento

Detection Summary

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	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorotridecanoic acid (PFTriA)	0.046	J	0.21	0.022	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.044	J	0.21	0.040	ug/Kg	1	✳	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-methylperfluorooctanesulfonamidoacetic 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 Sample ID: 320-81254-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.23	J I	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	I	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	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.14	J I	0.22	0.046	ug/Kg	1	✳	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	1	✳	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	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	33		2.3	0.50	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

Detection Summary

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SS-006 (Continued)

Lab Sample ID: 320-81254-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.11	J	0.27	0.031	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SS-106

Lab Sample ID: 320-81254-20

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-methylperfluorooctanesulfonamidoacetic 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

Lab Sample ID: 320-81254-21

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 (PFOS)	6.5		0.20	0.044	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SS-007

Lab Sample ID: 320-81254-22

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.17	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

Lab Sample ID: 320-81254-23

No Detections.

Client Sample ID: 21GST-MW14-10

Lab Sample ID: 320-81254-24

No Detections.

Client Sample ID: 21GST-MW14-02

Lab Sample ID: 320-81254-25

No Detections.

Client Sample ID: 21GST-MW14-03

Lab Sample ID: 320-81254-26

No Detections.

Client Sample ID: 21GST-MW14-04

Lab Sample ID: 320-81254-27

No Detections.

Client Sample ID: 21GST-MW14-05

Lab Sample ID: 320-81254-28

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

Detection Summary

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-MW14-06

Lab Sample ID: 320-81254-29

No Detections.

Client Sample ID: 21GST-MW18-01

Lab Sample ID: 320-81254-30

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	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.

Client Sample ID: 21GST-MW18-04

Lab Sample ID: 320-81254-34

No Detections.

Client Sample ID: 21GST-MW18-05

Lab Sample ID: 320-81254-35

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
Perfluorohexanesulfonic acid (PFHxS)	0.047	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-MW15-02

Lab Sample ID: 320-81254-38

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.038	J	0.23	0.033	ug/Kg	1	⊛	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.18	J	0.23	0.049	ug/Kg	1	⊛	EPA 537(Mod)	Total/NA

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
Perfluorooctanesulfonic acid (PFOS)	0.60		0.24	0.051	ug/Kg	1	⊛	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-MW15-14

Lab Sample ID: 320-81254-41

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.26		0.23	0.049	ug/Kg	1	⊛	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-MW15-05

Lab Sample ID: 320-81254-42

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

Detection Summary

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-MW15-06

Lab Sample ID: 320-81254-43

No Detections.

Client Sample ID: 21GST-SB002-01

Lab Sample ID: 320-81254-44

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.40		0.20	0.044	ug/Kg	1	⊛	EPA 537(Mod)	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
Perfluorooctanesulfonic acid (PFOS)	0.20	J	0.22	0.048	ug/Kg	1	⊛	EPA 537(Mod)	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

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.075	J	0.22	0.048	ug/Kg	1	⊛	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SB001-03

Lab Sample ID: 320-81254-50

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	Qualifier	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	1	⊛	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SB009-10

Lab Sample ID: 320-81254-53

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	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.

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
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SB009-04

Lab Sample ID: 320-81254-56

No Detections.

Client Sample ID: 21GST-SB010-01

Lab Sample ID: 320-81254-57

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.15	J	0.22	0.046	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SB010-10

Lab Sample ID: 320-81254-58

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.14	J	0.21	0.044	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SB010-02

Lab Sample ID: 320-81254-59

Analyte	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

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.12	J	0.21	0.046	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SB012-01

Lab Sample ID: 320-81254-61

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorotetradecanoic acid (PFTeA)	0.051	J	0.22	0.040	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-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

Lab Sample ID: 320-81254-64

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
Perfluorooctanesulfonic acid (PFOS)	0.090	J	0.23	0.049	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SB013-03

Lab Sample ID: 320-81254-66

No Detections.

Client Sample ID: 21GST-SB005-01

Lab Sample ID: 320-81254-67

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	1.4		0.20	0.043	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

Detection Summary

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SB005-02

Lab Sample ID: 320-81254-68

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
Perfluorohexanesulfonic acid (PFHxS)	0.30		0.23	0.034	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.66		0.23	0.050	ug/Kg	1	☒	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SB007-01

Lab Sample ID: 320-81254-70

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	J I	0.21	0.030	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.10	J I	0.21	0.044	ug/Kg	1	☒	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SB007-10

Lab Sample ID: 320-81254-71

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	J I	0.21	0.030	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.27	I	0.21	0.045	ug/Kg	1	☒	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SB007-02

Lab Sample ID: 320-81254-72

No Detections.

Client Sample ID: 21GST-SB007-03

Lab Sample ID: 320-81254-73

No Detections.

Client Sample ID: 21GST-SS-030

Lab Sample ID: 320-81254-74

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.083	J	0.29	0.045	ug/Kg	1	☒	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	J I	0.29	0.063	ug/Kg	1	☒	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SS-010

Lab Sample ID: 320-81254-75

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.034	J I	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

Lab Sample ID: 320-81254-76

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

Detection Summary

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SS-031 (Continued)

Lab Sample ID: 320-81254-76

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	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-131

Lab Sample ID: 320-81254-77

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	J	0.25	0.027	ug/Kg	1	✳	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-009

Lab Sample ID: 320-81254-78

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.74		0.22	0.034	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.25		0.22	0.041	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	0.69		0.22	0.058	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.038	J I	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-012

Lab Sample ID: 320-81254-79

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-011

Lab Sample ID: 320-81254-80

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-013

Lab Sample ID: 320-81254-81

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-SB003-01

Lab Sample ID: 320-81254-82

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.26	J	0.28	0.043	ug/Kg	1	✳	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	J I	0.28	0.031	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.27	J I	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-SB003-02

Lab Sample ID: 320-81254-83

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.072	J	0.21	0.031	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.6		0.21	0.046	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

Detection Summary

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SB003-03

Lab Sample ID: 320-81254-84

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.033	J	0.22	0.032	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.44		0.22	0.047	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SB004-01

Lab Sample ID: 320-81254-85

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.055	J	0.22	0.032	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.0		0.22	0.048	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SB004-02

Lab Sample ID: 320-81254-86

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)	Total/NA

Client Sample ID: 21GST-SB004-03

Lab Sample ID: 320-81254-87

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.25		0.24	0.052	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SB006-01

Lab Sample ID: 320-81254-88

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.15	J I	0.20	0.042	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SB006-10

Lab Sample ID: 320-81254-89

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.76		0.22	0.047	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SB006-02

Lab Sample ID: 320-81254-90

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.078	J I	0.21	0.044	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SB006-03

Lab Sample ID: 320-81254-91

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	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-SB008-01

Lab Sample ID: 320-81254-92

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.074	J	0.23	0.035	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.047	J	0.23	0.033	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.36	I	0.23	0.049	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SB008-02

Lab Sample ID: 320-81254-93

No Detections.

Client Sample ID: 21GST-SB008-03

Lab Sample ID: 320-81254-94

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.69		0.22	0.047	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

Detection Summary

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.046	J	0.21	0.024	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	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	1	✳	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.

Eurofins TestAmerica, Sacramento

Detection Summary

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SB014-01 (Continued)

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

Client Sample ID: 21GST-SB014-02

Lab Sample ID: 320-81254-100

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

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.13	J	0.23	0.048	ug/Kg	1	✳	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
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
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	1	✳	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.

Eurofins TestAmerica, Sacramento

Detection Summary

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SS-103 (Continued)

Lab Sample ID: 320-81254-107

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
Perfluorohexanesulfonic acid (PFHxS)	1.1		0.21	0.030	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	9.9		0.21	0.045	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-SS-002

Lab Sample ID: 320-81254-108

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

Lab Sample ID: 320-81254-109

Analyte	Result	Qualifier	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

Lab Sample ID: 320-81254-110

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.27		0.21	0.033	ug/Kg	1	✳	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

Lab Sample ID: 320-81254-111

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

Lab Sample ID: 320-81254-112

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	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

Detection Summary

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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.

Client Sample ID: 21GST-MW20-01

Lab Sample ID: 320-81254-116

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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.035	J	0.21	0.024	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

Client Sample ID: 21GST-MW20-02

Lab Sample ID: 320-81254-118

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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	☼	11/07/21 18:20	11/08/21 23:15	1
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	J I	0.21	0.046	ug/Kg	☼	11/07/21 18:20	11/08/21 23:15	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.025	ug/Kg	☼	11/07/21 18:20	11/08/21 23:15	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.051	ug/Kg	☼	11/07/21 18:20	11/08/21 23:15	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-1-sulfonic acid	ND		0.21	0.033	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 - 150	11/07/21 18:20	11/08/21 23:15	1
13C2 PFTeDA	92		50 - 150	11/07/21 18:20	11/08/21 23:15	1
13C3 PFBS	94		50 - 150	11/07/21 18:20	11/08/21 23:15	1
18O2 PFHxS	76		50 - 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	11/07/21 18:20	11/08/21 23:15	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

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SS-029

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

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	0.032	ug/Kg	☼	11/07/21 18:20	11/08/21 23:46	1
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	0.044	ug/Kg	☼	11/07/21 18:20	11/08/21 23:46	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	☼	11/07/21 18:20	11/08/21 23:46	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.050	ug/Kg	☼	11/07/21 18:20	11/08/21 23:46	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.036	ug/Kg	☼	11/07/21 18:20	11/08/21 23:46	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.042	ug/Kg	☼	11/07/21 18:20	11/08/21 23:46	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.032	ug/Kg	☼	11/07/21 18:20	11/08/21 23:46	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
18O2 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	11/07/21 18:20	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	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	8.4		0.1	0.1	%			11/05/21 11:58	1
Percent Solids	91.6		0.1	0.1	%			11/05/21 11:58	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SS-028

Lab Sample ID: 320-81254-3

Date Collected: 10/29/21 10:53

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 95.0

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	0.032	ug/Kg	☼	11/07/21 18:20	11/08/21 23:56	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.039	ug/Kg	☼	11/07/21 18:20	11/08/21 23:56	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.055	ug/Kg	☼	11/07/21 18:20	11/08/21 23:56	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.023	ug/Kg	☼	11/07/21 18:20	11/08/21 23:56	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.049	ug/Kg	☼	11/07/21 18:20	11/08/21 23:56	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.043	ug/Kg	☼	11/07/21 18:20	11/08/21 23:56	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.031	ug/Kg	☼	11/07/21 18:20	11/08/21 23:56	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.022	ug/Kg	☼	11/07/21 18:20	11/08/21 23:56	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.038	ug/Kg	☼	11/07/21 18:20	11/08/21 23:56	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.039	ug/Kg	☼	11/07/21 18:20	11/08/21 23:56	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21	0.030	ug/Kg	☼	11/07/21 18:20	11/08/21 23:56	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.21	0.044	ug/Kg	☼	11/07/21 18:20	11/08/21 23:56	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	☼	11/07/21 18:20	11/08/21 23:56	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.049	ug/Kg	☼	11/07/21 18:20	11/08/21 23:56	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.036	ug/Kg	☼	11/07/21 18:20	11/08/21 23:56	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.042	ug/Kg	☼	11/07/21 18:20	11/08/21 23:56	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.032	ug/Kg	☼	11/07/21 18:20	11/08/21 23:56	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.040	ug/Kg	☼	11/07/21 18:20	11/08/21 23:56	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	78		50 - 150	11/07/21 18:20	11/08/21 23:56	1
13C4 PFHpA	93		50 - 150	11/07/21 18:20	11/08/21 23:56	1
13C4 PFOA	89		50 - 150	11/07/21 18:20	11/08/21 23:56	1
13C5 PFNA	90		50 - 150	11/07/21 18:20	11/08/21 23:56	1
13C2 PFDA	91		50 - 150	11/07/21 18:20	11/08/21 23:56	1
13C2 PFUnA	90		50 - 150	11/07/21 18:20	11/08/21 23:56	1
13C2 PFDoA	88		50 - 150	11/07/21 18:20	11/08/21 23:56	1
13C2 PFTeDA	95		50 - 150	11/07/21 18:20	11/08/21 23:56	1
13C3 PFBS	86		50 - 150	11/07/21 18:20	11/08/21 23:56	1
18O2 PFHxS	77		50 - 150	11/07/21 18:20	11/08/21 23:56	1
13C4 PFOS	86		50 - 150	11/07/21 18:20	11/08/21 23:56	1
d3-NMeFOSAA	77		50 - 150	11/07/21 18:20	11/08/21 23:56	1
d5-NEtFOSAA	73		50 - 150	11/07/21 18:20	11/08/21 23:56	1
13C3 HFPO-DA	80		50 - 150	11/07/21 18:20	11/08/21 23:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	5.0		0.1	0.1	%			11/05/21 11:58	1
Percent Solids	95.0		0.1	0.1	%			11/05/21 11:58	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SS-027

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

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		0.20	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	J I	0.20	0.043	ug/Kg	☼	11/07/21 18:20	11/09/21 00:06	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg	☼	11/07/21 18:20	11/09/21 00:06	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.20	0.048	ug/Kg	☼	11/07/21 18:20	11/09/21 00:06	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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
18O2 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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	8.0		0.1	0.1	%			11/05/21 11:58	1
Percent Solids	92.0		0.1	0.1	%			11/05/21 11:58	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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		0.26	0.040	ug/Kg	☼	11/07/21 18:20	11/09/21 00:16	1
Perfluoroheptanoic acid (PFHpA)	ND		0.26	0.049	ug/Kg	☼	11/07/21 18:20	11/09/21 00:16	1
Perfluorooctanoic acid (PFOA)	ND		0.26	0.068	ug/Kg	☼	11/07/21 18:20	11/09/21 00:16	1
Perfluorononanoic acid (PFNA)	ND		0.26	0.028	ug/Kg	☼	11/07/21 18:20	11/09/21 00:16	1
Perfluorodecanoic acid (PFDA)	ND		0.26	0.062	ug/Kg	☼	11/07/21 18:20	11/09/21 00:16	1
Perfluoroundecanoic acid (PFUnA)	ND		0.26	0.054	ug/Kg	☼	11/07/21 18:20	11/09/21 00:16	1
Perfluorododecanoic acid (PFDoA)	ND		0.26	0.039	ug/Kg	☼	11/07/21 18:20	11/09/21 00:16	1
Perfluorotridecanoic acid (PFTriA)	0.085	J I	0.26	0.027	ug/Kg	☼	11/07/21 18:20	11/09/21 00:16	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.26	0.048	ug/Kg	☼	11/07/21 18:20	11/09/21 00:16	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.26	0.049	ug/Kg	☼	11/07/21 18:20	11/09/21 00:16	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.26	0.037	ug/Kg	☼	11/07/21 18:20	11/09/21 00:16	1
Perfluorooctanesulfonic acid (PFOS)	0.13	J I	0.26	0.056	ug/Kg	☼	11/07/21 18:20	11/09/21 00:16	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.26	0.030	ug/Kg	☼	11/07/21 18:20	11/09/21 00:16	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	0.086	J	0.26	0.062	ug/Kg	☼	11/07/21 18:20	11/09/21 00:16	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.26	0.045	ug/Kg	☼	11/07/21 18:20	11/09/21 00:16	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.26	0.053	ug/Kg	☼	11/07/21 18:20	11/09/21 00:16	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.26	0.040	ug/Kg	☼	11/07/21 18:20	11/09/21 00:16	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.26	0.050	ug/Kg	☼	11/07/21 18:20	11/09/21 00:16	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	89		50 - 150	11/07/21 18:20	11/09/21 00:16	1
13C4 PFHpA	90		50 - 150	11/07/21 18:20	11/09/21 00:16	1
13C4 PFOA	97		50 - 150	11/07/21 18:20	11/09/21 00:16	1
13C5 PFNA	90		50 - 150	11/07/21 18:20	11/09/21 00:16	1
13C2 PFDA	93		50 - 150	11/07/21 18:20	11/09/21 00:16	1
13C2 PFUnA	99		50 - 150	11/07/21 18:20	11/09/21 00:16	1
13C2 PFDoA	106		50 - 150	11/07/21 18:20	11/09/21 00:16	1
13C2 PFTeDA	108		50 - 150	11/07/21 18:20	11/09/21 00:16	1
13C3 PFBS	97		50 - 150	11/07/21 18:20	11/09/21 00:16	1
18O2 PFHxS	88		50 - 150	11/07/21 18:20	11/09/21 00:16	1
13C4 PFOS	91		50 - 150	11/07/21 18:20	11/09/21 00:16	1
d3-NMeFOSAA	83		50 - 150	11/07/21 18:20	11/09/21 00:16	1
d5-NEtFOSAA	88		50 - 150	11/07/21 18:20	11/09/21 00:16	1
13C3 HFPO-DA	94		50 - 150	11/07/21 18:20	11/09/21 00:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	23.8		0.1	0.1	%			11/05/21 11:58	1
Percent Solids	76.2		0.1	0.1	%			11/05/21 11:58	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SS-126

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

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		0.25	0.039	ug/Kg	☼	11/07/21 18:20	11/09/21 00:26	1
Perfluoroheptanoic acid (PFHpA)	ND		0.25	0.047	ug/Kg	☼	11/07/21 18:20	11/09/21 00:26	1
Perfluorooctanoic acid (PFOA)	ND		0.25	0.066	ug/Kg	☼	11/07/21 18:20	11/09/21 00:26	1
Perfluorononanoic acid (PFNA)	0.033	J	0.25	0.027	ug/Kg	☼	11/07/21 18:20	11/09/21 00:26	1
Perfluorodecanoic acid (PFDA)	ND		0.25	0.060	ug/Kg	☼	11/07/21 18:20	11/09/21 00:26	1
Perfluoroundecanoic acid (PFUnA)	ND		0.25	0.052	ug/Kg	☼	11/07/21 18:20	11/09/21 00:26	1
Perfluorododecanoic acid (PFDoA)	ND		0.25	0.037	ug/Kg	☼	11/07/21 18:20	11/09/21 00:26	1
Perfluorotridecanoic acid (PFTriA)	0.26	I	0.25	0.026	ug/Kg	☼	11/07/21 18:20	11/09/21 00:26	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.25	0.046	ug/Kg	☼	11/07/21 18:20	11/09/21 00:26	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.25	0.047	ug/Kg	☼	11/07/21 18:20	11/09/21 00:26	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.25	0.036	ug/Kg	☼	11/07/21 18:20	11/09/21 00:26	1
Perfluorooctanesulfonic acid (PFOS)	0.23	J I	0.25	0.053	ug/Kg	☼	11/07/21 18:20	11/09/21 00:26	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.25	0.029	ug/Kg	☼	11/07/21 18:20	11/09/21 00:26	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.25	0.060	ug/Kg	☼	11/07/21 18:20	11/09/21 00:26	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.25	0.044	ug/Kg	☼	11/07/21 18:20	11/09/21 00:26	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.051	ug/Kg	☼	11/07/21 18:20	11/09/21 00:26	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.25	0.039	ug/Kg	☼	11/07/21 18:20	11/09/21 00:26	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.25	0.048	ug/Kg	☼	11/07/21 18:20	11/09/21 00:26	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	76		50 - 150	11/07/21 18:20	11/09/21 00:26	1
13C4 PFHpA	90		50 - 150	11/07/21 18:20	11/09/21 00:26	1
13C4 PFOA	97		50 - 150	11/07/21 18:20	11/09/21 00:26	1
13C5 PFNA	86		50 - 150	11/07/21 18:20	11/09/21 00:26	1
13C2 PFDA	87		50 - 150	11/07/21 18:20	11/09/21 00:26	1
13C2 PFUnA	83		50 - 150	11/07/21 18:20	11/09/21 00:26	1
13C2 PFDoA	86		50 - 150	11/07/21 18:20	11/09/21 00:26	1
13C2 PFTeDA	93		50 - 150	11/07/21 18:20	11/09/21 00:26	1
13C3 PFBS	92		50 - 150	11/07/21 18:20	11/09/21 00:26	1
18O2 PFHxS	81		50 - 150	11/07/21 18:20	11/09/21 00:26	1
13C4 PFOS	86		50 - 150	11/07/21 18:20	11/09/21 00:26	1
d3-NMeFOSAA	77		50 - 150	11/07/21 18:20	11/09/21 00:26	1
d5-NEtFOSAA	77		50 - 150	11/07/21 18:20	11/09/21 00:26	1
13C3 HFPO-DA	86		50 - 150	11/07/21 18:20	11/09/21 00:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	21.3		0.1	0.1	%			11/05/21 11:58	1
Percent Solids	78.7		0.1	0.1	%			11/05/21 11:58	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SS-025

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

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		0.20	0.031	ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg	☼	11/07/21 18:20	11/09/21 00:56	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.20	0.048	ug/Kg	☼	11/07/21 18:20	11/09/21 00:56	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-1-sulfonic acid	ND		0.20	0.031	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 - 150	11/07/21 18:20	11/09/21 00:56	1
d5-NEtFOSAA	88		50 - 150	11/07/21 18:20	11/09/21 00:56	1
13C3 HFPO-DA	85		50 - 150	11/07/21 18:20	11/09/21 00:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	5.9		0.1	0.1	%			11/05/21 11:58	1
Percent Solids	94.1		0.1	0.1	%			11/05/21 11:58	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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		0.22	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	J I	0.22	0.048	ug/Kg	☼	11/07/21 18:20	11/09/21 01:07	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.22	0.025	ug/Kg	☼	11/07/21 18:20	11/09/21 01:07	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.22	0.053	ug/Kg	☼	11/07/21 18:20	11/09/21 01:07	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 150	11/07/21 18:20	11/09/21 01:07	1
13C2 PFUnA	90		50 - 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 - 150	11/07/21 18:20	11/09/21 01:07	1
13C3 PFBS	95		50 - 150	11/07/21 18:20	11/09/21 01:07	1
18O2 PFHxS	82		50 - 150	11/07/21 18:20	11/09/21 01:07	1
13C4 PFOS	89		50 - 150	11/07/21 18:20	11/09/21 01:07	1
d3-NMeFOSAA	80		50 - 150	11/07/21 18:20	11/09/21 01:07	1
d5-NEtFOSAA	78		50 - 150	11/07/21 18:20	11/09/21 01:07	1
13C3 HFPO-DA	89		50 - 150	11/07/21 18:20	11/09/21 01:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	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

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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)	2.1		0.22	0.034	ug/Kg	☼	11/07/21 18:20	11/09/21 01:17	1
Perfluoroheptanoic acid (PFHpA)	0.64		0.22	0.042	ug/Kg	☼	11/07/21 18:20	11/09/21 01:17	1
Perfluorooctanoic acid (PFOA)	1.8		0.22	0.058	ug/Kg	☼	11/07/21 18:20	11/09/21 01:17	1
Perfluorononanoic acid (PFNA)	0.38		0.22	0.024	ug/Kg	☼	11/07/21 18:20	11/09/21 01:17	1
Perfluorodecanoic acid (PFDA)	2.1		0.22	0.053	ug/Kg	☼	11/07/21 18:20	11/09/21 01:17	1
Perfluoroundecanoic acid (PFUnA)	7.6		0.22	0.046	ug/Kg	☼	11/07/21 18:20	11/09/21 01:17	1
Perfluorododecanoic acid (PFDoA)	2.0		0.22	0.033	ug/Kg	☼	11/07/21 18:20	11/09/21 01:17	1
Perfluorotridecanoic acid (PFTriA)	0.53		0.22	0.023	ug/Kg	☼	11/07/21 18:20	11/09/21 01:17	1
Perfluorotetradecanoic acid (PFTeA)	0.74		0.22	0.041	ug/Kg	☼	11/07/21 18:20	11/09/21 01:17	1
Perfluorobutanesulfonic acid (PFBS)	4.0		0.22	0.042	ug/Kg	☼	11/07/21 18:20	11/09/21 01:17	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.37		0.22	0.025	ug/Kg	☼	11/07/21 18:20	11/09/21 01:17	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.22	0.053	ug/Kg	☼	11/07/21 18:20	11/09/21 01:17	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.22	0.039	ug/Kg	☼	11/07/21 18:20	11/09/21 01:17	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22	0.045	ug/Kg	☼	11/07/21 18:20	11/09/21 01:17	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.22	0.034	ug/Kg	☼	11/07/21 18:20	11/09/21 01:17	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.043	ug/Kg	☼	11/07/21 18:20	11/09/21 01:17	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	90		50 - 150	11/07/21 18:20	11/09/21 01:17	1
13C4 PFHpA	90		50 - 150	11/07/21 18:20	11/09/21 01:17	1
13C4 PFOA	99		50 - 150	11/07/21 18:20	11/09/21 01:17	1
13C5 PFNA	87		50 - 150	11/07/21 18:20	11/09/21 01:17	1
13C2 PFDA	99		50 - 150	11/07/21 18:20	11/09/21 01:17	1
13C2 PFUnA	105		50 - 150	11/07/21 18:20	11/09/21 01:17	1
13C2 PFDoA	91		50 - 150	11/07/21 18:20	11/09/21 01:17	1
13C2 PFTeDA	90		50 - 150	11/07/21 18:20	11/09/21 01:17	1
13C3 PFBS	128		50 - 150	11/07/21 18:20	11/09/21 01:17	1
18O2 PFHxS	92		50 - 150	11/07/21 18:20	11/09/21 01:17	1
13C4 PFOS	92		50 - 150	11/07/21 18:20	11/09/21 01:17	1
d3-NMeFOSAA	94		50 - 150	11/07/21 18:20	11/09/21 01:17	1
d5-NEtFOSAA	91		50 - 150	11/07/21 18:20	11/09/21 01:17	1
13C3 HFPO-DA	90		50 - 150	11/07/21 18:20	11/09/21 01:17	1

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanesulfonic acid (PFHxS)	20	J	22	3.2	ug/Kg	☼	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
18O2 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

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
 Project/Site: SC Soils#3

Job ID: 320-81254-1

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	Qualifier	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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Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

Percent Solids: 85.2

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)	0.65		0.22	0.034	ug/Kg	☼	11/07/21 18:20	11/09/21 01:27	1
Perfluoroheptanoic acid (PFHpA)	0.32		0.22	0.041	ug/Kg	☼	11/07/21 18:20	11/09/21 01:27	1
Perfluorooctanoic acid (PFOA)	0.75		0.22	0.057	ug/Kg	☼	11/07/21 18:20	11/09/21 01:27	1
Perfluorononanoic acid (PFNA)	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 (PFUnA)	15		0.22	0.046	ug/Kg	☼	11/07/21 18:20	11/09/21 01:27	1
Perfluorododecanoic acid (PFDoA)	2.3		0.22	0.033	ug/Kg	☼	11/07/21 18:20	11/09/21 01:27	1
Perfluorotridecanoic acid (PFTriA)	0.30		0.22	0.023	ug/Kg	☼	11/07/21 18:20	11/09/21 01:27	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.77		0.22	0.025	ug/Kg	☼	11/07/21 18:20	11/09/21 01:27	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.22	0.052	ug/Kg	☼	11/07/21 18:20	11/09/21 01:27	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-1-sulfonic acid	ND		0.22	0.034	ug/Kg	☼	11/07/21 18:20	11/09/21 01:27	1
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 - 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 - 150	11/07/21 18:20	11/09/21 01:27	1
13C2 PFUnA	94		50 - 150	11/07/21 18:20	11/09/21 01:27	1
13C2 PFDoA	84		50 - 150	11/07/21 18:20	11/09/21 01:27	1
13C2 PFTeDA	91		50 - 150	11/07/21 18:20	11/09/21 01:27	1
13C3 PFBS	103		50 - 150	11/07/21 18:20	11/09/21 01:27	1
18O2 PFHxS	78		50 - 150	11/07/21 18:20	11/09/21 01:27	1
13C4 PFOS	87		50 - 150	11/07/21 18:20	11/09/21 01:27	1
d3-NMeFOSAA	80		50 - 150	11/07/21 18:20	11/09/21 01:27	1
d5-NEtFOSAA	82		50 - 150	11/07/21 18:20	11/09/21 01:27	1
13C3 HFPO-DA	83		50 - 150	11/07/21 18:20	11/09/21 01:27	1

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	32		2.2	0.47	ug/Kg	☼	11/07/21 18:20	11/12/21 19:30	10

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOS	95		50 - 150	11/07/21 18:20	11/12/21 19:30	10

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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
Percent Solids	85.2		0.1	0.1	%			11/05/21 11:58	1

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Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

Percent Solids: 90.3

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)	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 (PFUnA)	1.0		0.21	0.043	ug/Kg	☼	11/07/21 18:20	11/09/21 01:37	1
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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	☼	11/07/21 18:20	11/09/21 01:37	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.049	ug/Kg	☼	11/07/21 18:20	11/09/21 01:37	1
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.032	ug/Kg	☼	11/07/21 18:20	11/09/21 01:37	1
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 - 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 - 150	11/07/21 18:20	11/09/21 01:37	1
13C2 PFUnA	103		50 - 150	11/07/21 18:20	11/09/21 01:37	1
13C2 PFDoA	107		50 - 150	11/07/21 18:20	11/09/21 01:37	1
13C2 PFTeDA	101		50 - 150	11/07/21 18:20	11/09/21 01:37	1
13C3 PFBS	107		50 - 150	11/07/21 18:20	11/09/21 01:37	1
18O2 PFHxS	92		50 - 150	11/07/21 18:20	11/09/21 01:37	1
13C4 PFOS	96		50 - 150	11/07/21 18:20	11/09/21 01:37	1
d3-NMeFOSAA	99		50 - 150	11/07/21 18:20	11/09/21 01:37	1
d5-NEtFOSAA	97		50 - 150	11/07/21 18:20	11/09/21 01:37	1
13C3 HFPO-DA	94		50 - 150	11/07/21 18:20	11/09/21 01:37	1

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	27		2.1	0.44	ug/Kg	☼	11/07/21 18:20	11/12/21 19:40	10

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOS	115		50 - 150	11/07/21 18:20	11/12/21 19:40	10

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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
Percent Solids	90.3		0.1	0.1	%			11/05/21 11:58	1

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Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SS-019

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

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)	0.10	J	0.21	0.033	ug/Kg	☼	11/07/21 18:20	11/09/21 01:47	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.040	ug/Kg	☼	11/07/21 18:20	11/09/21 01:47	1
Perfluorooctanoic acid (PFOA)	0.14	J	0.21	0.056	ug/Kg	☼	11/07/21 18:20	11/09/21 01:47	1
Perfluorononanoic acid (PFNA)	0.047	J	0.21	0.023	ug/Kg	☼	11/07/21 18:20	11/09/21 01:47	1
Perfluorodecanoic acid (PFDA)	0.17	J	0.21	0.050	ug/Kg	☼	11/07/21 18:20	11/09/21 01:47	1
Perfluoroundecanoic acid (PFUnA)	0.96		0.21	0.044	ug/Kg	☼	11/07/21 18:20	11/09/21 01:47	1
Perfluorododecanoic acid (PFDoA)	0.18	J	0.21	0.032	ug/Kg	☼	11/07/21 18:20	11/09/21 01:47	1
Perfluorotridecanoic acid (PFTriA)	0.046	J	0.21	0.022	ug/Kg	☼	11/07/21 18:20	11/09/21 01:47	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.039	ug/Kg	☼	11/07/21 18:20	11/09/21 01:47	1
Perfluorobutanesulfonic acid (PFBS)	0.044	J	0.21	0.040	ug/Kg	☼	11/07/21 18:20	11/09/21 01:47	1
Perfluorohexanesulfonic acid (PFHxS)	0.84		0.21	0.030	ug/Kg	☼	11/07/21 18:20	11/09/21 01:47	1
Perfluorooctanesulfonic acid (PFOS)	13		0.21	0.045	ug/Kg	☼	11/07/21 18:20	11/09/21 01:47	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.034	J	0.21	0.024	ug/Kg	☼	11/07/21 18:20	11/09/21 01:47	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.050	ug/Kg	☼	11/07/21 18:20	11/09/21 01:47	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.037	ug/Kg	☼	11/07/21 18:20	11/09/21 01:47	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.043	ug/Kg	☼	11/07/21 18:20	11/09/21 01:47	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.033	ug/Kg	☼	11/07/21 18:20	11/09/21 01:47	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.041	ug/Kg	☼	11/07/21 18:20	11/09/21 01:47	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	92		50 - 150	11/07/21 18:20	11/09/21 01:47	1
13C4 PFHpA	95		50 - 150	11/07/21 18:20	11/09/21 01:47	1
13C4 PFOA	114		50 - 150	11/07/21 18:20	11/09/21 01:47	1
13C5 PFNA	114		50 - 150	11/07/21 18:20	11/09/21 01:47	1
13C2 PFDA	117		50 - 150	11/07/21 18:20	11/09/21 01:47	1
13C2 PFUnA	121		50 - 150	11/07/21 18:20	11/09/21 01:47	1
13C2 PFDoA	110		50 - 150	11/07/21 18:20	11/09/21 01:47	1
13C2 PFTeDA	112		50 - 150	11/07/21 18:20	11/09/21 01:47	1
13C3 PFBS	113		50 - 150	11/07/21 18:20	11/09/21 01:47	1
18O2 PFHxS	98		50 - 150	11/07/21 18:20	11/09/21 01:47	1
13C4 PFOS	103		50 - 150	11/07/21 18:20	11/09/21 01:47	1
d3-NMeFOSAA	96		50 - 150	11/07/21 18:20	11/09/21 01:47	1
d5-NEtFOSAA	102		50 - 150	11/07/21 18:20	11/09/21 01:47	1
13C3 HFPO-DA	100		50 - 150	11/07/21 18:20	11/09/21 01:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	12.9		0.1	0.1	%			11/05/21 11:58	1
Percent Solids	87.1		0.1	0.1	%			11/05/21 11:58	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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	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 01:57	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.038	ug/Kg	☼	11/07/21 18:20	11/09/21 01:57	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.053	ug/Kg	☼	11/07/21 18:20	11/09/21 01:57	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.022	ug/Kg	☼	11/07/21 18:20	11/09/21 01:57	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.048	ug/Kg	☼	11/07/21 18:20	11/09/21 01:57	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.042	ug/Kg	☼	11/07/21 18:20	11/09/21 01:57	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.030	ug/Kg	☼	11/07/21 18:20	11/09/21 01:57	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.021	ug/Kg	☼	11/07/21 18:20	11/09/21 01:57	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.037	ug/Kg	☼	11/07/21 18:20	11/09/21 01:57	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.038	ug/Kg	☼	11/07/21 18:20	11/09/21 01:57	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.029	ug/Kg	☼	11/07/21 18:20	11/09/21 01:57	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.20	0.043	ug/Kg	☼	11/07/21 18:20	11/09/21 01:57	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg	☼	11/07/21 18:20	11/09/21 01:57	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.20	0.048	ug/Kg	☼	11/07/21 18:20	11/09/21 01:57	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.035	ug/Kg	☼	11/07/21 18:20	11/09/21 01:57	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.20	0.041	ug/Kg	☼	11/07/21 18:20	11/09/21 01:57	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.031	ug/Kg	☼	11/07/21 18:20	11/09/21 01:57	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.039	ug/Kg	☼	11/07/21 18:20	11/09/21 01:57	1

Isotope Dilution	%Recovery	Qualifier	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

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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		0.27	0.041	ug/Kg	☼	11/07/21 18:20	11/09/21 02:07	1
Perfluoroheptanoic acid (PFHpA)	ND		0.27	0.051	ug/Kg	☼	11/07/21 18:20	11/09/21 02:07	1
Perfluorooctanoic acid (PFOA)	ND		0.27	0.071	ug/Kg	☼	11/07/21 18:20	11/09/21 02:07	1
Perfluorononanoic acid (PFNA)	ND		0.27	0.029	ug/Kg	☼	11/07/21 18:20	11/09/21 02:07	1
Perfluorodecanoic acid (PFDA)	ND		0.27	0.064	ug/Kg	☼	11/07/21 18:20	11/09/21 02:07	1
Perfluoroundecanoic acid (PFUnA)	ND		0.27	0.056	ug/Kg	☼	11/07/21 18:20	11/09/21 02:07	1
Perfluorododecanoic acid (PFDoA)	ND		0.27	0.040	ug/Kg	☼	11/07/21 18:20	11/09/21 02:07	1
Perfluorotridecanoic acid (PFTriA)	ND		0.27	0.028	ug/Kg	☼	11/07/21 18:20	11/09/21 02:07	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.27	0.049	ug/Kg	☼	11/07/21 18:20	11/09/21 02:07	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.27	0.051	ug/Kg	☼	11/07/21 18:20	11/09/21 02:07	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.27	0.039	ug/Kg	☼	11/07/21 18:20	11/09/21 02:07	1
Perfluorooctanesulfonic acid (PFOS)	0.23	J I	0.27	0.057	ug/Kg	☼	11/07/21 18:20	11/09/21 02:07	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.27	0.031	ug/Kg	☼	11/07/21 18:20	11/09/21 02:07	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.27	0.064	ug/Kg	☼	11/07/21 18:20	11/09/21 02:07	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.27	0.047	ug/Kg	☼	11/07/21 18:20	11/09/21 02:07	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.27	0.055	ug/Kg	☼	11/07/21 18:20	11/09/21 02:07	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		0.27	0.041	ug/Kg	☼	11/07/21 18:20	11/09/21 02:07	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.27	0.052	ug/Kg	☼	11/07/21 18:20	11/09/21 02:07	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	82		50 - 150	11/07/21 18:20	11/09/21 02:07	1
13C4 PFHpA	87		50 - 150	11/07/21 18:20	11/09/21 02:07	1
13C4 PFOA	97		50 - 150	11/07/21 18:20	11/09/21 02:07	1
13C5 PFNA	93		50 - 150	11/07/21 18:20	11/09/21 02:07	1
13C2 PFDA	94		50 - 150	11/07/21 18:20	11/09/21 02:07	1
13C2 PFUnA	94		50 - 150	11/07/21 18:20	11/09/21 02:07	1
13C2 PFDoA	91		50 - 150	11/07/21 18:20	11/09/21 02:07	1
13C2 PFTeDA	86		50 - 150	11/07/21 18:20	11/09/21 02:07	1
13C3 PFBS	102		50 - 150	11/07/21 18:20	11/09/21 02:07	1
18O2 PFHxS	86		50 - 150	11/07/21 18:20	11/09/21 02:07	1
13C4 PFOS	87		50 - 150	11/07/21 18:20	11/09/21 02:07	1
d3-NMeFOSAA	79		50 - 150	11/07/21 18:20	11/09/21 02:07	1
d5-NEtFOSAA	84		50 - 150	11/07/21 18:20	11/09/21 02:07	1
13C3 HFPO-DA	81		50 - 150	11/07/21 18:20	11/09/21 02:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	26.6		0.1	0.1	%			11/05/21 11:58	1
Percent Solids	73.4		0.1	0.1	%			11/05/21 11:58	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	☼	11/07/21 18:20	11/09/21 02:17	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.051	ug/Kg	☼	11/07/21 18:20	11/09/21 02:17	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 (ADONA)	ND		0.21	0.041	ug/Kg	☼	11/07/21 18:20	11/09/21 02:17	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	88		50 - 150	11/07/21 18:20	11/09/21 02:17	1
13C4 PFHpA	100		50 - 150	11/07/21 18:20	11/09/21 02:17	1
13C4 PFOA	107		50 - 150	11/07/21 18:20	11/09/21 02:17	1
13C5 PFNA	107		50 - 150	11/07/21 18:20	11/09/21 02:17	1
13C2 PFDA	104		50 - 150	11/07/21 18:20	11/09/21 02:17	1
13C2 PFUnA	97		50 - 150	11/07/21 18:20	11/09/21 02:17	1
13C2 PFDoA	106		50 - 150	11/07/21 18:20	11/09/21 02:17	1
13C2 PFTeDA	114		50 - 150	11/07/21 18:20	11/09/21 02:17	1
13C3 PFBS	100		50 - 150	11/07/21 18:20	11/09/21 02:17	1
18O2 PFHxS	89		50 - 150	11/07/21 18:20	11/09/21 02:17	1
13C4 PFOS	97		50 - 150	11/07/21 18:20	11/09/21 02:17	1
d3-NMeFOSAA	93		50 - 150	11/07/21 18:20	11/09/21 02:17	1
d5-NEtFOSAA	99		50 - 150	11/07/21 18:20	11/09/21 02:17	1
13C3 HFPO-DA	91		50 - 150	11/07/21 18:20	11/09/21 02:17	1

General Chemistry

Analyte	Result	Qualifier	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

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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		0.22	0.033	ug/Kg	☼	11/07/21 18:20	11/09/21 02:28	1
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.041	ug/Kg	☼	11/07/21 18:20	11/09/21 02:28	1
Perfluorooctanoic acid (PFOA)	ND		0.22	0.057	ug/Kg	☼	11/07/21 18:20	11/09/21 02:28	1
Perfluorononanoic acid (PFNA)	ND		0.22	0.024	ug/Kg	☼	11/07/21 18:20	11/09/21 02:28	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.052	ug/Kg	☼	11/07/21 18:20	11/09/21 02:28	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.045	ug/Kg	☼	11/07/21 18:20	11/09/21 02:28	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.032	ug/Kg	☼	11/07/21 18:20	11/09/21 02:28	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.023	ug/Kg	☼	11/07/21 18:20	11/09/21 02:28	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.040	ug/Kg	☼	11/07/21 18:20	11/09/21 02:28	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.041	ug/Kg	☼	11/07/21 18:20	11/09/21 02:28	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.22	0.031	ug/Kg	☼	11/07/21 18:20	11/09/21 02:28	1
Perfluorooctanesulfonic acid (PFOS)	0.14	J I	0.22	0.046	ug/Kg	☼	11/07/21 18:20	11/09/21 02:28	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.22	0.025	ug/Kg	☼	11/07/21 18:20	11/09/21 02:28	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.22	0.052	ug/Kg	☼	11/07/21 18:20	11/09/21 02:28	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.22	0.038	ug/Kg	☼	11/07/21 18:20	11/09/21 02:28	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22	0.044	ug/Kg	☼	11/07/21 18:20	11/09/21 02:28	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		0.22	0.033	ug/Kg	☼	11/07/21 18:20	11/09/21 02:28	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.042	ug/Kg	☼	11/07/21 18:20	11/09/21 02:28	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	87		50 - 150	11/07/21 18:20	11/09/21 02:28	1
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	1
13C2 PFDA	98		50 - 150	11/07/21 18:20	11/09/21 02:28	1
13C2 PFUnA	94		50 - 150	11/07/21 18:20	11/09/21 02:28	1
13C2 PFDoA	100		50 - 150	11/07/21 18:20	11/09/21 02:28	1
13C2 PFTeDA	110		50 - 150	11/07/21 18:20	11/09/21 02:28	1
13C3 PFBS	101		50 - 150	11/07/21 18:20	11/09/21 02:28	1
18O2 PFHxS	90		50 - 150	11/07/21 18:20	11/09/21 02:28	1
13C4 PFOS	93		50 - 150	11/07/21 18:20	11/09/21 02:28	1
d3-NMeFOSAA	90		50 - 150	11/07/21 18:20	11/09/21 02:28	1
d5-NEtFOSAA	89		50 - 150	11/07/21 18:20	11/09/21 02:28	1
13C3 HFPO-DA	87		50 - 150	11/07/21 18:20	11/09/21 02:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	10.3		0.1	0.1	%			11/05/21 11:58	1
Percent Solids	89.7		0.1	0.1	%			11/05/21 11:58	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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		0.20	0.031	ug/Kg	☼	11/07/21 18:20	11/09/21 02:58	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.038	ug/Kg	☼	11/07/21 18:20	11/09/21 02:58	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.054	ug/Kg	☼	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 (PFUnA)	ND		0.20	0.043	ug/Kg	☼	11/07/21 18:20	11/09/21 02:58	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.030	ug/Kg	☼	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	☼	11/07/21 18:20	11/09/21 02:58	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.029	ug/Kg	☼	11/07/21 18:20	11/09/21 02:58	1
Perfluorooctanesulfonic acid (PFOS)	0.27	I	0.20	0.044	ug/Kg	☼	11/07/21 18:20	11/09/21 02:58	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg	☼	11/07/21 18:20	11/09/21 02:58	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.20	0.049	ug/Kg	☼	11/07/21 18:20	11/09/21 02:58	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.035	ug/Kg	☼	11/07/21 18:20	11/09/21 02:58	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.20	0.042	ug/Kg	☼	11/07/21 18:20	11/09/21 02:58	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.031	ug/Kg	☼	11/07/21 18:20	11/09/21 02:58	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.039	ug/Kg	☼	11/07/21 18:20	11/09/21 02:58	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	79		50 - 150	11/07/21 18:20	11/09/21 02:58	1
13C4 PFHpA	86		50 - 150	11/07/21 18:20	11/09/21 02:58	1
13C4 PFOA	97		50 - 150	11/07/21 18:20	11/09/21 02:58	1
13C5 PFNA	87		50 - 150	11/07/21 18:20	11/09/21 02:58	1
13C2 PFDA	91		50 - 150	11/07/21 18:20	11/09/21 02:58	1
13C2 PFUnA	96		50 - 150	11/07/21 18:20	11/09/21 02:58	1
13C2 PFDoA	92		50 - 150	11/07/21 18:20	11/09/21 02:58	1
13C2 PFTeDA	91		50 - 150	11/07/21 18:20	11/09/21 02:58	1
13C3 PFBS	88		50 - 150	11/07/21 18:20	11/09/21 02:58	1
18O2 PFHxS	75		50 - 150	11/07/21 18:20	11/09/21 02:58	1
13C4 PFOS	81		50 - 150	11/07/21 18:20	11/09/21 02:58	1
d3-NMeFOSAA	81		50 - 150	11/07/21 18:20	11/09/21 02:58	1
d5-NEtFOSAA	84		50 - 150	11/07/21 18:20	11/09/21 02:58	1
13C3 HFPO-DA	89		50 - 150	11/07/21 18:20	11/09/21 02:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	6.7		0.1	0.1	%			11/05/21 11:58	1
Percent Solids	93.3		0.1	0.1	%			11/05/21 11:58	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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 for QSM 5.3, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.23	0.036	ug/Kg	☼	11/07/21 18:20	11/09/21 03:08	1
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.044	ug/Kg	☼	11/07/21 18:20	11/09/21 03:08	1
Perfluorooctanoic acid (PFOA)	ND		0.23	0.062	ug/Kg	☼	11/07/21 18:20	11/09/21 03:08	1
Perfluorononanoic acid (PFNA)	ND		0.23	0.026	ug/Kg	☼	11/07/21 18:20	11/09/21 03:08	1
Perfluorodecanoic acid (PFDA)	ND		0.23	0.056	ug/Kg	☼	11/07/21 18:20	11/09/21 03:08	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.049	ug/Kg	☼	11/07/21 18:20	11/09/21 03:08	1
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.035	ug/Kg	☼	11/07/21 18:20	11/09/21 03:08	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.024	ug/Kg	☼	11/07/21 18:20	11/09/21 03:08	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.043	ug/Kg	☼	11/07/21 18:20	11/09/21 03:08	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.044	ug/Kg	☼	11/07/21 18:20	11/09/21 03:08	1
Perfluorohexanesulfonic acid (PFHxS)	0.59		0.23	0.034	ug/Kg	☼	11/07/21 18:20	11/09/21 03:08	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.23	0.027	ug/Kg	☼	11/07/21 18:20	11/09/21 03:08	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.23	0.056	ug/Kg	☼	11/07/21 18:20	11/09/21 03:08	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.23	0.041	ug/Kg	☼	11/07/21 18:20	11/09/21 03:08	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23	0.048	ug/Kg	☼	11/07/21 18:20	11/09/21 03:08	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		0.23	0.036	ug/Kg	☼	11/07/21 18:20	11/09/21 03:08	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.045	ug/Kg	☼	11/07/21 18:20	11/09/21 03:08	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	76		50 - 150	11/07/21 18:20	11/09/21 03:08	1
13C4 PFHpA	84		50 - 150	11/07/21 18:20	11/09/21 03:08	1
13C4 PFOA	96		50 - 150	11/07/21 18:20	11/09/21 03:08	1
13C5 PFNA	85		50 - 150	11/07/21 18:20	11/09/21 03:08	1
13C2 PFDA	90		50 - 150	11/07/21 18:20	11/09/21 03:08	1
13C2 PFUnA	90		50 - 150	11/07/21 18:20	11/09/21 03:08	1
13C2 PFDoA	91		50 - 150	11/07/21 18:20	11/09/21 03:08	1
13C2 PFTeDA	87		50 - 150	11/07/21 18:20	11/09/21 03:08	1
13C3 PFBS	90		50 - 150	11/07/21 18:20	11/09/21 03:08	1
18O2 PFHxS	76		50 - 150	11/07/21 18:20	11/09/21 03:08	1
13C4 PFOS	81		50 - 150	11/07/21 18:20	11/09/21 03:08	1
d3-NMeFOSAA	76		50 - 150	11/07/21 18:20	11/09/21 03:08	1
d5-NEtFOSAA	79		50 - 150	11/07/21 18:20	11/09/21 03:08	1
13C3 HFPO-DA	78		50 - 150	11/07/21 18:20	11/09/21 03:08	1

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	33		2.3	0.50	ug/Kg	☼	11/07/21 18:20	11/12/21 19:51	10
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
13C4 PFOS	110		50 - 150	11/07/21 18:20	11/12/21 19:51	10			

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	20.9		0.1	0.1	%			11/05/21 11:58	1
Percent Solids	79.1		0.1	0.1	%			11/05/21 11:58	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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)	0.37		0.27	0.042	ug/Kg	☼	11/07/21 18:20	11/09/21 03:18	1
Perfluoroheptanoic acid (PFHpA)	0.12	J	0.27	0.052	ug/Kg	☼	11/07/21 18:20	11/09/21 03:18	1
Perfluorooctanoic acid (PFOA)	0.21	J	0.27	0.072	ug/Kg	☼	11/07/21 18:20	11/09/21 03:18	1
Perfluorononanoic acid (PFNA)	0.087	J	0.27	0.030	ug/Kg	☼	11/07/21 18:20	11/09/21 03:18	1
Perfluorodecanoic acid (PFDA)	0.22	J	0.27	0.065	ug/Kg	☼	11/07/21 18:20	11/09/21 03:18	1
Perfluoroundecanoic acid (PFUnA)	0.27		0.27	0.057	ug/Kg	☼	11/07/21 18:20	11/09/21 03:18	1
Perfluorododecanoic acid (PFDoA)	0.40		0.27	0.041	ug/Kg	☼	11/07/21 18:20	11/09/21 03:18	1
Perfluorotridecanoic acid (PFTriA)	0.25	J	0.27	0.028	ug/Kg	☼	11/07/21 18:20	11/09/21 03:18	1
Perfluorotetradecanoic acid (PFTeA)	0.34		0.27	0.050	ug/Kg	☼	11/07/21 18:20	11/09/21 03:18	1
Perfluorobutanesulfonic acid (PFBS)	0.24	J	0.27	0.052	ug/Kg	☼	11/07/21 18:20	11/09/21 03:18	1
Perfluorohexanesulfonic acid (PFHxS)	1.6		0.27	0.039	ug/Kg	☼	11/07/21 18:20	11/09/21 03:18	1
Perfluorooctanesulfonic acid (PFOS)	17		0.27	0.058	ug/Kg	☼	11/07/21 18:20	11/09/21 03:18	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.11	J	0.27	0.031	ug/Kg	☼	11/07/21 18:20	11/09/21 03:18	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.27	0.065	ug/Kg	☼	11/07/21 18:20	11/09/21 03:18	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.27	0.047	ug/Kg	☼	11/07/21 18:20	11/09/21 03:18	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.27	0.056	ug/Kg	☼	11/07/21 18:20	11/09/21 03:18	1
11-Chloroeicosadecafluoro-3-oxaundecane-1-sulfonic acid	ND		0.27	0.042	ug/Kg	☼	11/07/21 18:20	11/09/21 03:18	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.27	0.053	ug/Kg	☼	11/07/21 18:20	11/09/21 03:18	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	77		50 - 150	11/07/21 18:20	11/09/21 03:18	1
13C4 PFHpA	75		50 - 150	11/07/21 18:20	11/09/21 03:18	1
13C4 PFOA	92		50 - 150	11/07/21 18:20	11/09/21 03:18	1
13C5 PFNA	92		50 - 150	11/07/21 18:20	11/09/21 03:18	1
13C2 PFDA	95		50 - 150	11/07/21 18:20	11/09/21 03:18	1
13C2 PFUnA	83		50 - 150	11/07/21 18:20	11/09/21 03:18	1
13C2 PFDoA	75		50 - 150	11/07/21 18:20	11/09/21 03:18	1
13C2 PFTeDA	61		50 - 150	11/07/21 18:20	11/09/21 03:18	1
13C3 PFBS	96		50 - 150	11/07/21 18:20	11/09/21 03:18	1
18O2 PFHxS	82		50 - 150	11/07/21 18:20	11/09/21 03:18	1
13C4 PFOS	89		50 - 150	11/07/21 18:20	11/09/21 03:18	1
d3-NMeFOSAA	67		50 - 150	11/07/21 18:20	11/09/21 03:18	1
d5-NEtFOSAA	71		50 - 150	11/07/21 18:20	11/09/21 03:18	1
13C3 HFPO-DA	82		50 - 150	11/07/21 18:20	11/09/21 03:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	29.4		0.1	0.1	%			11/05/21 11:58	1
Percent Solids	70.6		0.1	0.1	%			11/05/21 11:58	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

Percent Solids: 72.7

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)	0.92		0.26	0.040	ug/Kg	☼	11/07/21 18:20	11/09/21 03:28	1
Perfluoroheptanoic acid (PFHpA)	0.36		0.26	0.048	ug/Kg	☼	11/07/21 18:20	11/09/21 03:28	1
Perfluorooctanoic acid (PFOA)	0.45		0.26	0.068	ug/Kg	☼	11/07/21 18:20	11/09/21 03:28	1
Perfluorononanoic acid (PFNA)	0.13	J	0.26	0.028	ug/Kg	☼	11/07/21 18:20	11/09/21 03:28	1
Perfluorodecanoic acid (PFDA)	0.34		0.26	0.061	ug/Kg	☼	11/07/21 18:20	11/09/21 03:28	1
Perfluoroundecanoic acid (PFUnA)	0.35		0.26	0.054	ug/Kg	☼	11/07/21 18:20	11/09/21 03:28	1
Perfluorododecanoic acid (PFDoA)	0.60		0.26	0.038	ug/Kg	☼	11/07/21 18:20	11/09/21 03:28	1
Perfluorotridecanoic acid (PFTriA)	0.47		0.26	0.027	ug/Kg	☼	11/07/21 18:20	11/09/21 03:28	1
Perfluorotetradecanoic acid (PFTeA)	0.63		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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.38		0.26	0.029	ug/Kg	☼	11/07/21 18:20	11/09/21 03:28	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.26	0.061	ug/Kg	☼	11/07/21 18:20	11/09/21 03:28	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.26	0.045	ug/Kg	☼	11/07/21 18:20	11/09/21 03:28	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.26	0.052	ug/Kg	☼	11/07/21 18:20	11/09/21 03:28	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.26	0.040	ug/Kg	☼	11/07/21 18:20	11/09/21 03:28	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.26	0.050	ug/Kg	☼	11/07/21 18:20	11/09/21 03:28	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	77		50 - 150	11/07/21 18:20	11/09/21 03:28	1
13C4 PFHpA	83		50 - 150	11/07/21 18:20	11/09/21 03:28	1
13C4 PFOA	89		50 - 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 - 150	11/07/21 18:20	11/09/21 03:28	1
13C2 PFUnA	88		50 - 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 - 150	11/07/21 18:20	11/09/21 03:28	1
13C3 PFBS	98		50 - 150	11/07/21 18:20	11/09/21 03:28	1
18O2 PFHxS	82		50 - 150	11/07/21 18:20	11/09/21 03:28	1
13C4 PFOS	90		50 - 150	11/07/21 18:20	11/09/21 03:28	1
d3-NMeFOSAA	65		50 - 150	11/07/21 18:20	11/09/21 03:28	1
d5-NEtFOSAA	68		50 - 150	11/07/21 18:20	11/09/21 03:28	1
13C3 HFPO-DA	87		50 - 150	11/07/21 18:20	11/09/21 03:28	1

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	33		2.6	0.55	ug/Kg	☼	11/07/21 18:20	11/12/21 20:01	10

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOS	90		50 - 150	11/07/21 18:20	11/12/21 20:01	10

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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 Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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 for QSM 5.3, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	0.083	J	0.20	0.031	ug/Kg	☼	11/09/21 04:35	11/12/21 14:17	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.039	ug/Kg	☼	11/09/21 04:35	11/12/21 14:17	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.054	ug/Kg	☼	11/09/21 04:35	11/12/21 14:17	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.022	ug/Kg	☼	11/09/21 04:35	11/12/21 14:17	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.049	ug/Kg	☼	11/09/21 04:35	11/12/21 14:17	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.043	ug/Kg	☼	11/09/21 04:35	11/12/21 14:17	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.030	ug/Kg	☼	11/09/21 04:35	11/12/21 14:17	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.021	ug/Kg	☼	11/09/21 04:35	11/12/21 14:17	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.038	ug/Kg	☼	11/09/21 04:35	11/12/21 14:17	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.039	ug/Kg	☼	11/09/21 04:35	11/12/21 14:17	1
Perfluorohexanesulfonic acid (PFHxS)	0.74		0.20	0.029	ug/Kg	☼	11/09/21 04:35	11/12/21 14:17	1
Perfluorooctanesulfonic acid (PFOS)	6.5		0.20	0.044	ug/Kg	☼	11/09/21 04:35	11/12/21 14:17	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg	☼	11/09/21 04:35	11/12/21 14:17	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.20	0.049	ug/Kg	☼	11/09/21 04:35	11/12/21 14:17	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.036	ug/Kg	☼	11/09/21 04:35	11/12/21 14:17	1
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-oxaundecane-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 - 150	11/09/21 04:35	11/12/21 14:17	1
13C3 PFBS	104		50 - 150	11/09/21 04:35	11/12/21 14:17	1
18O2 PFHxS	94		50 - 150	11/09/21 04:35	11/12/21 14:17	1
13C4 PFOS	100		50 - 150	11/09/21 04:35	11/12/21 14:17	1
d3-NMeFOSAA	93		50 - 150	11/09/21 04:35	11/12/21 14:17	1
d5-NEtFOSAA	102		50 - 150	11/09/21 04:35	11/12/21 14:17	1
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
Percent Solids	92.1		0.1	0.1	%			11/05/21 11:58	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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 for QSM 5.3, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.29	0.045	ug/Kg	☼	11/09/21 04:35	11/12/21 14:28	1
Perfluoroheptanoic acid (PFHpA)	ND		0.29	0.055	ug/Kg	☼	11/09/21 04:35	11/12/21 14:28	1
Perfluorooctanoic acid (PFOA)	ND		0.29	0.077	ug/Kg	☼	11/09/21 04:35	11/12/21 14:28	1
Perfluorononanoic acid (PFNA)	ND		0.29	0.032	ug/Kg	☼	11/09/21 04:35	11/12/21 14:28	1
Perfluorodecanoic acid (PFDA)	ND		0.29	0.070	ug/Kg	☼	11/09/21 04:35	11/12/21 14:28	1
Perfluoroundecanoic acid (PFUnA)	ND		0.29	0.061	ug/Kg	☼	11/09/21 04:35	11/12/21 14:28	1
Perfluorododecanoic acid (PFDoA)	ND		0.29	0.044	ug/Kg	☼	11/09/21 04:35	11/12/21 14:28	1
Perfluorotridecanoic acid (PFTriA)	ND		0.29	0.031	ug/Kg	☼	11/09/21 04:35	11/12/21 14:28	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.29	0.054	ug/Kg	☼	11/09/21 04:35	11/12/21 14:28	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.29	0.055	ug/Kg	☼	11/09/21 04:35	11/12/21 14:28	1
Perfluorohexanesulfonic acid (PFHxS)	0.17	J I	0.29	0.042	ug/Kg	☼	11/09/21 04:35	11/12/21 14:28	1
Perfluorooctanesulfonic acid (PFOS)	5.8		0.29	0.063	ug/Kg	☼	11/09/21 04:35	11/12/21 14:28	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.29	0.033	ug/Kg	☼	11/09/21 04:35	11/12/21 14:28	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.29	0.070	ug/Kg	☼	11/09/21 04:35	11/12/21 14:28	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.29	0.051	ug/Kg	☼	11/09/21 04:35	11/12/21 14:28	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.29	0.060	ug/Kg	☼	11/09/21 04:35	11/12/21 14:28	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.29	0.045	ug/Kg	☼	11/09/21 04:35	11/12/21 14:28	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.29	0.057	ug/Kg	☼	11/09/21 04:35	11/12/21 14:28	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	85		50 - 150	11/09/21 04:35	11/12/21 14:28	1
13C4 PFHpA	86		50 - 150	11/09/21 04:35	11/12/21 14:28	1
13C4 PFOA	94		50 - 150	11/09/21 04:35	11/12/21 14:28	1
13C5 PFNA	94		50 - 150	11/09/21 04:35	11/12/21 14:28	1
13C2 PFDA	103		50 - 150	11/09/21 04:35	11/12/21 14:28	1
13C2 PFUnA	88		50 - 150	11/09/21 04:35	11/12/21 14:28	1
13C2 PFDoA	85		50 - 150	11/09/21 04:35	11/12/21 14:28	1
13C2 PFTeDA	80		50 - 150	11/09/21 04:35	11/12/21 14:28	1
13C3 PFBS	104		50 - 150	11/09/21 04:35	11/12/21 14:28	1
18O2 PFHxS	93		50 - 150	11/09/21 04:35	11/12/21 14:28	1
13C4 PFOS	91		50 - 150	11/09/21 04:35	11/12/21 14:28	1
d3-NMeFOSAA	80		50 - 150	11/09/21 04:35	11/12/21 14:28	1
d5-NEtFOSAA	94		50 - 150	11/09/21 04:35	11/12/21 14:28	1
13C3 HFPO-DA	81		50 - 150	11/09/21 04:35	11/12/21 14:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	31.3		0.1	0.1	%			11/05/21 11:58	1
Percent Solids	68.7		0.1	0.1	%			11/05/21 11:58	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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 for QSM 5.3, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.032	ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg	☼	11/09/21 04:35	11/12/21 14:38	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.20	0.049	ug/Kg	☼	11/09/21 04:35	11/12/21 14:38	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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
18O2 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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	6.1		0.1	0.1	%			11/05/21 11:58	1
Percent Solids	93.9		0.1	0.1	%			11/05/21 11:58	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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		0.20	0.031	ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg	☼	11/09/21 04:35	11/12/21 14:48	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.20	0.048	ug/Kg	☼	11/09/21 04:35	11/12/21 14:48	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.035	ug/Kg	☼	11/09/21 04:35	11/12/21 14:48	1
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-oxaundecane-1-sulfonic acid	ND		0.20	0.031	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

Isotope 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
18O2 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	1
13C3 HFPO-DA	102		50 - 150	11/09/21 04:35	11/12/21 14:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	5.5		0.1	0.1	%			11/05/21 11:58	1
Percent Solids	94.5		0.1	0.1	%			11/05/21 11:58	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-MW14-02

Lab Sample ID: 320-81254-25

Date Collected: 10/27/21 14:10

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 79.3

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		0.25	0.039	ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.25	0.029	ug/Kg	☼	11/09/21 04:35	11/12/21 14:59	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.25	0.060	ug/Kg	☼	11/09/21 04:35	11/12/21 14:59	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.25	0.044	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-oxaundecane-1-sulfonic acid	ND		0.25	0.039	ug/Kg	☼	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
18O2 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
d3-NMeFOSAA	100		50 - 150	11/09/21 04:35	11/12/21 14:59	1
d5-NEtFOSAA	108		50 - 150	11/09/21 04:35	11/12/21 14:59	1
13C3 HFPO-DA	103		50 - 150	11/09/21 04:35	11/12/21 14:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	20.7		0.1	0.1	%			11/05/21 11:58	1
Percent Solids	79.3		0.1	0.1	%			11/05/21 11:58	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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 for QSM 5.3, Table B-15

Analyte	Result	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 15:09	1
Perfluoroheptanoic acid (PFHpA)	ND		0.24	0.045	ug/Kg	☼	11/09/21 04:35	11/12/21 15:09	1
Perfluorooctanoic acid (PFOA)	ND		0.24	0.062	ug/Kg	☼	11/09/21 04:35	11/12/21 15:09	1
Perfluorononanoic acid (PFNA)	ND		0.24	0.026	ug/Kg	☼	11/09/21 04:35	11/12/21 15:09	1
Perfluorodecanoic acid (PFDA)	ND		0.24	0.057	ug/Kg	☼	11/09/21 04:35	11/12/21 15:09	1
Perfluoroundecanoic acid (PFUnA)	ND		0.24	0.050	ug/Kg	☼	11/09/21 04:35	11/12/21 15:09	1
Perfluorododecanoic acid (PFDoA)	ND		0.24	0.035	ug/Kg	☼	11/09/21 04:35	11/12/21 15:09	1
Perfluorotridecanoic acid (PFTriA)	ND		0.24	0.025	ug/Kg	☼	11/09/21 04:35	11/12/21 15:09	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.24	0.044	ug/Kg	☼	11/09/21 04:35	11/12/21 15:09	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.24	0.045	ug/Kg	☼	11/09/21 04:35	11/12/21 15:09	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.24	0.034	ug/Kg	☼	11/09/21 04:35	11/12/21 15:09	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.24	0.051	ug/Kg	☼	11/09/21 04:35	11/12/21 15:09	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.24	0.027	ug/Kg	☼	11/09/21 04:35	11/12/21 15:09	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.24	0.057	ug/Kg	☼	11/09/21 04:35	11/12/21 15:09	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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	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 - 150	11/09/21 04:35	11/12/21 15:09	1
13C3 PFBS	121		50 - 150	11/09/21 04:35	11/12/21 15:09	1
18O2 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 - 150	11/09/21 04:35	11/12/21 15:09	1
13C3 HFPO-DA	110		50 - 150	11/09/21 04:35	11/12/21 15:09	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 11:58	1
Percent Solids	79.4		0.1	0.1	%			11/05/21 11:58	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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 for QSM 5.3, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.27	0.042	ug/Kg	☼	11/09/21 04:35	11/12/21 15:20	1
Perfluoroheptanoic acid (PFHpA)	ND		0.27	0.051	ug/Kg	☼	11/09/21 04:35	11/12/21 15:20	1
Perfluorooctanoic acid (PFOA)	ND		0.27	0.071	ug/Kg	☼	11/09/21 04:35	11/12/21 15:20	1
Perfluorononanoic acid (PFNA)	ND		0.27	0.030	ug/Kg	☼	11/09/21 04:35	11/12/21 15:20	1
Perfluorodecanoic acid (PFDA)	ND		0.27	0.064	ug/Kg	☼	11/09/21 04:35	11/12/21 15:20	1
Perfluoroundecanoic acid (PFUnA)	ND		0.27	0.056	ug/Kg	☼	11/09/21 04:35	11/12/21 15:20	1
Perfluorododecanoic acid (PFDoA)	ND		0.27	0.040	ug/Kg	☼	11/09/21 04:35	11/12/21 15:20	1
Perfluorotridecanoic acid (PFTriA)	ND		0.27	0.028	ug/Kg	☼	11/09/21 04:35	11/12/21 15:20	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.27	0.050	ug/Kg	☼	11/09/21 04:35	11/12/21 15:20	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.27	0.051	ug/Kg	☼	11/09/21 04:35	11/12/21 15:20	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.27	0.039	ug/Kg	☼	11/09/21 04:35	11/12/21 15:20	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.27	0.058	ug/Kg	☼	11/09/21 04:35	11/12/21 15:20	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.27	0.031	ug/Kg	☼	11/09/21 04:35	11/12/21 15:20	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.27	0.064	ug/Kg	☼	11/09/21 04:35	11/12/21 15:20	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.27	0.047	ug/Kg	☼	11/09/21 04:35	11/12/21 15:20	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.27	0.055	ug/Kg	☼	11/09/21 04:35	11/12/21 15:20	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.27	0.042	ug/Kg	☼	11/09/21 04:35	11/12/21 15:20	1
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	1
13C4 PFHpA	102		50 - 150	11/09/21 04:35	11/12/21 15:20	1
13C4 PFOA	101		50 - 150	11/09/21 04:35	11/12/21 15:20	1
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 - 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	1
13C2 PFTeDA	85		50 - 150	11/09/21 04:35	11/12/21 15:20	1
13C3 PFBS	112		50 - 150	11/09/21 04:35	11/12/21 15:20	1
18O2 PFHxS	99		50 - 150	11/09/21 04:35	11/12/21 15:20	1
13C4 PFOS	103		50 - 150	11/09/21 04:35	11/12/21 15:20	1
d3-NMeFOSAA	93		50 - 150	11/09/21 04:35	11/12/21 15:20	1
d5-NEtFOSAA	96		50 - 150	11/09/21 04:35	11/12/21 15:20	1
13C3 HFPO-DA	96		50 - 150	11/09/21 04:35	11/12/21 15:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	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

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-MW14-05

Lab Sample ID: 320-81254-28

Date Collected: 10/27/21 15:00

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 77.7

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		0.24	0.038	ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.24	0.028	ug/Kg	☼	11/09/21 04:35	11/12/21 15:30	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.24	0.058	ug/Kg	☼	11/09/21 04:35	11/12/21 15:30	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.24	0.042	ug/Kg	☼	11/09/21 04:35	11/12/21 15:30	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.24	0.050	ug/Kg	☼	11/09/21 04:35	11/12/21 15:30	1
11-Chloroeicosafluoro-3-oxaundecane-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
18O2 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

Analyte	Result	Qualifier	RL	MDL	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 Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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		0.25	0.038	ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.25	0.029	ug/Kg	☼	11/09/21 04:35	11/12/21 16:01	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.25	0.060	ug/Kg	☼	11/09/21 04:35	11/12/21 16:01	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 150	11/09/21 04:35	11/12/21 16:01	1
13C3 PFBS	108		50 - 150	11/09/21 04:35	11/12/21 16:01	1
18O2 PFHxS	97		50 - 150	11/09/21 04:35	11/12/21 16:01	1
13C4 PFOS	99		50 - 150	11/09/21 04:35	11/12/21 16:01	1
d3-NMeFOSAA	90		50 - 150	11/09/21 04:35	11/12/21 16:01	1
d5-NEtFOSAA	96		50 - 150	11/09/21 04:35	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
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 Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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		0.20	0.031	ug/Kg	☼	11/09/21 04:35	11/12/21 16:12	1
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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg	☼	11/09/21 04:35	11/12/21 16:12	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.20	0.049	ug/Kg	☼	11/09/21 04:35	11/12/21 16:12	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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	1
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	1
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	1
13C2 PFTeDA	92		50 - 150	11/09/21 04:35	11/12/21 16:12	1
13C3 PFBS	112		50 - 150	11/09/21 04:35	11/12/21 16:12	1
18O2 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	1
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	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 11:58	1
Percent Solids	92.3		0.1	0.1	%			11/05/21 11:58	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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, Table B-15

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 16:22	1
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.044	ug/Kg	☼	11/09/21 04:35	11/12/21 16:22	1
Perfluorooctanoic acid (PFOA)	ND		0.23	0.061	ug/Kg	☼	11/09/21 04:35	11/12/21 16:22	1
Perfluorononanoic acid (PFNA)	ND		0.23	0.025	ug/Kg	☼	11/09/21 04:35	11/12/21 16:22	1
Perfluorodecanoic acid (PFDA)	ND		0.23	0.055	ug/Kg	☼	11/09/21 04:35	11/12/21 16:22	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.049	ug/Kg	☼	11/09/21 04:35	11/12/21 16:22	1
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.035	ug/Kg	☼	11/09/21 04:35	11/12/21 16:22	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.024	ug/Kg	☼	11/09/21 04:35	11/12/21 16:22	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.043	ug/Kg	☼	11/09/21 04:35	11/12/21 16:22	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.044	ug/Kg	☼	11/09/21 04:35	11/12/21 16:22	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.23	0.034	ug/Kg	☼	11/09/21 04:35	11/12/21 16:22	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.23	0.050	ug/Kg	☼	11/09/21 04:35	11/12/21 16:22	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.23	0.027	ug/Kg	☼	11/09/21 04:35	11/12/21 16:22	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.23	0.055	ug/Kg	☼	11/09/21 04:35	11/12/21 16:22	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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	Unit	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 Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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	0.036	ug/Kg	☼	11/09/21 04:35	11/12/21 16:33	1
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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.23	0.027	ug/Kg	☼	11/09/21 04:35	11/12/21 16:33	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.23	0.056	ug/Kg	☼	11/09/21 04:35	11/12/21 16:33	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-1-sulfonic acid	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 - 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 - 150	11/09/21 04:35	11/12/21 16:33	1
13C3 PFBS	121		50 - 150	11/09/21 04:35	11/12/21 16:33	1
18O2 PFHxS	104		50 - 150	11/09/21 04:35	11/12/21 16:33	1
13C4 PFOS	106		50 - 150	11/09/21 04:35	11/12/21 16:33	1
d3-NMeFOSAA	96		50 - 150	11/09/21 04:35	11/12/21 16:33	1
d5-NEtFOSAA	100		50 - 150	11/09/21 04:35	11/12/21 16:33	1
13C3 HFPO-DA	97		50 - 150	11/09/21 04:35	11/12/21 16:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	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

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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		0.26	0.040	ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.26	0.029	ug/Kg	☼	11/09/21 04:35	11/12/21 16:43	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.26	0.061	ug/Kg	☼	11/09/21 04:35	11/12/21 16:43	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.26	0.045	ug/Kg	☼	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-oxaundecane-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
18O2 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	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	24.0		0.1	0.1	%			11/05/21 11:58	1
Percent Solids	76.0		0.1	0.1	%			11/05/21 11:58	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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 for QSM 5.3, Table B-15

Analyte	Result	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.24	0.028	ug/Kg	☼	11/09/21 04:35	11/12/21 16:53	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.24	0.058	ug/Kg	☼	11/09/21 04:35	11/12/21 16:53	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.24	0.042	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	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.24	0.037	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

Isotope 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	1
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
18O2 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	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	18.2		0.1	0.1	%			11/05/21 11:58	1
Percent Solids	81.8		0.1	0.1	%			11/05/21 11:58	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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		0.25	0.039	ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.25	0.029	ug/Kg	☼	11/09/21 04:35	11/12/21 17:04	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.25	0.061	ug/Kg	☼	11/09/21 04:35	11/12/21 17:04	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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
18O2 PFHxS	94		50 - 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	11/09/21 04:35	11/12/21 17:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	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

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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 04:35	11/12/21 17:14	1
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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.23	0.026	ug/Kg	☼	11/09/21 04:35	11/12/21 17:14	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.23	0.055	ug/Kg	☼	11/09/21 04:35	11/12/21 17:14	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.23	0.040	ug/Kg	☼	11/09/21 04:35	11/12/21 17:14	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23	0.047	ug/Kg	☼	11/09/21 04:35	11/12/21 17:14	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.23	0.035	ug/Kg	☼	11/09/21 04:35	11/12/21 17:14	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

Isotope 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	1
13C2 PFUnA	100		50 - 150	11/09/21 04:35	11/12/21 17:14	1
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	1
18O2 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	Result	Qualifier	RL	MDL	Unit	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	%			11/05/21 11:58	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.025	ug/Kg	☼	11/09/21 04:35	11/12/21 17:25	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.051	ug/Kg	☼	11/09/21 04:35	11/12/21 17:25	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.037	ug/Kg	☼	11/09/21 04:35	11/12/21 17:25	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.044	ug/Kg	☼	11/09/21 04:35	11/12/21 17:25	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.033	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 - 150	11/09/21 04:35	11/12/21 17:25	1
13C2 PFUnA	120		50 - 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 - 150	11/09/21 04:35	11/12/21 17:25	1
13C3 PFBS	119		50 - 150	11/09/21 04:35	11/12/21 17:25	1
18O2 PFHxS	101		50 - 150	11/09/21 04:35	11/12/21 17:25	1
13C4 PFOS	111		50 - 150	11/09/21 04:35	11/12/21 17:25	1
d3-NMeFOSAA	118		50 - 150	11/09/21 04:35	11/12/21 17:25	1
d5-NEtFOSAA	127		50 - 150	11/09/21 04:35	11/12/21 17:25	1
13C3 HFPO-DA	93		50 - 150	11/09/21 04:35	11/12/21 17:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	6.8		0.1	0.1	%			11/05/21 11:58	1
Percent Solids	93.2		0.1	0.1	%			11/05/21 11:58	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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 04:35	11/12/21 17:35	1
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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.23	0.026	ug/Kg	☼	11/09/21 04:35	11/12/21 17:35	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.23	0.054	ug/Kg	☼	11/09/21 04:35	11/12/21 17:35	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.23	0.040	ug/Kg	☼	11/09/21 04:35	11/12/21 17:35	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23	0.046	ug/Kg	☼	11/09/21 04:35	11/12/21 17:35	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.23	0.035	ug/Kg	☼	11/09/21 04:35	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

Isotope 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 - 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
18O2 PFHxS	103		50 - 150	11/09/21 04:35	11/12/21 17:35	1
13C4 PFOS	102		50 - 150	11/09/21 04:35	11/12/21 17:35	1
d3-NMeFOSAA	96		50 - 150	11/09/21 04:35	11/12/21 17:35	1
d5-NEtFOSAA	96		50 - 150	11/09/21 04:35	11/12/21 17:35	1
13C3 HFPO-DA	91		50 - 150	11/09/21 04:35	11/12/21 17:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	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	%			11/05/21 11:58	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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		0.22	0.033	ug/Kg	☼	11/09/21 04:35	11/14/21 03:26	1
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.041	ug/Kg	☼	11/09/21 04:35	11/14/21 03:26	1
Perfluorooctanoic acid (PFOA)	ND		0.22	0.057	ug/Kg	☼	11/09/21 04:35	11/14/21 03:26	1
Perfluorononanoic acid (PFNA)	ND		0.22	0.024	ug/Kg	☼	11/09/21 04:35	11/14/21 03:26	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.052	ug/Kg	☼	11/09/21 04:35	11/14/21 03:26	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.045	ug/Kg	☼	11/09/21 04:35	11/14/21 03:26	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.032	ug/Kg	☼	11/09/21 04:35	11/14/21 03:26	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.023	ug/Kg	☼	11/09/21 04:35	11/14/21 03:26	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.040	ug/Kg	☼	11/09/21 04:35	11/14/21 03:26	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.041	ug/Kg	☼	11/09/21 04:35	11/14/21 03:26	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.22	0.031	ug/Kg	☼	11/09/21 04:35	11/14/21 03:26	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.22	0.046	ug/Kg	☼	11/09/21 04:35	11/14/21 03:26	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.22	0.025	ug/Kg	☼	11/09/21 04:35	11/14/21 03:26	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.22	0.052	ug/Kg	☼	11/09/21 04:35	11/14/21 03:26	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.22	0.038	ug/Kg	☼	11/09/21 04:35	11/14/21 03:26	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22	0.044	ug/Kg	☼	11/09/21 04:35	11/14/21 03:26	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.22	0.033	ug/Kg	☼	11/09/21 04:35	11/14/21 03:26	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.042	ug/Kg	☼	11/09/21 04:35	11/14/21 03:26	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	110		50 - 150	11/09/21 04:35	11/14/21 03:26	1
13C4 PFHpA	106		50 - 150	11/09/21 04:35	11/14/21 03:26	1
13C4 PFOA	104		50 - 150	11/09/21 04:35	11/14/21 03:26	1
13C5 PFNA	94		50 - 150	11/09/21 04:35	11/14/21 03:26	1
13C2 PFDA	104		50 - 150	11/09/21 04:35	11/14/21 03:26	1
13C2 PFUnA	95		50 - 150	11/09/21 04:35	11/14/21 03:26	1
13C2 PFDoA	83		50 - 150	11/09/21 04:35	11/14/21 03:26	1
13C2 PFTeDA	80		50 - 150	11/09/21 04:35	11/14/21 03:26	1
13C3 PFBS	116		50 - 150	11/09/21 04:35	11/14/21 03:26	1
18O2 PFHxS	96		50 - 150	11/09/21 04:35	11/14/21 03:26	1
13C4 PFOS	98		50 - 150	11/09/21 04:35	11/14/21 03:26	1
d3-NMeFOSAA	100		50 - 150	11/09/21 04:35	11/14/21 03:26	1
d5-NEtFOSAA	107		50 - 150	11/09/21 04:35	11/14/21 03:26	1
13C3 HFPO-DA	95		50 - 150	11/09/21 04:35	11/14/21 03:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	13.5		0.1	0.1	%			11/05/21 11:58	1
Percent Solids	86.5		0.1	0.1	%			11/05/21 11:58	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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		0.24	0.037	ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.24	0.027	ug/Kg	☼	11/09/21 04:35	11/14/21 03:37	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.24	0.057	ug/Kg	☼	11/09/21 04:35	11/14/21 03:37	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-1-sulfonic acid	ND		0.24	0.037	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 - 150	11/09/21 04:35	11/14/21 03:37	1
18O2 PFHxS	105		50 - 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 - 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	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	18.7		0.1	0.1	%			11/05/21 11:58	1
Percent Solids	81.3		0.1	0.1	%			11/05/21 11:58	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-MW15-14

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	1
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.043	ug/Kg	☼	11/09/21 18:26	11/13/21 09:23	1
Perfluorooctanoic acid (PFOA)	ND		0.23	0.060	ug/Kg	☼	11/09/21 18:26	11/13/21 09:23	1
Perfluorononanoic acid (PFNA)	ND		0.23	0.025	ug/Kg	☼	11/09/21 18:26	11/13/21 09:23	1
Perfluorodecanoic acid (PFDA)	ND		0.23	0.054	ug/Kg	☼	11/09/21 18:26	11/13/21 09:23	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.048	ug/Kg	☼	11/09/21 18:26	11/13/21 09:23	1
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.034	ug/Kg	☼	11/09/21 18:26	11/13/21 09:23	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.024	ug/Kg	☼	11/09/21 18:26	11/13/21 09:23	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.042	ug/Kg	☼	11/09/21 18:26	11/13/21 09:23	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.043	ug/Kg	☼	11/09/21 18:26	11/13/21 09:23	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.23	0.033	ug/Kg	☼	11/09/21 18:26	11/13/21 09:23	1
Perfluorooctanesulfonic acid (PFOS)	0.26		0.23	0.049	ug/Kg	☼	11/09/21 18:26	11/13/21 09:23	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.23	0.026	ug/Kg	☼	11/09/21 18:26	11/13/21 09:23	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.23	0.054	ug/Kg	☼	11/09/21 18:26	11/13/21 09:23	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.23	0.040	ug/Kg	☼	11/09/21 18:26	11/13/21 09:23	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23	0.047	ug/Kg	☼	11/09/21 18:26	11/13/21 09:23	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.23	0.035	ug/Kg	☼	11/09/21 18:26	11/13/21 09:23	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.044	ug/Kg	☼	11/09/21 18:26	11/13/21 09:23	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	97		50 - 150	11/09/21 18:26	11/13/21 09:23	1
13C4 PFHpA	94		50 - 150	11/09/21 18:26	11/13/21 09:23	1
13C4 PFOA	87		50 - 150	11/09/21 18:26	11/13/21 09:23	1
13C5 PFNA	94		50 - 150	11/09/21 18:26	11/13/21 09:23	1
13C2 PFDA	89		50 - 150	11/09/21 18:26	11/13/21 09:23	1
13C2 PFUnA	94		50 - 150	11/09/21 18:26	11/13/21 09:23	1
13C2 PFDoA	89		50 - 150	11/09/21 18:26	11/13/21 09:23	1
13C2 PFTeDA	87		50 - 150	11/09/21 18:26	11/13/21 09:23	1
13C3 PFBS	101		50 - 150	11/09/21 18:26	11/13/21 09:23	1
18O2 PFHxS	91		50 - 150	11/09/21 18:26	11/13/21 09:23	1
13C4 PFOS	94		50 - 150	11/09/21 18:26	11/13/21 09:23	1
d3-NMeFOSAA	104		50 - 150	11/09/21 18:26	11/13/21 09:23	1
d5-NEtFOSAA	108		50 - 150	11/09/21 18:26	11/13/21 09:23	1
13C3 HFPO-DA	76		50 - 150	11/09/21 18:26	11/13/21 09:23	1

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

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-MW15-05

Lab Sample ID: 320-81254-42

Date Collected: 10/29/21 14:35

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 80.8

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		0.23	0.036	ug/Kg	☼	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	0.049	ug/Kg	☼	11/09/21 18:26	11/13/21 09:33	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.23	0.026	ug/Kg	☼	11/09/21 18:26	11/13/21 09:33	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.23	0.055	ug/Kg	☼	11/09/21 18:26	11/13/21 09:33	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 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 - 150	11/09/21 18:26	11/13/21 09:33	1
13C3 PFBS	97		50 - 150	11/09/21 18:26	11/13/21 09:33	1
18O2 PFHxS	82		50 - 150	11/09/21 18:26	11/13/21 09:33	1
13C4 PFOS	83		50 - 150	11/09/21 18:26	11/13/21 09:33	1
d3-NMeFOSAA	98		50 - 150	11/09/21 18:26	11/13/21 09:33	1
d5-NEtFOSAA	97		50 - 150	11/09/21 18:26	11/13/21 09:33	1
13C3 HFPO-DA	80		50 - 150	11/09/21 18:26	11/13/21 09:33	1

General Chemistry

Analyte	Result	Qualifier	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

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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 for QSM 5.3, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.24	0.037	ug/Kg	☼	11/09/21 18:26	11/13/21 09:43	1
Perfluoroheptanoic acid (PFHpA)	ND		0.24	0.045	ug/Kg	☼	11/09/21 18:26	11/13/21 09:43	1
Perfluorooctanoic acid (PFOA)	ND		0.24	0.063	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	0.057	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.24	0.027	ug/Kg	☼	11/09/21 18:26	11/13/21 09:43	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.24	0.057	ug/Kg	☼	11/09/21 18:26	11/13/21 09:43	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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
18O2 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

Analyte	Result	Qualifier	RL	MDL	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 Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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		0.20	0.032	ug/Kg	☼	11/09/21 18:26	11/13/21 09:54	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.039	ug/Kg	☼	11/09/21 18:26	11/13/21 09:54	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.054	ug/Kg	☼	11/09/21 18:26	11/13/21 09:54	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.022	ug/Kg	☼	11/09/21 18:26	11/13/21 09:54	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.049	ug/Kg	☼	11/09/21 18:26	11/13/21 09:54	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.043	ug/Kg	☼	11/09/21 18:26	11/13/21 09:54	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.031	ug/Kg	☼	11/09/21 18:26	11/13/21 09:54	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.021	ug/Kg	☼	11/09/21 18:26	11/13/21 09:54	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.038	ug/Kg	☼	11/09/21 18:26	11/13/21 09:54	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.039	ug/Kg	☼	11/09/21 18:26	11/13/21 09:54	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.030	ug/Kg	☼	11/09/21 18:26	11/13/21 09:54	1
Perfluorooctanesulfonic acid (PFOS)	0.40		0.20	0.044	ug/Kg	☼	11/09/21 18:26	11/13/21 09:54	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg	☼	11/09/21 18:26	11/13/21 09:54	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.20	0.049	ug/Kg	☼	11/09/21 18:26	11/13/21 09:54	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.036	ug/Kg	☼	11/09/21 18:26	11/13/21 09:54	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.20	0.042	ug/Kg	☼	11/09/21 18:26	11/13/21 09:54	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.032	ug/Kg	☼	11/09/21 18:26	11/13/21 09:54	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.040	ug/Kg	☼	11/09/21 18:26	11/13/21 09:54	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	89		50 - 150	11/09/21 18:26	11/13/21 09:54	1
13C4 PFHpA	91		50 - 150	11/09/21 18:26	11/13/21 09:54	1
13C4 PFOA	87		50 - 150	11/09/21 18:26	11/13/21 09:54	1
13C5 PFNA	82		50 - 150	11/09/21 18:26	11/13/21 09:54	1
13C2 PFDA	91		50 - 150	11/09/21 18:26	11/13/21 09:54	1
13C2 PFUnA	93		50 - 150	11/09/21 18:26	11/13/21 09:54	1
13C2 PFDoA	87		50 - 150	11/09/21 18:26	11/13/21 09:54	1
13C2 PFTeDA	84		50 - 150	11/09/21 18:26	11/13/21 09:54	1
13C3 PFBS	89		50 - 150	11/09/21 18:26	11/13/21 09:54	1
18O2 PFHxS	77		50 - 150	11/09/21 18:26	11/13/21 09:54	1
13C4 PFOS	86		50 - 150	11/09/21 18:26	11/13/21 09:54	1
d3-NMeFOSAA	96		50 - 150	11/09/21 18:26	11/13/21 09:54	1
d5-NEtFOSAA	97		50 - 150	11/09/21 18:26	11/13/21 09:54	1
13C3 HFPO-DA	84		50 - 150	11/09/21 18:26	11/13/21 09:54	1

General Chemistry

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 Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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		0.22	0.034	ug/Kg	☼	11/09/21 18:26	11/13/21 10:04	1
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.042	ug/Kg	☼	11/09/21 18:26	11/13/21 10:04	1
Perfluorooctanoic acid (PFOA)	ND		0.22	0.059	ug/Kg	☼	11/09/21 18:26	11/13/21 10:04	1
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	1
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	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.041	ug/Kg	☼	11/09/21 18:26	11/13/21 10:04	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.042	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	1
Perfluorooctanesulfonic acid (PFOS)	0.20	J	0.22	0.048	ug/Kg	☼	11/09/21 18:26	11/13/21 10:04	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.22	0.026	ug/Kg	☼	11/09/21 18:26	11/13/21 10:04	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.22	0.053	ug/Kg	☼	11/09/21 18:26	11/13/21 10:04	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.22	0.039	ug/Kg	☼	11/09/21 18:26	11/13/21 10:04	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22	0.046	ug/Kg	☼	11/09/21 18:26	11/13/21 10:04	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.22	0.034	ug/Kg	☼	11/09/21 18:26	11/13/21 10:04	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.043	ug/Kg	☼	11/09/21 18:26	11/13/21 10:04	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	99		50 - 150	11/09/21 18:26	11/13/21 10:04	1
13C4 PFHpA	97		50 - 150	11/09/21 18:26	11/13/21 10:04	1
13C4 PFOA	92		50 - 150	11/09/21 18:26	11/13/21 10:04	1
13C5 PFNA	95		50 - 150	11/09/21 18:26	11/13/21 10:04	1
13C2 PFDA	93		50 - 150	11/09/21 18:26	11/13/21 10:04	1
13C2 PFUnA	96		50 - 150	11/09/21 18:26	11/13/21 10:04	1
13C2 PFDoA	90		50 - 150	11/09/21 18:26	11/13/21 10:04	1
13C2 PFTeDA	93		50 - 150	11/09/21 18:26	11/13/21 10:04	1
13C3 PFBS	101		50 - 150	11/09/21 18:26	11/13/21 10:04	1
18O2 PFHxS	95		50 - 150	11/09/21 18:26	11/13/21 10:04	1
13C4 PFOS	97		50 - 150	11/09/21 18:26	11/13/21 10:04	1
d3-NMeFOSAA	111		50 - 150	11/09/21 18:26	11/13/21 10:04	1
d5-NEtFOSAA	107		50 - 150	11/09/21 18:26	11/13/21 10:04	1
13C3 HFPO-DA	75		50 - 150	11/09/21 18:26	11/13/21 10:04	1

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
Percent Solids	82.3		0.1	0.1	%			11/05/21 12:52	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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 for QSM 5.3, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.23	0.036	ug/Kg	☼	11/09/21 18:26	11/13/21 10:15	1
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.044	ug/Kg	☼	11/09/21 18:26	11/13/21 10:15	1
Perfluorooctanoic acid (PFOA)	ND		0.23	0.061	ug/Kg	☼	11/09/21 18:26	11/13/21 10:15	1
Perfluorononanoic acid (PFNA)	ND		0.23	0.026	ug/Kg	☼	11/09/21 18:26	11/13/21 10:15	1
Perfluorodecanoic acid (PFDA)	ND		0.23	0.056	ug/Kg	☼	11/09/21 18:26	11/13/21 10:15	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.049	ug/Kg	☼	11/09/21 18:26	11/13/21 10:15	1
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.035	ug/Kg	☼	11/09/21 18:26	11/13/21 10:15	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.024	ug/Kg	☼	11/09/21 18:26	11/13/21 10:15	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.043	ug/Kg	☼	11/09/21 18:26	11/13/21 10:15	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.044	ug/Kg	☼	11/09/21 18:26	11/13/21 10:15	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.23	0.034	ug/Kg	☼	11/09/21 18:26	11/13/21 10:15	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.23	0.050	ug/Kg	☼	11/09/21 18:26	11/13/21 10:15	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.23	0.027	ug/Kg	☼	11/09/21 18:26	11/13/21 10:15	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.23	0.056	ug/Kg	☼	11/09/21 18:26	11/13/21 10:15	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	94		50 - 150	11/09/21 18:26	11/13/21 10:15	1
13C4 PFHpA	90		50 - 150	11/09/21 18:26	11/13/21 10:15	1
13C4 PFOA	89		50 - 150	11/09/21 18:26	11/13/21 10:15	1
13C5 PFNA	91		50 - 150	11/09/21 18:26	11/13/21 10:15	1
13C2 PFDA	92		50 - 150	11/09/21 18:26	11/13/21 10:15	1
13C2 PFUnA	96		50 - 150	11/09/21 18:26	11/13/21 10:15	1
13C2 PFDoA	91		50 - 150	11/09/21 18:26	11/13/21 10:15	1
13C2 PFTeDA	91		50 - 150	11/09/21 18:26	11/13/21 10:15	1
13C3 PFBS	94		50 - 150	11/09/21 18:26	11/13/21 10:15	1
18O2 PFHxS	78		50 - 150	11/09/21 18:26	11/13/21 10:15	1
13C4 PFOS	93		50 - 150	11/09/21 18:26	11/13/21 10:15	1
d3-NMeFOSAA	101		50 - 150	11/09/21 18:26	11/13/21 10:15	1
d5-NEtFOSAA	106		50 - 150	11/09/21 18:26	11/13/21 10:15	1
13C3 HFPO-DA	84		50 - 150	11/09/21 18:26	11/13/21 10:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	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 Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

Percent Solids: 76.8

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		0.24	0.038	ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.24	0.028	ug/Kg	☼	11/09/21 18:26	11/13/21 10:25	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.24	0.059	ug/Kg	☼	11/09/21 18:26	11/13/21 10:25	1
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		0.24	0.038	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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	23.2		0.1	0.1	%			11/05/21 12:52	1
Percent Solids	76.8		0.1	0.1	%			11/05/21 12:52	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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		0.20	0.031	ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg	☼	11/09/21 18:26	11/13/21 10:35	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.20	0.048	ug/Kg	☼	11/09/21 18:26	11/13/21 10:35	1
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosafuoro-3-oxaundecane-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 - 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	11/09/21 18:26	11/13/21 10:35	1
13C2 PFTeDA	81		50 - 150	11/09/21 18:26	11/13/21 10:35	1
13C3 PFBS	93		50 - 150	11/09/21 18:26	11/13/21 10:35	1
18O2 PFHxS	81		50 - 150	11/09/21 18:26	11/13/21 10:35	1
13C4 PFOS	84		50 - 150	11/09/21 18:26	11/13/21 10:35	1
d3-NMeFOSAA	92		50 - 150	11/09/21 18:26	11/13/21 10:35	1
d5-NEtFOSAA	100		50 - 150	11/09/21 18:26	11/13/21 10:35	1
13C3 HFPO-DA	77		50 - 150	11/09/21 18:26	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

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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		0.22	0.034	ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.22	0.026	ug/Kg	☼	11/09/21 18:26	11/13/21 11:07	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.22	0.053	ug/Kg	☼	11/09/21 18:26	11/13/21 11:07	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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
18O2 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	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	14.2		0.1	0.1	%			11/05/21 12:52	1
Percent Solids	85.8		0.1	0.1	%			11/05/21 12:52	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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	0.036	ug/Kg	☼	11/09/21 18:26	11/13/21 11:17	1
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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.23	0.027	ug/Kg	☼	11/09/21 18:26	11/13/21 11:17	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.23	0.055	ug/Kg	☼	11/09/21 18:26	11/13/21 11:17	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.23	0.040	ug/Kg	☼	11/09/21 18:26	11/13/21 11:17	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23	0.047	ug/Kg	☼	11/09/21 18:26	11/13/21 11:17	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.23	0.036	ug/Kg	☼	11/09/21 18:26	11/13/21 11:17	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	Qualifier	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
18O2 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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	17.2		0.1	0.1	%			11/05/21 12:52	1
Percent Solids	82.8		0.1	0.1	%			11/05/21 12:52	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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 11:28	1
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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.23	0.026	ug/Kg	☼	11/09/21 18:26	11/13/21 11:28	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.23	0.054	ug/Kg	☼	11/09/21 18:26	11/13/21 11:28	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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	1
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
18O2 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	1
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	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	17.7		0.1	0.1	%			11/05/21 12:52	1
Percent Solids	82.3		0.1	0.1	%			11/05/21 12:52	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SB009-01

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

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		0.20	0.032	ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg	☼	11/09/21 18:26	11/13/21 11:38	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.20	0.049	ug/Kg	☼	11/09/21 18:26	11/13/21 11:38	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.036	ug/Kg	☼	11/09/21 18:26	11/13/21 11:38	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.20	0.042	ug/Kg	☼	11/09/21 18:26	11/13/21 11:38	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.032	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 - 150	11/09/21 18:26	11/13/21 11:38	1
18O2 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	11/09/21 18:26	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	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	5.9		0.1	0.1	%			11/05/21 12:52	1
Percent Solids	94.1		0.1	0.1	%			11/05/21 12:52	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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		0.20	0.031	ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg	☼	11/09/21 18:26	11/13/21 11:48	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.20	0.049	ug/Kg	☼	11/09/21 18:26	11/13/21 11:48	1
9-Chlorohexadecafluoro-3-oxanonane-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	0.041	ug/Kg	☼	11/09/21 18:26	11/13/21 11:48	1
11-Chloroeicosadecafluoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.031	ug/Kg	☼	11/09/21 18:26	11/13/21 11:48	1
4,8-Dioxo-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
18O2 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	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	6.5		0.1	0.1	%			11/05/21 12:52	1
Percent Solids	93.5		0.1	0.1	%			11/05/21 12:52	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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 for QSM 5.3, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.21	0.032	ug/Kg	☼	11/09/21 18:26	11/13/21 11:59	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.039	ug/Kg	☼	11/09/21 18:26	11/13/21 11:59	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.055	ug/Kg	☼	11/09/21 18:26	11/13/21 11:59	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.023	ug/Kg	☼	11/09/21 18:26	11/13/21 11:59	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.050	ug/Kg	☼	11/09/21 18:26	11/13/21 11:59	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.044	ug/Kg	☼	11/09/21 18:26	11/13/21 11:59	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.031	ug/Kg	☼	11/09/21 18:26	11/13/21 11:59	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.022	ug/Kg	☼	11/09/21 18:26	11/13/21 11:59	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.038	ug/Kg	☼	11/09/21 18:26	11/13/21 11:59	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.039	ug/Kg	☼	11/09/21 18:26	11/13/21 11:59	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21	0.030	ug/Kg	☼	11/09/21 18:26	11/13/21 11:59	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.21	0.045	ug/Kg	☼	11/09/21 18:26	11/13/21 11:59	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	☼	11/09/21 18:26	11/13/21 11:59	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.050	ug/Kg	☼	11/09/21 18:26	11/13/21 11:59	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 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
18O2 PFHxS	80		50 - 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 - 150	11/09/21 18:26	11/13/21 11:59	1
13C3 HFPO-DA	84		50 - 150	11/09/21 18:26	11/13/21 11:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	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 Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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	0.036	ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.23	0.027	ug/Kg	☼	11/09/21 18:26	11/13/21 12:09	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.23	0.055	ug/Kg	☼	11/09/21 18:26	11/13/21 12:09	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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

Analyte	Result	Qualifier	RL	MDL	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

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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	0.036	ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.23	0.027	ug/Kg	☼	11/09/21 18:26	11/13/21 12:20	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.23	0.056	ug/Kg	☼	11/09/21 18:26	11/13/21 12:20	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 150	11/09/21 18:26	11/13/21 12:20	1
13C3 PFBS	104		50 - 150	11/09/21 18:26	11/13/21 12:20	1
18O2 PFHxS	79		50 - 150	11/09/21 18:26	11/13/21 12:20	1
13C4 PFOS	89		50 - 150	11/09/21 18:26	11/13/21 12:20	1
d3-NMeFOSAA	91		50 - 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	11/09/21 18:26	11/13/21 12:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	20.5		0.1	0.1	%			11/05/21 12:52	1
Percent Solids	79.5		0.1	0.1	%			11/05/21 12:52	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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		0.22	0.033	ug/Kg	☼	11/09/21 18:26	11/13/21 12:30	1
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 (PFOS)	0.15	J	0.22	0.046	ug/Kg	☼	11/09/21 18:26	11/13/21 12:30	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.22	0.025	ug/Kg	☼	11/09/21 18:26	11/13/21 12:30	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.22	0.052	ug/Kg	☼	11/09/21 18:26	11/13/21 12:30	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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	1
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 - 150	11/09/21 18:26	11/13/21 12:30	1
13C2 PFTeDA	76		50 - 150	11/09/21 18:26	11/13/21 12:30	1
13C3 PFBS	97		50 - 150	11/09/21 18:26	11/13/21 12:30	1
18O2 PFHxS	84		50 - 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	11/09/21 18:26	11/13/21 12:30	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

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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	0.032	ug/Kg	☼	11/09/21 18:26	11/13/21 12:40	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.039	ug/Kg	☼	11/09/21 18:26	11/13/21 12:40	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.054	ug/Kg	☼	11/09/21 18:26	11/13/21 12:40	1
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 (PFOS)	0.14	J	0.21	0.044	ug/Kg	☼	11/09/21 18:26	11/13/21 12:40	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	☼	11/09/21 18:26	11/13/21 12:40	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.049	ug/Kg	☼	11/09/21 18:26	11/13/21 12:40	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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	1
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 - 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 - 150	11/09/21 18:26	11/13/21 12:40	1
13C2 PFTeDA	78		50 - 150	11/09/21 18:26	11/13/21 12:40	1
13C3 PFBS	84		50 - 150	11/09/21 18:26	11/13/21 12:40	1
18O2 PFHxS	75		50 - 150	11/09/21 18:26	11/13/21 12:40	1
13C4 PFOS	82		50 - 150	11/09/21 18:26	11/13/21 12:40	1
d3-NMeFOSAA	83		50 - 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	1
13C3 HFPO-DA	84		50 - 150	11/09/21 18:26	11/13/21 12:40	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

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SB010-02

Lab Sample ID: 320-81254-59

Date Collected: 10/30/21 12:40

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 91.2

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		0.22	0.034	ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.22	0.025	ug/Kg	☼	11/09/21 18:26	11/13/21 13:12	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.22	0.053	ug/Kg	☼	11/09/21 18:26	11/13/21 13:12	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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	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 Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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	☼	11/09/21 18:26	11/13/21 13:22	1
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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	☼	11/09/21 18:26	11/13/21 13:22	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.051	ug/Kg	☼	11/09/21 18:26	11/13/21 13:22	1
9-Chlorohexadecafluoro-3-oxanonane-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	0.044	ug/Kg	☼	11/09/21 18:26	11/13/21 13:22	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.033	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	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

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SB012-01

Lab Sample ID: 320-81254-61

Date Collected: 10/30/21 13:25

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 85.6

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		0.22	0.034	ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.22	0.025	ug/Kg	☼	11/09/21 18:26	11/16/21 15:07	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.22	0.052	ug/Kg	☼	11/09/21 18:26	11/16/21 15:07	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 150	11/09/21 18:26	11/16/21 15:07	1
13C2 PFUnA	77		50 - 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 - 150	11/09/21 18:26	11/16/21 15:07	1
13C3 PFBS	100		50 - 150	11/09/21 18:26	11/16/21 15:07	1
18O2 PFHxS	74		50 - 150	11/09/21 18:26	11/16/21 15:07	1
13C4 PFOS	76		50 - 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	11/09/21 18:26	11/16/21 15:07	1
13C3 HFPO-DA	92		50 - 150	11/09/21 18:26	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

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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	0.032	ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	☼	11/09/21 18:26	11/14/21 22:00	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.050	ug/Kg	☼	11/09/21 18:26	11/14/21 22:00	1
9-Chlorohexadecafluoro-3-oxanonane-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	0.042	ug/Kg	☼	11/09/21 18:26	11/14/21 22:00	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.032	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
18O2 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

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

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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	0.036	ug/Kg	☼	11/09/21 18:26	11/14/21 22:11	1
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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.23	0.026	ug/Kg	☼	11/09/21 18:26	11/14/21 22:11	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.23	0.055	ug/Kg	☼	11/09/21 18:26	11/14/21 22:11	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 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 - 150	11/09/21 18:26	11/14/21 22:11	1
13C3 PFBS	108		50 - 150	11/09/21 18:26	11/14/21 22:11	1
18O2 PFHxS	93		50 - 150	11/09/21 18:26	11/14/21 22:11	1
13C4 PFOS	99		50 - 150	11/09/21 18:26	11/14/21 22:11	1
d3-NMeFOSAA	96		50 - 150	11/09/21 18:26	11/14/21 22:11	1
d5-NEtFOSAA	106		50 - 150	11/09/21 18:26	11/14/21 22:11	1
13C3 HFPO-DA	94		50 - 150	11/09/21 18:26	11/14/21 22:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	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	%			11/05/21 12:51	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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		0.22	0.034	ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.22	0.025	ug/Kg	☼	11/09/21 18:26	11/14/21 22:21	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.22	0.053	ug/Kg	☼	11/09/21 18:26	11/14/21 22:21	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 150	11/09/21 18:26	11/14/21 22:21	1
13C2 PFDA	118		50 - 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 - 150	11/09/21 18:26	11/14/21 22:21	1
13C3 PFBS	126		50 - 150	11/09/21 18:26	11/14/21 22:21	1
18O2 PFHxS	115		50 - 150	11/09/21 18:26	11/14/21 22:21	1
13C4 PFOS	118		50 - 150	11/09/21 18:26	11/14/21 22:21	1
d3-NMeFOSAA	121		50 - 150	11/09/21 18:26	11/14/21 22:21	1
d5-NEtFOSAA	125		50 - 150	11/09/21 18:26	11/14/21 22:21	1
13C3 HFPO-DA	110		50 - 150	11/09/21 18:26	11/14/21 22:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	13.3		0.1	0.1	%			11/05/21 12:51	1
Percent Solids	86.7		0.1	0.1	%			11/05/21 12:51	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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	0.036	ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.23	0.026	ug/Kg	☼	11/09/21 18:26	11/14/21 22:32	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.23	0.055	ug/Kg	☼	11/09/21 18:26	11/14/21 22:32	1
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		0.23	0.036	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
18O2 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	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	16.0		0.1	0.1	%			11/05/21 12:51	1
Percent Solids	84.0		0.1	0.1	%			11/05/21 12:51	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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		0.24	0.037	ug/Kg	☼	11/09/21 18:26	11/14/21 22:42	1
Perfluoroheptanoic acid (PFHpA)	ND		0.24	0.046	ug/Kg	☼	11/09/21 18:26	11/14/21 22:42	1
Perfluorooctanoic acid (PFOA)	ND		0.24	0.064	ug/Kg	☼	11/09/21 18:26	11/14/21 22:42	1
Perfluorononanoic acid (PFNA)	ND		0.24	0.027	ug/Kg	☼	11/09/21 18:26	11/14/21 22:42	1
Perfluorodecanoic acid (PFDA)	ND		0.24	0.058	ug/Kg	☼	11/09/21 18:26	11/14/21 22:42	1
Perfluoroundecanoic acid (PFUnA)	ND		0.24	0.051	ug/Kg	☼	11/09/21 18:26	11/14/21 22:42	1
Perfluorododecanoic acid (PFDoA)	ND		0.24	0.036	ug/Kg	☼	11/09/21 18:26	11/14/21 22:42	1
Perfluorotridecanoic acid (PFTriA)	ND		0.24	0.025	ug/Kg	☼	11/09/21 18:26	11/14/21 22:42	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.24	0.045	ug/Kg	☼	11/09/21 18:26	11/14/21 22:42	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.24	0.046	ug/Kg	☼	11/09/21 18:26	11/14/21 22:42	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.24	0.035	ug/Kg	☼	11/09/21 18:26	11/14/21 22:42	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.24	0.052	ug/Kg	☼	11/09/21 18:26	11/14/21 22:42	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.24	0.028	ug/Kg	☼	11/09/21 18:26	11/14/21 22:42	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.24	0.058	ug/Kg	☼	11/09/21 18:26	11/14/21 22:42	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.24	0.042	ug/Kg	☼	11/09/21 18:26	11/14/21 22:42	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.24	0.049	ug/Kg	☼	11/09/21 18:26	11/14/21 22:42	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.24	0.037	ug/Kg	☼	11/09/21 18:26	11/14/21 22:42	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.24	0.047	ug/Kg	☼	11/09/21 18:26	11/14/21 22:42	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	103		50 - 150	11/09/21 18:26	11/14/21 22:42	1
13C4 PFHpA	96		50 - 150	11/09/21 18:26	11/14/21 22:42	1
13C4 PFOA	86		50 - 150	11/09/21 18:26	11/14/21 22:42	1
13C5 PFNA	84		50 - 150	11/09/21 18:26	11/14/21 22:42	1
13C2 PFDA	87		50 - 150	11/09/21 18:26	11/14/21 22:42	1
13C2 PFUnA	90		50 - 150	11/09/21 18:26	11/14/21 22:42	1
13C2 PFDoA	85		50 - 150	11/09/21 18:26	11/14/21 22:42	1
13C2 PFTeDA	83		50 - 150	11/09/21 18:26	11/14/21 22:42	1
13C3 PFBS	97		50 - 150	11/09/21 18:26	11/14/21 22:42	1
18O2 PFHxS	84		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 22:42	1
d3-NMeFOSAA	85		50 - 150	11/09/21 18:26	11/14/21 22:42	1
d5-NEtFOSAA	90		50 - 150	11/09/21 18:26	11/14/21 22:42	1
13C3 HFPO-DA	82		50 - 150	11/09/21 18:26	11/14/21 22:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	20.1		0.1	0.1	%			11/05/21 12:51	1
Percent Solids	79.9		0.1	0.1	%			11/05/21 12:51	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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		0.20	0.031	ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg	☼	11/09/21 18:26	11/14/21 22:53	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.20	0.049	ug/Kg	☼	11/09/21 18:26	11/14/21 22:53	1
9-Chlorohexadecafluoro-3-oxanonane-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	0.041	ug/Kg	☼	11/09/21 18:26	11/14/21 22:53	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.031	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
18O2 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 - 150	11/09/21 18:26	11/14/21 22:53	1
d5-NEtFOSAA	116		50 - 150	11/09/21 18:26	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	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	6.5		0.1	0.1	%			11/05/21 12:51	1
Percent Solids	93.5		0.1	0.1	%			11/05/21 12:51	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SB005-02

Lab Sample ID: 320-81254-68

Date Collected: 10/30/21 15:15

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 86.8

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		0.22	0.035	ug/Kg	☼	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	0.048	ug/Kg	☼	11/09/21 18:26	11/14/21 23:03	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.22	0.026	ug/Kg	☼	11/09/21 18:26	11/14/21 23:03	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.22	0.054	ug/Kg	☼	11/09/21 18:26	11/14/21 23:03	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.22	0.039	ug/Kg	☼	11/09/21 18:26	11/14/21 23:03	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22	0.046	ug/Kg	☼	11/09/21 18:26	11/14/21 23:03	1
11-Chloroeicosafluoro-3-oxaundecane-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
18O2 PFHxS	89		50 - 150	11/09/21 18:26	11/14/21 23:03	1
13C4 PFOS	96		50 - 150	11/09/21 18:26	11/14/21 23:03	1
d3-NMeFOSAA	92		50 - 150	11/09/21 18:26	11/14/21 23:03	1
d5-NEtFOSAA	97		50 - 150	11/09/21 18:26	11/14/21 23:03	1
13C3 HFPO-DA	90		50 - 150	11/09/21 18:26	11/14/21 23:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	13.2		0.1	0.1	%			11/05/21 12:51	1
Percent Solids	86.8		0.1	0.1	%			11/05/21 12:51	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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	0.036	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	0.050	ug/Kg	☼	11/09/21 18:26	11/14/21 23:34	1
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	ND		0.23	0.027	ug/Kg	☼	11/09/21 18:26	11/14/21 23:34	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	ND		0.23	0.055	ug/Kg	☼	11/09/21 18:26	11/14/21 23:34	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.23	0.040	ug/Kg	☼	11/09/21 18:26	11/14/21 23:34	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23	0.047	ug/Kg	☼	11/09/21 18:26	11/14/21 23:34	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.23	0.036	ug/Kg	☼	11/09/21 18:26	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
18O2 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

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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 for QSM 5.3, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	0.059	J	0.21	0.032	ug/Kg	☼	11/09/21 18:26	11/14/21 23:45	1
Perfluoroheptanoic acid (PFHpA)	0.11	J	0.21	0.039	ug/Kg	☼	11/09/21 18:26	11/14/21 23:45	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.055	ug/Kg	☼	11/09/21 18:26	11/14/21 23:45	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.023	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	0.043	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	J I	0.21	0.030	ug/Kg	☼	11/09/21 18:26	11/14/21 23:45	1
Perfluorooctanesulfonic acid (PFOS)	0.10	J I	0.21	0.044	ug/Kg	☼	11/09/21 18:26	11/14/21 23:45	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	☼	11/09/21 18:26	11/14/21 23:45	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.049	ug/Kg	☼	11/09/21 18:26	11/14/21 23:45	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.036	ug/Kg	☼	11/09/21 18:26	11/14/21 23:45	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.042	ug/Kg	☼	11/09/21 18:26	11/14/21 23:45	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.032	ug/Kg	☼	11/09/21 18:26	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 - 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
18O2 PFHxS	94		50 - 150	11/09/21 18:26	11/14/21 23:45	1
13C4 PFOS	100		50 - 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 - 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

Analyte	Result	Qualifier	RL	MDL	Unit	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

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SB007-10

Lab Sample ID: 320-81254-71

Date Collected: 10/30/21 15:50

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 91.3

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)	0.051	J	0.21	0.032	ug/Kg	☼	11/09/21 18:26	11/14/21 23:55	1
Perfluoroheptanoic acid (PFHpA)	0.056	J	0.21	0.040	ug/Kg	☼	11/09/21 18:26	11/14/21 23:55	1
Perfluorooctanoic acid (PFOA)	0.11	J	0.21	0.055	ug/Kg	☼	11/09/21 18:26	11/14/21 23:55	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.023	ug/Kg	☼	11/09/21 18:26	11/14/21 23:55	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.050	ug/Kg	☼	11/09/21 18:26	11/14/21 23:55	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.044	ug/Kg	☼	11/09/21 18:26	11/14/21 23:55	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.031	ug/Kg	☼	11/09/21 18:26	11/14/21 23:55	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.022	ug/Kg	☼	11/09/21 18:26	11/14/21 23:55	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.039	ug/Kg	☼	11/09/21 18:26	11/14/21 23:55	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.040	ug/Kg	☼	11/09/21 18:26	11/14/21 23:55	1
Perfluorohexanesulfonic acid (PFHxS)	0.038	J I	0.21	0.030	ug/Kg	☼	11/09/21 18:26	11/14/21 23:55	1
Perfluorooctanesulfonic acid (PFOS)	0.27	I	0.21	0.045	ug/Kg	☼	11/09/21 18:26	11/14/21 23:55	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	☼	11/09/21 18:26	11/14/21 23:55	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.050	ug/Kg	☼	11/09/21 18:26	11/14/21 23:55	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.037	ug/Kg	☼	11/09/21 18:26	11/14/21 23:55	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.043	ug/Kg	☼	11/09/21 18:26	11/14/21 23:55	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.032	ug/Kg	☼	11/09/21 18:26	11/14/21 23:55	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.041	ug/Kg	☼	11/09/21 18:26	11/14/21 23:55	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	103		50 - 150	11/09/21 18:26	11/14/21 23:55	1
13C4 PFHpA	103		50 - 150	11/09/21 18:26	11/14/21 23:55	1
13C4 PFOA	95		50 - 150	11/09/21 18:26	11/14/21 23:55	1
13C5 PFNA	95		50 - 150	11/09/21 18:26	11/14/21 23:55	1
13C2 PFDA	96		50 - 150	11/09/21 18:26	11/14/21 23:55	1
13C2 PFUnA	96		50 - 150	11/09/21 18:26	11/14/21 23:55	1
13C2 PFDoA	91		50 - 150	11/09/21 18:26	11/14/21 23:55	1
13C2 PFTeDA	94		50 - 150	11/09/21 18:26	11/14/21 23:55	1
13C3 PFBS	100		50 - 150	11/09/21 18:26	11/14/21 23:55	1
18O2 PFHxS	90		50 - 150	11/09/21 18:26	11/14/21 23:55	1
13C4 PFOS	90		50 - 150	11/09/21 18:26	11/14/21 23:55	1
d3-NMeFOSAA	96		50 - 150	11/09/21 18:26	11/14/21 23:55	1
d5-NEtFOSAA	94		50 - 150	11/09/21 18:26	11/14/21 23:55	1
13C3 HFPO-DA	93		50 - 150	11/09/21 18:26	11/14/21 23:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	8.7		0.1	0.1	%			11/05/21 12:51	1
Percent Solids	91.3		0.1	0.1	%			11/05/21 12:51	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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		0.22	0.035	ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.22	0.026	ug/Kg	☼	11/09/21 18:26	11/15/21 00:05	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.22	0.054	ug/Kg	☼	11/09/21 18:26	11/15/21 00:05	1
9-Chlorohexadecafluoro-3-oxanonane-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	0.046	ug/Kg	☼	11/09/21 18:26	11/15/21 00:05	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.22	0.035	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
18O2 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

Analyte	Result	Qualifier	RL	MDL	Unit	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

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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 for QSM 5.3, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.23	0.036	ug/Kg	☼	11/09/21 18:26	11/15/21 00:16	1
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.044	ug/Kg	☼	11/09/21 18:26	11/15/21 00:16	1
Perfluorooctanoic acid (PFOA)	ND		0.23	0.062	ug/Kg	☼	11/09/21 18:26	11/15/21 00:16	1
Perfluorononanoic acid (PFNA)	ND		0.23	0.026	ug/Kg	☼	11/09/21 18:26	11/15/21 00:16	1
Perfluorodecanoic acid (PFDA)	ND		0.23	0.056	ug/Kg	☼	11/09/21 18:26	11/15/21 00:16	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.049	ug/Kg	☼	11/09/21 18:26	11/15/21 00:16	1
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.035	ug/Kg	☼	11/09/21 18:26	11/15/21 00:16	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.025	ug/Kg	☼	11/09/21 18:26	11/15/21 00:16	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.043	ug/Kg	☼	11/09/21 18:26	11/15/21 00:16	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.044	ug/Kg	☼	11/09/21 18:26	11/15/21 00:16	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.23	0.034	ug/Kg	☼	11/09/21 18:26	11/15/21 00:16	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.23	0.050	ug/Kg	☼	11/09/21 18:26	11/15/21 00:16	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.23	0.027	ug/Kg	☼	11/09/21 18:26	11/15/21 00:16	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.23	0.056	ug/Kg	☼	11/09/21 18:26	11/15/21 00:16	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.23	0.041	ug/Kg	☼	11/09/21 18:26	11/15/21 00:16	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23	0.048	ug/Kg	☼	11/09/21 18:26	11/15/21 00:16	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.23	0.036	ug/Kg	☼	11/09/21 18:26	11/15/21 00:16	1
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 Fac
13C2 PFHxA	98		50 - 150	11/09/21 18:26	11/15/21 00:16	1
13C4 PFHpA	94		50 - 150	11/09/21 18:26	11/15/21 00:16	1
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 - 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	1
13C2 PFTeDA	81		50 - 150	11/09/21 18:26	11/15/21 00:16	1
13C3 PFBS	95		50 - 150	11/09/21 18:26	11/15/21 00:16	1
18O2 PFHxS	86		50 - 150	11/09/21 18:26	11/15/21 00:16	1
13C4 PFOS	87		50 - 150	11/09/21 18:26	11/15/21 00:16	1
d3-NMeFOSAA	95		50 - 150	11/09/21 18:26	11/15/21 00:16	1
d5-NEtFOSAA	96		50 - 150	11/09/21 18:26	11/15/21 00:16	1
13C3 HFPO-DA	85		50 - 150	11/09/21 18:26	11/15/21 00:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	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

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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)	0.083	J	0.29	0.045	ug/Kg	☼	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	J I	0.29	0.063	ug/Kg	☼	11/09/21 18:26	11/15/21 00:26	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.29	0.034	ug/Kg	☼	11/09/21 18:26	11/15/21 00:26	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.29	0.070	ug/Kg	☼	11/09/21 18:26	11/15/21 00:26	1
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosafuoro-3-oxaundecane-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 - 150	11/09/21 18:26	11/15/21 00:26	1
13C2 PFDA	90		50 - 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 - 150	11/09/21 18:26	11/15/21 00:26	1
13C3 PFBS	99		50 - 150	11/09/21 18:26	11/15/21 00:26	1
18O2 PFHxS	85		50 - 150	11/09/21 18:26	11/15/21 00:26	1
13C4 PFOS	95		50 - 150	11/09/21 18:26	11/15/21 00:26	1
d3-NMeFOSAA	93		50 - 150	11/09/21 18:26	11/15/21 00:26	1
d5-NEtFOSAA	108		50 - 150	11/09/21 18:26	11/15/21 00:26	1
13C3 HFPO-DA	80		50 - 150	11/09/21 18:26	11/15/21 00:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	34.8		0.1	0.1	%			11/05/21 12:51	1
Percent Solids	65.2		0.1	0.1	%			11/05/21 12:51	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.21	0.033	ug/Kg	☼	11/09/21 18:26	11/15/21 00:37	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.040	ug/Kg	☼	11/09/21 18:26	11/15/21 00:37	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.056	ug/Kg	☼	11/09/21 18:26	11/15/21 00:37	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.023	ug/Kg	☼	11/09/21 18:26	11/15/21 00:37	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.051	ug/Kg	☼	11/09/21 18:26	11/15/21 00:37	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.045	ug/Kg	☼	11/09/21 18:26	11/15/21 00:37	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.032	ug/Kg	☼	11/09/21 18:26	11/15/21 00:37	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.022	ug/Kg	☼	11/09/21 18:26	11/15/21 00:37	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.039	ug/Kg	☼	11/09/21 18:26	11/15/21 00:37	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.040	ug/Kg	☼	11/09/21 18:26	11/15/21 00:37	1
Perfluorohexanesulfonic acid (PFHxS)	0.034	J I	0.21	0.031	ug/Kg	☼	11/09/21 18:26	11/15/21 00:37	1
Perfluorooctanesulfonic acid (PFOS)	0.69		0.21	0.046	ug/Kg	☼	11/09/21 18:26	11/15/21 00:37	1
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	☼	11/09/21 18:26	11/15/21 00:37	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	ND		0.21	0.051	ug/Kg	☼	11/09/21 18:26	11/15/21 00:37	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.037	ug/Kg	☼	11/09/21 18:26	11/15/21 00:37	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.044	ug/Kg	☼	11/09/21 18:26	11/15/21 00:37	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.033	ug/Kg	☼	11/09/21 18:26	11/15/21 00:37	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.041	ug/Kg	☼	11/09/21 18:26	11/15/21 00:37	1

Isotope Dilution	%Recovery	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	11/15/21 00:37	1
13C4 PFOA	103		50 - 150	11/09/21 18:26	11/15/21 00:37	1
13C5 PFNA	107		50 - 150	11/09/21 18:26	11/15/21 00:37	1
13C2 PFDA	101		50 - 150	11/09/21 18:26	11/15/21 00:37	1
13C2 PFUnA	113		50 - 150	11/09/21 18:26	11/15/21 00:37	1
13C2 PFDoA	100		50 - 150	11/09/21 18:26	11/15/21 00:37	1
13C2 PFTeDA	93		50 - 150	11/09/21 18:26	11/15/21 00:37	1
13C3 PFBS	114		50 - 150	11/09/21 18:26	11/15/21 00:37	1
18O2 PFHxS	96		50 - 150	11/09/21 18:26	11/15/21 00:37	1
13C4 PFOS	106		50 - 150	11/09/21 18:26	11/15/21 00:37	1
d3-NMeFOSAA	111		50 - 150	11/09/21 18:26	11/15/21 00:37	1
d5-NEtFOSAA	116		50 - 150	11/09/21 18:26	11/15/21 00:37	1
13C3 HFPO-DA	81		50 - 150	11/09/21 18:26	11/15/21 00:37	1

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

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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)	0.051	J	0.22	0.035	ug/Kg	☼	11/09/21 18:26	11/15/21 00:47	1
Perfluoroheptanoic acid (PFHpA)	0.093	J	0.22	0.042	ug/Kg	☼	11/09/21 18:26	11/15/21 00:47	1
Perfluorooctanoic acid (PFOA)	0.088	J	0.22	0.059	ug/Kg	☼	11/09/21 18:26	11/15/21 00:47	1
Perfluorononanoic acid (PFNA)	0.12	J	0.22	0.025	ug/Kg	☼	11/09/21 18:26	11/15/21 00:47	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.054	ug/Kg	☼	11/09/21 18:26	11/15/21 00:47	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.047	ug/Kg	☼	11/09/21 18:26	11/15/21 00:47	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.033	ug/Kg	☼	11/09/21 18:26	11/15/21 00:47	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.023	ug/Kg	☼	11/09/21 18:26	11/15/21 00:47	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.041	ug/Kg	☼	11/09/21 18:26	11/15/21 00:47	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.042	ug/Kg	☼	11/09/21 18:26	11/15/21 00:47	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.22	0.032	ug/Kg	☼	11/09/21 18:26	11/15/21 00:47	1
Perfluorooctanesulfonic acid (PFOS)	0.56	I	0.22	0.048	ug/Kg	☼	11/09/21 18:26	11/15/21 00:47	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.22	0.026	ug/Kg	☼	11/09/21 18:26	11/15/21 00:47	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.22	0.054	ug/Kg	☼	11/09/21 18:26	11/15/21 00:47	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.22	0.039	ug/Kg	☼	11/09/21 18:26	11/15/21 00:47	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22	0.046	ug/Kg	☼	11/09/21 18:26	11/15/21 00:47	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		0.22	0.035	ug/Kg	☼	11/09/21 18:26	11/15/21 00:47	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.044	ug/Kg	☼	11/09/21 18:26	11/15/21 00:47	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	102		50 - 150	11/09/21 18:26	11/15/21 00:47	1
13C4 PFHpA	91		50 - 150	11/09/21 18:26	11/15/21 00:47	1
13C4 PFOA	91		50 - 150	11/09/21 18:26	11/15/21 00:47	1
13C5 PFNA	94		50 - 150	11/09/21 18:26	11/15/21 00:47	1
13C2 PFDA	92		50 - 150	11/09/21 18:26	11/15/21 00:47	1
13C2 PFUnA	99		50 - 150	11/09/21 18:26	11/15/21 00:47	1
13C2 PFDoA	94		50 - 150	11/09/21 18:26	11/15/21 00:47	1
13C2 PFTeDA	86		50 - 150	11/09/21 18:26	11/15/21 00:47	1
13C3 PFBS	104		50 - 150	11/09/21 18:26	11/15/21 00:47	1
18O2 PFHxS	93		50 - 150	11/09/21 18:26	11/15/21 00:47	1
13C4 PFOS	95		50 - 150	11/09/21 18:26	11/15/21 00:47	1
d3-NMeFOSAA	99		50 - 150	11/09/21 18:26	11/15/21 00:47	1
d5-NEtFOSAA	108		50 - 150	11/09/21 18:26	11/15/21 00:47	1
13C3 HFPO-DA	85		50 - 150	11/09/21 18:26	11/15/21 00:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	16.4		0.1	0.1	%			11/05/21 12:51	1
Percent Solids	83.6		0.1	0.1	%			11/05/21 12:51	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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		0.25	0.038	ug/Kg	☼	11/09/21 18:26	11/15/21 00:58	1
Perfluoroheptanoic acid (PFHpA)	0.066	J	0.25	0.047	ug/Kg	☼	11/09/21 18:26	11/15/21 00:58	1
Perfluorooctanoic acid (PFOA)	0.070	J	0.25	0.065	ug/Kg	☼	11/09/21 18:26	11/15/21 00:58	1
Perfluorononanoic acid (PFNA)	0.11	J	0.25	0.027	ug/Kg	☼	11/09/21 18:26	11/15/21 00:58	1
Perfluorodecanoic acid (PFDA)	ND		0.25	0.059	ug/Kg	☼	11/09/21 18:26	11/15/21 00:58	1
Perfluoroundecanoic acid (PFUnA)	ND		0.25	0.052	ug/Kg	☼	11/09/21 18:26	11/15/21 00:58	1
Perfluorododecanoic acid (PFDoA)	ND		0.25	0.037	ug/Kg	☼	11/09/21 18:26	11/15/21 00:58	1
Perfluorotridecanoic acid (PFTriA)	ND		0.25	0.026	ug/Kg	☼	11/09/21 18:26	11/15/21 00:58	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.25	0.046	ug/Kg	☼	11/09/21 18:26	11/15/21 00:58	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.25	0.047	ug/Kg	☼	11/09/21 18:26	11/15/21 00:58	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.25	0.036	ug/Kg	☼	11/09/21 18:26	11/15/21 00:58	1
Perfluorooctanesulfonic acid (PFOS)	0.60	I	0.25	0.053	ug/Kg	☼	11/09/21 18:26	11/15/21 00:58	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.25	0.028	ug/Kg	☼	11/09/21 18:26	11/15/21 00:58	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.25	0.059	ug/Kg	☼	11/09/21 18:26	11/15/21 00:58	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.25	0.043	ug/Kg	☼	11/09/21 18:26	11/15/21 00:58	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.051	ug/Kg	☼	11/09/21 18:26	11/15/21 00:58	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.25	0.038	ug/Kg	☼	11/09/21 18:26	11/15/21 00:58	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.25	0.048	ug/Kg	☼	11/09/21 18:26	11/15/21 00:58	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	94		50 - 150	11/09/21 18:26	11/15/21 00:58	1
13C4 PFHpA	96		50 - 150	11/09/21 18:26	11/15/21 00:58	1
13C4 PFOA	91		50 - 150	11/09/21 18:26	11/15/21 00:58	1
13C5 PFNA	89		50 - 150	11/09/21 18:26	11/15/21 00:58	1
13C2 PFDA	99		50 - 150	11/09/21 18:26	11/15/21 00:58	1
13C2 PFUnA	94		50 - 150	11/09/21 18:26	11/15/21 00:58	1
13C2 PFDoA	92		50 - 150	11/09/21 18:26	11/15/21 00:58	1
13C2 PFTeDA	82		50 - 150	11/09/21 18:26	11/15/21 00:58	1
13C3 PFBS	106		50 - 150	11/09/21 18:26	11/15/21 00:58	1
18O2 PFHxS	86		50 - 150	11/09/21 18:26	11/15/21 00:58	1
13C4 PFOS	91		50 - 150	11/09/21 18:26	11/15/21 00:58	1
d3-NMeFOSAA	100		50 - 150	11/09/21 18:26	11/15/21 00:58	1
d5-NEtFOSAA	101		50 - 150	11/09/21 18:26	11/15/21 00:58	1
13C3 HFPO-DA	87		50 - 150	11/09/21 18:26	11/15/21 00:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	19.5		0.1	0.1	%			11/05/21 12:51	1
Percent Solids	80.5		0.1	0.1	%			11/05/21 12:51	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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)	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.038	J I	0.22	0.025	ug/Kg	☼	11/09/21 18:26	11/15/21 01:08	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.22	0.052	ug/Kg	☼	11/09/21 18:26	11/15/21 01:08	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.22	0.038	ug/Kg	☼	11/09/21 18:26	11/15/21 01:08	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22	0.045	ug/Kg	☼	11/09/21 18:26	11/15/21 01:08	1
11-Chloroeicosafuoro-3-oxaundecane-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
18O2 PFHxS	98		50 - 150	11/09/21 18:26	11/15/21 01:08	1
13C4 PFOS	109		50 - 150	11/09/21 18:26	11/15/21 01:08	1
d3-NMeFOSAA	113		50 - 150	11/09/21 18:26	11/15/21 01:08	1
d5-NEtFOSAA	126		50 - 150	11/09/21 18:26	11/15/21 01:08	1
13C3 HFPO-DA	99		50 - 150	11/09/21 18:26	11/15/21 01:08	1

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	64		2.2	0.47	ug/Kg	☼	11/09/21 18:26	11/15/21 12:25	10
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
13C4 PFOS	98		50 - 150	11/09/21 18:26	11/15/21 12:25	10			

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	12.6		0.1	0.1	%			11/05/21 12:51	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

General Chemistry (Continued)

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

1

2

3

4

5

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12

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14

15

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SS-012

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

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		0.19	0.030	ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.19	0.022	ug/Kg	☼	11/09/21 18:26	11/15/21 01:39	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.19	0.046	ug/Kg	☼	11/09/21 18:26	11/15/21 01:39	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-1-sulfonic acid	ND		0.19	0.030	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 - 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 - 150	11/09/21 18:26	11/15/21 01:39	1
18O2 PFHxS	99		50 - 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 - 150	11/09/21 18:26	11/15/21 01:39	1
d5-NEtFOSAA	103		50 - 150	11/09/21 18:26	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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	6.0		0.1	0.1	%			11/05/21 12:51	1
Percent Solids	94.0		0.1	0.1	%			11/05/21 12:51	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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	☼	11/09/21 18:26	11/15/21 01:50	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.041	ug/Kg	☼	11/09/21 18:26	11/15/21 01:50	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.057	ug/Kg	☼	11/09/21 18:26	11/15/21 01:50	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.024	ug/Kg	☼	11/09/21 18:26	11/15/21 01:50	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.051	ug/Kg	☼	11/09/21 18:26	11/15/21 01:50	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.045	ug/Kg	☼	11/09/21 18:26	11/15/21 01:50	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.032	ug/Kg	☼	11/09/21 18:26	11/15/21 01:50	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.023	ug/Kg	☼	11/09/21 18:26	11/15/21 01:50	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.040	ug/Kg	☼	11/09/21 18:26	11/15/21 01:50	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.041	ug/Kg	☼	11/09/21 18:26	11/15/21 01:50	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21	0.031	ug/Kg	☼	11/09/21 18:26	11/15/21 01:50	1
Perfluorooctanesulfonic acid (PFOS)	0.15	J	0.21	0.046	ug/Kg	☼	11/09/21 18:26	11/15/21 01:50	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.025	ug/Kg	☼	11/09/21 18:26	11/15/21 01:50	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.051	ug/Kg	☼	11/09/21 18:26	11/15/21 01:50	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.038	ug/Kg	☼	11/09/21 18:26	11/15/21 01:50	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.044	ug/Kg	☼	11/09/21 18:26	11/15/21 01:50	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.033	ug/Kg	☼	11/09/21 18:26	11/15/21 01:50	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.042	ug/Kg	☼	11/09/21 18:26	11/15/21 01:50	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	112		50 - 150	11/09/21 18:26	11/15/21 01:50	1
13C4 PFHpA	107		50 - 150	11/09/21 18:26	11/15/21 01:50	1
13C4 PFOA	101		50 - 150	11/09/21 18:26	11/15/21 01:50	1
13C5 PFNA	106		50 - 150	11/09/21 18:26	11/15/21 01:50	1
13C2 PFDA	108		50 - 150	11/09/21 18:26	11/15/21 01:50	1
13C2 PFUnA	110		50 - 150	11/09/21 18:26	11/15/21 01:50	1
13C2 PFDoA	101		50 - 150	11/09/21 18:26	11/15/21 01:50	1
13C2 PFTeDA	97		50 - 150	11/09/21 18:26	11/15/21 01:50	1
13C3 PFBS	112		50 - 150	11/09/21 18:26	11/15/21 01:50	1
18O2 PFHxS	95		50 - 150	11/09/21 18:26	11/15/21 01:50	1
13C4 PFOS	100		50 - 150	11/09/21 18:26	11/15/21 01:50	1
d3-NMeFOSAA	103		50 - 150	11/09/21 18:26	11/15/21 01:50	1
d5-NEtFOSAA	113		50 - 150	11/09/21 18:26	11/15/21 01:50	1
13C3 HFPO-DA	94		50 - 150	11/09/21 18:26	11/15/21 01:50	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 12:51	1
Percent Solids	93.1		0.1	0.1	%			11/05/21 12:51	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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	☼	11/10/21 13:52	11/12/21 03:56	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.040	ug/Kg	☼	11/10/21 13:52	11/12/21 03:56	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.056	ug/Kg	☼	11/10/21 13:52	11/12/21 03:56	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.023	ug/Kg	☼	11/10/21 13:52	11/12/21 03:56	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.051	ug/Kg	☼	11/10/21 13:52	11/12/21 03:56	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.045	ug/Kg	☼	11/10/21 13:52	11/12/21 03:56	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.032	ug/Kg	☼	11/10/21 13:52	11/12/21 03:56	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.022	ug/Kg	☼	11/10/21 13:52	11/12/21 03:56	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.039	ug/Kg	☼	11/10/21 13:52	11/12/21 03:56	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.040	ug/Kg	☼	11/10/21 13:52	11/12/21 03:56	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21	0.031	ug/Kg	☼	11/10/21 13:52	11/12/21 03:56	1
Perfluorooctanesulfonic acid (PFOS)	1.2		0.21	0.046	ug/Kg	☼	11/10/21 13:52	11/12/21 03:56	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	☼	11/10/21 13:52	11/12/21 03:56	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.051	ug/Kg	☼	11/10/21 13:52	11/12/21 03:56	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.037	ug/Kg	☼	11/10/21 13:52	11/12/21 03:56	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.044	ug/Kg	☼	11/10/21 13:52	11/12/21 03:56	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.033	ug/Kg	☼	11/10/21 13:52	11/12/21 03:56	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.042	ug/Kg	☼	11/10/21 13:52	11/12/21 03:56	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	90		50 - 150	11/10/21 13:52	11/12/21 03:56	1
13C4 PFHpA	88		50 - 150	11/10/21 13:52	11/12/21 03:56	1
13C4 PFOA	90		50 - 150	11/10/21 13:52	11/12/21 03:56	1
13C5 PFNA	97		50 - 150	11/10/21 13:52	11/12/21 03:56	1
13C2 PFDA	100		50 - 150	11/10/21 13:52	11/12/21 03:56	1
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	1
13C2 PFTeDA	76		50 - 150	11/10/21 13:52	11/12/21 03:56	1
13C3 PFBS	101		50 - 150	11/10/21 13:52	11/12/21 03:56	1
18O2 PFHxS	87		50 - 150	11/10/21 13:52	11/12/21 03:56	1
13C4 PFOS	100		50 - 150	11/10/21 13:52	11/12/21 03:56	1
d3-NMeFOSAA	99		50 - 150	11/10/21 13:52	11/12/21 03:56	1
d5-NEtFOSAA	103		50 - 150	11/10/21 13:52	11/12/21 03:56	1
13C3 HFPO-DA	71		50 - 150	11/10/21 13:52	11/12/21 03:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	13.8		0.1	0.1	%			11/05/21 14:24	1
Percent Solids	86.2		0.1	0.1	%			11/05/21 14:24	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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)	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	J I	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	J I	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.28	0.032	ug/Kg	☼	11/10/21 13:52	11/12/21 04:28	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.28	0.067	ug/Kg	☼	11/10/21 13:52	11/12/21 04:28	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 150	11/10/21 13:52	11/12/21 04:28	1
13C2 PFUnA	84		50 - 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 - 150	11/10/21 13:52	11/12/21 04:28	1
13C3 PFBS	90		50 - 150	11/10/21 13:52	11/12/21 04:28	1
18O2 PFHxS	82		50 - 150	11/10/21 13:52	11/12/21 04:28	1
13C4 PFOS	90		50 - 150	11/10/21 13:52	11/12/21 04:28	1
d3-NMeFOSAA	89		50 - 150	11/10/21 13:52	11/12/21 04:28	1
d5-NEtFOSAA	103		50 - 150	11/10/21 13:52	11/12/21 04:28	1
13C3 HFPO-DA	69		50 - 150	11/10/21 13:52	11/12/21 04:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	35.8		0.1	0.1	%			11/05/21 14:24	1
Percent Solids	64.2		0.1	0.1	%			11/05/21 14:24	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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	☼	11/10/21 13:52	11/12/21 04:38	1
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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.025	ug/Kg	☼	11/10/21 13:52	11/12/21 04:38	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.051	ug/Kg	☼	11/10/21 13:52	11/12/21 04:38	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 150	11/10/21 13:52	11/12/21 04:38	1
13C3 PFBS	107		50 - 150	11/10/21 13:52	11/12/21 04:38	1
18O2 PFHxS	96		50 - 150	11/10/21 13:52	11/12/21 04:38	1
13C4 PFOS	100		50 - 150	11/10/21 13:52	11/12/21 04:38	1
d3-NMeFOSAA	110		50 - 150	11/10/21 13:52	11/12/21 04:38	1
d5-NEtFOSAA	115		50 - 150	11/10/21 13:52	11/12/21 04:38	1
13C3 HFPO-DA	90		50 - 150	11/10/21 13:52	11/12/21 04:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	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	%			11/05/21 14:24	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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 for QSM 5.3, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.22	0.034	ug/Kg	☼	11/10/21 13:52	11/12/21 04:48	1
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 (PFHxS)	0.033	J	0.22	0.032	ug/Kg	☼	11/10/21 13:52	11/12/21 04:48	1
Perfluorooctanesulfonic acid (PFOS)	0.44		0.22	0.047	ug/Kg	☼	11/10/21 13:52	11/12/21 04:48	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.22	0.025	ug/Kg	☼	11/10/21 13:52	11/12/21 04:48	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.22	0.053	ug/Kg	☼	11/10/21 13:52	11/12/21 04:48	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.22	0.038	ug/Kg	☼	11/10/21 13:52	11/12/21 04:48	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22	0.045	ug/Kg	☼	11/10/21 13:52	11/12/21 04:48	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		0.22	0.034	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 - 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 - 150	11/10/21 13:52	11/12/21 04:48	1
13C2 PFUnA	103		50 - 150	11/10/21 13:52	11/12/21 04:48	1
13C2 PFDoA	101		50 - 150	11/10/21 13:52	11/12/21 04:48	1
13C2 PFTeDA	96		50 - 150	11/10/21 13:52	11/12/21 04:48	1
13C3 PFBS	111		50 - 150	11/10/21 13:52	11/12/21 04:48	1
18O2 PFHxS	94		50 - 150	11/10/21 13:52	11/12/21 04:48	1
13C4 PFOS	104		50 - 150	11/10/21 13:52	11/12/21 04:48	1
d3-NMeFOSAA	113		50 - 150	11/10/21 13:52	11/12/21 04:48	1
d5-NEtFOSAA	122		50 - 150	11/10/21 13:52	11/12/21 04:48	1
13C3 HFPO-DA	96		50 - 150	11/10/21 13:52	11/12/21 04:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	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	%			11/05/21 14:24	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SB004-01

Lab Sample ID: 320-81254-85

Date Collected: 10/31/21 11:05

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 86.1

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		0.22	0.035	ug/Kg	☼	11/10/21 13:52	11/12/21 04:59	1
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.042	ug/Kg	☼	11/10/21 13:52	11/12/21 04:59	1
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 (PFHxS)	0.055	J	0.22	0.032	ug/Kg	☼	11/10/21 13:52	11/12/21 04:59	1
Perfluorooctanesulfonic acid (PFOS)	1.0		0.22	0.048	ug/Kg	☼	11/10/21 13:52	11/12/21 04:59	1
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	ND		0.22	0.026	ug/Kg	☼	11/10/21 13:52	11/12/21 04:59	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	ND		0.22	0.054	ug/Kg	☼	11/10/21 13:52	11/12/21 04:59	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.22	0.039	ug/Kg	☼	11/10/21 13:52	11/12/21 04:59	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22	0.046	ug/Kg	☼	11/10/21 13:52	11/12/21 04:59	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.22	0.035	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 - 150	11/10/21 13:52	11/12/21 04:59	1
13C2 PFUnA	102		50 - 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 - 150	11/10/21 13:52	11/12/21 04:59	1
13C3 PFBS	108		50 - 150	11/10/21 13:52	11/12/21 04:59	1
18O2 PFHxS	97		50 - 150	11/10/21 13:52	11/12/21 04:59	1
13C4 PFOS	98		50 - 150	11/10/21 13:52	11/12/21 04:59	1
d3-NMeFOSAA	105		50 - 150	11/10/21 13:52	11/12/21 04:59	1
d5-NEtFOSAA	110		50 - 150	11/10/21 13:52	11/12/21 04:59	1
13C3 HFPO-DA	92		50 - 150	11/10/21 13:52	11/12/21 04:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	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	%			11/05/21 14:24	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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	☼	11/10/21 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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.23	0.026	ug/Kg	☼	11/10/21 13:52	11/12/21 05:09	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.23	0.055	ug/Kg	☼	11/10/21 13:52	11/12/21 05:09	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 150	11/10/21 13:52	11/12/21 05:09	1
18O2 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 - 150	11/10/21 13:52	11/12/21 05:09	1
d5-NEtFOSAA	114		50 - 150	11/10/21 13:52	11/12/21 05:09	1
13C3 HFPO-DA	97		50 - 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

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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		0.24	0.038	ug/Kg	☼	11/10/21 13:52	11/12/21 05:40	1
Perfluoroheptanoic acid (PFHpA)	ND		0.24	0.046	ug/Kg	☼	11/10/21 13:52	11/12/21 05:40	1
Perfluorooctanoic acid (PFOA)	ND		0.24	0.065	ug/Kg	☼	11/10/21 13:52	11/12/21 05:40	1
Perfluorononanoic acid (PFNA)	ND		0.24	0.027	ug/Kg	☼	11/10/21 13:52	11/12/21 05:40	1
Perfluorodecanoic acid (PFDA)	ND		0.24	0.058	ug/Kg	☼	11/10/21 13:52	11/12/21 05:40	1
Perfluoroundecanoic acid (PFUnA)	ND		0.24	0.051	ug/Kg	☼	11/10/21 13:52	11/12/21 05:40	1
Perfluorododecanoic acid (PFDoA)	ND		0.24	0.037	ug/Kg	☼	11/10/21 13:52	11/12/21 05:40	1
Perfluorotridecanoic acid (PFTriA)	ND		0.24	0.026	ug/Kg	☼	11/10/21 13:52	11/12/21 05:40	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.24	0.045	ug/Kg	☼	11/10/21 13:52	11/12/21 05:40	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.24	0.046	ug/Kg	☼	11/10/21 13:52	11/12/21 05:40	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.24	0.035	ug/Kg	☼	11/10/21 13:52	11/12/21 05:40	1
Perfluorooctanesulfonic acid (PFOS)	0.25		0.24	0.052	ug/Kg	☼	11/10/21 13:52	11/12/21 05:40	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.24	0.028	ug/Kg	☼	11/10/21 13:52	11/12/21 05:40	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.24	0.058	ug/Kg	☼	11/10/21 13:52	11/12/21 05:40	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.24	0.043	ug/Kg	☼	11/10/21 13:52	11/12/21 05:40	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.24	0.050	ug/Kg	☼	11/10/21 13:52	11/12/21 05:40	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.24	0.038	ug/Kg	☼	11/10/21 13:52	11/12/21 05:40	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.24	0.048	ug/Kg	☼	11/10/21 13:52	11/12/21 05:40	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	96		50 - 150	11/10/21 13:52	11/12/21 05:40	1
13C4 PFHpA	93		50 - 150	11/10/21 13:52	11/12/21 05:40	1
13C4 PFOA	91		50 - 150	11/10/21 13:52	11/12/21 05:40	1
13C5 PFNA	86		50 - 150	11/10/21 13:52	11/12/21 05:40	1
13C2 PFDA	95		50 - 150	11/10/21 13:52	11/12/21 05:40	1
13C2 PFUnA	95		50 - 150	11/10/21 13:52	11/12/21 05:40	1
13C2 PFDoA	91		50 - 150	11/10/21 13:52	11/12/21 05:40	1
13C2 PFTeDA	88		50 - 150	11/10/21 13:52	11/12/21 05:40	1
13C3 PFBS	99		50 - 150	11/10/21 13:52	11/12/21 05:40	1
18O2 PFHxS	90		50 - 150	11/10/21 13:52	11/12/21 05:40	1
13C4 PFOS	88		50 - 150	11/10/21 13:52	11/12/21 05:40	1
d3-NMeFOSAA	101		50 - 150	11/10/21 13:52	11/12/21 05:40	1
d5-NEtFOSAA	118		50 - 150	11/10/21 13:52	11/12/21 05:40	1
13C3 HFPO-DA	92		50 - 150	11/10/21 13:52	11/12/21 05:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	20.9		0.1	0.1	%			11/05/21 14:24	1
Percent Solids	79.1		0.1	0.1	%			11/05/21 14:24	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SB006-01

Lab Sample ID: 320-81254-88

Date Collected: 10/31/21 12:30

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 92.2

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		0.20	0.030	ug/Kg	☼	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	J I	0.20	0.042	ug/Kg	☼	11/10/21 13:52	11/12/21 05:51	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg	☼	11/10/21 13:52	11/12/21 05:51	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.20	0.047	ug/Kg	☼	11/10/21 13:52	11/12/21 05:51	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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
18O2 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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	7.8		0.1	0.1	%			11/05/21 14:24	1
Percent Solids	92.2		0.1	0.1	%			11/05/21 14:24	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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		0.22	0.034	ug/Kg	☼	11/10/21 13:52	11/12/21 06:01	1
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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.22	0.025	ug/Kg	☼	11/10/21 13:52	11/12/21 06:01	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.22	0.053	ug/Kg	☼	11/10/21 13:52	11/12/21 06:01	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-1-sulfonic acid	ND		0.22	0.034	ug/Kg	☼	11/10/21 13:52	11/12/21 06:01	1
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	1
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	1
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	1
13C3 PFBS	100		50 - 150	11/10/21 13:52	11/12/21 06:01	1
18O2 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	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	9.6		0.1	0.1	%			11/05/21 14:24	1
Percent Solids	90.4		0.1	0.1	%			11/05/21 14:24	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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	0.032	ug/Kg	☼	11/10/21 13:52	11/12/21 06:12	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.039	ug/Kg	☼	11/10/21 13:52	11/12/21 06:12	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.055	ug/Kg	☼	11/10/21 13:52	11/12/21 06:12	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.023	ug/Kg	☼	11/10/21 13:52	11/12/21 06:12	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.050	ug/Kg	☼	11/10/21 13:52	11/12/21 06:12	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.043	ug/Kg	☼	11/10/21 13:52	11/12/21 06:12	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.031	ug/Kg	☼	11/10/21 13:52	11/12/21 06:12	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.022	ug/Kg	☼	11/10/21 13:52	11/12/21 06:12	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.038	ug/Kg	☼	11/10/21 13:52	11/12/21 06:12	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.039	ug/Kg	☼	11/10/21 13:52	11/12/21 06:12	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21	0.030	ug/Kg	☼	11/10/21 13:52	11/12/21 06:12	1
Perfluorooctanesulfonic acid (PFOS)	0.078	J I	0.21	0.044	ug/Kg	☼	11/10/21 13:52	11/12/21 06:12	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	☼	11/10/21 13:52	11/12/21 06:12	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.050	ug/Kg	☼	11/10/21 13:52	11/12/21 06:12	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.036	ug/Kg	☼	11/10/21 13:52	11/12/21 06:12	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.042	ug/Kg	☼	11/10/21 13:52	11/12/21 06:12	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.032	ug/Kg	☼	11/10/21 13:52	11/12/21 06:12	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.040	ug/Kg	☼	11/10/21 13:52	11/12/21 06:12	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	107		50 - 150	11/10/21 13:52	11/12/21 06:12	1
13C4 PFHpA	103		50 - 150	11/10/21 13:52	11/12/21 06:12	1
13C4 PFOA	95		50 - 150	11/10/21 13:52	11/12/21 06:12	1
13C5 PFNA	94		50 - 150	11/10/21 13:52	11/12/21 06:12	1
13C2 PFDA	91		50 - 150	11/10/21 13:52	11/12/21 06:12	1
13C2 PFUnA	94		50 - 150	11/10/21 13:52	11/12/21 06:12	1
13C2 PFDoA	93		50 - 150	11/10/21 13:52	11/12/21 06:12	1
13C2 PFTeDA	87		50 - 150	11/10/21 13:52	11/12/21 06:12	1
13C3 PFBS	107		50 - 150	11/10/21 13:52	11/12/21 06:12	1
18O2 PFHxS	92		50 - 150	11/10/21 13:52	11/12/21 06:12	1
13C4 PFOS	95		50 - 150	11/10/21 13:52	11/12/21 06:12	1
d3-NMeFOSAA	106		50 - 150	11/10/21 13:52	11/12/21 06:12	1
d5-NEtFOSAA	110		50 - 150	11/10/21 13:52	11/12/21 06:12	1
13C3 HFPO-DA	109		50 - 150	11/10/21 13:52	11/12/21 06:12	1

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 Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SB006-03

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

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		0.22	0.034	ug/Kg	☼	11/10/21 18:34	11/13/21 14:45	1
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.042	ug/Kg	☼	11/10/21 18:34	11/13/21 14:45	1
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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.22	0.025	ug/Kg	☼	11/10/21 18:34	11/13/21 14:45	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.22	0.053	ug/Kg	☼	11/10/21 18:34	11/13/21 14:45	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.22	0.039	ug/Kg	☼	11/10/21 18:34	11/13/21 14:45	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22	0.045	ug/Kg	☼	11/10/21 18:34	11/13/21 14:45	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.22	0.034	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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	100		50 - 150	11/10/21 18:34	11/13/21 14:45	1
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 - 150	11/10/21 18:34	11/13/21 14:45	1
18O2 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	Qualifier	RL	MDL	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	%			11/05/21 14:24	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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 for QSM 5.3, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	0.074	J	0.23	0.035	ug/Kg	☼	11/10/21 18:34	11/13/21 15:17	1
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.043	ug/Kg	☼	11/10/21 18:34	11/13/21 15:17	1
Perfluorooctanoic acid (PFOA)	ND		0.23	0.060	ug/Kg	☼	11/10/21 18:34	11/13/21 15:17	1
Perfluorononanoic acid (PFNA)	ND		0.23	0.025	ug/Kg	☼	11/10/21 18:34	11/13/21 15:17	1
Perfluorodecanoic acid (PFDA)	ND		0.23	0.055	ug/Kg	☼	11/10/21 18:34	11/13/21 15:17	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.048	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	0.042	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	0.033	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.23	0.026	ug/Kg	☼	11/10/21 18:34	11/13/21 15:17	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.23	0.055	ug/Kg	☼	11/10/21 18:34	11/13/21 15:17	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.23	0.040	ug/Kg	☼	11/10/21 18:34	11/13/21 15:17	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23	0.047	ug/Kg	☼	11/10/21 18:34	11/13/21 15:17	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.23	0.035	ug/Kg	☼	11/10/21 18:34	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
18O2 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	Result	Qualifier	RL	MDL	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 Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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	0.032	ug/Kg	☼	11/10/21 18:34	11/13/21 15:27	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.040	ug/Kg	☼	11/10/21 18:34	11/13/21 15:27	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.055	ug/Kg	☼	11/10/21 18:34	11/13/21 15:27	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.023	ug/Kg	☼	11/10/21 18:34	11/13/21 15:27	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.050	ug/Kg	☼	11/10/21 18:34	11/13/21 15:27	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.044	ug/Kg	☼	11/10/21 18:34	11/13/21 15:27	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.031	ug/Kg	☼	11/10/21 18:34	11/13/21 15:27	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.022	ug/Kg	☼	11/10/21 18:34	11/13/21 15:27	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.038	ug/Kg	☼	11/10/21 18:34	11/13/21 15:27	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.040	ug/Kg	☼	11/10/21 18:34	11/13/21 15:27	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21	0.030	ug/Kg	☼	11/10/21 18:34	11/13/21 15:27	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.21	0.045	ug/Kg	☼	11/10/21 18:34	11/13/21 15:27	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	☼	11/10/21 18:34	11/13/21 15:27	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.050	ug/Kg	☼	11/10/21 18:34	11/13/21 15:27	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.036	ug/Kg	☼	11/10/21 18:34	11/13/21 15:27	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.043	ug/Kg	☼	11/10/21 18:34	11/13/21 15:27	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.032	ug/Kg	☼	11/10/21 18:34	11/13/21 15:27	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.041	ug/Kg	☼	11/10/21 18:34	11/13/21 15:27	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	110		50 - 150	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	1
13C4 PFOA	109		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	1
13C2 PFDA	111		50 - 150	11/10/21 18:34	11/13/21 15:27	1
13C2 PFUnA	112		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	1
13C2 PFTeDA	107		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	1
18O2 PFHxS	93		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	1
d3-NMeFOSAA	107		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	1
13C3 HFPO-DA	94		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 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

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SB008-03

Lab Sample ID: 320-81254-94

Date Collected: 10/31/21 13:15

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 84.7

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		0.22	0.034	ug/Kg	☼	11/10/21 18:34	11/13/21 15:38	1
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.041	ug/Kg	☼	11/10/21 18:34	11/13/21 15:38	1
Perfluorooctanoic acid (PFOA)	ND		0.22	0.058	ug/Kg	☼	11/10/21 18:34	11/13/21 15:38	1
Perfluorononanoic acid (PFNA)	ND		0.22	0.024	ug/Kg	☼	11/10/21 18:34	11/13/21 15:38	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.052	ug/Kg	☼	11/10/21 18:34	11/13/21 15:38	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.046	ug/Kg	☼	11/10/21 18:34	11/13/21 15:38	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.033	ug/Kg	☼	11/10/21 18:34	11/13/21 15:38	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.023	ug/Kg	☼	11/10/21 18:34	11/13/21 15:38	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.040	ug/Kg	☼	11/10/21 18:34	11/13/21 15:38	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.041	ug/Kg	☼	11/10/21 18:34	11/13/21 15:38	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.22	0.032	ug/Kg	☼	11/10/21 18:34	11/13/21 15:38	1
Perfluorooctanesulfonic acid (PFOS)	0.69		0.22	0.047	ug/Kg	☼	11/10/21 18:34	11/13/21 15:38	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.22	0.025	ug/Kg	☼	11/10/21 18:34	11/13/21 15:38	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.22	0.052	ug/Kg	☼	11/10/21 18:34	11/13/21 15:38	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.22	0.038	ug/Kg	☼	11/10/21 18:34	11/13/21 15:38	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22	0.045	ug/Kg	☼	11/10/21 18:34	11/13/21 15:38	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.22	0.034	ug/Kg	☼	11/10/21 18:34	11/13/21 15:38	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.043	ug/Kg	☼	11/10/21 18:34	11/13/21 15:38	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	110		50 - 150	11/10/21 18:34	11/13/21 15:38	1
13C4 PFHpA	108		50 - 150	11/10/21 18:34	11/13/21 15:38	1
13C4 PFOA	102		50 - 150	11/10/21 18:34	11/13/21 15:38	1
13C5 PFNA	98		50 - 150	11/10/21 18:34	11/13/21 15:38	1
13C2 PFDA	101		50 - 150	11/10/21 18:34	11/13/21 15:38	1
13C2 PFUnA	109		50 - 150	11/10/21 18:34	11/13/21 15:38	1
13C2 PFDoA	100		50 - 150	11/10/21 18:34	11/13/21 15:38	1
13C2 PFTeDA	102		50 - 150	11/10/21 18:34	11/13/21 15:38	1
13C3 PFBS	114		50 - 150	11/10/21 18:34	11/13/21 15:38	1
18O2 PFHxS	94		50 - 150	11/10/21 18:34	11/13/21 15:38	1
13C4 PFOS	98		50 - 150	11/10/21 18:34	11/13/21 15:38	1
d3-NMeFOSAA	104		50 - 150	11/10/21 18:34	11/13/21 15:38	1
d5-NEtFOSAA	121		50 - 150	11/10/21 18:34	11/13/21 15:38	1
13C3 HFPO-DA	98		50 - 150	11/10/21 18:34	11/13/21 15:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	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	%			11/05/21 14:24	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SB011-01

Lab Sample ID: 320-81254-95

Date Collected: 10/31/21 14:15

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 91.2

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)	0.68		0.21	0.033	ug/Kg	☼	11/10/21 18:34	11/13/21 15:48	1
Perfluoroheptanoic acid (PFHpA)	0.21		0.21	0.040	ug/Kg	☼	11/10/21 18:34	11/13/21 15:48	1
Perfluorooctanoic acid (PFOA)	0.63		0.21	0.056	ug/Kg	☼	11/10/21 18:34	11/13/21 15:48	1
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	0.050	ug/Kg	☼	11/10/21 18:34	11/13/21 15:48	1
Perfluoroundecanoic acid (PFUnA)	1.3		0.21	0.044	ug/Kg	☼	11/10/21 18:34	11/13/21 15:48	1
Perfluorododecanoic acid (PFDoA)	0.63		0.21	0.032	ug/Kg	☼	11/10/21 18:34	11/13/21 15:48	1
Perfluorotridecanoic acid (PFTriA)	0.10	J	0.21	0.022	ug/Kg	☼	11/10/21 18:34	11/13/21 15:48	1
Perfluorotetradecanoic acid (PFTeA)	0.16	J	0.21	0.039	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.046	J	0.21	0.024	ug/Kg	☼	11/10/21 18:34	11/13/21 15:48	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.050	ug/Kg	☼	11/10/21 18:34	11/13/21 15:48	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.037	ug/Kg	☼	11/10/21 18:34	11/13/21 15:48	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.043	ug/Kg	☼	11/10/21 18:34	11/13/21 15:48	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.033	ug/Kg	☼	11/10/21 18:34	11/13/21 15:48	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.041	ug/Kg	☼	11/10/21 18:34	11/13/21 15:48	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	90		50 - 150	11/10/21 18:34	11/13/21 15:48	1
13C4 PFHpA	95		50 - 150	11/10/21 18:34	11/13/21 15:48	1
13C4 PFOA	90		50 - 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	1
13C2 PFDA	97		50 - 150	11/10/21 18:34	11/13/21 15:48	1
13C2 PFUnA	92		50 - 150	11/10/21 18:34	11/13/21 15:48	1
13C2 PFDoA	91		50 - 150	11/10/21 18:34	11/13/21 15:48	1
13C2 PFTeDA	89		50 - 150	11/10/21 18:34	11/13/21 15:48	1
13C3 PFBS	100		50 - 150	11/10/21 18:34	11/13/21 15:48	1
18O2 PFHxS	80		50 - 150	11/10/21 18:34	11/13/21 15:48	1
13C4 PFOS	84		50 - 150	11/10/21 18:34	11/13/21 15:48	1
d3-NMeFOSAA	103		50 - 150	11/10/21 18:34	11/13/21 15:48	1
d5-NEtFOSAA	110		50 - 150	11/10/21 18:34	11/13/21 15:48	1
13C3 HFPO-DA	81		50 - 150	11/10/21 18:34	11/13/21 15:48	1

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	79		2.1	0.45	ug/Kg	☼	11/10/21 18:34	11/15/21 12:56	10

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOS	89		50 - 150	11/10/21 18:34	11/15/21 12:56	10

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SB011-01

Lab Sample ID: 320-81254-95

Date Collected: 10/31/21 14:15

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 91.2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	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

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Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SB011-12

Lab Sample ID: 320-81254-96

Date Collected: 10/31/21 14:25

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 93.2

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)	0.24		0.20	0.031	ug/Kg	☼	11/10/21 18:34	11/13/21 15:58	1
Perfluoroheptanoic acid (PFHpA)	0.26		0.20	0.038	ug/Kg	☼	11/10/21 18:34	11/13/21 15:58	1
Perfluorooctanoic acid (PFOA)	4.9		0.20	0.054	ug/Kg	☼	11/10/21 18:34	11/13/21 15:58	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.022	ug/Kg	☼	11/10/21 18:34	11/13/21 15:58	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.048	ug/Kg	☼	11/10/21 18:34	11/13/21 15:58	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.042	ug/Kg	☼	11/10/21 18:34	11/13/21 15:58	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.030	ug/Kg	☼	11/10/21 18:34	11/13/21 15:58	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.021	ug/Kg	☼	11/10/21 18:34	11/13/21 15:58	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.037	ug/Kg	☼	11/10/21 18:34	11/13/21 15:58	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.038	ug/Kg	☼	11/10/21 18:34	11/13/21 15:58	1
Perfluorooctanesulfonic acid (PFOS)	0.67		0.20	0.043	ug/Kg	☼	11/10/21 18:34	11/13/21 15:58	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg	☼	11/10/21 18:34	11/13/21 15:58	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.20	0.048	ug/Kg	☼	11/10/21 18:34	11/13/21 15:58	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.035	ug/Kg	☼	11/10/21 18:34	11/13/21 15:58	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.20	0.041	ug/Kg	☼	11/10/21 18:34	11/13/21 15:58	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.031	ug/Kg	☼	11/10/21 18:34	11/13/21 15:58	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.039	ug/Kg	☼	11/10/21 18:34	11/13/21 15:58	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	125		50 - 150	11/10/21 18:34	11/13/21 15:58	1
13C4 PFHpA	121		50 - 150	11/10/21 18:34	11/13/21 15:58	1
13C4 PFOA	109		50 - 150	11/10/21 18:34	11/13/21 15:58	1
13C5 PFNA	110		50 - 150	11/10/21 18:34	11/13/21 15:58	1
13C2 PFDA	119		50 - 150	11/10/21 18:34	11/13/21 15:58	1
13C2 PFUnA	122		50 - 150	11/10/21 18:34	11/13/21 15:58	1
13C2 PFDoA	119		50 - 150	11/10/21 18:34	11/13/21 15:58	1
13C2 PFTeDA	114		50 - 150	11/10/21 18:34	11/13/21 15:58	1
13C3 PFBS	117		50 - 150	11/10/21 18:34	11/13/21 15:58	1
18O2 PFHxS	112		50 - 150	11/10/21 18:34	11/13/21 15:58	1
13C4 PFOS	118		50 - 150	11/10/21 18:34	11/13/21 15:58	1
d3-NMeFOSAA	127		50 - 150	11/10/21 18:34	11/13/21 15:58	1
d5-NEtFOSAA	138		50 - 150	11/10/21 18:34	11/13/21 15:58	1
13C3 HFPO-DA	102		50 - 150	11/10/21 18:34	11/13/21 15:58	1

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanesulfonic acid (PFHxS)	20		1.0	0.15	ug/Kg	☼	11/10/21 18:34	11/16/21 14:57	5

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
18O2 PFHxS	78		50 - 150	11/10/21 18:34	11/16/21 14:57	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	6.8		0.1	0.1	%			11/05/21 14:24	1
Percent Solids	93.2		0.1	0.1	%			11/05/21 14:24	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SB011-02

Lab Sample ID: 320-81254-97

Date Collected: 10/31/21 14:35

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 89.1

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)	0.36		0.21	0.033	ug/Kg	☼	11/10/21 18:34	11/13/21 16:30	1
Perfluoroheptanoic acid (PFHpA)	0.18	J	0.21	0.041	ug/Kg	☼	11/10/21 18:34	11/13/21 16:30	1
Perfluorooctanoic acid (PFOA)	4.0		0.21	0.057	ug/Kg	☼	11/10/21 18:34	11/13/21 16:30	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.024	ug/Kg	☼	11/10/21 18:34	11/13/21 16:30	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.052	ug/Kg	☼	11/10/21 18:34	11/13/21 16:30	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.045	ug/Kg	☼	11/10/21 18:34	11/13/21 16:30	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.032	ug/Kg	☼	11/10/21 18:34	11/13/21 16:30	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.023	ug/Kg	☼	11/10/21 18:34	11/13/21 16:30	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.040	ug/Kg	☼	11/10/21 18:34	11/13/21 16:30	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.041	ug/Kg	☼	11/10/21 18:34	11/13/21 16:30	1
Perfluorohexanesulfonic acid (PFHxS)	15		0.21	0.031	ug/Kg	☼	11/10/21 18:34	11/13/21 16:30	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.025	ug/Kg	☼	11/10/21 18:34	11/13/21 16:30	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.052	ug/Kg	☼	11/10/21 18:34	11/13/21 16:30	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.038	ug/Kg	☼	11/10/21 18:34	11/13/21 16:30	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.044	ug/Kg	☼	11/10/21 18:34	11/13/21 16:30	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.033	ug/Kg	☼	11/10/21 18:34	11/13/21 16:30	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.042	ug/Kg	☼	11/10/21 18:34	11/13/21 16:30	1

Isotope Dilution	%Recovery	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
18O2 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 for QSM 5.3, Table B-15 - 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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOS	79		50 - 150	11/10/21 18:34	11/15/21 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 Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SB011-03

Lab Sample ID: 320-81254-98

Date Collected: 10/31/21 14:45

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 81.7

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)	0.085	J	0.23	0.035	ug/Kg	☼	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 (PFHxS)	0.40		0.23	0.033	ug/Kg	☼	11/10/21 18:34	11/13/21 16:40	1
Perfluorooctanesulfonic acid (PFOS)	2.4		0.23	0.049	ug/Kg	☼	11/10/21 18:34	11/13/21 16:40	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.23	0.026	ug/Kg	☼	11/10/21 18:34	11/13/21 16:40	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.23	0.055	ug/Kg	☼	11/10/21 18:34	11/13/21 16:40	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.23	0.040	ug/Kg	☼	11/10/21 18:34	11/13/21 16:40	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23	0.047	ug/Kg	☼	11/10/21 18:34	11/13/21 16:40	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.23	0.035	ug/Kg	☼	11/10/21 18:34	11/13/21 16:40	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.045	ug/Kg	☼	11/10/21 18:34	11/13/21 16:40	1

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
18O2 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	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	18.3		0.1	0.1	%			11/05/21 14:24	1
Percent Solids	81.7		0.1	0.1	%			11/05/21 14:24	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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)	0.038	J	0.21	0.032	ug/Kg	☼	11/10/21 18:34	11/13/21 16:51	1
Perfluoroheptanoic acid (PFHpA)	0.058	J	0.21	0.039	ug/Kg	☼	11/10/21 18:34	11/13/21 16:51	1
Perfluorooctanoic acid (PFOA)	0.12	J	0.21	0.055	ug/Kg	☼	11/10/21 18:34	11/13/21 16:51	1
Perfluorononanoic acid (PFNA)	0.29		0.21	0.023	ug/Kg	☼	11/10/21 18:34	11/13/21 16:51	1
Perfluorodecanoic acid (PFDA)	0.14	J	0.21	0.049	ug/Kg	☼	11/10/21 18:34	11/13/21 16:51	1
Perfluoroundecanoic acid (PFUnA)	0.095	J	0.21	0.043	ug/Kg	☼	11/10/21 18:34	11/13/21 16:51	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.031	ug/Kg	☼	11/10/21 18:34	11/13/21 16:51	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.022	ug/Kg	☼	11/10/21 18:34	11/13/21 16:51	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.038	ug/Kg	☼	11/10/21 18:34	11/13/21 16:51	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.039	ug/Kg	☼	11/10/21 18:34	11/13/21 16:51	1
Perfluorohexanesulfonic acid (PFHxS)	0.071	J	0.21	0.030	ug/Kg	☼	11/10/21 18:34	11/13/21 16:51	1
Perfluorooctanesulfonic acid (PFOS)	1.2		0.21	0.044	ug/Kg	☼	11/10/21 18:34	11/13/21 16:51	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	☼	11/10/21 18:34	11/13/21 16:51	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.049	ug/Kg	☼	11/10/21 18:34	11/13/21 16:51	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.036	ug/Kg	☼	11/10/21 18:34	11/13/21 16:51	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.042	ug/Kg	☼	11/10/21 18:34	11/13/21 16:51	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.032	ug/Kg	☼	11/10/21 18:34	11/13/21 16:51	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.040	ug/Kg	☼	11/10/21 18:34	11/13/21 16:51	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	119		50 - 150	11/10/21 18:34	11/13/21 16:51	1
13C4 PFHpA	117		50 - 150	11/10/21 18:34	11/13/21 16:51	1
13C4 PFOA	111		50 - 150	11/10/21 18:34	11/13/21 16:51	1
13C5 PFNA	117		50 - 150	11/10/21 18:34	11/13/21 16:51	1
13C2 PFDA	119		50 - 150	11/10/21 18:34	11/13/21 16:51	1
13C2 PFUnA	123		50 - 150	11/10/21 18:34	11/13/21 16:51	1
13C2 PFDoA	113		50 - 150	11/10/21 18:34	11/13/21 16:51	1
13C2 PFTeDA	116		50 - 150	11/10/21 18:34	11/13/21 16:51	1
13C3 PFBS	123		50 - 150	11/10/21 18:34	11/13/21 16:51	1
18O2 PFHxS	110		50 - 150	11/10/21 18:34	11/13/21 16:51	1
13C4 PFOS	115		50 - 150	11/10/21 18:34	11/13/21 16:51	1
d3-NMeFOSAA	125		50 - 150	11/10/21 18:34	11/13/21 16:51	1
d5-NEtFOSAA	132		50 - 150	11/10/21 18:34	11/13/21 16:51	1
13C3 HFPO-DA	106		50 - 150	11/10/21 18:34	11/13/21 16:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	11.3		0.1	0.1	%			11/05/21 14:24	1
Percent Solids	88.7		0.1	0.1	%			11/05/21 14:24	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SB014-02

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

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)	0.12	J	0.21	0.033	ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.025	ug/Kg	☼	11/10/21 18:34	11/13/21 17:01	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.051	ug/Kg	☼	11/10/21 18:34	11/13/21 17:01	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.037	ug/Kg	☼	11/10/21 18:34	11/13/21 17:01	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.044	ug/Kg	☼	11/10/21 18:34	11/13/21 17:01	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.033	ug/Kg	☼	11/10/21 18:34	11/13/21 17:01	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	Qualifier	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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	16.5		0.1	0.1	%			11/05/21 14:24	1
Percent Solids	83.5		0.1	0.1	%			11/05/21 14:24	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SB014-03

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

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	☼	11/10/21 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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.23	0.026	ug/Kg	☼	11/10/21 18:34	11/13/21 17:11	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.23	0.054	ug/Kg	☼	11/10/21 18:34	11/13/21 17:11	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-1-sulfonic acid	ND		0.23	0.035	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 - 150	11/10/21 18:34	11/13/21 17:11	1
13C3 PFBS	108		50 - 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 - 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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	17.0		0.1	0.1	%			11/05/21 14:24	1
Percent Solids	83.0		0.1	0.1	%			11/05/21 14:24	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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 for QSM 5.3, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.21	0.032	ug/Kg	☼	11/10/21 18:34	11/13/21 17:22	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.040	ug/Kg	☼	11/10/21 18:34	11/13/21 17:22	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.055	ug/Kg	☼	11/10/21 18:34	11/13/21 17:22	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.023	ug/Kg	☼	11/10/21 18:34	11/13/21 17:22	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.050	ug/Kg	☼	11/10/21 18:34	11/13/21 17:22	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.044	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	0.022	ug/Kg	☼	11/10/21 18:34	11/13/21 17:22	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.038	ug/Kg	☼	11/10/21 18:34	11/13/21 17:22	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.040	ug/Kg	☼	11/10/21 18:34	11/13/21 17:22	1
Perfluorohexanesulfonic acid (PFHxS)	0.040	J	0.21	0.030	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-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	☼	11/10/21 18:34	11/13/21 17:22	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	ND		0.21	0.050	ug/Kg	☼	11/10/21 18:34	11/13/21 17:22	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 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 - 150	11/10/21 18:34	11/13/21 17:22	1
13C3 PFBS	113		50 - 150	11/10/21 18:34	11/13/21 17:22	1
18O2 PFHxS	104		50 - 150	11/10/21 18:34	11/13/21 17:22	1
13C4 PFOS	105		50 - 150	11/10/21 18:34	11/13/21 17:22	1
d3-NMeFOSAA	119		50 - 150	11/10/21 18:34	11/13/21 17:22	1
d5-NEtFOSAA	126		50 - 150	11/10/21 18:34	11/13/21 17:22	1
13C3 HFPO-DA	101		50 - 150	11/10/21 18:34	11/13/21 17:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	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	%			11/05/21 14:24	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SS-033

Lab Sample ID: 320-81254-103

Date Collected: 11/01/21 09:56

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 95.4

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		0.20	0.030	ug/Kg	☼	11/10/21 18:34	11/13/21 17:32	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.037	ug/Kg	☼	11/10/21 18:34	11/13/21 17:32	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.052	ug/Kg	☼	11/10/21 18:34	11/13/21 17:32	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.022	ug/Kg	☼	11/10/21 18:34	11/13/21 17:32	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.047	ug/Kg	☼	11/10/21 18:34	11/13/21 17:32	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.041	ug/Kg	☼	11/10/21 18:34	11/13/21 17:32	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.029	ug/Kg	☼	11/10/21 18:34	11/13/21 17:32	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.021	ug/Kg	☼	11/10/21 18:34	11/13/21 17:32	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.036	ug/Kg	☼	11/10/21 18:34	11/13/21 17:32	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.037	ug/Kg	☼	11/10/21 18:34	11/13/21 17:32	1
Perfluorohexanesulfonic acid (PFHxS)	0.049	J	0.20	0.029	ug/Kg	☼	11/10/21 18:34	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-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg	☼	11/10/21 18:34	11/13/21 17:32	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	ND		0.20	0.047	ug/Kg	☼	11/10/21 18:34	11/13/21 17:32	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.034	ug/Kg	☼	11/10/21 18:34	11/13/21 17:32	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.20	0.040	ug/Kg	☼	11/10/21 18:34	11/13/21 17:32	1
11-Chloroeicosafuoro-3-oxaundecane-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
18O2 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	Unit	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	%			11/05/21 14:24	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SS-034

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

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		0.20	0.030	ug/Kg	☼	11/10/21 18:34	11/13/21 17:43	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.037	ug/Kg	☼	11/10/21 18:34	11/13/21 17:43	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.052	ug/Kg	☼	11/10/21 18:34	11/13/21 17:43	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.022	ug/Kg	☼	11/10/21 18:34	11/13/21 17:43	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.047	ug/Kg	☼	11/10/21 18:34	11/13/21 17:43	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.041	ug/Kg	☼	11/10/21 18:34	11/13/21 17:43	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.030	ug/Kg	☼	11/10/21 18:34	11/13/21 17:43	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.021	ug/Kg	☼	11/10/21 18:34	11/13/21 17:43	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.036	ug/Kg	☼	11/10/21 18:34	11/13/21 17:43	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.037	ug/Kg	☼	11/10/21 18:34	11/13/21 17:43	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.029	ug/Kg	☼	11/10/21 18:34	11/13/21 17:43	1
Perfluorooctanesulfonic acid (PFOS)	0.063	J	0.20	0.042	ug/Kg	☼	11/10/21 18:34	11/13/21 17:43	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg	☼	11/10/21 18:34	11/13/21 17:43	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.20	0.047	ug/Kg	☼	11/10/21 18:34	11/13/21 17:43	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.034	ug/Kg	☼	11/10/21 18:34	11/13/21 17:43	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.20	0.040	ug/Kg	☼	11/10/21 18:34	11/13/21 17:43	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.030	ug/Kg	☼	11/10/21 18:34	11/13/21 17:43	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.038	ug/Kg	☼	11/10/21 18:34	11/13/21 17:43	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	111		50 - 150	11/10/21 18:34	11/13/21 17:43	1
13C4 PFHpA	113		50 - 150	11/10/21 18:34	11/13/21 17:43	1
13C4 PFOA	103		50 - 150	11/10/21 18:34	11/13/21 17:43	1
13C5 PFNA	100		50 - 150	11/10/21 18:34	11/13/21 17:43	1
13C2 PFDA	107		50 - 150	11/10/21 18:34	11/13/21 17:43	1
13C2 PFUnA	102		50 - 150	11/10/21 18:34	11/13/21 17:43	1
13C2 PFDoA	100		50 - 150	11/10/21 18:34	11/13/21 17:43	1
13C2 PFTeDA	103		50 - 150	11/10/21 18:34	11/13/21 17:43	1
13C3 PFBS	115		50 - 150	11/10/21 18:34	11/13/21 17:43	1
18O2 PFHxS	92		50 - 150	11/10/21 18:34	11/13/21 17:43	1
13C4 PFOS	99		50 - 150	11/10/21 18:34	11/13/21 17:43	1
d3-NMeFOSAA	104		50 - 150	11/10/21 18:34	11/13/21 17:43	1
d5-NEtFOSAA	106		50 - 150	11/10/21 18:34	11/13/21 17:43	1
13C3 HFPO-DA	95		50 - 150	11/10/21 18:34	11/13/21 17:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	5.3		0.1	0.1	%			11/05/21 14:24	1
Percent Solids	94.7		0.1	0.1	%			11/05/21 14:24	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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 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	☼	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	0.056	ug/Kg	☼	11/10/21 18:34	11/13/21 17:53	1
Perfluorononanoic acid (PFNA)	0.026	J	0.21	0.023	ug/Kg	☼	11/10/21 18:34	11/13/21 17:53	1
Perfluorodecanoic acid (PFDA)	0.066	J	0.21	0.051	ug/Kg	☼	11/10/21 18:34	11/13/21 17:53	1
Perfluoroundecanoic acid (PFUnA)	0.065	J	0.21	0.045	ug/Kg	☼	11/10/21 18:34	11/13/21 17:53	1
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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	☼	11/10/21 18:34	11/13/21 17:53	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.051	ug/Kg	☼	11/10/21 18:34	11/13/21 17:53	1
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosafuoro-3-oxaundecane-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 - 150	11/10/21 18:34	11/13/21 17:53	1
13C3 PFBS	100		50 - 150	11/10/21 18:34	11/13/21 17:53	1
18O2 PFHxS	82		50 - 150	11/10/21 18:34	11/13/21 17:53	1
13C4 PFOS	115		50 - 150	11/10/21 18:34	11/13/21 17:53	1
d3-NMeFOSAA	80		50 - 150	11/10/21 18:34	11/13/21 17:53	1
d5-NEtFOSAA	85		50 - 150	11/10/21 18:34	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

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

Percent Solids: 87.8

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)	0.094	J	0.22	0.034	ug/Kg	☼	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	0.047	ug/Kg	☼	11/10/21 18:34	11/13/21 18:04	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.22	0.025	ug/Kg	☼	11/10/21 18:34	11/13/21 18:04	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.22	0.052	ug/Kg	☼	11/10/21 18:34	11/13/21 18:04	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.22	0.038	ug/Kg	☼	11/10/21 18:34	11/13/21 18:04	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22	0.045	ug/Kg	☼	11/10/21 18:34	11/13/21 18:04	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		0.22	0.034	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
18O2 PFHxS	97		50 - 150	11/10/21 18:34	11/13/21 18:04	1
13C4 PFOS	111		50 - 150	11/10/21 18:34	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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	12.2		0.1	0.1	%			11/05/21 14:24	1
Percent Solids	87.8		0.1	0.1	%			11/05/21 14:24	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SS-103

Lab Sample ID: 320-81254-107

Date Collected: 11/01/21 10:09

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 89.9

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)	0.094	J	0.21	0.032	ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	☼	11/10/21 18:34	11/13/21 18:35	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.050	ug/Kg	☼	11/10/21 18:34	11/13/21 18:35	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 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
18O2 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

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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		0.22	0.034	ug/Kg	☼	11/10/21 18:34	11/13/21 18:45	1
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	0.040	ug/Kg	☼	11/10/21 18:34	11/13/21 18:45	1
Perfluorobutanesulfonic acid (PFBS)	0.050	J	0.22	0.041	ug/Kg	☼	11/10/21 18:34	11/13/21 18:45	1
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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.22	0.025	ug/Kg	☼	11/10/21 18:34	11/13/21 18:45	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.22	0.052	ug/Kg	☼	11/10/21 18:34	11/13/21 18:45	1
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		0.22	0.034	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	1
13C2 PFDA	98		50 - 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	11/10/21 18:34	11/13/21 18:45	1
13C2 PFTeDA	65		50 - 150	11/10/21 18:34	11/13/21 18:45	1
13C3 PFBS	118		50 - 150	11/10/21 18:34	11/13/21 18:45	1
18O2 PFHxS	91		50 - 150	11/10/21 18:34	11/13/21 18:45	1
13C4 PFOS	140		50 - 150	11/10/21 18:34	11/13/21 18:45	1
d3-NMeFOSAA	74		50 - 150	11/10/21 18:34	11/13/21 18:45	1
d5-NEtFOSAA	82		50 - 150	11/10/21 18:34	11/13/21 18:45	1
13C3 HFPO-DA	76		50 - 150	11/10/21 18:34	11/13/21 18:45	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 Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SS-001

Lab Sample ID: 320-81254-109

Date Collected: 11/01/21 10:28

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 92.3

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		0.19	0.030	ug/Kg	☼	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	0.042	ug/Kg	☼	11/10/21 18:34	11/13/21 18:56	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.19	0.022	ug/Kg	☼	11/10/21 18:34	11/13/21 18:56	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.19	0.047	ug/Kg	☼	11/10/21 18:34	11/13/21 18:56	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.19	0.034	ug/Kg	☼	11/10/21 18:34	11/13/21 18:56	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.19	0.040	ug/Kg	☼	11/10/21 18:34	11/13/21 18:56	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		0.19	0.030	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 - 150	11/10/21 18:34	11/13/21 18:56	1
13C3 PFBS	109		50 - 150	11/10/21 18:34	11/13/21 18:56	1
18O2 PFHxS	91		50 - 150	11/10/21 18:34	11/13/21 18:56	1
13C4 PFOS	106		50 - 150	11/10/21 18:34	11/13/21 18:56	1
d3-NMeFOSAA	88		50 - 150	11/10/21 18:34	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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	7.7		0.1	0.1	%			11/05/21 14:24	1
Percent Solids	92.3		0.1	0.1	%			11/05/21 14:24	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-MW16-01

Lab Sample ID: 320-81254-110

Date Collected: 10/31/21 09:55

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 90.5

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)	0.27		0.21	0.033	ug/Kg	☼	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	J	0.21	0.039	ug/Kg	☼	11/10/21 18:34	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	0.031	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	☼	11/10/21 18:34	11/13/21 19:06	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.051	ug/Kg	☼	11/10/21 18:34	11/13/21 19:06	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 PFTeA	87		50 - 150	11/10/21 18:34	11/13/21 19:06	1
13C3 PFBS	102		50 - 150	11/10/21 18:34	11/13/21 19:06	1
18O2 PFHxS	92		50 - 150	11/10/21 18:34	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 - 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	11/10/21 18:34	11/13/21 19:06	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 14:24	1
Percent Solids	90.5		0.1	0.1	%			11/05/21 14:24	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-MW16-02

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

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	☼	11/10/21 18:37	11/12/21 22:27	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.041	ug/Kg	☼	11/10/21 18:37	11/12/21 22:27	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.057	ug/Kg	☼	11/10/21 18:37	11/12/21 22:27	1
Perfluorononanoic acid (PFNA)	0.22		0.21	0.024	ug/Kg	☼	11/10/21 18:37	11/12/21 22:27	1
Perfluorodecanoic acid (PFDA)	0.16	J	0.21	0.052	ug/Kg	☼	11/10/21 18:37	11/12/21 22:27	1
Perfluoroundecanoic acid (PFUnA)	0.20	J	0.21	0.045	ug/Kg	☼	11/10/21 18:37	11/12/21 22:27	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.032	ug/Kg	☼	11/10/21 18:37	11/12/21 22:27	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.023	ug/Kg	☼	11/10/21 18:37	11/12/21 22:27	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.040	ug/Kg	☼	11/10/21 18:37	11/12/21 22:27	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.041	ug/Kg	☼	11/10/21 18:37	11/12/21 22:27	1
Perfluorohexanesulfonic acid (PFHxS)	0.033	J	0.21	0.031	ug/Kg	☼	11/10/21 18:37	11/12/21 22:27	1
Perfluorooctanesulfonic acid (PFOS)	0.39		0.21	0.046	ug/Kg	☼	11/10/21 18:37	11/12/21 22:27	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.025	ug/Kg	☼	11/10/21 18:37	11/12/21 22:27	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.052	ug/Kg	☼	11/10/21 18:37	11/12/21 22:27	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.038	ug/Kg	☼	11/10/21 18:37	11/12/21 22:27	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.044	ug/Kg	☼	11/10/21 18:37	11/12/21 22:27	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.033	ug/Kg	☼	11/10/21 18:37	11/12/21 22:27	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.042	ug/Kg	☼	11/10/21 18:37	11/12/21 22:27	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	110		50 - 150	11/10/21 18:37	11/12/21 22:27	1
13C4 PFHpA	97		50 - 150	11/10/21 18:37	11/12/21 22:27	1
13C4 PFOA	96		50 - 150	11/10/21 18:37	11/12/21 22:27	1
13C5 PFNA	99		50 - 150	11/10/21 18:37	11/12/21 22:27	1
13C2 PFDA	98		50 - 150	11/10/21 18:37	11/12/21 22:27	1
13C2 PFUnA	95		50 - 150	11/10/21 18:37	11/12/21 22:27	1
13C2 PFDoA	99		50 - 150	11/10/21 18:37	11/12/21 22:27	1
13C2 PFTeDA	90		50 - 150	11/10/21 18:37	11/12/21 22:27	1
13C3 PFBS	101		50 - 150	11/10/21 18:37	11/12/21 22:27	1
18O2 PFHxS	91		50 - 150	11/10/21 18:37	11/12/21 22:27	1
13C4 PFOS	93		50 - 150	11/10/21 18:37	11/12/21 22:27	1
d3-NMeFOSAA	102		50 - 150	11/10/21 18:37	11/12/21 22:27	1
d5-NEtFOSAA	109		50 - 150	11/10/21 18:37	11/12/21 22:27	1
13C3 HFPO-DA	89		50 - 150	11/10/21 18:37	11/12/21 22:27	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 14:24	1
Percent Solids	92.1		0.1	0.1	%			11/05/21 14:24	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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 for QSM 5.3, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	0.053	J	0.25	0.038	ug/Kg	☼	11/10/21 18:37	11/12/21 22:58	1
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 (PFHxS)	0.066	J	0.25	0.036	ug/Kg	☼	11/10/21 18:37	11/12/21 22:58	1
Perfluorooctanesulfonic acid (PFOS)	1.8		0.25	0.053	ug/Kg	☼	11/10/21 18:37	11/12/21 22:58	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.25	0.028	ug/Kg	☼	11/10/21 18:37	11/12/21 22:58	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.25	0.059	ug/Kg	☼	11/10/21 18:37	11/12/21 22:58	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.25	0.043	ug/Kg	☼	11/10/21 18:37	11/12/21 22:58	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.050	ug/Kg	☼	11/10/21 18:37	11/12/21 22:58	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.25	0.038	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 - 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	1
13C2 PFDA	98		50 - 150	11/10/21 18:37	11/12/21 22:58	1
13C2 PFUnA	103		50 - 150	11/10/21 18:37	11/12/21 22:58	1
13C2 PFDoA	99		50 - 150	11/10/21 18:37	11/12/21 22:58	1
13C2 PFTeDA	98		50 - 150	11/10/21 18:37	11/12/21 22:58	1
13C3 PFBS	125		50 - 150	11/10/21 18:37	11/12/21 22:58	1
18O2 PFHxS	99		50 - 150	11/10/21 18:37	11/12/21 22:58	1
13C4 PFOS	97		50 - 150	11/10/21 18:37	11/12/21 22:58	1
d3-NMeFOSAA	103		50 - 150	11/10/21 18:37	11/12/21 22:58	1
d5-NEtFOSAA	109		50 - 150	11/10/21 18:37	11/12/21 22:58	1
13C3 HFPO-DA	102		50 - 150	11/10/21 18:37	11/12/21 22:58	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 14:24	1
Percent Solids	79.4		0.1	0.1	%			11/05/21 14:24	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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 for QSM 5.3, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.25	0.039	ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.25	0.029	ug/Kg	☼	11/10/21 18:37	11/12/21 23:08	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.25	0.060	ug/Kg	☼	11/10/21 18:37	11/12/21 23:08	1
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosfluoro-3-oxaundecane-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 - 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 - 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 - 150	11/10/21 18:37	11/12/21 23:08	1
13C4 PFOS	102		50 - 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
Percent Moisture	20.7		0.1	0.1	%			11/05/21 14:24	1
Percent Solids	79.3		0.1	0.1	%			11/05/21 14:24	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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		0.26	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.26	0.030	ug/Kg	☼	11/10/21 18:37	11/12/21 23:19	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.26	0.062	ug/Kg	☼	11/10/21 18:37	11/12/21 23:19	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.26	0.045	ug/Kg	☼	11/10/21 18:37	11/12/21 23:19	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.26	0.053	ug/Kg	☼	11/10/21 18:37	11/12/21 23:19	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		0.26	0.040	ug/Kg	☼	11/10/21 18:37	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 - 150	11/10/21 18:37	11/12/21 23:19	1
18O2 PFHxS	101		50 - 150	11/10/21 18:37	11/12/21 23:19	1
13C4 PFOS	102		50 - 150	11/10/21 18:37	11/12/21 23:19	1
d3-NMeFOSAA	106		50 - 150	11/10/21 18:37	11/12/21 23:19	1
d5-NEtFOSAA	111		50 - 150	11/10/21 18:37	11/12/21 23:19	1
13C3 HFPO-DA	101		50 - 150	11/10/21 18:37	11/12/21 23:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	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	%			11/05/21 14:24	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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		0.22	0.034	ug/Kg	☼	11/10/21 18:37	11/12/21 23:29	1
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.042	ug/Kg	☼	11/10/21 18:37	11/12/21 23:29	1
Perfluorooctanoic acid (PFOA)	ND		0.22	0.059	ug/Kg	☼	11/10/21 18:37	11/12/21 23:29	1
Perfluorononanoic acid (PFNA)	ND		0.22	0.024	ug/Kg	☼	11/10/21 18:37	11/12/21 23:29	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.053	ug/Kg	☼	11/10/21 18:37	11/12/21 23:29	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.047	ug/Kg	☼	11/10/21 18:37	11/12/21 23:29	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.033	ug/Kg	☼	11/10/21 18:37	11/12/21 23:29	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.023	ug/Kg	☼	11/10/21 18:37	11/12/21 23:29	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.041	ug/Kg	☼	11/10/21 18:37	11/12/21 23:29	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.042	ug/Kg	☼	11/10/21 18:37	11/12/21 23:29	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.22	0.032	ug/Kg	☼	11/10/21 18:37	11/12/21 23:29	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.22	0.048	ug/Kg	☼	11/10/21 18:37	11/12/21 23:29	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.22	0.025	ug/Kg	☼	11/10/21 18:37	11/12/21 23:29	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.22	0.053	ug/Kg	☼	11/10/21 18:37	11/12/21 23:29	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.22	0.039	ug/Kg	☼	11/10/21 18:37	11/12/21 23:29	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22	0.045	ug/Kg	☼	11/10/21 18:37	11/12/21 23:29	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.22	0.034	ug/Kg	☼	11/10/21 18:37	11/12/21 23:29	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.043	ug/Kg	☼	11/10/21 18:37	11/12/21 23:29	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	102		50 - 150	11/10/21 18:37	11/12/21 23:29	1
13C4 PFHpA	100		50 - 150	11/10/21 18:37	11/12/21 23:29	1
13C4 PFOA	98		50 - 150	11/10/21 18:37	11/12/21 23:29	1
13C5 PFNA	98		50 - 150	11/10/21 18:37	11/12/21 23:29	1
13C2 PFDA	100		50 - 150	11/10/21 18:37	11/12/21 23:29	1
13C2 PFUnA	100		50 - 150	11/10/21 18:37	11/12/21 23:29	1
13C2 PFDoA	95		50 - 150	11/10/21 18:37	11/12/21 23:29	1
13C2 PFTeDA	91		50 - 150	11/10/21 18:37	11/12/21 23:29	1
13C3 PFBS	104		50 - 150	11/10/21 18:37	11/12/21 23:29	1
18O2 PFHxS	96		50 - 150	11/10/21 18:37	11/12/21 23:29	1
13C4 PFOS	98		50 - 150	11/10/21 18:37	11/12/21 23:29	1
d3-NMeFOSAA	108		50 - 150	11/10/21 18:37	11/12/21 23:29	1
d5-NEtFOSAA	109		50 - 150	11/10/21 18:37	11/12/21 23:29	1
13C3 HFPO-DA	86		50 - 150	11/10/21 18:37	11/12/21 23:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	16.1		0.1	0.1	%			11/05/21 14:24	1
Percent Solids	83.9		0.1	0.1	%			11/05/21 14:24	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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 for QSM 5.3, Table B-15

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 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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg	☼	11/10/21 18:37	11/12/21 23:40	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.20	0.048	ug/Kg	☼	11/10/21 18:37	11/12/21 23:40	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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
18O2 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	Result	Qualifier	RL	MDL	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

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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	0.032	ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.035	J	0.21	0.024	ug/Kg	☼	11/10/21 18:37	11/13/21 00:11	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.050	ug/Kg	☼	11/10/21 18:37	11/13/21 00:11	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.036	ug/Kg	☼	11/10/21 18:37	11/13/21 00:11	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.042	ug/Kg	☼	11/10/21 18:37	11/13/21 00:11	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.032	ug/Kg	☼	11/10/21 18:37	11/13/21 00:11	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.040	ug/Kg	☼	11/10/21 18:37	11/13/21 00:11	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	116		50 - 150	11/10/21 18:37	11/13/21 00:11	1
13C4 PFHpA	109		50 - 150	11/10/21 18:37	11/13/21 00:11	1
13C4 PFOA	104		50 - 150	11/10/21 18:37	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 - 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 - 150	11/10/21 18:37	11/13/21 00:11	1
13C3 PFBS	115		50 - 150	11/10/21 18:37	11/13/21 00:11	1
18O2 PFHxS	96		50 - 150	11/10/21 18:37	11/13/21 00:11	1
13C4 PFOS	103		50 - 150	11/10/21 18:37	11/13/21 00:11	1
d3-NMeFOSAA	105		50 - 150	11/10/21 18:37	11/13/21 00:11	1
d5-NEtFOSAA	117		50 - 150	11/10/21 18:37	11/13/21 00:11	1
13C3 HFPO-DA	97		50 - 150	11/10/21 18:37	11/13/21 00:11	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	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-MW20-02

Lab Sample ID: 320-81254-118

Date Collected: 11/01/21 16:10

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 75.7

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		0.25	0.039	ug/Kg	☼	11/10/21 18:37	11/13/21 00:21	1
Perfluoroheptanoic acid (PFHpA)	ND		0.25	0.048	ug/Kg	☼	11/10/21 18:37	11/13/21 00:21	1
Perfluorooctanoic acid (PFOA)	ND		0.25	0.067	ug/Kg	☼	11/10/21 18:37	11/13/21 00:21	1
Perfluorononanoic acid (PFNA)	ND		0.25	0.028	ug/Kg	☼	11/10/21 18:37	11/13/21 00:21	1
Perfluorodecanoic acid (PFDA)	ND		0.25	0.060	ug/Kg	☼	11/10/21 18:37	11/13/21 00:21	1
Perfluoroundecanoic acid (PFUnA)	ND		0.25	0.053	ug/Kg	☼	11/10/21 18:37	11/13/21 00:21	1
Perfluorododecanoic acid (PFDoA)	ND		0.25	0.038	ug/Kg	☼	11/10/21 18:37	11/13/21 00:21	1
Perfluorotridecanoic acid (PFTriA)	ND		0.25	0.026	ug/Kg	☼	11/10/21 18:37	11/13/21 00:21	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.25	0.047	ug/Kg	☼	11/10/21 18:37	11/13/21 00:21	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.25	0.048	ug/Kg	☼	11/10/21 18:37	11/13/21 00:21	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.25	0.037	ug/Kg	☼	11/10/21 18:37	11/13/21 00:21	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.25	0.054	ug/Kg	☼	11/10/21 18:37	11/13/21 00:21	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.25	0.029	ug/Kg	☼	11/10/21 18:37	11/13/21 00:21	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.25	0.060	ug/Kg	☼	11/10/21 18:37	11/13/21 00:21	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.25	0.044	ug/Kg	☼	11/10/21 18:37	11/13/21 00:21	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.052	ug/Kg	☼	11/10/21 18:37	11/13/21 00:21	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.25	0.039	ug/Kg	☼	11/10/21 18:37	11/13/21 00:21	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.25	0.049	ug/Kg	☼	11/10/21 18:37	11/13/21 00:21	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	125		50 - 150	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	1
13C4 PFOA	112		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	1
13C2 PFDA	117		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	1
13C2 PFDoA	115		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	1
13C3 PFBS	136		50 - 150	11/10/21 18:37	11/13/21 00:21	1
18O2 PFHxS	113		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	1
d3-NMeFOSAA	123		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	1
13C3 HFPO-DA	106		50 - 150	11/10/21 18:37	11/13/21 00:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	24.3		0.1	0.1	%			11/05/21 14:24	1
Percent Solids	75.7		0.1	0.1	%			11/05/21 14:24	1

Eurofins TestAmerica, Sacramento

Isotope Dilution Summary

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

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFHxA (50-150)	C4PFHA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)	PFDoA (50-150)	PFTDA (50-150)
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	108
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	103
320-81254-8	21GST-SS-024	82	93	90	91	92	90	95	101
320-81254-9	21GST-SS-022	90	90	99	87	99	105	91	90
320-81254-9 - DL	21GST-SS-022								
320-81254-10	21GST-SS-021	75	89	97	91	94	94	84	91
320-81254-10 - DL	21GST-SS-021								
320-81254-11	21GST-SS-020	88	91	108	103	102	103	107	101
320-81254-11 - DL	21GST-SS-020								
320-81254-12	21GST-SS-019	92	95	114	114	117	121	110	112
320-81254-13	21GST-SS-018	99	117	116	110	116	114	119	127
320-81254-14	21GST-SS-014	82	87	97	93	94	94	91	86
320-81254-15	21GST-SS-017	88	100	107	107	104	97	106	114
320-81254-16	21GST-SS-016	87	92	102	94	98	94	100	110
320-81254-17	21GST-SS-015	79	86	97	87	91	96	92	91
320-81254-18	21GST-SS-008	76	84	96	85	90	90	91	87
320-81254-18 - DL	21GST-SS-008								
320-81254-19	21GST-SS-006	77	75	92	92	95	83	75	61
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	85
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
320-81254-30	21GST-MW18-01	114	106	102	103	110	103	93	92
320-81254-31	21GST-MW18-02	113	105	104	98	93	101	90	85
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
320-81254-35	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	95
320-81254-39	21GST-MW15-03	110	106	104	94	104	95	83	80
320-81254-40	21GST-MW15-04	111	109	101	104	105	105	93	90
320-81254-40 MS	21GST-MW15-04	113	101	102	97	105	100	87	82
320-81254-40 MSD	21GST-MW15-04	112	114	110	106	111	105	96	87

Eurofins TestAmerica, Sacramento

Isotope Dilution Summary

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

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFHxA (50-150)	C4PFHA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)	PFDaA (50-150)	PFTDA (50-150)
320-81254-41	21GST-MW15-14	97	94	87	94	89	94	89	87
320-81254-42	21GST-MW15-05	90	87	82	87	86	88	79	83
320-81254-43	21GST-MW15-06	93	88	86	90	94	87	87	83
320-81254-44	21GST-SB002-01	89	91	87	82	91	93	87	84
320-81254-45	21GST-SB002-02	99	97	92	95	93	96	90	93
320-81254-46	21GST-SB002-03	94	90	89	91	92	96	91	91
320-81254-47	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								
320-81254-79	21GST-SS-012	113	109	101	101	103	98	92	89
320-81254-80	21GST-SS-011	112	107	101	106	108	110	101	97
320-81254-80 MS	21GST-SS-011	100	98	92	96	102	104	91	90
320-81254-80 MSD	21GST-SS-011	106	104	97	102	102	113	104	96
320-81254-81	21GST-SS-013	90	88	90	97	100	97	85	76
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	21GST-SB003-01	79	80	80	85	87	84	78	72
320-81254-83	21GST-SB003-02	101	97	95	101	100	100	92	91

Eurofins TestAmerica, Sacramento

Isotope Dilution Summary

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

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFHxA (50-150)	C4PFHA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)	PFDoA (50-150)	PFTDA (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								
320-81254-96	21GST-SB011-12	125	121	109	110	119	122	119	114
320-81254-96 - DL	21GST-SB011-12								
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-SB014-02	104	97	99	99	100	100	97	99
320-81254-101	21GST-SB014-03	111	104	101	101	103	108	99	97
320-81254-102	21GST-SS-032	113	112	106	110	112	118	113	105
320-81254-103	21GST-SS-033	94	92	86	89	93	93	86	84
320-81254-104	21GST-SS-034	111	113	103	100	107	102	100	103
320-81254-105	21GST-SS-004	80	87	87	88	95	87	77	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
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
320-81254-114	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
LCS 320-540825/2-A	Lab Control Sample	88	93	98	94	85	97	94	98
LCS 320-541157/2-A	Lab Control Sample	100	99	103	99	93	96	91	91
LCS 320-541434/2-A	Lab Control Sample	113	94	94	98	97	92	93	87
LCS 320-541446/2-A	Lab Control Sample	85	75	73	77	79	81	75	69
LCS 320-541628/2-A	Lab Control Sample	104	96	92	97	95	94	84	88
LCS 320-541730/2-A	Lab Control Sample	102	99	98	97	100	97	97	94
LCS 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

Eurofins TestAmerica, Sacramento

Isotope Dilution Summary

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

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFHxA (50-150)	C4PFHA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)	PFDaA (50-150)	PFTDA (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

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	C3PFBS (50-150)	PFHxS (50-150)	PFOS (50-150)	d3NMFOS (50-150)	d5NEFOS (50-150)	HFPODA (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			95			
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			110			
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			
320-81254-21	21GST-SS-005	104	94	100	93	102	96
320-81254-22	21GST-SS-007	104	93	91	80	94	81
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

Eurofins TestAmerica, Sacramento

Isotope Dilution Summary

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

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)					
		C3PFBS (50-150)	PFHxS (50-150)	PFOS (50-150)	d3NMFOS (50-150)	d5NEFOS (50-150)	HFPODA (50-150)
320-81254-35	21GST-MW18-05	115	94	97	86	93	89
320-81254-36	21GST-MW18-06	119	100	98	95	94	93
320-81254-37	21GST-MW15-01	119	101	111	118	127	93
320-81254-38	21GST-MW15-02	112	103	102	96	96	91
320-81254-39	21GST-MW15-03	116	96	98	100	107	95
320-81254-40	21GST-MW15-04	115	105	106	108	114	93
320-81254-40 MS	21GST-MW15-04	115	97	102	104	101	102
320-81254-40 MSD	21GST-MW15-04	121	105	104	113	112	107
320-81254-41	21GST-MW15-14	101	91	94	104	108	76
320-81254-42	21GST-MW15-05	97	82	83	98	97	80
320-81254-43	21GST-MW15-06	96	83	89	100	99	83
320-81254-44	21GST-SB002-01	89	77	86	96	97	84
320-81254-45	21GST-SB002-02	101	95	97	111	107	75
320-81254-46	21GST-SB002-03	94	78	93	101	106	84
320-81254-47	21GST-SB002-04	104	91	94	101	102	92
320-81254-48	21GST-SB001-01	93	81	84	92	100	77
320-81254-49	21GST-SB001-02	94	80	84	92	97	77
320-81254-50	21GST-SB001-03	94	77	86	88	92	77
320-81254-51	21GST-SB001-04	101	91	94	102	107	91
320-81254-52	21GST-SB009-01	100	79	89	101	107	87
320-81254-53	21GST-SB009-10	90	77	84	96	100	80
320-81254-54	21GST-SB009-02	98	80	90	95	98	84
320-81254-55	21GST-SB009-03	96	79	90	98	98	81
320-81254-56	21GST-SB009-04	104	79	89	91	103	79
320-81254-57	21GST-SB010-01	97	84	90	96	97	90
320-81254-58	21GST-SB010-10	84	75	82	83	88	84
320-81254-59	21GST-SB010-02	91	79	81	97	97	79
320-81254-60	21GST-SB010-03	93	78	79	93	101	80
320-81254-60 MS	21GST-SB010-03	96	78	83	95	93	80
320-81254-60 MSD	21GST-SB010-03	83	74	84	92	94	74
320-81254-61	21GST-SB012-01	100	74	76	70	77	92
320-81254-62	21GST-SB012-02	111	94	100	104	113	92
320-81254-63	21GST-SB012-03	108	93	99	96	106	94
320-81254-64	21GST-SB013-01	126	115	118	121	125	110
320-81254-65	21GST-SB013-02	107	94	99	92	109	91
320-81254-66	21GST-SB013-03	97	84	90	85	90	82
320-81254-67	21GST-SB005-01	107	95	99	100	116	90
320-81254-68	21GST-SB005-02	101	89	96	92	97	90
320-81254-69	21GST-SB005-03	142	125	130	122	127	111
320-81254-70	21GST-SB007-01	108	94	100	103	111	90
320-81254-71	21GST-SB007-10	100	90	90	96	94	93
320-81254-72	21GST-SB007-02	128	107	110	116	125	109
320-81254-73	21GST-SB007-03	95	86	87	95	96	85
320-81254-74	21GST-SS-030	99	85	95	93	108	80
320-81254-75	21GST-SS-010	114	96	106	111	116	81
320-81254-76	21GST-SS-031	104	93	95	99	108	85
320-81254-77	21GST-SS-131	106	86	91	100	101	87
320-81254-78	21GST-SS-009	114	98	109	113	126	99
320-81254-78 - DL	21GST-SS-009			98			
320-81254-79	21GST-SS-012	103	99	98	98	103	101

Eurofins TestAmerica, Sacramento

Isotope Dilution Summary

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

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)					
		C3PFBS (50-150)	PFHxS (50-150)	PFOS (50-150)	d3NMFOs (50-150)	d5NEFOs (50-150)	HFPODA (50-150)
320-81254-80	21GST-SS-011	112	95	100	103	113	94
320-81254-80 MS	21GST-SS-011	104	89	93	101	107	89
320-81254-80 MSD	21GST-SS-011	109	93	99	104	114	87
320-81254-81	21GST-SS-013	101	87	100	99	103	71
320-81254-81 MS	21GST-SS-013	106	89	96	98	107	68
320-81254-81 MSD	21GST-SS-013	106	95	104	102	111	75
320-81254-82	21GST-SB003-01	90	82	90	89	103	69
320-81254-83	21GST-SB003-02	107	96	100	110	115	90
320-81254-84	21GST-SB003-03	111	94	104	113	122	96
320-81254-85	21GST-SB004-01	108	97	98	105	110	92
320-81254-86	21GST-SB004-02	114	96	97	110	114	97
320-81254-87	21GST-SB004-03	99	90	88	101	118	92
320-81254-88	21GST-SB006-01	101	90	90	105	112	89
320-81254-89	21GST-SB006-10	100	90	97	103	115	85
320-81254-90	21GST-SB006-02	107	92	95	106	110	109
320-81254-91	21GST-SB006-03	98	89	94	108	115	89
320-81254-91 MS	21GST-SB006-03	104	94	96	112	120	93
320-81254-91 MSD	21GST-SB006-03	136	108	115	115	118	105
320-81254-92	21GST-SB008-01	118	99	107	114	124	109
320-81254-93	21GST-SB008-02	110	93	99	107	133	94
320-81254-94	21GST-SB008-03	114	94	98	104	121	98
320-81254-95	21GST-SB011-01	100	80	84	103	110	81
320-81254-95 - DL	21GST-SB011-01			89			
320-81254-96	21GST-SB011-12	117	112	118	127	138	102
320-81254-96 - DL	21GST-SB011-12		78				
320-81254-97	21GST-SB011-02	97	81	86	101	107	83
320-81254-97 - DL	21GST-SB011-02			79			
320-81254-98	21GST-SB011-03	123	107	109	117	120	108
320-81254-99	21GST-SB014-01	123	110	115	125	132	106
320-81254-100	21GST-SB014-02	119	94	96	102	111	84
320-81254-101	21GST-SB014-03	108	94	101	104	106	90
320-81254-102	21GST-SS-032	113	104	105	119	126	101
320-81254-103	21GST-SS-033	98	83	92	98	100	76
320-81254-104	21GST-SS-034	115	92	99	104	106	95
320-81254-105	21GST-SS-004	100	82	115	80	85	78
320-81254-106	21GST-SS-003	117	97	111	82	99	83
320-81254-107	21GST-SS-103	120	100	116	84	94	90
320-81254-108	21GST-SS-002	118	91	140	74	82	76
320-81254-109	21GST-SS-001	109	91	106	88	99	78
320-81254-110	21GST-MW16-01	102	92	106	107	116	86
320-81254-111	21GST-MW16-02	101	91	93	102	109	89
320-81254-111 MS	21GST-MW16-02	108	86	94	97	103	92
320-81254-111 MSD	21GST-MW16-02	109	97	106	111	111	96
320-81254-112	21GST-MW16-03	125	99	97	103	109	102
320-81254-113	21GST-MW16-04	102	87	102	104	109	89
320-81254-114	21GST-MW19-01	115	101	102	106	111	101
320-81254-115	21GST-MW19-02	104	96	98	108	109	86
320-81254-116	21GST-MW20-01	108	93	100	99	120	92
320-81254-117	21GST-MW20-10	115	96	103	105	117	97
320-81254-118	21GST-MW20-02	136	113	118	123	144	106

Eurofins TestAmerica, Sacramento

Isotope Dilution Summary

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

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)					
		C3PFBS (50-150)	PFHxS (50-150)	PFOS (50-150)	d3NMFOS (50-150)	d5NEFOS (50-150)	HFPODA (50-150)
LCS 320-540825/2-A	Lab Control Sample	101	79	88	86	88	85
LCS 320-541157/2-A	Lab Control Sample	118	99	100	92	90	92
LCS 320-541434/2-A	Lab Control Sample	103	95	99	97	105	87
LCS 320-541446/2-A	Lab Control Sample	92	73	75	82	87	71
LCS 320-541628/2-A	Lab Control Sample	104	92	99	101	101	85
LCS 320-541730/2-A	Lab Control Sample	113	92	100	103	105	92
LCS 320-541731/2-A	Lab Control Sample	124	107	115	125	119	100
MB 320-540825/1-A	Method Blank	127	108	112	102	99	112
MB 320-541157/1-A	Method Blank	117	98	103	97	105	95
MB 320-541434/1-A	Method Blank	120	106	117	109	126	105
MB 320-541446/1-A	Method Blank	92	77	88	90	89	73
MB 320-541628/1-A	Method Blank	105	94	98	102	107	90
MB 320-541730/1-A	Method Blank	126	112	113	128	138	119
MB 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

QC Sample Results

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

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	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg		11/07/21 18:20	11/08/21 22:55	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.20	0.048	ug/Kg		11/07/21 18:20	11/08/21 22:55	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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

Isotope Dilution	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
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
18O2 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

Analyte	Spike Added	LCS Result	LCS 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

Eurofins TestAmerica, Sacramento

QC Sample Results

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)

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorodecanoic acid (PFDA)	2.00	1.92		ug/Kg		96	69 - 133
Perfluoroundecanoic acid (PFUnA)	2.00	1.92		ug/Kg		96	64 - 136
Perfluorododecanoic acid (PFDoA)	2.00	1.87		ug/Kg		93	69 - 135
Perfluorotridecanoic acid (PFTriA)	2.00	1.93		ug/Kg		96	66 - 139
Perfluorotetradecanoic acid (PFTeA)	2.00	1.77		ug/Kg		89	69 - 133
Perfluorobutanesulfonic acid (PFBS)	1.77	1.40		ug/Kg		79	72 - 128
Perfluorohexanesulfonic acid (PFHxS)	1.82	1.80		ug/Kg		99	67 - 130
Perfluorooctanesulfonic acid (PFOS)	1.86	1.70		ug/Kg		92	68 - 136
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	2.00	1.75		ug/Kg		87	63 - 144
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	2.00	1.75		ug/Kg		87	61 - 139
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	1.86	1.84		ug/Kg		99	75 - 135
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	2.00	1.94		ug/Kg		97	77 - 137
11-Chloroeicosadecafluoro-3-oxaundecane-1-sulfonic acid	1.88	1.79		ug/Kg		95	76 - 136
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.88	1.86		ug/Kg		98	79 - 139

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C2 PFHxA	88		50 - 150
13C4 PFHpA	93		50 - 150
13C4 PFOA	98		50 - 150
13C5 PFNA	94		50 - 150
13C2 PFDA	85		50 - 150
13C2 PFUnA	97		50 - 150
13C2 PFDoA	94		50 - 150
13C2 PFTeDA	98		50 - 150
13C3 PFBS	101		50 - 150
18O2 PFHxS	79		50 - 150
13C4 PFOS	88		50 - 150
d3-NMeFOSAA	86		50 - 150
d5-NEtFOSAA	88		50 - 150
13C3 HFPO-DA	85		50 - 150

Lab Sample ID: 320-81254-1 MS
Matrix: Solid
Analysis Batch: 541064

Client Sample ID: 21GST-SS-023
Prep Type: Total/NA
Prep Batch: 540825

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorohexanoic acid (PFHxA)	ND		2.04	2.21		ug/Kg	☼	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

Eurofins TestAmerica, Sacramento

QC Sample Results

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)

Lab Sample ID: 320-81254-1 MS
Matrix: Solid
Analysis Batch: 541064

Client Sample ID: 21GST-SS-023
Prep Type: Total/NA
Prep Batch: 540825

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorononanoic acid (PFNA)	0.033	J	2.04	1.87		ug/Kg	⊛	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	J I	1.89	1.74		ug/Kg	⊛	87	68 - 136
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.04	1.68		ug/Kg	⊛	83	63 - 144
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.04	1.93		ug/Kg	⊛	95	61 - 139
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-1-sulfonic acid	ND		1.92	1.97		ug/Kg	⊛	103	76 - 136
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.92	2.06		ug/Kg	⊛	107	79 - 139

Isotope Dilution	MS %Recovery	MS 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
18O2 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

Lab Sample ID: 320-81254-1 MSD
Matrix: Solid
Analysis Batch: 541064

Client Sample ID: 21GST-SS-023
Prep Type: Total/NA
Prep Batch: 540825

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
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	6	30

Eurofins TestAmerica, Sacramento

QC Sample Results

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)

Lab Sample ID: 320-81254-1 MSD
Matrix: Solid
Analysis Batch: 541064

Client Sample ID: 21GST-SS-023
Prep Type: Total/NA
Prep Batch: 540825

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorooctanoic acid (PFOA)	ND		2.00	1.76		ug/Kg	*	88	69 - 133	9	30
Perfluorononanoic acid (PFNA)	0.033	J	2.00	1.79		ug/Kg	*	88	72 - 129	4	30
Perfluorodecanoic acid (PFDA)	ND		2.00	1.90		ug/Kg	*	95	69 - 133	5	30
Perfluoroundecanoic acid (PFUnA)	ND		2.00	1.84		ug/Kg	*	92	64 - 136	3	30
Perfluorododecanoic acid (PFDoA)	ND		2.00	1.92		ug/Kg	*	96	69 - 135	1	30
Perfluorotridecanoic acid (PFTriA)	ND		2.00	1.92		ug/Kg	*	96	66 - 139	2	30
Perfluorotetradecanoic acid (PFTeA)	ND		2.00	1.86		ug/Kg	*	93	69 - 133	0	30
Perfluorobutanesulfonic acid (PFBS)	ND		1.77	1.44		ug/Kg	*	81	72 - 128	10	30
Perfluorohexanesulfonic acid (PFHxS)	ND		1.82	1.65		ug/Kg	*	90	67 - 130	12	30
Perfluorooctanesulfonic acid (PFOS)	0.091	J I	1.86	1.70		ug/Kg	*	86	68 - 136	2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.00	1.78		ug/Kg	*	89	63 - 144	6	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.00	1.84		ug/Kg	*	92	61 - 139	4	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.87	1.71		ug/Kg	*	92	75 - 135	10	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		2.00	1.90		ug/Kg	*	95	77 - 137	9	30
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		1.89	1.76		ug/Kg	*	93	76 - 136	11	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.89	1.96		ug/Kg	*	104	79 - 139	5	30

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C2 PFHxA	91		50 - 150
13C4 PFHpA	105		50 - 150
13C4 PFOA	109		50 - 150
13C5 PFNA	110		50 - 150
13C2 PFDA	110		50 - 150
13C2 PFUnA	105		50 - 150
13C2 PFDoA	114		50 - 150
13C2 PFTeDA	118		50 - 150
13C3 PFBS	102		50 - 150
18O2 PFHxS	93		50 - 150
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

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 541157

Analyte	MB Result	MB 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

Eurofins TestAmerica, Sacramento

QC Sample Results

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)

Lab Sample ID: MB 320-541157/1-A
Matrix: Solid
Analysis Batch: 542324

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 541157

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.038	ug/Kg		11/09/21 04:35	11/12/21 13:56	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.053	ug/Kg		11/09/21 04:35	11/12/21 13:56	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.022	ug/Kg		11/09/21 04:35	11/12/21 13:56	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.048	ug/Kg		11/09/21 04:35	11/12/21 13:56	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.042	ug/Kg		11/09/21 04:35	11/12/21 13:56	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.030	ug/Kg		11/09/21 04:35	11/12/21 13:56	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.021	ug/Kg		11/09/21 04:35	11/12/21 13:56	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.037	ug/Kg		11/09/21 04:35	11/12/21 13:56	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.038	ug/Kg		11/09/21 04:35	11/12/21 13:56	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.029	ug/Kg		11/09/21 04:35	11/12/21 13:56	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.20	0.043	ug/Kg		11/09/21 04:35	11/12/21 13:56	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg		11/09/21 04:35	11/12/21 13:56	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.20	0.048	ug/Kg		11/09/21 04:35	11/12/21 13:56	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.035	ug/Kg		11/09/21 04:35	11/12/21 13:56	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.20	0.041	ug/Kg		11/09/21 04:35	11/12/21 13:56	1
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.031	ug/Kg		11/09/21 04:35	11/12/21 13:56	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.039	ug/Kg		11/09/21 04:35	11/12/21 13:56	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	102		50 - 150	11/09/21 04:35	11/12/21 13:56	1
13C4 PFHpA	97		50 - 150	11/09/21 04:35	11/12/21 13:56	1
13C4 PFOA	102		50 - 150	11/09/21 04:35	11/12/21 13:56	1
13C5 PFNA	104		50 - 150	11/09/21 04:35	11/12/21 13:56	1
13C2 PFDA	94		50 - 150	11/09/21 04:35	11/12/21 13:56	1
13C2 PFUnA	100		50 - 150	11/09/21 04:35	11/12/21 13:56	1
13C2 PFDoA	95		50 - 150	11/09/21 04:35	11/12/21 13:56	1
13C2 PFTeDA	93		50 - 150	11/09/21 04:35	11/12/21 13:56	1
13C3 PFBS	117		50 - 150	11/09/21 04:35	11/12/21 13:56	1
18O2 PFHxS	98		50 - 150	11/09/21 04:35	11/12/21 13:56	1
13C4 PFOS	103		50 - 150	11/09/21 04:35	11/12/21 13:56	1
d3-NMeFOSAA	97		50 - 150	11/09/21 04:35	11/12/21 13:56	1
d5-NEtFOSAA	105		50 - 150	11/09/21 04:35	11/12/21 13:56	1
13C3 HFPO-DA	95		50 - 150	11/09/21 04:35	11/12/21 13:56	1

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%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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QC Sample Results

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)

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoroundecanoic acid (PFUnA)	2.00	1.73		ug/Kg		87	64 - 136
Perfluorododecanoic acid (PFDoA)	2.00	2.02		ug/Kg		101	69 - 135
Perfluorotridecanoic acid (PFTriA)	2.00	1.77		ug/Kg		88	66 - 139
Perfluorotetradecanoic acid (PFTeA)	2.00	1.77		ug/Kg		89	69 - 133
Perfluorobutanesulfonic acid (PFBS)	1.77	1.40		ug/Kg		79	72 - 128
Perfluorohexanesulfonic acid (PFHxS)	1.82	1.63		ug/Kg		90	67 - 130
Perfluorooctanesulfonic acid (PFOS)	1.86	1.68		ug/Kg		91	68 - 136
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	2.00	1.87		ug/Kg		93	63 - 144
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	2.00	1.89		ug/Kg		95	61 - 139
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	1.86	1.70		ug/Kg		91	75 - 135
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	2.00	1.84		ug/Kg		92	77 - 137
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	1.88	1.84		ug/Kg		98	76 - 136
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.88	1.68		ug/Kg		89	79 - 139

Isotope Dilution	LCS		Limits
	%Recovery	Qualifier	
13C2 PFHxA	100		50 - 150
13C4 PFHpA	99		50 - 150
13C4 PFOA	103		50 - 150
13C5 PFNA	99		50 - 150
13C2 PFDA	93		50 - 150
13C2 PFUnA	96		50 - 150
13C2 PFDoA	91		50 - 150
13C2 PFTeDA	91		50 - 150
13C3 PFBS	118		50 - 150
18O2 PFHxS	99		50 - 150
13C4 PFOS	100		50 - 150
d3-NMeFOSAA	92		50 - 150
d5-NEtFOSAA	90		50 - 150
13C3 HFPO-DA	92		50 - 150

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS		Unit	D	%Rec	%Rec. Limits
				Result	Qualifier				
Perfluorohexanoic acid (PFHxA)	ND		2.44	1.93		ug/Kg	☼	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		ug/Kg	☼	95	72 - 129

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QC Sample Results

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)

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.44	2.05		ug/Kg	☼	84	63 - 144
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.44	2.39		ug/Kg	☼	98	61 - 139
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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

Isotope Dilution	MS %Recovery	MS 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
18O2 PFHxS	97		50 - 150
13C4 PFOS	102		50 - 150
d3-NMeFOSAA	104		50 - 150
d5-NEtFOSAA	101		50 - 150
13C3 HFPO-DA	102		50 - 150

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorohexanoic acid (PFHxA)	ND		2.31	1.80		ug/Kg	☼	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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QC Sample Results

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)

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

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier						
Perfluorononanoic acid (PFNA)	ND		2.31	1.90		ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.31	1.74		ug/Kg	☼	75	63 - 144	16	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.31	1.89		ug/Kg	☼	82	61 - 139	23	30
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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

Isotope Dilution	MSD	MSD	Limits
	%Recovery	Qualifier	
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
18O2 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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
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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QC Sample Results

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)

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorooctanoic acid (PFOA)	ND		0.20	0.053	ug/Kg		11/09/21 18:26	11/14/21 21:29	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.022	ug/Kg		11/09/21 18:26	11/14/21 21:29	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.048	ug/Kg		11/09/21 18:26	11/14/21 21:29	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.042	ug/Kg		11/09/21 18:26	11/14/21 21:29	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.030	ug/Kg		11/09/21 18:26	11/14/21 21:29	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.021	ug/Kg		11/09/21 18:26	11/14/21 21:29	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.037	ug/Kg		11/09/21 18:26	11/14/21 21:29	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.038	ug/Kg		11/09/21 18:26	11/14/21 21:29	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.029	ug/Kg		11/09/21 18:26	11/14/21 21:29	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.20	0.043	ug/Kg		11/09/21 18:26	11/14/21 21:29	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg		11/09/21 18:26	11/14/21 21:29	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.20	0.048	ug/Kg		11/09/21 18:26	11/14/21 21:29	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.035	ug/Kg		11/09/21 18:26	11/14/21 21:29	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.20	0.041	ug/Kg		11/09/21 18:26	11/14/21 21:29	1
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.031	ug/Kg		11/09/21 18:26	11/14/21 21:29	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.039	ug/Kg		11/09/21 18:26	11/14/21 21:29	1

Isotope Dilution	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%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 (PFUnA)	2.00	2.20		ug/Kg		110	64 - 136

Eurofins TestAmerica, Sacramento

QC Sample Results

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)

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	1.88		ug/Kg		94	63 - 144
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	1.93		ug/Kg		97	61 - 139
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
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
18O2 PFHxS	95		50 - 150
13C4 PFOS	99		50 - 150
d3-NMeFOSAA	97		50 - 150
d5-NEtFOSAA	105		50 - 150
13C3 HFPO-DA	87		50 - 150

Lab Sample ID: 320-81254-80 MS
Matrix: Solid
Analysis Batch: 542653

Client Sample ID: 21GST-SS-011
Prep Type: Total/NA
Prep Batch: 541434

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec. Limits
				Result	Qualifier				
Perfluorohexanoic acid (PFHxA)	ND		1.99	1.82		ug/Kg	⊛	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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QC Sample Results

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)

Lab Sample ID: 320-81254-80 MS

Matrix: Solid

Analysis Batch: 542653

Client Sample ID: 21GST-SS-011

Prep Type: Total/NA

Prep Batch: 541434

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoroundecanoic acid (PFUnA)	ND		1.99	1.88		ug/Kg	⊛	94	64 - 136
Perfluorododecanoic acid (PFDoA)	ND		1.99	2.13		ug/Kg	⊛	107	69 - 135
Perfluorotridecanoic acid (PFTriA)	ND		1.99	1.88		ug/Kg	⊛	95	66 - 139
Perfluorotetradecanoic acid (PFTeA)	ND		1.99	1.86		ug/Kg	⊛	94	69 - 133
Perfluorobutanesulfonic acid (PFBS)	ND		1.76	1.50		ug/Kg	⊛	85	72 - 128
Perfluorohexanesulfonic acid (PFHxS)	ND		1.81	1.71		ug/Kg	⊛	94	67 - 130
Perfluorooctanesulfonic acid (PFOS)	0.15	J	1.85	2.00		ug/Kg	⊛	100	68 - 136
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.99	1.91		ug/Kg	⊛	96	63 - 144
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		1.99	2.09		ug/Kg	⊛	105	61 - 139
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.85	1.76		ug/Kg	⊛	95	75 - 135
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		1.99	1.94		ug/Kg	⊛	98	77 - 137
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		1.87	1.95		ug/Kg	⊛	104	76 - 136
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.87	1.90		ug/Kg	⊛	101	79 - 139

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
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

Analysis Batch: 542653

Client Sample ID: 21GST-SS-011

Prep Type: Total/NA

Prep Batch: 541434

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Perfluorohexanoic acid (PFHxA)	ND		2.05	1.85		ug/Kg	⊛	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

Eurofins TestAmerica, Sacramento

QC Sample Results

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)

Lab Sample ID: 320-81254-80 MSD

Matrix: Solid

Analysis Batch: 542653

Client Sample ID: 21GST-SS-011

Prep Type: Total/NA

Prep Batch: 541434

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorodecanoic acid (PFDA)	ND		2.05	2.04		ug/Kg	☼	99	69 - 133	7	30
Perfluoroundecanoic acid (PFUnA)	ND		2.05	1.94		ug/Kg	☼	95	64 - 136	3	30
Perfluorododecanoic acid (PFDoA)	ND		2.05	2.06		ug/Kg	☼	100	69 - 135	4	30
Perfluorotridecanoic acid (PFTriA)	ND		2.05	1.82		ug/Kg	☼	89	66 - 139	3	30
Perfluorotetradecanoic acid (PFTeA)	ND		2.05	2.02		ug/Kg	☼	98	69 - 133	8	30
Perfluorobutanesulfonic acid (PFBS)	ND		1.82	1.50		ug/Kg	☼	82	72 - 128	0	30
Perfluorohexanesulfonic acid (PFHxS)	ND		1.87	1.73		ug/Kg	☼	92	67 - 130	1	30
Perfluorooctanesulfonic acid (PFOS)	0.15	J	1.91	1.87		ug/Kg	☼	90	68 - 136	7	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.05	1.94		ug/Kg	☼	94	63 - 144	2	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.05	1.90		ug/Kg	☼	93	61 - 139	9	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.91	1.77		ug/Kg	☼	92	75 - 135	0	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		2.05	2.39		ug/Kg	☼	116	77 - 137	21	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		1.94	2.00		ug/Kg	☼	103	76 - 136	3	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.94	1.83		ug/Kg	☼	94	79 - 139	4	30

Isotope Dilution	MSD %Recovery	MSD 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
18O2 PFHxS	93		50 - 150
13C4 PFOS	99		50 - 150
d3-NMeFOSAA	104		50 - 150
d5-NEtFOSAA	114		50 - 150
13C3 HFPO-DA	87		50 - 150

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	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.031	ug/Kg		11/09/21 18:26	11/13/21 09:02	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.038	ug/Kg		11/09/21 18:26	11/13/21 09:02	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.053	ug/Kg		11/09/21 18:26	11/13/21 09:02	1

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QC Sample Results

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)

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	MB Result	MB 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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg		11/09/21 18:26	11/13/21 09:02	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.20	0.048	ug/Kg		11/09/21 18:26	11/13/21 09:02	1
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosfluoro-3-oxaundecane-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

Isotope Dilution	MB %Recovery	MB 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
18O2 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 - 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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%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 (PFUnA)	2.00	1.92		ug/Kg		96	64 - 136

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QC Sample Results

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)

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorododecanoic acid (PFDoA)	2.00	2.09		ug/Kg		104	69 - 135
Perfluorotridecanoic acid (PFTriA)	2.00	1.69		ug/Kg		84	66 - 139
Perfluorotetradecanoic acid (PFTeA)	2.00	1.92		ug/Kg		96	69 - 133
Perfluorobutanesulfonic acid (PFBS)	1.77	1.49		ug/Kg		84	72 - 128
Perfluorohexanesulfonic acid (PFHxS)	1.82	1.84		ug/Kg		101	67 - 130
Perfluorooctanesulfonic acid (PFOS)	1.86	1.88		ug/Kg		101	68 - 136
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	1.88		ug/Kg		94	63 - 144
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	1.92		ug/Kg		96	61 - 139
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	1.86	1.77		ug/Kg		95	75 - 135
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	2.00	2.14		ug/Kg		107	77 - 137
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	1.88	1.93		ug/Kg		102	76 - 136
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.88	1.91		ug/Kg		101	79 - 139

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
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
18O2 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
Matrix: Solid
Analysis Batch: 542350

Client Sample ID: 21GST-SB010-03
Prep Type: Total/NA
Prep Batch: 541446

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec. Limits
				Result	Qualifier				
Perfluorohexanoic acid (PFHxA)	ND		2.09	1.87		ug/Kg	✖	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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QC Sample Results

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)

Lab Sample ID: 320-81254-60 MS

Matrix: Solid

Analysis Batch: 542350

Client Sample ID: 21GST-SB010-03

Prep Type: Total/NA

Prep Batch: 541446

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoroundecanoic acid (PFUnA)	ND		2.09	2.04		ug/Kg	☼	98	64 - 136
Perfluorododecanoic acid (PFDoA)	ND		2.09	2.26		ug/Kg	☼	108	69 - 135
Perfluorotridecanoic acid (PFTriA)	ND		2.09	1.97		ug/Kg	☼	94	66 - 139
Perfluorotetradecanoic acid (PFTeA)	ND		2.09	2.01		ug/Kg	☼	96	69 - 133
Perfluorobutanesulfonic acid (PFBS)	ND		1.84	1.59		ug/Kg	☼	86	72 - 128
Perfluorohexanesulfonic acid (PFHxS)	ND		1.90	1.79		ug/Kg	☼	94	67 - 130
Perfluorooctanesulfonic acid (PFOS)	0.12	J	1.94	1.96		ug/Kg	☼	95	68 - 136
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.09	1.98		ug/Kg	☼	95	63 - 144
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.09	2.02		ug/Kg	☼	97	61 - 139
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.94	1.98		ug/Kg	☼	102	75 - 135
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		2.09	2.36		ug/Kg	☼	113	77 - 137
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		1.97	2.03		ug/Kg	☼	103	76 - 136
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.97	2.07		ug/Kg	☼	105	79 - 139

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
13C2 PFHxA	98		50 - 150
13C4 PFHpA	96		50 - 150
13C4 PFOA	87		50 - 150
13C5 PFNA	94		50 - 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
18O2 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

Matrix: Solid

Analysis Batch: 542350

Client Sample ID: 21GST-SB010-03

Prep Type: Total/NA

Prep Batch: 541446

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Perfluorohexanoic acid (PFHxA)	ND		2.11	1.87		ug/Kg	☼	88	70 - 132	0	30
Perfluoroheptanoic acid (PFHpA)	ND		2.11	1.90		ug/Kg	☼	90	71 - 131	6	30
Perfluorooctanoic acid (PFOA)	ND		2.11	2.06		ug/Kg	☼	98	69 - 133	1	30
Perfluorononanoic acid (PFNA)	ND		2.11	2.00		ug/Kg	☼	95	72 - 129	3	30

Eurofins TestAmerica, Sacramento

QC Sample Results

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)

Lab Sample ID: 320-81254-60 MSD

Matrix: Solid

Analysis Batch: 542350

Client Sample ID: 21GST-SB010-03

Prep Type: Total/NA

Prep Batch: 541446

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
	Result	Qualifier	Added	Result	Qualifier						
Perfluorodecanoic acid (PFDA)	ND		2.11	1.94		ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.11	1.92		ug/Kg	☼	91	63 - 144	3	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.11	2.09		ug/Kg	☼	99	61 - 139	3	30
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-1-sulfonic acid	ND		1.99	1.88		ug/Kg	☼	95	76 - 136	8	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.99	2.02		ug/Kg	☼	101	79 - 139	3	30

Isotope Dilution	MSD	MSD	Limits
	%Recovery	Qualifier	
13C2 PFHxA	90		50 - 150
13C4 PFHpA	93		50 - 150
13C4 PFOA	83		50 - 150
13C5 PFNA	86		50 - 150
13C2 PFDA	89		50 - 150
13C2 PFUnA	89		50 - 150
13C2 PFDoA	80		50 - 150
13C2 PFTeDA	75		50 - 150
13C3 PFBS	83		50 - 150
18O2 PFHxS	74		50 - 150
13C4 PFOS	84		50 - 150
d3-NMeFOSAA	92		50 - 150
d5-NEtFOSAA	94		50 - 150
13C3 HFPO-DA	74		50 - 150

Lab Sample ID: MB 320-541628/1-A

Matrix: Solid

Analysis Batch: 541977

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 541628

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
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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QC Sample Results

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)

Lab Sample ID: MB 320-541628/1-A
Matrix: Solid
Analysis Batch: 541977

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 541628

Analyte	MB Result	MB 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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg		11/10/21 13:52	11/12/21 03:35	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.20	0.048	ug/Kg		11/10/21 13:52	11/12/21 03:35	1
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosfluoro-3-oxaundecane-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

Isotope Dilution	MB %Recovery	MB 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
18O2 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 - 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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%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 (PFUnA)	2.00	2.00		ug/Kg		100	64 - 136

Eurofins TestAmerica, Sacramento

QC Sample Results

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)

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorododecanoic acid (PFDoA)	2.00	2.15		ug/Kg		108	69 - 135
Perfluorotridecanoic acid (PFTriA)	2.00	1.94		ug/Kg		97	66 - 139
Perfluorotetradecanoic acid (PFTeA)	2.00	1.79		ug/Kg		90	69 - 133
Perfluorobutanesulfonic acid (PFBS)	1.77	1.60		ug/Kg		91	72 - 128
Perfluorohexanesulfonic acid (PFHxS)	1.82	1.81		ug/Kg		100	67 - 130
Perfluorooctanesulfonic acid (PFOS)	1.86	1.74		ug/Kg		94	68 - 136
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	1.91		ug/Kg		95	63 - 144
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	1.94		ug/Kg		97	61 - 139
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	1.86	1.65		ug/Kg		89	75 - 135
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	2.00	2.34		ug/Kg		117	77 - 137
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	1.88	1.87		ug/Kg		99	76 - 136
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.88	1.92		ug/Kg		102	79 - 139

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
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
18O2 PFHxS	92		50 - 150
13C4 PFOS	99		50 - 150
d3-NMeFOSAA	101		50 - 150
d5-NEtFOSAA	101		50 - 150
13C3 HFPO-DA	85		50 - 150

Lab Sample ID: 320-81254-81 MS
Matrix: Solid
Analysis Batch: 541977

Client Sample ID: 21GST-SS-013
Prep Type: Total/NA
Prep Batch: 541628

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec. Limits
				Result	Qualifier				
Perfluorohexanoic acid (PFHxA)	ND		2.14	2.09		ug/Kg	⊛	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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QC Sample Results

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)

Lab Sample ID: 320-81254-81 MS
Matrix: Solid
Analysis Batch: 541977

Client Sample ID: 21GST-SS-013
Prep Type: Total/NA
Prep Batch: 541628

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoroundecanoic acid (PFUnA)	ND		2.14	2.01		ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.14	2.08		ug/Kg	☼	97	63 - 144
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.14	2.24		ug/Kg	☼	105	61 - 139
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
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
18O2 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
Analysis Batch: 541977

Client Sample ID: 21GST-SS-013
Prep Type: Total/NA
Prep Batch: 541628

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	%Rec. Limits	RPD	
				Result	Qualifier					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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QC Sample Results

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)

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorodecanoic acid (PFDA)	ND		2.28	2.53		ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.28	2.34		ug/Kg	☼	102	63 - 144	12	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.28	2.22		ug/Kg	☼	97	61 - 139	1	30
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-1-sulfonic acid	ND		2.15	1.95		ug/Kg	☼	90	76 - 136	6	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.15	1.99		ug/Kg	☼	92	79 - 139	0	30

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C2 PFHxA	96		50 - 150
13C4 PFHpA	97		50 - 150
13C4 PFOA	96		50 - 150
13C5 PFNA	106		50 - 150
13C2 PFDA	94		50 - 150
13C2 PFUnA	96		50 - 150
13C2 PFDoA	90		50 - 150
13C2 PFTeDA	85		50 - 150
13C3 PFBS	106		50 - 150
18O2 PFHxS	95		50 - 150
13C4 PFOS	104		50 - 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

Analysis Batch: 542490

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 541730

Analyte	MB Result	MB 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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QC Sample Results

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)

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg		11/10/21 18:34	11/13/21 14:25	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.20	0.048	ug/Kg		11/10/21 18:34	11/13/21 14:25	1
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosfluoro-3-oxaundecane-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

Isotope Dilution	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
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
18O2 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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%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 (PFUnA)	2.00	2.03		ug/Kg		102	64 - 136

Eurofins TestAmerica, Sacramento

QC Sample Results

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)

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorododecanoic acid (PFDoA)	2.00	2.20		ug/Kg		110	69 - 135
Perfluorotridecanoic acid (PFTriA)	2.00	1.88		ug/Kg		94	66 - 139
Perfluorotetradecanoic acid (PFTeA)	2.00	1.83		ug/Kg		91	69 - 133
Perfluorobutanesulfonic acid (PFBS)	1.77	1.47		ug/Kg		83	72 - 128
Perfluorohexanesulfonic acid (PFHxS)	1.82	1.67		ug/Kg		92	67 - 130
Perfluorooctanesulfonic acid (PFOS)	1.86	1.69		ug/Kg		91	68 - 136
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	1.92		ug/Kg		96	63 - 144
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.03		ug/Kg		102	61 - 139
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	1.86	1.72		ug/Kg		92	75 - 135
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	2.00	1.99		ug/Kg		99	77 - 137
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	1.88	1.89		ug/Kg		100	76 - 136
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.88	1.84		ug/Kg		98	79 - 139

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C2 PFHxA	102		50 - 150
13C4 PFHpA	99		50 - 150
13C4 PFOA	98		50 - 150
13C5 PFNA	97		50 - 150
13C2 PFDA	100		50 - 150
13C2 PFUnA	97		50 - 150
13C2 PFDoA	97		50 - 150
13C2 PFTeDA	94		50 - 150
13C3 PFBS	113		50 - 150
18O2 PFHxS	92		50 - 150
13C4 PFOS	100		50 - 150
d3-NMeFOSAA	103		50 - 150
d5-NEtFOSAA	105		50 - 150
13C3 HFPO-DA	92		50 - 150

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec. Limits
				Result	Qualifier				
Perfluorohexanoic acid (PFHxA)	ND		2.27	1.96		ug/Kg	⊛	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

Eurofins TestAmerica, Sacramento

QC Sample Results

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)

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoroundecanoic acid (PFUnA)	ND		2.27	2.12		ug/Kg	☼	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.27	1.90		ug/Kg	☼	84	63 - 144
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.27	2.19		ug/Kg	☼	96	61 - 139
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
13C2 PFHxA	103		50 - 150
13C4 PFHpA	100		50 - 150
13C4 PFOA	96		50 - 150
13C5 PFNA	95		50 - 150
13C2 PFDA	104		50 - 150
13C2 PFUnA	106		50 - 150
13C2 PFDoA	97		50 - 150
13C2 PFTeDA	98		50 - 150
13C3 PFBS	104		50 - 150
18O2 PFHxS	94		50 - 150
13C4 PFOS	96		50 - 150
d3-NMeFOSAA	112		50 - 150
d5-NEtFOSAA	120		50 - 150
13C3 HFPO-DA	93		50 - 150

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	%Rec. Limits	RPD	
				Result	Qualifier					RPD	Limit
Perfluorohexanoic acid (PFHxA)	ND		2.16	1.98		ug/Kg	☼	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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QC Sample Results

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)

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

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier						
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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.16	2.04		ug/Kg	☼	94	63 - 144	7	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.16	2.08		ug/Kg	☼	96	61 - 139	5	30
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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

Isotope Dilution	MSD	MSD	Limits
	%Recovery	Qualifier	
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
18O2 PFHxS	108		50 - 150
13C4 PFOS	115		50 - 150
d3-NMeFOSAA	115		50 - 150
d5-NEtFOSAA	118		50 - 150
13C3 HFPO-DA	105		50 - 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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
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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QC Sample Results

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)

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

Analyte	MB Result	MB 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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg		11/10/21 18:37	11/12/21 22:06	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.20	0.048	ug/Kg		11/10/21 18:37	11/12/21 22:06	1
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosfluoro-3-oxaundecane-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

Isotope Dilution	MB %Recovery	MB 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
18O2 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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%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 (PFUnA)	2.00	1.96		ug/Kg		98	64 - 136

Eurofins TestAmerica, Sacramento

QC Sample Results

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)

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorododecanoic acid (PFDoA)	2.00	2.04		ug/Kg		102	69 - 135
Perfluorotridecanoic acid (PFTriA)	2.00	1.86		ug/Kg		93	66 - 139
Perfluorotetradecanoic acid (PFTeA)	2.00	1.67		ug/Kg		83	69 - 133
Perfluorobutanesulfonic acid (PFBS)	1.77	1.54		ug/Kg		87	72 - 128
Perfluorohexanesulfonic acid (PFHxS)	1.82	1.66		ug/Kg		91	67 - 130
Perfluorooctanesulfonic acid (PFOS)	1.86	1.65		ug/Kg		89	68 - 136
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	1.63		ug/Kg		81	63 - 144
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	1.95		ug/Kg		98	61 - 139
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	1.86	1.63		ug/Kg		87	75 - 135
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	2.00	2.00		ug/Kg		100	77 - 137
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	1.88	1.85		ug/Kg		98	76 - 136
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.88	1.77		ug/Kg		94	79 - 139

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
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
18O2 PFHxS	107		50 - 150
13C4 PFOS	115		50 - 150
d3-NMeFOSAA	125		50 - 150
d5-NEtFOSAA	119		50 - 150
13C3 HFPO-DA	100		50 - 150

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec. Limits
				Result	Qualifier				
Perfluorohexanoic acid (PFHxA)	ND		2.04	1.84		ug/Kg	⊛	90	70 - 132
Perfluoroheptanoic acid (PFHpA)	ND		2.04	1.91		ug/Kg	⊛	93	71 - 131
Perfluorooctanoic acid (PFOA)	ND		2.04	2.01		ug/Kg	⊛	98	69 - 133
Perfluorononanoic acid (PFNA)	0.22		2.04	2.22		ug/Kg	⊛	98	72 - 129
Perfluorodecanoic acid (PFDA)	0.16	J	2.04	2.07		ug/Kg	⊛	94	69 - 133

Eurofins TestAmerica, Sacramento

QC Sample Results

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)

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoroundecanoic acid (PFUnA)	0.20	J	2.04	2.17		ug/Kg	☼	96	64 - 136
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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.04	1.76		ug/Kg	☼	86	63 - 144
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.04	1.94		ug/Kg	☼	95	61 - 139
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
13C2 PFHxA	101		50 - 150
13C4 PFHpA	96		50 - 150
13C4 PFOA	93		50 - 150
13C5 PFNA	93		50 - 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
18O2 PFHxS	86		50 - 150
13C4 PFOS	94		50 - 150
d3-NMeFOSAA	97		50 - 150
d5-NEtFOSAA	103		50 - 150
13C3 HFPO-DA	92		50 - 150

Lab Sample ID: 320-81254-111 MSD

Matrix: Solid

Analysis Batch: 542335

Client Sample ID: 21GST-MW16-02

Prep Type: Total/NA

Prep Batch: 541731

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	%Rec. Limits	RPD	
				Result	Qualifier					RPD	Limit
Perfluorohexanoic acid (PFHxA)	ND		2.12	1.82		ug/Kg	☼	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

Eurofins TestAmerica, Sacramento

QC Sample Results

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)

Lab Sample ID: 320-81254-111 MSD

Matrix: Solid

Analysis Batch: 542335

Client Sample ID: 21GST-MW16-02

Prep Type: Total/NA

Prep Batch: 541731

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorodecanoic acid (PFDA)	0.16	J	2.12	2.08		ug/Kg	⊛	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.12	1.92		ug/Kg	⊛	90	63 - 144	9	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.12	2.01		ug/Kg	⊛	95	61 - 139	4	30
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C2 PFHxA	108		50 - 150
13C4 PFHpA	105		50 - 150
13C4 PFOA	98		50 - 150
13C5 PFNA	101		50 - 150
13C2 PFDA	108		50 - 150
13C2 PFUnA	103		50 - 150
13C2 PFDoA	100		50 - 150
13C2 PFTeDA	103		50 - 150
13C3 PFBS	109		50 - 150
18O2 PFHxS	97		50 - 150
13C4 PFOS	106		50 - 150
d3-NMeFOSAA	111		50 - 150
d5-NEtFOSAA	111		50 - 150
13C3 HFPO-DA	96		50 - 150

Method: D 2216 - Percent Moisture

Lab Sample ID: 320-81254-1 DU

Matrix: Solid

Analysis Batch: 540289

Client Sample ID: 21GST-SS-023

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Moisture	9.5		9.1		%		4	20

Eurofins TestAmerica, Sacramento

QC Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Method: D 2216 - Percent Moisture (Continued)

Lab Sample ID: 320-81254-1 DU
Matrix: Solid
Analysis Batch: 540289

Client Sample ID: 21GST-SS-023
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Solids	90.5		90.9		%		0.5	20

Lab Sample ID: 320-81254-21 DU
Matrix: Solid
Analysis Batch: 540290

Client Sample ID: 21GST-SS-005
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Moisture	7.9		8.3		%		4	20
Percent Solids	92.1		91.7		%		0.4	20

Lab Sample ID: 320-81254-41 DU
Matrix: Solid
Analysis Batch: 540311

Client Sample ID: 21GST-MW15-14
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	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
Matrix: Solid
Analysis Batch: 540312

Client Sample ID: 21GST-SB012-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Moisture	14.4		13.2		%		9	20
Percent Solids	85.6		86.8		%		1	20

Lab Sample ID: 320-81254-83 DU
Matrix: Solid
Analysis Batch: 540335

Client Sample ID: 21GST-SB003-02
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	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
Matrix: Solid
Analysis Batch: 540353

Client Sample ID: 21GST-SB014-03
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Moisture	17.0		16.9		%		0.8	20
Percent Solids	83.0		83.1		%		0.2	20

QC Association Summary

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

Eurofins TestAmerica, Sacramento

QC Association Summary

Client: Shannon & Wilson, Inc
 Project/Site: SC Soils#3

Job ID: 320-81254-1

LCMS (Continued)

Analysis Batch: 541064 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81254-20	21GST-SS-106	Total/NA	Solid	EPA 537(Mod)	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	
320-81254-40 MSD	21GST-MW15-04	Total/NA	Solid	SHAKE	

Prep Batch: 541434

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	

Eurofins TestAmerica, Sacramento

QC Association Summary

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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 Batch
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	
320-81254-60 MSD	21GST-SB010-03	Total/NA	Solid	SHAKE	

Prep Batch: 541628

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	

Eurofins TestAmerica, Sacramento

QC Association Summary

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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	
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

Eurofins TestAmerica, Sacramento

QC Association Summary

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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	Prep 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

Eurofins TestAmerica, Sacramento

QC Association Summary

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

Eurofins TestAmerica, Sacramento

QC Association Summary

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-81254-39	21GST-MW15-03	Total/NA	Solid	EPA 537(Mod)	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

Eurofins TestAmerica, Sacramento

QC Association Summary

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 Batch
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	

Eurofins TestAmerica, Sacramento

QC Association Summary

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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 Batch
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	
320-81254-72	21GST-SB007-02	Total/NA	Solid	D 2216	
320-81254-73	21GST-SB007-03	Total/NA	Solid	D 2216	
320-81254-74	21GST-SS-030	Total/NA	Solid	D 2216	
320-81254-75	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	

QC Association Summary

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

General Chemistry

Analysis Batch: 540335

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
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 Batch
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	

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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			540289	11/05/21 11:58	TCS	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.18 g	10.0 mL	540825	11/07/21 18:20	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541064	11/08/21 23:15	LT	TAL SAC

Client Sample ID: 21GST-SS-029

Lab Sample ID: 320-81254-2

Date Collected: 10/29/21 10:47

Matrix: Solid

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	Analysis	D 2216		1			540289	11/05/21 11:58	TCS	TAL SAC

Client Sample ID: 21GST-SS-029

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

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	11/08/21 23:46	LT	TAL SAC

Client Sample ID: 21GST-SS-028

Lab Sample ID: 320-81254-3

Date Collected: 10/29/21 10:53

Matrix: Solid

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	Analysis	D 2216		1			540289	11/05/21 11:58	TCS	TAL SAC

Client Sample ID: 21GST-SS-028

Lab Sample ID: 320-81254-3

Date Collected: 10/29/21 10:53

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 95.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.11 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

Lab Sample ID: 320-81254-4

Date Collected: 10/29/21 11:04

Matrix: Solid

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	Analysis	D 2216		1			540289	11/05/21 11:58	TCS	TAL SAC

Eurofins TestAmerica, Sacramento

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SS-027

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.40 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

Lab Sample ID: 320-81254-5

Date Collected: 10/29/21 11:10

Matrix: Solid

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	Analysis	D 2216		1			540289	11/05/21 11:58	TCS	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.08 g	10.0 mL	540825	11/07/21 18:20	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541064	11/09/21 00:16	LT	TAL SAC

Client Sample ID: 21GST-SS-126

Lab Sample ID: 320-81254-6

Date Collected: 10/29/21 11:00

Matrix: Solid

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	Analysis	D 2216		1			540289	11/05/21 11:58	TCS	TAL SAC

Client Sample ID: 21GST-SS-126

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.11 g	10.0 mL	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

Lab Sample ID: 320-81254-7

Date Collected: 10/29/21 11:35

Matrix: Solid

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	Analysis	D 2216		1			540289	11/05/21 11:58	TCS	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SS-025

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

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	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

Matrix: Solid

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	Analysis	D 2216		1			540289	11/05/21 11:58	TCS	TAL SAC

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

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 01:07	LT	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

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			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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.56 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

Matrix: Solid

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	Analysis	D 2216		1			540289	11/05/21 11:58	TCS	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

Percent Solids: 85.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.41 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

Lab Sample ID: 320-81254-11

Date Collected: 10/29/21 12:19

Matrix: Solid

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	Analysis	D 2216		1			540289	11/05/21 11:58	TCS	TAL SAC

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

Percent Solids: 90.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.37 g	10.0 mL	540825	11/07/21 18:20	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541064	11/09/21 01:37	LT	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

Lab Sample ID: 320-81254-12

Date Collected: 10/29/21 12:31

Matrix: Solid

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	Analysis	D 2216		1			540289	11/05/21 11:58	TCS	TAL SAC

Client Sample ID: 21GST-SS-019

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.46 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

Lab Sample ID: 320-81254-13

Date Collected: 10/29/21 12:42

Matrix: Solid

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	Analysis	D 2216		1			540289	11/05/21 11:58	TCS	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.39 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

Lab Sample ID: 320-81254-14

Date Collected: 10/29/21 12:56

Matrix: Solid

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	Analysis	D 2216		1			540289	11/05/21 11:58	TCS	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.10 g	10.0 mL	540825	11/07/21 18:20	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541064	11/09/21 02:07	LT	TAL SAC

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

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			540289	11/05/21 11:58	TCS	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.22 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

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

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			540289	11/05/21 11:58	TCS	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.17 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

Lab Sample ID: 320-81254-17

Date Collected: 10/29/21 13:19

Matrix: Solid

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	Analysis	D 2216		1			540289	11/05/21 11:58	TCS	TAL SAC

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

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

Lab Sample ID: 320-81254-18

Date Collected: 10/29/21 13:28

Matrix: Solid

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	Analysis	D 2216		1			540289	11/05/21 11:58	TCS	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.43 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

Lab Sample ID: 320-81254-19

Date Collected: 10/29/21 13:36

Matrix: Solid

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	Analysis	D 2216		1			540289	11/05/21 11:58	TCS	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.22 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

Lab Sample ID: 320-81254-20

Date Collected: 10/29/21 13:26

Matrix: Solid

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	Analysis	D 2216		1			540289	11/05/21 11:58	TCS	TAL SAC

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

Percent Solids: 72.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.39 g	10.0 mL	540825	11/07/21 18:20	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541064	11/09/21 03:28	LT	TAL SAC
Total/NA	Prep	SHAKE	DL		5.39 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 20:01	RS1	TAL SAC

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

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			540290	11/05/21 11:58	TCS	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.35 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

Lab Sample ID: 320-81254-22

Date Collected: 10/29/21 13:54

Matrix: Solid

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	Analysis	D 2216		1			540290	11/05/21 11:58	TCS	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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	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

Lab Sample ID: 320-81254-23

Date Collected: 10/27/21 14:00

Matrix: Solid

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	Analysis	D 2216		1			540290	11/05/21 11:58	TCS	TAL SAC

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

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

Lab Sample ID: 320-81254-24

Date Collected: 10/27/21 13:50

Matrix: Solid

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	Analysis	D 2216		1			540290	11/05/21 11:58	TCS	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.32 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

Lab Sample ID: 320-81254-25

Date Collected: 10/27/21 14:10

Matrix: Solid

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	Analysis	D 2216		1			540290	11/05/21 11:58	TCS	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-MW14-02

Lab Sample ID: 320-81254-25

Date Collected: 10/27/21 14:10

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 79.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.01 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

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

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			540290	11/05/21 11:58	TCS	TAL SAC

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

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

Date Collected: 10/27/21 14:30

Matrix: Solid

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	Analysis	D 2216		1			540290	11/05/21 11:58	TCS	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.19 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

Lab Sample ID: 320-81254-28

Date Collected: 10/27/21 15:00

Matrix: Solid

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	Analysis	D 2216		1			540290	11/05/21 11:58	TCS	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.31 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

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			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

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			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

Percent Solids: 92.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.34 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

Lab Sample ID: 320-81254-31

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			540290	11/05/21 11:58	TCS	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.39 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

Lab Sample ID: 320-81254-32

Date Collected: 10/28/21 10:00

Matrix: Solid

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	Analysis	D 2216		1			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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.35 g	10.0 mL	541157	11/09/21 04:35	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542324	11/12/21 16:33	S1M	TAL SAC

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

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			540290	11/05/21 11:58	TCS	TAL SAC

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

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	541157	11/09/21 04:35	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542324	11/12/21 16:43	S1M	TAL SAC

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

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			540290	11/05/21 11:58	TCS	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.10 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

Lab Sample ID: 320-81254-35

Date Collected: 10/28/21 11:25

Matrix: Solid

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	Analysis	D 2216		1			540290	11/05/21 11:58	TCS	TAL SAC

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

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 17:04	S1M	TAL SAC

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

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			540290	11/05/21 11:58	TCS	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.49 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

Lab Sample ID: 320-81254-37

Date Collected: 10/29/21 13:00

Matrix: Solid

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	Analysis	D 2216		1			540290	11/05/21 11:58	TCS	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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	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

Lab Sample ID: 320-81254-38

Date Collected: 10/29/21 13:05

Matrix: Solid

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	Analysis	D 2216		1			540290	11/05/21 11:58	TCS	TAL SAC

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

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 17:35	S1M	TAL SAC

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

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			540290	11/05/21 11:58	TCS	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.36 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

Lab Sample ID: 320-81254-40

Date Collected: 10/29/21 14:10

Matrix: Solid

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	Analysis	D 2216		1			540290	11/05/21 11:58	TCS	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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	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

Lab Sample ID: 320-81254-41

Date Collected: 10/29/21 14:00

Matrix: Solid

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	Analysis	D 2216		1			540311	11/05/21 12:52	TCS	TAL SAC

Client Sample ID: 21GST-MW15-14

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.38 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

Lab Sample ID: 320-81254-42

Date Collected: 10/29/21 14:35

Matrix: Solid

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	Analysis	D 2216		1			540311	11/05/21 12:52	TCS	TAL SAC

Client Sample ID: 21GST-MW15-05

Lab Sample ID: 320-81254-42

Date Collected: 10/29/21 14:35

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 80.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.40 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

Lab Sample ID: 320-81254-43

Date Collected: 10/29/21 15:30

Matrix: Solid

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	Analysis	D 2216		1			540311	11/05/21 12:52	TCS	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.20 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

Lab Sample ID: 320-81254-44

Date Collected: 10/30/21 09:35

Matrix: Solid

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	Analysis	D 2216		1			540311	11/05/21 12:52	TCS	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.38 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

Lab Sample ID: 320-81254-45

Date Collected: 10/30/21 09:50

Matrix: Solid

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	Analysis	D 2216		1			540311	11/05/21 12:52	TCS	TAL SAC

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

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	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

Lab Sample ID: 320-81254-46

Date Collected: 10/30/21 10:00

Matrix: Solid

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	Analysis	D 2216		1			540311	11/05/21 12:52	TCS	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.09 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

Lab Sample ID: 320-81254-47

Date Collected: 10/30/21 10:10

Matrix: Solid

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	Analysis	D 2216		1			540311	11/05/21 12:52	TCS	TAL SAC

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

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

Lab Sample ID: 320-81254-48

Date Collected: 10/30/21 10:30

Matrix: Solid

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	Analysis	D 2216		1			540311	11/05/21 12:52	TCS	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.30 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

Lab Sample ID: 320-81254-49

Date Collected: 10/30/21 10:40

Matrix: Solid

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	Analysis	D 2216		1			540311	11/05/21 12:52	TCS	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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	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

Lab Sample ID: 320-81254-50

Date Collected: 10/30/21 10:50

Matrix: Solid

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	Analysis	D 2216		1			540311	11/05/21 12:52	TCS	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.23 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

Lab Sample ID: 320-81254-51

Date Collected: 10/30/21 11:00

Matrix: Solid

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	Analysis	D 2216		1			540311	11/05/21 12:52	TCS	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.36 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

Lab Sample ID: 320-81254-52

Date Collected: 10/30/21 11:35

Matrix: Solid

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	Analysis	D 2216		1			540311	11/05/21 12:52	TCS	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SB009-01

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.22 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

Lab Sample ID: 320-81254-53

Date Collected: 10/30/21 11:25

Matrix: Solid

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	Analysis	D 2216		1			540311	11/05/21 12:52	TCS	TAL SAC

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

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	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

Lab Sample ID: 320-81254-54

Date Collected: 10/30/21 11:50

Matrix: Solid

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	Analysis	D 2216		1			540311	11/05/21 12:52	TCS	TAL SAC

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

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	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

Lab Sample ID: 320-81254-55

Date Collected: 10/30/21 12:00

Matrix: Solid

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	Analysis	D 2216		1			540311	11/05/21 12:52	TCS	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.19 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

Lab Sample ID: 320-81254-56

Date Collected: 10/30/21 12:05

Matrix: Solid

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	Analysis	D 2216		1			540311	11/05/21 12:52	TCS	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.38 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

Lab Sample ID: 320-81254-57

Date Collected: 10/30/21 12:35

Matrix: Solid

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	Analysis	D 2216		1			540311	11/05/21 12:52	TCS	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.03 g	10.0 mL	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

Lab Sample ID: 320-81254-58

Date Collected: 10/30/21 12:25

Matrix: Solid

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	Analysis	D 2216		1			540311	11/05/21 12:52	TCS	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.28 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

Lab Sample ID: 320-81254-59

Date Collected: 10/30/21 12:40

Matrix: Solid

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	Analysis	D 2216		1			540311	11/05/21 12:52	TCS	TAL SAC

Client Sample ID: 21GST-SB010-02

Lab Sample ID: 320-81254-59

Date Collected: 10/30/21 12:40

Matrix: Solid

Date Received: 11/03/21 14:01

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

Lab Sample ID: 320-81254-60

Date Collected: 10/30/21 12:45

Matrix: Solid

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	Analysis	D 2216		1			540311	11/05/21 12:52	TCS	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.13 g	10.0 mL	541446	11/09/21 18:26	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542350	11/13/21 13:22	RS1	TAL SAC

Client Sample ID: 21GST-SB012-01

Lab Sample ID: 320-81254-61

Date Collected: 10/30/21 13:25

Matrix: Solid

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	Analysis	D 2216		1			540312	11/05/21 12:51	TCS	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SB012-01

Lab Sample ID: 320-81254-61

Date Collected: 10/30/21 13:25

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 85.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.37 g	10.0 mL	541434	11/09/21 18:26	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			543244	11/16/21 15:07	RS1	TAL SAC

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

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			540312	11/05/21 12:51	TCS	TAL SAC

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

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	541434	11/09/21 18:26	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542653	11/14/21 22:00	S1M	TAL SAC

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

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			540312	11/05/21 12:51	TCS	TAL SAC

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

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

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			540312	11/05/21 12:51	TCS	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.23 g	10.0 mL	541434	11/09/21 18:26	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542653	11/14/21 22:21	S1M	TAL SAC

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

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			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

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 84.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.18 g	10.0 mL	541434	11/09/21 18:26	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542653	11/14/21 22:32	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

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			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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.19 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

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

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			540312	11/05/21 12:51	TCS	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

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	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

Date Collected: 10/30/21 15:15

Matrix: Solid

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	Analysis	D 2216		1			540312	11/05/21 12:51	TCS	TAL SAC

Client Sample ID: 21GST-SB005-02

Lab Sample ID: 320-81254-68

Date Collected: 10/30/21 15:15

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 86.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.14 g	10.0 mL	541434	11/09/21 18:26	AM	TAL SAC
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

Matrix: Solid

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	Analysis	D 2216		1			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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.45 g	10.0 mL	541434	11/09/21 18:26	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542653	11/14/21 23:34	S1M	TAL SAC

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

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			540312	11/05/21 12:51	TCS	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
 Project/Site: SC Soils#3

Job ID: 320-81254-1

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.42 g	10.0 mL	541434	11/09/21 18:26	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542653	11/14/21 23:45	S1M	TAL SAC

Client Sample ID: 21GST-SB007-10

Lab Sample ID: 320-81254-71

Date Collected: 10/30/21 15:50

Matrix: Solid

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	Analysis	D 2216		1			540312	11/05/21 12:51	TCS	TAL SAC

Client Sample ID: 21GST-SB007-10

Lab Sample ID: 320-81254-71

Date Collected: 10/30/21 15:50

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 91.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.25 g	10.0 mL	541434	11/09/21 18:26	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542653	11/14/21 23:55	S1M	TAL SAC

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

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			540312	11/05/21 12:51	TCS	TAL SAC

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

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 00:05	S1M	TAL SAC

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

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			540312	11/05/21 12:51	TCS	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.24 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

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

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			540312	11/05/21 12:51	TCS	TAL SAC

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

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

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			540312	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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.35 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

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

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			540312	11/05/21 12:51	TCS	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.36 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

Lab Sample ID: 320-81254-77

Date Collected: 10/31/21 13:49

Matrix: Solid

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	Analysis	D 2216		1			540312	11/05/21 12:51	TCS	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.03 g	10.0 mL	541434	11/09/21 18:26	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542653	11/15/21 00:58	S1M	TAL SAC

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

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			540312	11/05/21 12:51	TCS	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.24 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

Lab Sample ID: 320-81254-79

Date Collected: 10/31/21 14:19

Matrix: Solid

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	Analysis	D 2216		1			540312	11/05/21 12:51	TCS	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SS-012

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.51 g	10.0 mL	541434	11/09/21 18:26	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542653	11/15/21 01:39	S1M	TAL SAC

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

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			540312	11/05/21 12:51	TCS	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.01 g	10.0 mL	541434	11/09/21 18:26	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542653	11/15/21 01:50	S1M	TAL SAC

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

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			540335	11/05/21 14:24	KDB	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.45 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

Lab Sample ID: 320-81254-82

Date Collected: 10/31/21 11:35

Matrix: Solid

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	Analysis	D 2216		1			540335	11/05/21 14:24	KDB	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.59 g	10.0 mL	541628	11/10/21 13:52	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541977	11/12/21 04:28	LT	TAL SAC

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

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			540335	11/05/21 14:24	KDB	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.46 g	10.0 mL	541628	11/10/21 13:52	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541977	11/12/21 04:38	LT	TAL SAC

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

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			540335	11/05/21 14:24	KDB	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.38 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

Lab Sample ID: 320-81254-85

Date Collected: 10/31/21 11:05

Matrix: Solid

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	Analysis	D 2216		1			540335	11/05/21 14:24	KDB	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SB004-01

Lab Sample ID: 320-81254-85

Date Collected: 10/31/21 11:05

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 86.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.20 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

Lab Sample ID: 320-81254-86

Date Collected: 10/31/21 11:10

Matrix: Solid

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	Analysis	D 2216		1			540335	11/05/21 14:24	KDB	TAL SAC

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

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

Lab Sample ID: 320-81254-87

Date Collected: 10/31/21 11:20

Matrix: Solid

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	Analysis	D 2216		1			540335	11/05/21 14:24	KDB	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.19 g	10.0 mL	541628	11/10/21 13:52	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541977	11/12/21 05:40	LT	TAL SAC

Client Sample ID: 21GST-SB006-01

Lab Sample ID: 320-81254-88

Date Collected: 10/31/21 12:30

Matrix: Solid

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	Analysis	D 2216		1			540335	11/05/21 14:24	KDB	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SB006-01

Lab Sample ID: 320-81254-88

Date Collected: 10/31/21 12:30

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 92.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.52 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

Lab Sample ID: 320-81254-89

Date Collected: 10/31/21 12:20

Matrix: Solid

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	Analysis	D 2216		1			540335	11/05/21 14:24	KDB	TAL SAC

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

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

Lab Sample ID: 320-81254-90

Date Collected: 10/31/21 12:40

Matrix: Solid

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	Analysis	D 2216		1			540335	11/05/21 14:24	KDB	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.52 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

Lab Sample ID: 320-81254-91

Date Collected: 10/31/21 12:45

Matrix: Solid

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	Analysis	D 2216		1			540335	11/05/21 14:24	KDB	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SB006-03

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.36 g	10.0 mL	541730	11/10/21 18:34	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542490	11/13/21 14:45	RS1	TAL SAC

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

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			540335	11/05/21 14:24	KDB	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.19 g	10.0 mL	541730	11/10/21 18:34	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542490	11/13/21 15:17	RS1	TAL SAC

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

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			540335	11/05/21 14:24	KDB	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.49 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

Lab Sample ID: 320-81254-94

Date Collected: 10/31/21 13:15

Matrix: Solid

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	Analysis	D 2216		1			540335	11/05/21 14:24	KDB	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SB008-03

Lab Sample ID: 320-81254-94

Date Collected: 10/31/21 13:15

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 84.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.41 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

Lab Sample ID: 320-81254-95

Date Collected: 10/31/21 14:15

Matrix: Solid

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	Analysis	D 2216		1			540335	11/05/21 14:24	KDB	TAL SAC

Client Sample ID: 21GST-SB011-01

Lab Sample ID: 320-81254-95

Date Collected: 10/31/21 14:15

Matrix: Solid

Date Received: 11/03/21 14:01

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			5.22 g	10.0 mL	541730	11/10/21 18:34	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542490	11/13/21 15:48	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	10			542864	11/15/21 12:56	SK	TAL SAC

Client Sample ID: 21GST-SB011-12

Lab Sample ID: 320-81254-96

Date Collected: 10/31/21 14:25

Matrix: Solid

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	Analysis	D 2216		1			540335	11/05/21 14:24	KDB	TAL SAC

Client Sample ID: 21GST-SB011-12

Lab Sample ID: 320-81254-96

Date Collected: 10/31/21 14:25

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 93.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.31 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

Lab Sample ID: 320-81254-97

Date Collected: 10/31/21 14:35

Matrix: Solid

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	Analysis	D 2216		1			540335	11/05/21 14:24	KDB	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SB011-02

Lab Sample ID: 320-81254-97

Date Collected: 10/31/21 14:35

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 89.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.22 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

Lab Sample ID: 320-81254-98

Date Collected: 10/31/21 14:45

Matrix: Solid

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	Analysis	D 2216		1			540335	11/05/21 14:24	KDB	TAL SAC

Client Sample ID: 21GST-SB011-03

Lab Sample ID: 320-81254-98

Date Collected: 10/31/21 14:45

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 81.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.36 g	10.0 mL	541730	11/10/21 18:34	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542490	11/13/21 16:40	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

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			540335	11/05/21 14:24	KDB	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

Percent Solids: 88.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.48 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

Lab Sample ID: 320-81254-100

Date Collected: 10/31/21 15:05

Matrix: Solid

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	Analysis	D 2216		1			540335	11/05/21 14:24	KDB	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SB014-02

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.59 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

Lab Sample ID: 320-81254-101

Date Collected: 10/31/21 15:10

Matrix: Solid

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	Analysis	D 2216		1			540353	11/05/21 14:24	KDB	TAL SAC

Client Sample ID: 21GST-SB014-03

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.35 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

Lab Sample ID: 320-81254-102

Date Collected: 11/01/21 09:48

Matrix: Solid

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	Analysis	D 2216		1			540353	11/05/21 14:24	KDB	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.12 g	10.0 mL	541730	11/10/21 18:34	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542490	11/13/21 17:22	RS1	TAL SAC

Client Sample ID: 21GST-SS-033

Lab Sample ID: 320-81254-103

Date Collected: 11/01/21 09:56

Matrix: Solid

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	Analysis	D 2216		1			540353	11/05/21 14:24	KDB	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SS-033

Lab Sample ID: 320-81254-103

Date Collected: 11/01/21 09:56

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 95.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.33 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

Lab Sample ID: 320-81254-104

Date Collected: 11/01/21 09:59

Matrix: Solid

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	Analysis	D 2216		1			540353	11/05/21 14:24	KDB	TAL SAC

Client Sample ID: 21GST-SS-034

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

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

Lab Sample ID: 320-81254-105

Date Collected: 11/01/21 10:16

Matrix: Solid

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	Analysis	D 2216		1			540353	11/05/21 14:24	KDB	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.27 g	10.0 mL	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

Lab Sample ID: 320-81254-106

Date Collected: 11/01/21 10:19

Matrix: Solid

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	Analysis	D 2216		1			540353	11/05/21 14:24	KDB	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

Percent Solids: 87.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.23 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

Lab Sample ID: 320-81254-107

Date Collected: 11/01/21 10:09

Matrix: Solid

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	Analysis	D 2216		1			540353	11/05/21 14:24	KDB	TAL SAC

Client Sample ID: 21GST-SS-103

Lab Sample ID: 320-81254-107

Date Collected: 11/01/21 10:09

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 89.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.32 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

Lab Sample ID: 320-81254-108

Date Collected: 11/01/21 10:36

Matrix: Solid

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	Analysis	D 2216		1			540353	11/05/21 14:24	KDB	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.11 g	10.0 mL	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

Lab Sample ID: 320-81254-109

Date Collected: 11/01/21 10:28

Matrix: Solid

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	Analysis	D 2216		1			540353	11/05/21 14:24	KDB	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-SS-001

Lab Sample ID: 320-81254-109

Date Collected: 11/01/21 10:28

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 92.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.57 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

Lab Sample ID: 320-81254-110

Date Collected: 10/31/21 09:55

Matrix: Solid

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	Analysis	D 2216		1			540353	11/05/21 14:24	KDB	TAL SAC

Client Sample ID: 21GST-MW16-01

Lab Sample ID: 320-81254-110

Date Collected: 10/31/21 09:55

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 90.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.20 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

Lab Sample ID: 320-81254-111

Date Collected: 10/31/21 10:00

Matrix: Solid

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	Analysis	D 2216		1			540353	11/05/21 14:24	KDB	TAL SAC

Client Sample ID: 21GST-MW16-02

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.05 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

Lab Sample ID: 320-81254-112

Date Collected: 10/31/21 10:05

Matrix: Solid

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	Analysis	D 2216		1			540353	11/05/21 14:24	KDB	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.14 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

Lab Sample ID: 320-81254-113

Date Collected: 10/31/21 10:15

Matrix: Solid

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	Analysis	D 2216		1			540353	11/05/21 14:24	KDB	TAL SAC

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

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	541731	11/10/21 18:37	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542335	11/12/21 23:08	S1M	TAL SAC

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

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			540353	11/05/21 14:24	KDB	TAL SAC

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.07 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

Lab Sample ID: 320-81254-115

Date Collected: 11/01/21 10:30

Matrix: Solid

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	Analysis	D 2216		1			540353	11/05/21 14:24	KDB	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.38 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

Lab Sample ID: 320-81254-116

Date Collected: 11/01/21 13:45

Matrix: Solid

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	Analysis	D 2216		1			540353	11/05/21 14:24	KDB	TAL SAC

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

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	541731	11/10/21 18:37	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542335	11/12/21 23:40	S1M	TAL SAC

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

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			540353	11/05/21 14:24	KDB	TAL SAC

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

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	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

Lab Sample ID: 320-81254-118

Date Collected: 11/01/21 16:10

Matrix: Solid

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	Analysis	D 2216		1			540353	11/05/21 14:24	KDB	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Client Sample ID: 21GST-MW20-02

Lab Sample ID: 320-81254-118

Date Collected: 11/01/21 16:10

Matrix: Solid

Date Received: 11/03/21 14:01

Percent Solids: 75.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.24 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



Accreditation/Certification Summary

Client: Shannon & Wilson, Inc
Project/Site: SC Soils#3

Job ID: 320-81254-1

Laboratory: Eurofins TestAmerica, Sacramento

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24

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

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



Method Summary

Client: 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



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
320-81254-1	21GST-SS-023	Solid	10/29/21 10:21	11/03/21 14:01
320-81254-2	21GST-SS-029	Solid	10/29/21 10:47	11/03/21 14:01
320-81254-3	21GST-SS-028	Solid	10/29/21 10:53	11/03/21 14:01
320-81254-4	21GST-SS-027	Solid	10/29/21 11:04	11/03/21 14:01
320-81254-5	21GST-SS-026	Solid	10/29/21 11:10	11/03/21 14:01
320-81254-6	21GST-SS-126	Solid	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
320-81254-13	21GST-SS-018	Solid	10/29/21 12:42	11/03/21 14:01
320-81254-14	21GST-SS-014	Solid	10/29/21 12:56	11/03/21 14:01
320-81254-15	21GST-SS-017	Solid	10/29/21 13:07	11/03/21 14:01
320-81254-16	21GST-SS-016	Solid	10/29/21 13:16	11/03/21 14:01
320-81254-17	21GST-SS-015	Solid	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
320-81254-19	21GST-SS-006	Solid	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
320-81254-21	21GST-SS-005	Solid	10/29/21 13:50	11/03/21 14:01
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
320-81254-24	21GST-MW14-10	Solid	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	10/27/21 14:25	11/03/21 14:01
320-81254-27	21GST-MW14-04	Solid	10/27/21 14:30	11/03/21 14:01
320-81254-28	21GST-MW14-05	Solid	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
320-81254-30	21GST-MW18-01	Solid	10/28/21 09:55	11/03/21 14:01
320-81254-31	21GST-MW18-02	Solid	10/28/21 10:10	11/03/21 14:01
320-81254-32	21GST-MW18-12	Solid	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	10/28/21 11:10	11/03/21 14:01
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
320-81254-37	21GST-MW15-01	Solid	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
320-81254-39	21GST-MW15-03	Solid	10/29/21 13:55	11/03/21 14:01
320-81254-40	21GST-MW15-04	Solid	10/29/21 14:10	11/03/21 14:01
320-81254-41	21GST-MW15-14	Solid	10/29/21 14:00	11/03/21 14:01
320-81254-42	21GST-MW15-05	Solid	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
320-81254-45	21GST-SB002-02	Solid	10/30/21 09:50	11/03/21 14:01
320-81254-46	21GST-SB002-03	Solid	10/30/21 10:00	11/03/21 14:01
320-81254-47	21GST-SB002-04	Solid	10/30/21 10:10	11/03/21 14:01
320-81254-48	21GST-SB001-01	Solid	10/30/21 10:30	11/03/21 14:01
320-81254-49	21GST-SB001-02	Solid	10/30/21 10:40	11/03/21 14:01
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
320-81254-52	21GST-SB009-01	Solid	10/30/21 11:35	11/03/21 14:01
320-81254-53	21GST-SB009-10	Solid	10/30/21 11:25	11/03/21 14:01
320-81254-54	21GST-SB009-02	Solid	10/30/21 11:50	11/03/21 14:01
320-81254-55	21GST-SB009-03	Solid	10/30/21 12:00	11/03/21 14:01



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
320-81254-56	21GST-SB009-04	Solid	10/30/21 12:05	11/03/21 14:01
320-81254-57	21GST-SB010-01	Solid	10/30/21 12:35	11/03/21 14:01
320-81254-58	21GST-SB010-10	Solid	10/30/21 12:25	11/03/21 14:01
320-81254-59	21GST-SB010-02	Solid	10/30/21 12:40	11/03/21 14:01
320-81254-60	21GST-SB010-03	Solid	10/30/21 12:45	11/03/21 14:01
320-81254-61	21GST-SB012-01	Solid	10/30/21 13:25	11/03/21 14:01
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
320-81254-68	21GST-SB005-02	Solid	10/30/21 15:15	11/03/21 14:01
320-81254-69	21GST-SB005-03	Solid	10/30/21 15:30	11/03/21 14:01
320-81254-70	21GST-SB007-01	Solid	10/30/21 16:00	11/03/21 14:01
320-81254-71	21GST-SB007-10	Solid	10/30/21 15:50	11/03/21 14:01
320-81254-72	21GST-SB007-02	Solid	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
320-81254-74	21GST-SS-030	Solid	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
320-81254-79	21GST-SS-012	Solid	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	10/31/21 14:31	11/03/21 14:01
320-81254-82	21GST-SB003-01	Solid	10/31/21 11:35	11/03/21 14:01
320-81254-83	21GST-SB003-02	Solid	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
320-81254-85	21GST-SB004-01	Solid	10/31/21 11:05	11/03/21 14:01
320-81254-86	21GST-SB004-02	Solid	10/31/21 11:10	11/03/21 14:01
320-81254-87	21GST-SB004-03	Solid	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	10/31/21 12:20	11/03/21 14:01
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
320-81254-92	21GST-SB008-01	Solid	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
320-81254-95	21GST-SB011-01	Solid	10/31/21 14:15	11/03/21 14:01
320-81254-96	21GST-SB011-12	Solid	10/31/21 14:25	11/03/21 14:01
320-81254-97	21GST-SB011-02	Solid	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
320-81254-100	21GST-SB014-02	Solid	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
320-81254-102	21GST-SS-032	Solid	11/01/21 09:48	11/03/21 14:01
320-81254-103	21GST-SS-033	Solid	11/01/21 09:56	11/03/21 14:01
320-81254-104	21GST-SS-034	Solid	11/01/21 09:59	11/03/21 14:01
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
320-81254-107	21GST-SS-103	Solid	11/01/21 10:09	11/03/21 14:01
320-81254-108	21GST-SS-002	Solid	11/01/21 10:36	11/03/21 14:01
320-81254-109	21GST-SS-001	Solid	11/01/21 10:28	11/03/21 14:01
320-81254-110	21GST-MW16-01	Solid	10/31/21 09:55	11/03/21 14:01



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
320-81254-118	21GST-MW20-02	Solid	11/01/21 16:10	11/03/21 14:01

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

CHAIN-OF-CUSTODY RECORD

Analytical Methods (include preservative if used)

Turn Around Time:
 Normal Rush
 Please Specify

Quote No:

J-Flags: Yes No

PFAS-18 or 19 AS
 L
 537

Total Number of Containers

Remarks/Matrix Composition/Grab? Sample Containers

Sample Identity	Lab No.	Time	Date Sampled	Analytical Methods					Total Number of Containers	Remarks/Matrix Composition/Grab? Sample Containers
21GST-SS-020		1219	10/29/21	X					1	Soil
21GST-SS-019		1231		X					1	
21GST-SS-018		1242		X					1	
21GST-SS-014		1256		X					1	
21GST-SS-017		1307		X					1	
21GST-SS-016		1316		X					1	
21GST-SS-015		1319		X					1	
21GST-SS-008		1328		X					1	
21GST-SS-006		1336		X					1	
21GST-SS-106		1326		X					1	

Project Information

Number: 102599-008
 Name: SC Soils #3
 Contact: Kristen
 Ongoing Project? Yes No
 Sampler: KRF/MS

Sample Receipt

Total No. of Containers: _____
 COC Seals/Intact? Y/N/NA _____
 Received Good Cond./Cold _____
 Temp: _____
 Delivery Method: _____

Relinquished By: 1.

Signature: _____ Time: 7:30
 Printed Name: Kristen Frabinger Date: 11-2-21
 Company: SW

Relinquished By: 2.

Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Relinquished By: 3.

Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Notes:

Received By: 1.

Signature: _____ Time: 17:01
 Printed Name: Jason Simmons Date: 11/3/21
 Company: BSTBAC

Received By: 2.

Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Received By: 3.

Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
 Yellow - w/shipment - for consignee files
 Pink - Shannon & Wilson - job file



CHAIN-OF-CUSTODY RECORD

Analytical Methods (include preservative if used)

Turn Around Time:
 Normal Rush
 Please Specify

Quote No:

J-Flags: Yes No

PHAS-18 analysis 537

Total Number of Containers

Sample Identity	Lab No.	Time	Date Sampled							Remarks/Matrix Composition/Grab? Sample Containers
- 21GST-MW18-02		1010	10/25/21	X						Soil
- 21GST-MW18-12		1000	↓	X						
- 21GST-MW18-03		1020	↓	X						
- 21GST-MW18-04		1110	↓	X						
- 21GST-MW18-05		1125	↓	X						
- 21GST-MW18-06		1210	↓	X						
- 21GST-MW15-01		1300	10/29/21	X						
- 21GST-MW15-02		1305	↓	X						
- 21GST-MW15-03		1355	↓	X						
- 21GST-MW15-04		1410	↓	X						

Project Information

Number: 162599-008
 Name: SC Soil #3
 Contact: Kristen
 Ongoing Project? Yes No
 Sampler: KRF/APW

Sample Receipt

Total No. of Containers: _____
 COC Seals/Intact? Y/N/NA _____
 Received Good Cond./Cold _____
 Temp: _____
 Delivery Method: _____

Relinquished By: 1.

Signature: _____ Time: 730
 Printed Name: Kristen Freilinger Date: 11-2-21
 Company: STW

Relinquished By: 2.

Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Relinquished By: 3.

Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Notes:

Received By: 1.

Signature: _____ Time: 1401
 Printed Name: John Simmons Date: 11/2/21
 Company: STW

Received By: 2.

Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Received By: 3.

Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
 Yellow - w/shipment - for consignee files
 Pink - Shannon & Wilson - job file



Address: _____

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TAL-8210

Regulatory Program: DW NPDES RCRA Other:

Client Contact		Project Manager: <u>David Alltred</u>		Site Contact: <u>Kristen Freiburger</u>		Date:		COC No:	
Company Name: <u>Shannon & Wilson</u>		Tel/Email:		Lab Contact: <u>David Alltred</u>		Carrier:		_____ of _____ COCs	
Address:		Analysis Turnaround Time		Filtered Sample (Y/N) Perform MS / MSD (Y/N) <u>PFAS-18 analytes 537M</u>				Sampler: For Lab Use Only: Walk-in Client: _____ Lab Sampling: _____ Job / SDG No.: _____	
City/State/Zip:		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS							
Phone:		TAT if different from Below _____							
Fax:		<input type="checkbox"/> 2 weeks							
Project Name: <u>SC Soils #3</u>		<input type="checkbox"/> 1 week							
Site:		<input type="checkbox"/> 2 days							
P O #		<input type="checkbox"/> 1 day							
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.			Sample Specific Notes:
<u>21GST-MW15-14</u>		<u>10/29/21</u>	<u>1400</u>	<u>G</u>	<u>Soil</u>	<u>1</u>	<u>X</u>		
<u>21GST-MW15-05</u>		<u>↓</u>	<u>1435</u>	<u>G</u>	<u>↓</u>	<u>1</u>	<u>X</u>		
<u>21GST-MW15-06</u>		<u>↓</u>	<u>1530</u>	<u>G</u>	<u>↓</u>	<u>1</u>	<u>X</u>		
<u>21GST-SB002-01</u>		<u>10/30/21</u>	<u>0935</u>	<u>G</u>	<u>↓</u>	<u>1</u>	<u>X</u>		
<u>21GST-SB002-02</u>		<u>↓</u>	<u>0950</u>	<u>G</u>	<u>↓</u>	<u>1</u>	<u>X</u>		
<u>21GST-SB002-03</u>		<u>↓</u>	<u>1000</u>	<u>G</u>	<u>↓</u>	<u>1</u>	<u>X</u>		
<u>21GST-SB002-04</u>		<u>↓</u>	<u>1010</u>	<u>G</u>	<u>↓</u>	<u>1</u>	<u>X</u>		
<u>21GST-SB001-01</u>		<u>↓</u>	<u>1030</u>	<u>G</u>	<u>↓</u>	<u>1</u>	<u>X</u>		
<u>21GST-SB001-02</u>		<u>↓</u>	<u>1040</u>	<u>G</u>	<u>↓</u>	<u>1</u>	<u>X</u>		
<u>21GST-SB001-03</u>		<u>↓</u>	<u>1050</u>	<u>G</u>	<u>↓</u>	<u>1</u>	<u>X</u>		
<u>21GST-SB001-04</u>		<u>↓</u>	<u>1100</u>	<u>G</u>	<u>↓</u>	<u>1</u>	<u>X</u>		
<u>21GST-SB009-01</u>		<u>↓</u>	<u>1135</u>	<u>G</u>	<u>↓</u>	<u>1</u>	<u>X</u>		
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other _____									
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.					Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)				
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown					<input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months				
Special Instructions/QC Requirements & Comments:									
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.: <u>1504664, 1504665</u>		Cooler Temp. (°C): Obs'd: <u>6.7</u> Corr'd: <u>6.7</u>		Therm ID No.: <u>L-05</u>			
Relinquished by: <u>Kristen Freiburger</u>		Company: <u>SW</u>		Date/Time: <u>11-2-21 730</u>		Received by: <u>[Signature]</u>		Company: <u>[Signature]</u>	
Relinquished by:		Company:		Date/Time:		Received by:		Company:	
Relinquished by:		Company:		Date/Time:		Received in Laboratory by:		Company:	

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Address: _____

Regulatory Program: DW NPDES RCRA Other:

Client Contact		Project Manager: <u>David Allford</u>		Site Contact:		Date:		COC No:	
Company Name: <u>Shannon & Wilson</u>		Tel/Email:		Lab Contact:		Carrier:		_____ of _____ COCs	
Address:		Analysis Turnaround Time		Filtered Sample (Y/N) Perform MS / MSD (Y/N) <u>PFAS - 18 analytes 5/7</u>				Sampler: For Lab Use Only: Walk-in Client: _____ Lab Sampling: _____ Job / SDG No.: _____	
City/State/Zip:		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS							
Phone:		TAT if different from Below _____							
Fax:		<input type="checkbox"/> 2 weeks							
Project Name: <u>SC Soils #3</u>		<input type="checkbox"/> 1 week							
Site:		<input type="checkbox"/> 2 days							
P O #		<input type="checkbox"/> 1 day							
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.			Sample Specific Notes:
<u>21GST-SB009-10</u>		<u>10/30/21</u>	<u>1125</u>	<u>G</u>	<u>Soil</u>	<u>1</u>	<u>X</u>		
<u>21GST-SB009-02</u>			<u>1150</u>				<u>X</u>		
<u>21GST-SB009-03</u>			<u>1200</u>				<u>X</u>		
<u>21GST-SB009-04</u>			<u>1205</u>				<u>X</u>		
<u>21GST-SB010-01</u>			<u>1235</u>				<u>X</u>		
<u>21GST-SB010-10</u>			<u>1225</u>				<u>X</u>		
<u>21GST-SB010-02</u>			<u>1240</u>				<u>X</u>		
<u>21GST-SB010-03</u>			<u>1245</u>				<u>X</u>		
<u>21GST-SB012-01</u>			<u>1325</u>				<u>X</u>		
<u>21GST-SB012-02</u>			<u>1330</u>				<u>X</u>		
<u>21GST-SB012-03</u>			<u>1340</u>				<u>X</u>		
<u>21GST-SB013-01</u>			<u>1430</u>				<u>X</u>		
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.						<input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months			
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown									
Special Instructions/QC Requirements & Comments:									
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.: <u>1504664, 1504665</u>		Cooler Temp. (°C): Obs'd: <u>6.7</u> Corr'd: <u>6.7</u>		Therm ID No.: <u>607</u>			
Relinquished by: <u>Kristen Freiburger</u>		Company: <u>SW</u>		Date/Time: <u>11-2-21 730</u>		Received by: <u>[Signature]</u>		Company: <u>EST82C</u>	
Relinquished by:		Company:		Date/Time:		Received by:		Date/Time: <u>11/3/21 1401</u>	
Relinquished by:		Company:		Date/Time:		Received in Laboratory by:		Date/Time:	

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Address: _____

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TAL-8210

Regulatory Program: DW NPDES RCRA Other:

Client Contact		Project Manager: David Altuda		Site Contact:		Date:		COC No:	
Company Name: Shannon & Wilson		Tel/Email:		Lab Contact:		Carrier:		_____ of _____ COCs	
Address:		Analysis Turnaround Time		Filtered Sample (Y/N) Perform MS / MSD (Y/N) MS - 15 min (MS)				Sampler: For Lab Use Only: Walk-in Client: Lab Sampling: Job / SDG No.:	
City/State/Zip:		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS							
Phone:		TAT if different from Below _____							
Fax:		<input type="checkbox"/> 2 weeks							
Project Name: SC Soils #3		<input type="checkbox"/> 1 week							
Site:		<input type="checkbox"/> 2 days							
P O #		<input type="checkbox"/> 1 day							
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sample Specific Notes:		
21 GST-SB013-02		10/30/21	1435	G	Soil	1			
21 GST-SB013-03			1445			1			
21 GST-SB005-01			1510			1			
21 GST-SB005-02			1515			1			
21 GST-SB005-03			1530			1			
21 GST-SB007-01			1600			1			
21 GST-SB007-10			1550			1			
21 GST-SB007-02			1605			1			
21 GST-SB007-03			1615			1			
21 GST-SS-030		10/31/21	1349			1			
21 GST-SS-010			1354			1			
21 GST-SS-031			1359			1			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other									
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.					Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)				
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown					<input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months				
Special Instructions/QC Requirements & Comments:									
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.: 1504664, 1504665		Cooler Temp. (°C): Obs'd: 6.7L Corr'd: 6.76		Therm ID No.: 605			
Relinquished by: Kristen Freilinger		Company: SW		Date/Time: 11-2-21 730		Received by: [Signature]		Company: [Signature]	
Relinquished by:		Company:		Date/Time:		Received by:		Company:	
Relinquished by:		Company:		Date/Time:		Received in Laboratory by:		Company:	

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Address: _____

Regulatory Program: DW NPDES RCRA Other:

Client Contact		Project Manager: <u>David Alteder</u>		Site Contact:		Date:		COC No:	
Company Name: <u>Shannon & Wilson</u>		Tel/Email:		Lab Contact:		Carrier:		_____ of _____ COCs	
Address:		Analysis Turnaround Time		Filtered Sample (Y/N) Perform MS / MSD (Y/N) <u>PPAS-18 analytes (537)</u>				Sampler: For Lab Use Only: Walk-in Client: _____ Lab Sampling: _____ Job / SDG No.: _____	
City/State/Zip:		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS							
Phone:		TAT if different from Below _____							
Fax:		<input type="checkbox"/> 2 weeks							
Project Name: <u>SC Soils #3</u>		<input type="checkbox"/> 1 week							
Site:		<input type="checkbox"/> 2 days							
P O #		<input type="checkbox"/> 1 day							
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.			Sample Specific Notes:
<u>21GST-SS-131</u>		<u>10/1/21</u>	<u>1349</u>	<u>G</u>	<u>Soil</u>	<u>1</u>	<u>X</u>		
<u>21GST-SS-009</u>			<u>1413</u>	<u>G</u>		<u>1</u>	<u>X</u>		
<u>21GST-SS-012</u>			<u>1419</u>	<u>G</u>		<u>1</u>	<u>X</u>		
<u>21GST-SS-011</u>			<u>1427</u>	<u>G</u>		<u>1</u>	<u>X</u>		
<u>21GST-SS-013</u>		<u>↓</u>	<u>1431</u>	<u>G</u>	<u>↓</u>	<u>1</u>	<u>X</u>		
21GST-SS-01									
21GST-SS-02									
21GST-SS-03									
<u>21GST-SB003-01</u>		<u>10/3/21</u>	<u>1135</u>	<u>G</u>	<u>Soil</u>	<u>1</u>	<u>X</u>		
<u>21GST-SB003-02</u>			<u>1140</u>	<u>G</u>		<u>1</u>	<u>X</u>		
<u>21GST-SB003-03</u>			<u>1150</u>	<u>G</u>		<u>1</u>	<u>X</u>		
<u>21GST-SB004-01</u>		<u>↓</u>	<u>1105</u>	<u>G</u>	<u>↓</u>	<u>1</u>	<u>X</u>		
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.					<input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months				
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown									
Special Instructions/QC Requirements & Comments:									
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.: <u>1504664 1504665</u>		Cooler Temp. (°C): Obs'd: <u>6.7c</u> Corr'd: <u>6.7c</u>		Therm ID No.: <u>605</u>			
Relinquished by: <u>Kristen Freiberg</u>		Company: <u>SW</u>		Date/Time: <u>11-2-21 730</u>		Received by: <u>[Signature]</u>		Company: <u>EST</u>	
Relinquished by:		Company:		Date/Time:		Received by:		Date/Time: <u>11/3/21 1401</u>	
Relinquished by:		Company:		Date/Time:		Received in Laboratory by:		Date/Time:	

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Address: _____

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TAL-8210

Regulatory Program: DW NPDES RCRA Other:

Client Contact		Project Manager: <u>David Allender</u>		Site Contact:		Date:		COC No:	
Company Name: <u>Shannon & Wilson, Inc</u>		Tel/Email:		Lab Contact:		Carrier:		_____ of _____ COCs	
Address:		Analysis Turnaround Time		Filtered Sample (Y/N) Perform MS / MSD (Y/N) <u>PFAS - 18 analytes 537</u>				Sampler: For Lab Use Only: Walk-in Client: _____ Lab Sampling: _____ Job / SDG No.: _____	
City/State/Zip:		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS							
Phone:		TAT if different from Below _____							
Fax:		<input type="checkbox"/> 2 weeks							
Project Name: <u>SC Soils #3</u>		<input type="checkbox"/> 1 week							
Site:		<input type="checkbox"/> 2 days							
P O #		<input type="checkbox"/> 1 day							
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sample Specific Notes:		
21 GST-SB004-02		10/31/21	1110	G	Soil	1			
21 GST-SB004-03			1120	G	Soil	1			
21 GST-SB006-01			1230	G		1			
21 GST-SB006-10			1220	G		1			
21 GST-SB006-02			1240	G		1			
21 GST-SB006-03			1245	G		1			
21 GST-SB008-01			1305	G		1			
21 GST-SB008-02			1310	G		1			
21 GST-SB008-03			1315	G		1			
21 GST-SB011-01			1415	G		1			
21 GST-SB011-12			1425	G		1			
21 GST-SB011-02			1435	G		1			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other									
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.								Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown								<input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months	
Special Instructions/QC Requirements & Comments:									
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.: <u>1504664 1504665</u>		Cooler Temp. (°C): Obs'd: <u>6.7c</u> Corr'd: <u>6.7c</u>		Therm ID No.: <u>605</u>			
Relinquished by: <u>Kristen Freiburger</u>		Company: <u>SW</u>		Date/Time: <u>11-2-21 730</u>		Received by: <u>[Signature]</u>		Company: <u>EB&S</u>	
Relinquished by:		Company:		Date/Time:		Received by:		Company:	
Relinquished by:		Company:		Date/Time:		Received in Laboratory by:		Company:	

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Address: _____

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TAL-8210

Regulatory Program: DW NPDES RCRA Other:

Client Contact		Project Manager: <u>David Alltucko</u>		Site Contact:		Date:		COC No:	
Company Name: <u>Shannon & Wilson</u>		Tel/Email:		Lab Contact:		Carrier:		_____ of _____ COCs	
Address:		Analysis Turnaround Time		Filtered Sample (Y/N) Perform MS/MSD (Y/N) <u>PEAS-18 analytes</u>				Sampler: For Lab Use Only: Walk-in Client: Lab Sampling:	
City/State/Zip:		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS							
Phone:		TAT if different from Below _____							
Fax:		<input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day							
Project Name: <u>SC Soils #3</u>								Job / SDG No.:	
Site:									
P O #									
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.			Sample Specific Notes:
21 GST-SB011-03		10-31-21	1445	G	Soil	1	X		
21 GST-SB014-01		↓	1500	↓	↓	1	X		
21 GST-SB014-02		↓	1505	↓	↓	1	X		
21 GST-SB014-03		↓	1510	↓	↓	1	X		
21 GST-SS-032		11-1-21	948	↓	↓	1	X		
21 GST-SS-033		↓	956	↓	↓	1	X		
21 GST-SS-034		↓	959	↓	↓	1	X		
21 GST-SS-004		↓	10:16	↓	↓	1	X		
21 GST-SS-003		↓	10:19	↓	↓	1	X		
21 GST-SS-103		↓	10:09	↓	↓	1	X		
21 GST-SS-002		↓	10:36	↓	↓	1	X		
21 GST-SS-001		↓	10:28	↓	↓	1	X		
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other									
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.								Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown								<input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months	
Special Instructions/QC Requirements & Comments:									
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.: <u>1504664 1504665</u>		Cooler Temp. (°C): Obs'd: <u>6.7c</u> Corr'd: <u>6.7c</u>		Therm ID No.: <u>L05</u>			
Relinquished by: <u>Kristen Freilinger</u>		Company: <u>S&W</u>		Date/Time: <u>11-2-21 730</u>		Received by: <u>[Signature]</u>		Company: <u>BOBAX</u>	
Relinquished by:		Company:		Date/Time:		Received by:		Date/Time: <u>11/3/21 1401</u>	
Relinquished by:		Company:		Date/Time:		Received in Laboratory by:		Company:	

11/17/2021



Address: _____

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TAL-8210

Regulatory Program: DW NPDES RCRA Other:

Client Contact		Project Manager: David Allister		Site Contact:		Date:		COC No:	
Company Name: Shannon & Wilson		Tel/Email:		Lab Contact:		Carrier:		_____ of _____ COCs	
Address:		Analysis Turnaround Time		Filtered Sample (Y/N) Perform MS/MSD (Y/N) PFAS - Analyte 537				Sampler: For Lab Use Only: Walk-in Client: _____ Lab Sampling: _____ Job / SDG No.: _____	
City/State/Zip:		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS							
Phone:		TAT if different from Below _____							
Fax:		<input type="checkbox"/> 2 weeks							
Project Name: SC Soils #3		<input type="checkbox"/> 1 week							
Site:		<input type="checkbox"/> 2 days							
P O #		<input type="checkbox"/> 1 day							
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sample Specific Notes:		
21GST-MW16-01		10-31-21	955	G Soil		1			
21GST-MW16-02			1000			1			
21GST-MW16-03			1005			1			
21GST-MW16-04			1015			1			
21GST-MW19-01		↓	1605			1			
21GST-MW19-02		11-1-21	1030			1			
21GST-MW20-01			1345			1			
21GST-MW20-10			1335			1			
21GST-MW20-02		↓	1610			1			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____									
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.					Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)				
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown					<input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months				
Special Instructions/QC Requirements & Comments:									
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.: 1504664, 1504665		Cooler Temp. (°C): Obs'd: 6.7 Corr'd: 6.7		Therm ID No.: 1005			
Relinquished by: Kristen DeBayer		Company: SW		Date/Time: 11-2-21 730		Received by:		Company: ESTBAC	
Relinquished by:		Company:		Date/Time:		Received by:		Date/Time: 11/3/21 1401	
Relinquished by:		Company:		Date/Time:		Received in Laboratory by:		Date/Time:	

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11/17/2021



Login Sample Receipt Checklist

Client: Shannon & Wilson, Inc

Job Number: 320-81254-1

Login Number: 81254

List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Cahill, Nicholas P

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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	
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 <math><6\text{mm}</math> (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

Laboratory Report Date:

Note: Any N/A or No box checked must have an explanation in the comments box.

1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform 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)

a. CoC information completed, signed, and dated (including released/received by)?

Yes No N/A Comments:

b. Correct analyses requested?

Yes No N/A Comments:

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

Yes No N/A Comments:

The cooler temperatures were recorded at 6.7° and 8° C upon receipt at the laboratory.

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 chemical preservation.

c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

Yes No N/A Comments:

The sample receipt form noted the samples arrived in good condition.

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 No N/A 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 No N/A 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.

Laboratory Report Date:

b. Discrepancies, errors, or QC failures identified by the lab?

Yes No N/A 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 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 case narrative does not specify an effect on the data. See section 6 for further assessment.

5. Samples 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:

Laboratory Report Date:

- 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/usability is 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 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 No N/A 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)

- i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

Yes No N/A Comments:

An LCS was reported for each preparation batch. See MS/MSD discussion for assessment of method precision.

Laboratory Report Date:

- ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

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 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:

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.

- vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No N/A 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

- i. Organics – One MS/MSD reported per matrix, analysis and 20 samples?

Yes No N/A Comments:

Laboratory Report Date:

- ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?

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 limits and 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 MSD associated with preparatory batch 541157.

- 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:

Project sample *GST21-MW15-04* is the parent sample from which the MSD was spiked. HFPO-DA was not detected in the parent sample; therefore, the parent sample result is considered estimated due 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 been 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.

- 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 No N/A 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:

Laboratory Report Date:

iii. Do the sample results with failed surrogate/IDA recoveries have data flags? If so, are the data flags clearly defined?

Yes No N/A 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

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)

Yes No N/A 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 No N/A 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 No N/A Comments:

Laboratory Report Date:

ii. Submitted blind to lab?

Yes No N/A 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)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where R_1 = Sample Concentration R_2 = Field Duplicate ConcentrationYes No N/A 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.

Laboratory Report Date:

- g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below)?

Yes No N/A 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 No N/A 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 No N/A 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.

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



Authorized for release by:
11/16/2021 1:15:03 PM

David Alltucker, Project Manager I
(916)374-4383
David.Alltucker@Eurofinset.com

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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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Definitions/Glossary

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

Qualifiers

LCMS

Qualifier	Qualifier Description
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.
α	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

Case Narrative

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

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.

Detection Summary

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

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	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	7.7		1.7	0.50	ng/L	1		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	Qualifier	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	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	4.2		1.7	0.50	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.4	J	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)	0.70	J	1.7	0.17	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	7.6		1.7	0.49	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	6.2		1.7	0.46	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

Detection Summary

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	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	8.6		1.8	0.51	ng/L	1		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

Lab Sample ID: 320-81258-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	26		1.7	0.49	ng/L	1		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

Lab Sample ID: 320-81258-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	45		1.7	0.51	ng/L	1		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

Lab Sample ID: 320-81258-12

No Detections.

Client Sample ID: 21GST-TWP-103

Lab Sample ID: 320-81258-13

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.

Eurofins TestAmerica, Sacramento

Detection Summary

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

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	J	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	Qualifier	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

Lab Sample ID: 320-81258-21

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

Detection Summary

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

Client Sample ID: 21GST-TWP-111 (Continued)

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	Qualifier	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	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	3.9		1.8	0.51	ng/L	1		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

Detection Summary

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

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

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.

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

Client Sample ID: 21GST-TWP-15

Lab Sample ID: 320-81258-1

Date Collected: 10/27/21 10:10

Matrix: Water

Date Received: 11/03/21 14:01

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)	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.2	1.0	ng/L		11/04/21 19:30	11/11/21 02:39	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.2	1.1	ng/L		11/04/21 19:30	11/11/21 02:39	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.7	0.20	ng/L		11/04/21 19:30	11/11/21 02:39	1
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-Chloroeicosafuoro-3-oxaundecane-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 - 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 - 150	11/04/21 19:30	11/11/21 02:39	1
18O2 PFHxS	100		50 - 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
d3-NMeFOSAA	105		50 - 150	11/04/21 19:30	11/11/21 02:39	1
d5-NEtFOSAA	117		50 - 150	11/04/21 19:30	11/11/21 02:39	1
13C3 HFPO-DA	99		50 - 150	11/04/21 19:30	11/11/21 02:39	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

Client Sample ID: 21GST-TWP-115

Lab Sample ID: 320-81258-2

Date Collected: 10/27/21 10:00

Matrix: Water

Date Received: 11/03/21 14:01

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)	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.6	1.1	ng/L		11/04/21 19:30	11/11/21 02:49	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.6	1.2	ng/L		11/04/21 19:30	11/11/21 02:49	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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	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
18O2 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 - 150	11/04/21 19:30	11/11/21 02:49	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

Client Sample ID: 21GST-TWP-1

Lab Sample ID: 320-81258-3

Date Collected: 10/27/21 11:47

Matrix: Water

Date Received: 11/03/21 14:01

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	0.53	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.6	1.1	ng/L		11/04/21 19:30	11/11/21 03:00	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.6	1.2	ng/L		11/04/21 19:30	11/11/21 03:00	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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
13C2 PFUnA	86		50 - 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

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

Client Sample ID: 21GST-TWP-2

Lab Sample ID: 320-81258-4

Date Collected: 10/27/21 13:45

Matrix: Water

Date Received: 11/03/21 14:01

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)	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.3	1.0	ng/L		11/04/21 19:30	11/11/21 03:10	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.3	1.1	ng/L		11/04/21 19:30	11/11/21 03:10	1
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosafuoro-3-oxaundecane-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 - 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 - 150				11/04/21 19:30	11/11/21 03:10	1
13C2 PFUnA	88		50 - 150				11/04/21 19:30	11/11/21 03:10	1
13C2 PFDoA	94		50 - 150				11/04/21 19:30	11/11/21 03:10	1
13C2 PFTeDA	96		50 - 150				11/04/21 19:30	11/11/21 03:10	1
13C3 PFBS	116		50 - 150				11/04/21 19:30	11/11/21 03:10	1
18O2 PFHxS	99		50 - 150				11/04/21 19:30	11/11/21 03:10	1
13C4 PFOS	106		50 - 150				11/04/21 19:30	11/11/21 03:10	1
d3-NMeFOSAA	115		50 - 150				11/04/21 19:30	11/11/21 03:10	1
d5-NEtFOSAA	108		50 - 150				11/04/21 19:30	11/11/21 03:10	1
13C3 HFPO-DA	97		50 - 150				11/04/21 19:30	11/11/21 03:10	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

Client Sample ID: 21GST-TWP-10

Lab Sample ID: 320-81258-5

Date Collected: 10/27/21 16:54

Matrix: Water

Date Received: 11/03/21 14:01

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)	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	0.50	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.4	1.1	ng/L		11/04/21 19:30	11/11/21 03:21	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.4	1.1	ng/L		11/04/21 19:30	11/11/21 03:21	1
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosafuoro-3-oxaundecane-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 - 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
18O2 PFHxS	88		50 - 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 - 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
13C3 HFPO-DA	100		50 - 150				11/04/21 19:30	11/11/21 03:21	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

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

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)	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	0.46	ng/L		11/04/21 19:30	11/11/21 03:31	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.3	1.0	ng/L		11/04/21 19:30	11/11/21 03:31	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.3	1.1	ng/L		11/04/21 19:30	11/11/21 03:31	1
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosafuoro-3-oxaundecane-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
18O2 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 - 150				11/04/21 19:30	11/11/21 03:31	1

Client Sample Results

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

Date Collected: 10/27/21 17:31

Matrix: Water

Date Received: 11/03/21 14:01

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		1.7	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.4	1.0	ng/L		11/04/21 19:30	11/11/21 03:42	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.4	1.1	ng/L		11/04/21 19:30	11/11/21 03:42	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 150	11/04/21 19:30	11/11/21 03:42	1
13C3 PFBS	106		50 - 150	11/04/21 19:30	11/11/21 03:42	1
18O2 PFHxS	90		50 - 150	11/04/21 19:30	11/11/21 03:42	1
13C4 PFOS	102		50 - 150	11/04/21 19:30	11/11/21 03:42	1
d3-NMeFOSAA	80		50 - 150	11/04/21 19:30	11/11/21 03:42	1
d5-NEtFOSAA	81		50 - 150	11/04/21 19:30	11/11/21 03:42	1
13C3 HFPO-DA	77		50 - 150	11/04/21 19:30	11/11/21 03:42	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

Client Sample ID: MW-113-45

Lab Sample ID: 320-81258-8

Date Collected: 10/27/21 17:21

Matrix: Water

Date Received: 11/03/21 14:01

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	0.51	ng/L		11/04/21 19:30	11/11/21 04:02	1
Perfluoroheptanoic acid (PFHpA)	ND		1.8	0.22	ng/L		11/04/21 19:30	11/11/21 04:02	1
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 (PFUnA)	ND		1.8	0.97	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
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.1	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
Perfluorobutanesulfonic acid (PFBS)	ND		1.8	0.18	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	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.8	0.47	ng/L		11/04/21 19:30	11/11/21 04:02	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.4	1.1	ng/L		11/04/21 19:30	11/11/21 04:02	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.4	1.1	ng/L		11/04/21 19:30	11/11/21 04:02	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.8	0.21	ng/L		11/04/21 19:30	11/11/21 04:02	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.5	1.3	ng/L		11/04/21 19:30	11/11/21 04:02	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		1.8	0.28	ng/L		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
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
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
18O2 PFHxS	100		50 - 150				11/04/21 19:30	11/11/21 04:02	1
13C4 PFOS	107		50 - 150				11/04/21 19:30	11/11/21 04:02	1
d3-NMeFOSAA	87		50 - 150				11/04/21 19:30	11/11/21 04:02	1
d5-NEtFOSAA	85		50 - 150				11/04/21 19:30	11/11/21 04:02	1
13C3 HFPO-DA	88		50 - 150				11/04/21 19:30	11/11/21 04:02	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

Client Sample ID: 21GST-TWP-8

Lab Sample ID: 320-81258-9

Date Collected: 10/28/21 13:22

Matrix: Water

Date Received: 11/03/21 14:01

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)	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.4	1.1	ng/L		11/04/21 19:30	11/11/21 04:13	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.4	1.1	ng/L		11/04/21 19:30	11/11/21 04:13	1
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosafuoro-3-oxaundecane-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 - 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 - 150	11/04/21 19:30	11/11/21 04:13	1
13C2 PFUnA	82		50 - 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 - 150	11/04/21 19:30	11/11/21 04:13	1
13C3 PFBS	101		50 - 150	11/04/21 19:30	11/11/21 04:13	1
18O2 PFHxS	84		50 - 150	11/04/21 19:30	11/11/21 04:13	1
13C4 PFOS	92		50 - 150	11/04/21 19:30	11/11/21 04:13	1
d3-NMeFOSAA	86		50 - 150	11/04/21 19:30	11/11/21 04:13	1
d5-NEtFOSAA	82		50 - 150	11/04/21 19:30	11/11/21 04:13	1
13C3 HFPO-DA	80		50 - 150	11/04/21 19:30	11/11/21 04:13	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

Client Sample ID: 21GST-TWP-5

Lab Sample ID: 320-81258-10

Date Collected: 10/28/21 12:12

Matrix: Water

Date Received: 11/03/21 14:01

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)	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.2	1.0	ng/L		11/04/21 19:30	11/11/21 04:23	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.2	1.1	ng/L		11/04/21 19:30	11/11/21 04:23	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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
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
18O2 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 HFPO-DA	97		50 - 150				11/04/21 19:30	11/11/21 04:23	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

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

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)	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	ng/L		11/04/21 19:30	11/11/21 04:34	1
Perfluorotridecanoic acid (PFTriA)	ND		1.7	1.1	ng/L		11/04/21 19:30	11/11/21 04:34	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.64	ng/L		11/04/21 19:30	11/11/21 04:34	1
Perfluorobutanesulfonic acid (PFBS)	10		1.7	0.17	ng/L		11/04/21 19:30	11/11/21 04:34	1
Perfluorohexanesulfonic acid (PFHxS)	100		1.7	0.50	ng/L		11/04/21 19:30	11/11/21 04:34	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.4	1.0	ng/L		11/04/21 19:30	11/11/21 04:34	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.4	1.1	ng/L		11/04/21 19:30	11/11/21 04:34	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.7	0.21	ng/L		11/04/21 19:30	11/11/21 04:34	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.5	1.3	ng/L		11/04/21 19:30	11/11/21 04:34	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		1.7	0.28	ng/L		11/04/21 19:30	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 - 150	11/04/21 19:30	11/11/21 04:34	1
18O2 PFHxS	93		50 - 150	11/04/21 19:30	11/11/21 04:34	1
13C4 PFOS	98		50 - 150	11/04/21 19:30	11/11/21 04:34	1
d3-NMeFOSAA	100		50 - 150	11/04/21 19:30	11/11/21 04:34	1
d5-NEtFOSAA	102		50 - 150	11/04/21 19:30	11/11/21 04:34	1
13C3 HFPO-DA	89		50 - 150	11/04/21 19:30	11/11/21 04:34	1

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	340		8.7	2.4	ng/L		11/04/21 19:30	11/12/21 09:26	5

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOS	97		50 - 150	11/04/21 19:30	11/12/21 09:26	5

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

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

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	0.51	ng/L		11/04/21 19:30	11/11/21 04:44	1
Perfluoroheptanoic acid (PFHpA)	ND		1.8	0.22	ng/L		11/04/21 19:30	11/11/21 04:44	1
Perfluorooctanoic acid (PFOA)	ND		1.8	0.75	ng/L		11/04/21 19:30	11/11/21 04:44	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.24	ng/L		11/04/21 19:30	11/11/21 04:44	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.27	ng/L		11/04/21 19:30	11/11/21 04:44	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.97	ng/L		11/04/21 19:30	11/11/21 04:44	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.49	ng/L		11/04/21 19:30	11/11/21 04:44	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		11/04/21 19:30	11/11/21 04:44	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.65	ng/L		11/04/21 19:30	11/11/21 04:44	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.8	0.18	ng/L		11/04/21 19:30	11/11/21 04:44	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.8	0.50	ng/L		11/04/21 19:30	11/11/21 04:44	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.8	0.48	ng/L		11/04/21 19:30	11/11/21 04:44	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.4	1.1	ng/L		11/04/21 19:30	11/11/21 04:44	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.4	1.2	ng/L		11/04/21 19:30	11/11/21 04:44	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.8	0.21	ng/L		11/04/21 19:30	11/11/21 04:44	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.5	1.3	ng/L		11/04/21 19:30	11/11/21 04:44	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		1.8	0.28	ng/L		11/04/21 19:30	11/11/21 04:44	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.8	0.35	ng/L		11/04/21 19:30	11/11/21 04:44	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	92		50 - 150	11/04/21 19:30	11/11/21 04:44	1
13C4 PFHpA	96		50 - 150	11/04/21 19:30	11/11/21 04:44	1
13C4 PFOA	93		50 - 150	11/04/21 19:30	11/11/21 04:44	1
13C5 PFNA	97		50 - 150	11/04/21 19:30	11/11/21 04:44	1
13C2 PFDA	93		50 - 150	11/04/21 19:30	11/11/21 04:44	1
13C2 PFUnA	84		50 - 150	11/04/21 19:30	11/11/21 04:44	1
13C2 PFDoA	73		50 - 150	11/04/21 19:30	11/11/21 04:44	1
13C2 PFTeDA	77		50 - 150	11/04/21 19:30	11/11/21 04:44	1
13C3 PFBS	102		50 - 150	11/04/21 19:30	11/11/21 04:44	1
18O2 PFHxS	91		50 - 150	11/04/21 19:30	11/11/21 04:44	1
13C4 PFOS	94		50 - 150	11/04/21 19:30	11/11/21 04:44	1
d3-NMeFOSAA	79		50 - 150	11/04/21 19:30	11/11/21 04:44	1
d5-NEtFOSAA	77		50 - 150	11/04/21 19:30	11/11/21 04:44	1
13C3 HFPO-DA	88		50 - 150	11/04/21 19:30	11/11/21 04:44	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

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

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	0.52	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.5	1.1	ng/L		11/04/21 19:30	11/11/21 04:55	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.5	1.2	ng/L		11/04/21 19:30	11/11/21 04:55	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 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 - 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 - 150	11/04/21 19:30	11/11/21 04:55	1
13C3 PFBS	118		50 - 150	11/04/21 19:30	11/11/21 04:55	1
18O2 PFHxS	106		50 - 150	11/04/21 19:30	11/11/21 04:55	1
13C4 PFOS	108		50 - 150	11/04/21 19:30	11/11/21 04:55	1
d3-NMeFOSAA	94		50 - 150	11/04/21 19:30	11/11/21 04:55	1
d5-NEtFOSAA	96		50 - 150	11/04/21 19:30	11/11/21 04:55	1
13C3 HFPO-DA	95		50 - 150	11/04/21 19:30	11/11/21 04:55	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

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

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	0.51	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.4	1.1	ng/L		11/04/21 19:30	11/11/21 05:05	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.4	1.2	ng/L		11/04/21 19:30	11/11/21 05:05	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 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 - 150	11/04/21 19:30	11/11/21 05:05	1
13C3 PFBS	124		50 - 150	11/04/21 19:30	11/11/21 05:05	1
18O2 PFHxS	99		50 - 150	11/04/21 19:30	11/11/21 05:05	1
13C4 PFOS	102		50 - 150	11/04/21 19:30	11/11/21 05:05	1
d3-NMeFOSAA	101		50 - 150	11/04/21 19:30	11/11/21 05:05	1
d5-NEtFOSAA	92		50 - 150	11/04/21 19:30	11/11/21 05:05	1
13C3 HFPO-DA	95		50 - 150	11/04/21 19:30	11/11/21 05:05	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

Client Sample ID: MW-24-30

Lab Sample ID: 320-81258-15

Date Collected: 10/29/21 15:39

Matrix: Water

Date Received: 11/03/21 14:01

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		1.7	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.2	1.0	ng/L		11/04/21 19:30	11/11/21 05:15	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.2	1.1	ng/L		11/04/21 19:30	11/11/21 05:15	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.7	0.20	ng/L		11/04/21 19:30	11/11/21 05:15	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.4	1.3	ng/L		11/04/21 19:30	11/11/21 05:15	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		1.7	0.27	ng/L		11/04/21 19:30	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 - 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
18O2 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
d5-NEtFOSAA	82		50 - 150	11/04/21 19:30	11/11/21 05:15	1
13C3 HFPO-DA	99		50 - 150	11/04/21 19:30	11/11/21 05:15	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

Client Sample ID: MW-24-10

Lab Sample ID: 320-81258-16

Date Collected: 10/29/21 15:25

Matrix: Water

Date Received: 11/03/21 14:01

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		1.7	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.2	1.0	ng/L		11/04/21 19:30	11/11/21 05:26	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.2	1.1	ng/L		11/04/21 19:30	11/11/21 05:26	1
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosafuoro-3-oxaundecane-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 - 150	11/04/21 19:30	11/11/21 05:26	1
13C2 PFUnA	89		50 - 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 - 150	11/04/21 19:30	11/11/21 05:26	1
13C3 PFBS	102		50 - 150	11/04/21 19:30	11/11/21 05:26	1
18O2 PFHxS	95		50 - 150	11/04/21 19:30	11/11/21 05:26	1
13C4 PFOS	93		50 - 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
d5-NEtFOSAA	97		50 - 150	11/04/21 19:30	11/11/21 05:26	1
13C3 HFPO-DA	95		50 - 150	11/04/21 19:30	11/11/21 05:26	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

Client Sample ID: MW-25-47

Lab Sample ID: 320-81258-17

Date Collected: 10/29/21 11:01

Matrix: Water

Date Received: 11/03/21 14:01

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	0.52	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.5	1.1	ng/L		11/04/21 19:30	11/11/21 05:36	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.5	1.2	ng/L		11/04/21 19:30	11/11/21 05:36	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 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 - 150	11/04/21 19:30	11/11/21 05:36	1
13C3 PFBS	98		50 - 150	11/04/21 19:30	11/11/21 05:36	1
18O2 PFHxS	86		50 - 150	11/04/21 19:30	11/11/21 05:36	1
13C4 PFOS	91		50 - 150	11/04/21 19:30	11/11/21 05:36	1
d3-NMeFOSAA	97		50 - 150	11/04/21 19:30	11/11/21 05:36	1
d5-NEtFOSAA	97		50 - 150	11/04/21 19:30	11/11/21 05:36	1
13C3 HFPO-DA	85		50 - 150	11/04/21 19:30	11/11/21 05:36	1

Client Sample Results

Client: Shannon & Wilson, Inc
 Project/Site: SC Waters#3

Job ID: 320-81258-1

Client Sample ID: MW-125-47

Lab Sample ID: 320-81258-18

Date Collected: 10/29/21 10:51

Matrix: Water

Date Received: 11/03/21 14:01

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	0.53	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.6	1.1	ng/L		11/04/21 19:30	11/11/21 05:57	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.6	1.2	ng/L		11/04/21 19:30	11/11/21 05:57	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 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
18O2 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 Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

Client Sample ID: MW-22-15

Lab Sample ID: 320-81258-19

Date Collected: 10/30/21 15:30

Matrix: Water

Date Received: 11/03/21 14:01

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)	3.0		1.8	0.53	ng/L		11/04/21 19:30	11/11/21 06:07	1
Perfluoroheptanoic acid (PFHpA)	1.1	J	1.8	0.23	ng/L		11/04/21 19:30	11/11/21 06:07	1
Perfluorooctanoic acid (PFOA)	1.0	J	1.8	0.78	ng/L		11/04/21 19:30	11/11/21 06:07	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.25	ng/L		11/04/21 19:30	11/11/21 06:07	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.28	ng/L		11/04/21 19:30	11/11/21 06:07	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	1.0	ng/L		11/04/21 19:30	11/11/21 06:07	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.50	ng/L		11/04/21 19:30	11/11/21 06:07	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		11/04/21 19:30	11/11/21 06:07	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.67	ng/L		11/04/21 19:30	11/11/21 06:07	1
Perfluorobutanesulfonic acid (PFBS)	0.39	J I	1.8	0.18	ng/L		11/04/21 19:30	11/11/21 06:07	1
Perfluorohexanesulfonic acid (PFHxS)	4.5		1.8	0.52	ng/L		11/04/21 19:30	11/11/21 06:07	1
Perfluorooctanesulfonic acid (PFOS)	22		1.8	0.50	ng/L		11/04/21 19:30	11/11/21 06:07	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.6	1.1	ng/L		11/04/21 19:30	11/11/21 06:07	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.6	1.2	ng/L		11/04/21 19:30	11/11/21 06:07	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.8	0.22	ng/L		11/04/21 19:30	11/11/21 06:07	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.7	1.4	ng/L		11/04/21 19:30	11/11/21 06:07	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		1.8	0.29	ng/L		11/04/21 19:30	11/11/21 06:07	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.8	0.37	ng/L		11/04/21 19:30	11/11/21 06:07	1
Isotope Dilution	%Recovery	Qualifier	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 - 150				11/04/21 19:30	11/11/21 06:07	1
18O2 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 - 150				11/04/21 19:30	11/11/21 06:07	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

Client Sample ID: MW-22-40

Lab Sample ID: 320-81258-20

Date Collected: 10/30/21 14:59

Matrix: Water

Date Received: 11/03/21 14:01

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)	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.5	1.1	ng/L		11/04/21 19:30	11/11/21 06:18	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.5	1.2	ng/L		11/04/21 19:30	11/11/21 06:18	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 PFHxA	101		50 - 150	11/04/21 19:30	11/11/21 06:18	1
13C4 PFHpA	97		50 - 150	11/04/21 19:30	11/11/21 06:18	1
13C4 PFOA	103		50 - 150	11/04/21 19:30	11/11/21 06:18	1
13C5 PFNA	98		50 - 150	11/04/21 19:30	11/11/21 06:18	1
13C2 PFDA	103		50 - 150	11/04/21 19:30	11/11/21 06:18	1
13C2 PFUnA	103		50 - 150	11/04/21 19:30	11/11/21 06:18	1
13C2 PFDoA	88		50 - 150	11/04/21 19:30	11/11/21 06:18	1
13C2 PFTeDA	87		50 - 150	11/04/21 19:30	11/11/21 06:18	1
13C3 PFBS	112		50 - 150	11/04/21 19:30	11/11/21 06:18	1
18O2 PFHxS	100		50 - 150	11/04/21 19:30	11/11/21 06:18	1
13C4 PFOS	97		50 - 150	11/04/21 19:30	11/11/21 06:18	1
d3-NMeFOSAA	105		50 - 150	11/04/21 19:30	11/11/21 06:18	1
d5-NEtFOSAA	106		50 - 150	11/04/21 19:30	11/11/21 06:18	1
13C3 HFPO-DA	98		50 - 150	11/04/21 19:30	11/11/21 06:18	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

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

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		1.7	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.3	1.0	ng/L		11/04/21 19:36	11/13/21 06:26	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.3	1.1	ng/L		11/04/21 19:36	11/13/21 06:26	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.7	0.21	ng/L		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-oxaundecane-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
13C2 PFDoA	96		50 - 150	11/04/21 19:36	11/13/21 06:26	1
13C2 PFTeDA	89		50 - 150	11/04/21 19:36	11/13/21 06:26	1
13C3 PFBS	121		50 - 150	11/04/21 19:36	11/13/21 06:26	1
18O2 PFHxS	101		50 - 150	11/04/21 19:36	11/13/21 06:26	1
13C4 PFOS	104		50 - 150	11/04/21 19:36	11/13/21 06:26	1
d3-NMeFOSAA	108		50 - 150	11/04/21 19:36	11/13/21 06:26	1
d5-NEtFOSAA	117		50 - 150	11/04/21 19:36	11/13/21 06:26	1
13C3 HFPO-DA	107		50 - 150	11/04/21 19:36	11/13/21 06:26	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

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

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)	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	0.47	ng/L		11/04/21 19:36	11/13/21 06:36	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.3	1.0	ng/L		11/04/21 19:36	11/13/21 06:36	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.3	1.1	ng/L		11/04/21 19:36	11/13/21 06:36	1
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		1.7	0.28	ng/L		11/04/21 19:36	11/13/21 06:36	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.7	0.35	ng/L		11/04/21 19:36	11/13/21 06:36	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	113		50 - 150				11/04/21 19:36	11/13/21 06:36	1
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	1
13C2 PFTeDA	82		50 - 150				11/04/21 19:36	11/13/21 06:36	1
13C3 PFBS	114		50 - 150				11/04/21 19:36	11/13/21 06:36	1
18O2 PFHxS	104		50 - 150				11/04/21 19:36	11/13/21 06:36	1
13C4 PFOS	101		50 - 150				11/04/21 19:36	11/13/21 06:36	1
d3-NMeFOSAA	101		50 - 150				11/04/21 19:36	11/13/21 06:36	1
d5-NEtFOSAA	107		50 - 150				11/04/21 19:36	11/13/21 06:36	1
13C3 HFPO-DA	106		50 - 150				11/04/21 19:36	11/13/21 06:36	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

Client Sample ID: 21GST-TWP-111

Lab Sample ID: 320-81258-23

Date Collected: 10/30/21 12:32

Matrix: Water

Date Received: 11/03/21 14:01

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)	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.5	1.1	ng/L		11/04/21 19:36	11/13/21 06:46	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.5	1.2	ng/L		11/04/21 19:36	11/13/21 06:46	1
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosafuoro-3-oxaundecane-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 - 150				11/04/21 19:36	11/13/21 06:46	1
18O2 PFHxS	102		50 - 150				11/04/21 19:36	11/13/21 06:46	1
13C4 PFOS	107		50 - 150				11/04/21 19:36	11/13/21 06:46	1
d3-NMeFOSAA	97		50 - 150				11/04/21 19:36	11/13/21 06:46	1
d5-NEtFOSAA	102		50 - 150				11/04/21 19:36	11/13/21 06:46	1
13C3 HFPO-DA	92		50 - 150				11/04/21 19:36	11/13/21 06:46	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

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

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)	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.3	1.0	ng/L		11/04/21 19:36	11/13/21 06:57	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.3	1.1	ng/L		11/04/21 19:36	11/13/21 06:57	1
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosafuoro-3-oxaundecane-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 - 150				11/04/21 19:36	11/13/21 06:57	1
13C3 PFBS	127		50 - 150				11/04/21 19:36	11/13/21 06:57	1
18O2 PFHxS	108		50 - 150				11/04/21 19:36	11/13/21 06:57	1
13C4 PFOS	106		50 - 150				11/04/21 19:36	11/13/21 06:57	1
d3-NMeFOSAA	107		50 - 150				11/04/21 19:36	11/13/21 06:57	1
d5-NEtFOSAA	113		50 - 150				11/04/21 19:36	11/13/21 06:57	1
13C3 HFPO-DA	108		50 - 150				11/04/21 19:36	11/13/21 06:57	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

Client Sample ID: 21GST-TWP-7

Lab Sample ID: 320-81258-25

Date Collected: 10/30/21 10:38

Matrix: Water

Date Received: 11/03/21 14:01

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)	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.3	1.0	ng/L		11/04/21 19:36	11/13/21 07:07	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.3	1.1	ng/L		11/04/21 19:36	11/13/21 07:07	1
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosafuoro-3-oxaundecane-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 - 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 - 150	11/04/21 19:36	11/13/21 07:07	1
13C2 PFUnA	96		50 - 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	11/04/21 19:36	11/13/21 07:07	1
13C3 PFBS	112		50 - 150	11/04/21 19:36	11/13/21 07:07	1
18O2 PFHxS	97		50 - 150	11/04/21 19:36	11/13/21 07:07	1
13C4 PFOS	106		50 - 150	11/04/21 19:36	11/13/21 07:07	1
d3-NMeFOSAA	96		50 - 150	11/04/21 19:36	11/13/21 07:07	1
d5-NEtFOSAA	103		50 - 150	11/04/21 19:36	11/13/21 07:07	1
13C3 HFPO-DA	91		50 - 150	11/04/21 19:36	11/13/21 07:07	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

Client Sample ID: 21GST-TWP-6

Lab Sample ID: 320-81258-26

Date Collected: 10/30/21 09:57

Matrix: Water

Date Received: 11/03/21 14:01

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)	1.0	J	1.7	0.50	ng/L		11/04/21 19:36	11/13/21 07:18	1
Perfluoroheptanoic acid (PFHpA)	0.61	J	1.7	0.21	ng/L		11/04/21 19:36	11/13/21 07:18	1
Perfluorooctanoic acid (PFOA)	ND		1.7	0.73	ng/L		11/04/21 19:36	11/13/21 07:18	1
Perfluorononanoic acid (PFNA)	ND		1.7	0.23	ng/L		11/04/21 19:36	11/13/21 07:18	1
Perfluorodecanoic acid (PFDA)	ND		1.7	0.27	ng/L		11/04/21 19:36	11/13/21 07:18	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.94	ng/L		11/04/21 19:36	11/13/21 07:18	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.47	ng/L		11/04/21 19:36	11/13/21 07:18	1
Perfluorotridecanoic acid (PFTriA)	ND		1.7	1.1	ng/L		11/04/21 19:36	11/13/21 07:18	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.63	ng/L		11/04/21 19:36	11/13/21 07:18	1
Perfluorobutanesulfonic acid (PFBS)	0.50	J	1.7	0.17	ng/L		11/04/21 19:36	11/13/21 07:18	1
Perfluorohexanesulfonic acid (PFHxS)	8.4		1.7	0.49	ng/L		11/04/21 19:36	11/13/21 07:18	1
Perfluorooctanesulfonic acid (PFOS)	8.0		1.7	0.46	ng/L		11/04/21 19:36	11/13/21 07:18	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.3	1.0	ng/L		11/04/21 19:36	11/13/21 07:18	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.3	1.1	ng/L		11/04/21 19:36	11/13/21 07:18	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.7	0.21	ng/L		11/04/21 19:36	11/13/21 07:18	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.4	1.3	ng/L		11/04/21 19:36	11/13/21 07:18	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		1.7	0.27	ng/L		11/04/21 19:36	11/13/21 07:18	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.7	0.34	ng/L		11/04/21 19:36	11/13/21 07:18	1
Isotope Dilution	%Recovery	Qualifier	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 - 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 - 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 - 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 Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

Client Sample ID: 21GST-SW-031

Lab Sample ID: 320-81258-27

Date Collected: 10/31/21 12:45

Matrix: Water

Date Received: 11/03/21 14:01

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		1.9	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.7	1.1	ng/L		11/04/21 19:36	11/13/21 07:28	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.7	1.2	ng/L		11/04/21 19:36	11/13/21 07:28	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 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 - 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 - 150	11/04/21 19:36	11/13/21 07:28	1
13C3 PFBS	103		50 - 150	11/04/21 19:36	11/13/21 07:28	1
18O2 PFHxS	92		50 - 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
d3-NMeFOSAA	78		50 - 150	11/04/21 19:36	11/13/21 07:28	1
d5-NEtFOSAA	86		50 - 150	11/04/21 19:36	11/13/21 07:28	1
13C3 HFPO-DA	93		50 - 150	11/04/21 19:36	11/13/21 07:28	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

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	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.54	ng/L		11/04/21 19:36	11/13/21 07:49	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.23	ng/L		11/04/21 19:36	11/13/21 07:49	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.79	ng/L		11/04/21 19:36	11/13/21 07:49	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.25	ng/L		11/04/21 19:36	11/13/21 07:49	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.29	ng/L		11/04/21 19:36	11/13/21 07:49	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		11/04/21 19:36	11/13/21 07:49	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.51	ng/L		11/04/21 19:36	11/13/21 07:49	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		11/04/21 19:36	11/13/21 07:49	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.68	ng/L		11/04/21 19:36	11/13/21 07:49	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.19	ng/L		11/04/21 19:36	11/13/21 07:49	1
Perfluorohexanesulfonic acid (PFHxS)	0.64	J	1.9	0.53	ng/L		11/04/21 19:36	11/13/21 07:49	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	0.50	ng/L		11/04/21 19:36	11/13/21 07:49	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.7	1.1	ng/L		11/04/21 19:36	11/13/21 07:49	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.7	1.2	ng/L		11/04/21 19:36	11/13/21 07:49	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.9	0.22	ng/L		11/04/21 19:36	11/13/21 07:49	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.7	1.4	ng/L		11/04/21 19:36	11/13/21 07:49	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		1.9	0.30	ng/L		11/04/21 19:36	11/13/21 07:49	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.37	ng/L		11/04/21 19:36	11/13/21 07:49	1

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
18O2 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 Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

Client Sample ID: MW-21-15

Lab Sample ID: 320-81258-29

Date Collected: 11/01/21 11:15

Matrix: Water

Date Received: 11/03/21 14:01

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)	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		11/04/21 19:36	11/13/21 07:59	1
Perfluorooctanesulfonic acid (PFOS)	49		1.8	0.48	ng/L		11/04/21 19:36	11/13/21 07:59	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.4	1.1	ng/L		11/04/21 19:36	11/13/21 07:59	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.4	1.1	ng/L		11/04/21 19:36	11/13/21 07:59	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.8	0.21	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-Chloroeicosafuoro-3-oxaundecane-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 - 150	11/04/21 19:36	11/13/21 07:59	1
13C4 PFOA	99		50 - 150	11/04/21 19:36	11/13/21 07:59	1
13C5 PFNA	100		50 - 150	11/04/21 19:36	11/13/21 07:59	1
13C2 PFDA	94		50 - 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 - 150	11/04/21 19:36	11/13/21 07:59	1
13C2 PFTeDA	75		50 - 150	11/04/21 19:36	11/13/21 07:59	1
13C3 PFBS	105		50 - 150	11/04/21 19:36	11/13/21 07:59	1
18O2 PFHxS	94		50 - 150	11/04/21 19:36	11/13/21 07:59	1
13C4 PFOS	96		50 - 150	11/04/21 19:36	11/13/21 07:59	1
d3-NMeFOSAA	88		50 - 150	11/04/21 19:36	11/13/21 07:59	1
d5-NEtFOSAA	91		50 - 150	11/04/21 19:36	11/13/21 07:59	1
13C3 HFPO-DA	96		50 - 150	11/04/21 19:36	11/13/21 07:59	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

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 B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.8	0.52	ng/L		11/04/21 19:36	11/13/21 08:10	1
Perfluoroheptanoic acid (PFHpA)	ND		1.8	0.22	ng/L		11/04/21 19:36	11/13/21 08:10	1
Perfluorooctanoic acid (PFOA)	ND		1.8	0.76	ng/L		11/04/21 19:36	11/13/21 08:10	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.24	ng/L		11/04/21 19:36	11/13/21 08:10	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.28	ng/L		11/04/21 19:36	11/13/21 08:10	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.98	ng/L		11/04/21 19:36	11/13/21 08:10	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.49	ng/L		11/04/21 19:36	11/13/21 08:10	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		11/04/21 19:36	11/13/21 08:10	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.65	ng/L		11/04/21 19:36	11/13/21 08:10	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.8	0.18	ng/L		11/04/21 19:36	11/13/21 08:10	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.8	0.51	ng/L		11/04/21 19:36	11/13/21 08:10	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.8	0.48	ng/L		11/04/21 19:36	11/13/21 08:10	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.5	1.1	ng/L		11/04/21 19:36	11/13/21 08:10	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.5	1.2	ng/L		11/04/21 19:36	11/13/21 08:10	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.8	0.21	ng/L		11/04/21 19:36	11/13/21 08:10	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.6	1.3	ng/L		11/04/21 19:36	11/13/21 08:10	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		1.8	0.29	ng/L		11/04/21 19:36	11/13/21 08:10	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.8	0.36	ng/L		11/04/21 19:36	11/13/21 08:10	1

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
18O2 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 Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

Client Sample ID: MW-121-45

Lab Sample ID: 320-81258-31

Date Collected: 11/01/21 11:42

Matrix: Water

Date Received: 11/03/21 14:01

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	0.51	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.4	1.1	ng/L		11/09/21 18:40	11/13/21 01:34	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.4	1.1	ng/L		11/09/21 18:40	11/13/21 01:34	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.8	0.21	ng/L		11/09/21 18:40	11/13/21 01:34	1
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-oxaundecane-1-sulfonic acid	ND		1.8	0.28	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	Qualifier	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
18O2 PFHxS	97		50 - 150	11/09/21 18:40	11/13/21 01:34	1
13C4 PFOS	101		50 - 150	11/09/21 18:40	11/13/21 01:34	1
d3-NMeFOSAA	96		50 - 150	11/09/21 18:40	11/13/21 01:34	1
d5-NEtFOSAA	103		50 - 150	11/09/21 18:40	11/13/21 01:34	1
13C3 HFPO-DA	98		50 - 150	11/09/21 18:40	11/13/21 01:34	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

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

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)	8.6		1.7	0.50	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	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.3	1.0	ng/L		11/09/21 18:40	11/13/21 01:44	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.3	1.1	ng/L		11/09/21 18:40	11/13/21 01:44	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.7	0.21	ng/L		11/09/21 18:40	11/13/21 01:44	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.5	1.3	ng/L		11/09/21 18:40	11/13/21 01:44	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		1.7	0.28	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	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	106		50 - 150				11/09/21 18:40	11/13/21 01:44	1
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	1
13C2 PFDA	96		50 - 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	1
13C2 PFTeDA	80		50 - 150				11/09/21 18:40	11/13/21 01:44	1
13C3 PFBS	116		50 - 150				11/09/21 18:40	11/13/21 01:44	1
18O2 PFHxS	100		50 - 150				11/09/21 18:40	11/13/21 01:44	1
13C4 PFOS	107		50 - 150				11/09/21 18:40	11/13/21 01:44	1
d3-NMeFOSAA	83		50 - 150				11/09/21 18:40	11/13/21 01:44	1
d5-NEtFOSAA	91		50 - 150				11/09/21 18:40	11/13/21 01:44	1
13C3 HFPO-DA	89		50 - 150				11/09/21 18:40	11/13/21 01:44	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

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

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)	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	0.51	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.5	1.1	ng/L		11/09/21 18:40	11/13/21 01:55	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.5	1.2	ng/L		11/09/21 18:40	11/13/21 01:55	1
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosafuoro-3-oxaundecane-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 - 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 - 150				11/09/21 18:40	11/13/21 01:55	1
18O2 PFHxS	104		50 - 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 - 150				11/09/21 18:40	11/13/21 01:55	1
d5-NEtFOSAA	97		50 - 150				11/09/21 18:40	11/13/21 01:55	1
13C3 HFPO-DA	95		50 - 150				11/09/21 18:40	11/13/21 01:55	1

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

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFHxA (50-150)	C4PFHA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)	PFDaA (50-150)	PFTDA (50-150)
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-11	113	113	103	104	101	102	86	82
320-81258-23	21GST-TWP-111	108	101	102	95	96	96	89	83
320-81258-24	21GST-TWP-9	113	112	106	102	101	103	88	81
320-81258-25	21GST-TWP-7	102	101	102	103	104	96	86	78
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
LCS 320-540159/2-A	Lab Control Sample	98	97	101	103	98	101	101	92
LCS 320-540161/2-A	Lab Control Sample	108	101	97	92	98	105	90	83
LCS 320-541439/2-A	Lab Control Sample	106	102	99	97	103	102	93	93
LCSD 320-540159/3-A	Lab Control Sample Dup	110	105	100	110	106	104	94	93
LCSD 320-540161/3-A	Lab Control Sample Dup	109	105	96	100	98	103	95	89
LCSD 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

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)					
		C3PFBS (50-150)	PFHxS (50-150)	PFOS (50-150)	d3NMFOS (50-150)	d5NEFOS (50-150)	HFPODA (50-150)
320-81258-1	21GST-TWP-15	109	100	103	105	117	99
320-81258-2	21GST-TWP-115	107	99	101	104	114	89
320-81258-3	21GST-TWP-1	117	105	101	93	91	99

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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)

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)					
		C3PFBS (50-150)	PFHxS (50-150)	PFOS (50-150)	d3NMFOs (50-150)	d5NEFOs (50-150)	HFPODA (50-150)
320-81258-4	21GST-TWP-2	116	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	104	105	93
MB 320-541439/1-A	Method Blank	115	101	103	102	113	93

Surrogate Legend

- PFHxA = 13C2 PFHxA
- C4PFHA = 13C4 PFHpA
- PFOA = 13C4 PFOA
- PFNA = 13C5 PFNA
- PFDA = 13C2 PFDA
- PFUnA = 13C2 PFUnA
- PFDaA = 13C2 PFDaA
- PFTDA = 13C2 PFTeDA

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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QC Sample Results

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

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	MB Result	MB 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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		5.0	1.2	ng/L		11/04/21 19:30	11/11/21 02:08	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		5.0	1.3	ng/L		11/04/21 19:30	11/11/21 02:08	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	104		50 - 150	11/04/21 19:30	11/11/21 02:08	1
13C4 PFHpA	105		50 - 150	11/04/21 19:30	11/11/21 02:08	1
13C4 PFOA	102		50 - 150	11/04/21 19:30	11/11/21 02:08	1
13C5 PFNA	101		50 - 150	11/04/21 19:30	11/11/21 02:08	1
13C2 PFDA	102		50 - 150	11/04/21 19:30	11/11/21 02:08	1
13C2 PFUnA	101		50 - 150	11/04/21 19:30	11/11/21 02:08	1
13C2 PFDoA	97		50 - 150	11/04/21 19:30	11/11/21 02:08	1
13C2 PFTeDA	92		50 - 150	11/04/21 19:30	11/11/21 02:08	1
13C3 PFBS	119		50 - 150	11/04/21 19:30	11/11/21 02:08	1
18O2 PFHxS	97		50 - 150	11/04/21 19:30	11/11/21 02:08	1
13C4 PFOS	101		50 - 150	11/04/21 19:30	11/11/21 02:08	1
d3-NMeFOSAA	109		50 - 150	11/04/21 19:30	11/11/21 02:08	1
d5-NEtFOSAA	107		50 - 150	11/04/21 19:30	11/11/21 02:08	1
13C3 HFPO-DA	95		50 - 150	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
Prep Batch: 540159

Analyte	Spike Added	LCS Result	LCS 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

Eurofins TestAmerica, Sacramento

QC Sample Results

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)

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorodecanoic acid (PFDA)	40.0	41.1		ng/L		103	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 - 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-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	40.0	35.7		ng/L		89	65 - 136
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	40.0	39.1		ng/L		98	61 - 135
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C2 PFHxA	98		50 - 150
13C4 PFHpA	97		50 - 150
13C4 PFOA	101		50 - 150
13C5 PFNA	103		50 - 150
13C2 PFDA	98		50 - 150
13C2 PFUnA	101		50 - 150
13C2 PFDoA	101		50 - 150
13C2 PFTeDA	92		50 - 150
13C3 PFBS	104		50 - 150
18O2 PFHxS	94		50 - 150
13C4 PFOS	102		50 - 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
Matrix: Water
Analysis Batch: 541793

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 540159

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	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		ng/L		102	71 - 133	9	30

Eurofins TestAmerica, Sacramento

QC Sample Results

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)

Lab Sample ID: LCSD 320-540159/3-A
Matrix: Water
Analysis Batch: 541793

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 540159

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	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 (PFUnA)	40.0	38.9		ng/L		97	69 - 133	5	30
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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	35.8		ng/L		90	65 - 136	0	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	38.4		ng/L		96	61 - 135	2	30
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	37.7	33.4		ng/L		89	76 - 136	5	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	37.7	35.1		ng/L		93	81 - 141	2	30

Isotope Dilution	LCSD		Limits
	%Recovery	Qualifier	
13C2 PFHxA	110		50 - 150
13C4 PFHpA	105		50 - 150
13C4 PFOA	100		50 - 150
13C5 PFNA	110		50 - 150
13C2 PFDA	106		50 - 150
13C2 PFUnA	104		50 - 150
13C2 PFDoA	94		50 - 150
13C2 PFTeDA	93		50 - 150
13C3 PFBS	115		50 - 150
18O2 PFHxS	93		50 - 150
13C4 PFOS	103		50 - 150
d3-NMeFOSAA	114		50 - 150
d5-NEtFOSAA	112		50 - 150
13C3 HFPO-DA	97		50 - 150

Lab Sample ID: MB 320-540161/1-A
Matrix: Water
Analysis Batch: 542345

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 540161

Analyte	MB Result	MB Qualifier	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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QC Sample Results

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)

Lab Sample ID: MB 320-540161/1-A
Matrix: Water
Analysis Batch: 542345

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 540161

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		5.0	1.2	ng/L		11/04/21 19:36	11/13/21 05:54	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		5.0	1.3	ng/L		11/04/21 19:36	11/13/21 05:54	1
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosafuoro-3-oxaundecane-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

Isotope Dilution	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
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
18O2 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
Prep Batch: 540161

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
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 (PFUnA)	40.0	37.3		ng/L		93	69 - 133

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QC Sample Results

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)

Lab Sample ID: LCS 320-540161/2-A
Matrix: Water
Analysis Batch: 542345

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 540161

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorododecanoic acid (PFDoA)	40.0	43.0		ng/L		108	72 - 134
Perfluorotridecanoic acid (PFTriA)	40.0	38.5		ng/L		96	65 - 144
Perfluorotetradecanoic acid (PFTeA)	40.0	36.5		ng/L		91	71 - 132
Perfluorobutanesulfonic acid (PFBS)	35.4	29.0		ng/L		82	72 - 130
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.1		ng/L		94	68 - 131
Perfluorooctanesulfonic acid (PFOS)	37.1	32.3		ng/L		87	65 - 140
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	38.4		ng/L		96	65 - 136
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	37.6		ng/L		94	61 - 135
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	37.3	30.0		ng/L		80	77 - 137
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	40.0	43.5		ng/L		109	72 - 132
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	37.7	33.5		ng/L		89	76 - 136
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	37.7	35.7		ng/L		95	81 - 141

Isotope Dilution	LCS %Recovery	LCS 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
18O2 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

Lab Sample ID: LCSD 320-540161/3-A
Matrix: Water
Analysis Batch: 542345

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 540161

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%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

Eurofins TestAmerica, Sacramento

QC Sample Results

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)

Lab Sample ID: LCSD 320-540161/3-A
Matrix: Water
Analysis Batch: 542345

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 540161

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluoroundecanoic acid (PFUnA)	40.0	39.0		ng/L		97	69 - 133	4	30
Perfluorododecanoic acid (PFDoA)	40.0	40.3		ng/L		101	72 - 134	7	30
Perfluorotridecanoic acid (PFTriA)	40.0	35.6		ng/L		89	65 - 144	8	30
Perfluorotetradecanoic acid (PFTeA)	40.0	35.2		ng/L		88	71 - 132	4	30
Perfluorobutanesulfonic acid (PFBS)	35.4	31.0		ng/L		88	72 - 130	7	30
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.2		ng/L		94	68 - 131	0	30
Perfluorooctanesulfonic acid (PFOS)	37.1	35.1		ng/L		95	65 - 140	8	30
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	40.0	37.0		ng/L		93	65 - 136	4	30
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	40.0	40.2		ng/L		100	61 - 135	7	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	37.3	34.7		ng/L		93	77 - 137	15	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	40.0	37.4		ng/L		93	72 - 132	15	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	37.7	37.6		ng/L		100	76 - 136	11	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	37.7	36.0		ng/L		96	81 - 141	1	30

Isotope Dilution	LCSD		Limits
	%Recovery	Qualifier	
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
18O2 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

Analyte	MB Result	MB 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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QC Sample Results

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)

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		5.0	1.2	ng/L		11/09/21 18:40	11/13/21 01:03	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		5.0	1.3	ng/L		11/09/21 18:40	11/13/21 01:03	1
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosafuoro-3-oxaundecane-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

Isotope Dilution	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
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
18O2 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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%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

Eurofins TestAmerica, Sacramento

QC Sample Results

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)

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorotridecanoic acid (PFTriA)	40.0	35.4		ng/L		88	65 - 144
Perfluorotetradecanoic acid (PFTeA)	40.0	33.9		ng/L		85	71 - 132
Perfluorobutanesulfonic acid (PFBS)	35.4	29.0		ng/L		82	72 - 130
Perfluorohexanesulfonic acid (PFHxS)	36.4	33.4		ng/L		92	68 - 131
Perfluorooctanesulfonic acid (PFOS)	37.1	32.4		ng/L		87	65 - 140
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	35.0		ng/L		88	65 - 136
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	39.3		ng/L		98	61 - 135
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	37.3	32.0		ng/L		86	77 - 137
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	40.0	38.1		ng/L		95	72 - 132
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	37.7	33.8		ng/L		90	76 - 136
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	37.7	34.8		ng/L		92	81 - 141

Isotope Dilution	LCS %Recovery	LCS Qualifier	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 - 150
13C2 PFUnA	102		50 - 150
13C2 PFDoA	93		50 - 150
13C2 PFTeDA	93		50 - 150
13C3 PFBS	116		50 - 150
18O2 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
Matrix: Water
Analysis Batch: 542340

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 541439

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	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 (PFUnA)	40.0	38.8		ng/L		97	69 - 133	13	30

Eurofins TestAmerica, Sacramento

QC Sample Results

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)

Lab Sample ID: LCSD 320-541439/3-A
Matrix: Water
Analysis Batch: 542340

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 541439

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorododecanoic acid (PFDoA)	40.0	41.7		ng/L		104	72 - 134	6	30
Perfluorotridecanoic acid (PFTriA)	40.0	34.8		ng/L		87	65 - 144	2	30
Perfluorotetradecanoic acid (PFTeA)	40.0	36.9		ng/L		92	71 - 132	8	30
Perfluorobutanesulfonic acid (PFBS)	35.4	29.6		ng/L		84	72 - 130	2	30
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.3		ng/L		94	68 - 131	3	30
Perfluorooctanesulfonic acid (PFOS)	37.1	34.7		ng/L		94	65 - 140	7	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	35.9		ng/L		90	65 - 136	2	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	39.1		ng/L		98	61 - 135	0	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	37.3	31.1		ng/L		83	77 - 137	3	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	40.0	40.2		ng/L		100	72 - 132	5	30
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	37.7	35.2		ng/L		93	76 - 136	4	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	37.7	36.6		ng/L		97	81 - 141	5	30

Isotope Dilution	LCSD		Limits
	%Recovery	Qualifier	
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
18O2 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
Project/Site: SC Waters#3

Job ID: 320-81258-1

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	
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	

QC Association Summary

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

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

Eurofins TestAmerica, Sacramento

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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Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

Client Sample ID: 21GST-TWP-15

Lab Sample ID: 320-81258-1

Date Collected: 10/27/21 10:10

Matrix: Water

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			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

Lab Sample ID: 320-81258-2

Date Collected: 10/27/21 10:00

Matrix: Water

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			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

Matrix: Water

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			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

Lab Sample ID: 320-81258-4

Date Collected: 10/27/21 13:45

Matrix: Water

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			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

Matrix: Water

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	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

Lab Sample ID: 320-81258-6

Date Collected: 10/27/21 12:26

Matrix: Water

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			291.5 mL	10.0 mL	540159	11/04/21 19:30	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541793	11/11/21 03:31	K1S	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared 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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared 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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared 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

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			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

Lab Sample ID: 320-81258-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			286.1 mL	10.0 mL	540159	11/04/21 19:30	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541793	11/11/21 04:34	K1S	TAL SAC
Total/NA	Prep	3535	DL		286.1 mL	10.0 mL	540159	11/04/21 19:30	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)	DL	5			542097	11/12/21 09:26	MYV	TAL SAC

Client Sample ID: 21GST-TWP-3

Date Collected: 10/28/21 10:27

Date Received: 11/03/21 14:01

Lab Sample ID: 320-81258-12

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			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

Eurofins TestAmerica, Sacramento

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared 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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared 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

Matrix: Water

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			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

Lab Sample ID: 320-81258-16

Date Collected: 10/29/21 15:25

Matrix: Water

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			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

Lab Sample ID: 320-81258-17

Date Collected: 10/29/21 11:01

Matrix: Water

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			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

Lab Sample ID: 320-81258-18

Date Collected: 10/29/21 10:51

Matrix: Water

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			274.7 mL	10.0 mL	540159	11/04/21 19:30	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541793	11/11/21 05:57	K1S	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			272.5 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

Date Collected: 10/30/21 14:59

Date Received: 11/03/21 14:01

Lab Sample ID: 320-81258-20

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			279.2 mL	10.0 mL	540159	11/04/21 19:30	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			541793	11/11/21 06:18	K1S	TAL SAC

Client Sample ID: 21GST-TWP-12

Date Collected: 10/30/21 13:43

Date Received: 11/03/21 14:01

Lab Sample ID: 320-81258-21

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			289.8 mL	10.0 mL	540161	11/04/21 19:36	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542345	11/13/21 06:26	S1M	TAL SAC

Client Sample ID: 21GST-TWP-11

Date Collected: 10/30/21 12:42

Date Received: 11/03/21 14:01

Lab Sample ID: 320-81258-22

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			288.7 mL	10.0 mL	540161	11/04/21 19:36	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542345	11/13/21 06:36	S1M	TAL SAC

Client Sample ID: 21GST-TWP-111

Date Collected: 10/30/21 12:32

Date Received: 11/03/21 14:01

Lab Sample ID: 320-81258-23

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			277.3 mL	10.0 mL	540161	11/04/21 19:36	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542345	11/13/21 06:46	S1M	TAL SAC

Client Sample ID: 21GST-TWP-9

Date Collected: 10/30/21 11:24

Date Received: 11/03/21 14:01

Lab Sample ID: 320-81258-24

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			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

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared 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 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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared 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			266 mL	10.0 mL	540161	11/04/21 19:36	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542345	11/13/21 07:28	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

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

Lab Sample ID: 320-81258-29

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			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

Lab Sample ID: 320-81258-30

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			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

Lab Chronicle

Client: Shannon & Wilson, Inc
 Project/Site: SC Waters#3

Job ID: 320-81258-1

Client Sample ID: MW-121-45

Lab Sample ID: 320-81258-31

Date Collected: 11/01/21 11:42

Matrix: Water

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 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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared 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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared 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

Accreditation/Certification Summary

Client: Shannon & Wilson, Inc
Project/Site: SC Waters#3

Job ID: 320-81258-1

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 Waters#3

Job ID: 320-81258-1

Method	Method Description	Protocol	Laboratory
EPA 537(Mod) 3535	PFAS for QSM 5.3, Table B-15 Solid-Phase Extraction (SPE)	EPA SW846	TAL SAC 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

Job ID: 320-81258-1

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
320-81258-32	MW-14-31	Water	11/01/21 16:20	11/03/21 14:01
320-81258-33	MW-14-15	Water	11/01/21 16:50	11/03/21 14:01



JDY RECORD

Analytical Methods (include preservative if used)

Turn Around Time:
 Normal Rush
 Please Specify

Quote No:

MSA Number:

J-Flags: Yes No

AFAS-18 analytes
537

Sample Identity	Lab No.	Time	Date Sampled	Analytical Methods					Total Number of Containers	Remarks/Matrix Composition/Grab? Sample Containers
21GST-TWP-15		1010	10/27/21	X					2	Groundwater
21GST-TWP-115		1000		X					2	
21GST-TWP-1		1147		X					2	
21GST-TWP-2		1345		X					2	
21GST-TWP-10		1654		X					2	
MW-13-20		1226		X					2	
MW-13-45		1731		X					2	
MW-113-45		1721		X					2	
21GST-TWP-8		1322	10/28/21	X					2	
21GST-TWP-5		1212		X					2	

Project Information
 Number: 102599-008
 Name: SC Waters #3
 Contact: Kristen
 Ongoing Project? Yes No
 Sampler: APW/JKR/MSL

Sample Receipt
 Total No. of Containers: _____
 COC Seals/Intact? Y/N/NA _____
 Received Good Cond./Cold _____
 Temp: _____
 Delivery Method: _____

Relinquished By: 1.
 Signature: _____ Time: 7:30
 Printed Name: _____ Date: 11-2-21
 Company: StW

Relinquished By: 2.
 Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Relinquished By: 3.
 Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Notes:

Received By: 1.
 Signature: _____ Time: 1:01
 Printed Name: _____ Date: 11/3/21
 Company: 15378 AC

Received By: 2.
 Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Received By: 3.
 Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
 Yellow - w/shipment - for consignee files
 Pink - Shannon & Wilson - job file



CHAIN-OF-CUSTODY RECORD

Analytical Methods (include preservative if used)

Turn Around Time:
 Normal Rush
 Please Specify

Quote No:

J-Flags: Yes No

PFAS-18 analytes
537

Sample Identity	Lab No.	Time	Date Sampled	Analytical Methods					Total Number of Containers	Remarks/Matrix Composition/Grab? Sample Containers
21GST-TWP-4		1130	10/28/21	X					2	groundwater ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓
21GST-TWP-3		1027	↓	X					2	
21GST-TWP-103		1017	↓	X					2	
MW-25-15		1509	10/29/21	X					2	
MW-24-30		1539	10/29/21	X					2	
MW-24-10		1525	↓	X					2	
MW-25-47		1101	↓	X					2	
MW-125-47		1051	↓	X					2	
MW-22-15		1530	10/30/21	X					2	
MW-22-40		1459	↓	X					2	

Project Information
 Number: 102599-008
 Name: SC water #3
 Contact: Kristen
 Ongoing Project? Yes No
 Sampler: APW/JKR/MS

Sample Receipt
 Total No. of Containers:
 COC Seals/Intact? Y/N/NA
 Received Good Cond./Cold
 Temp:
 Delivery Method:

Relinquished By: 1.
 Signature: [Signature] Time: 730
 Printed Name: Kristen Freiburger Date: 11-2-21
 Company: S&W

Relinquished By: 2.
 Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Relinquished By: 3.
 Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Notes:

Received By: 1.
 Signature: [Signature] Time: 1:01
 Printed Name: Jessie J. Simon Date: 11/2/21
 Company: BTSA

Received By: 2.
 Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Received By: 3.
 Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
 Yellow - w/shipment - for consignee files
 Pink - Shannon & Wilson - job file

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11/16/2021



CHAIN-OF-CUSTODY RECORD

Analytical Methods (include preservative if used)

Turn Around Time:

Normal Rush

Please Specify

Quote No:

J-Flags: Yes No

PFAS-18 analytes
537

Sample Identity	Lab No.	Time	Date Sampled	Analytical Methods					Total Number of Containers	Remarks/Matrix Composition/Grab? Sample Containers
21GST-TWP-12		1343	10/30/21	X					2	groundwater
21GST-TWP-11		1242	↓	X					2	
21GST-TWP-111		1232	↓	X					2	
21GST-TWP-9		1124	↓	X					2	
21GST-TWP-7		1038	↓	X					2	
21GST-TWP-6		0957	↓	X					2	
21GST-SW-031		1235	10/31/21	X					2	
21GST-SW-131		1235	↓	X					2	
MW-21-15		1115	11-21	X					2	
MW-21-45		1152	↓	X					2	

Project Information

Number: 102599-008

Name: Scott Swales

Contact: Kristen

Ongoing Project? Yes No

Sampler: MSC/KRF/SKR

Sample Receipt

Total No. of Containers:

COC Seals/Intact? Y/N/NA

Received Good Cond./Cold

Temp:

Delivery Method:

Relinquished By: 1.

Signature: [Signature] Time: 730

Printed Name: Kristen Freiburger Date: 11-2-21

Company: [Signature]

Relinquished By: 2.

Signature: _____ Time: _____

Printed Name: _____ Date: _____

Company: _____

Relinquished By: 3.

Signature: _____ Time: _____

Printed Name: _____ Date: _____

Company: _____

Notes:

Received By: 1.

Signature: [Signature] Time: 1401

Printed Name: Jacob Jimenez Date: 11/3/21

Company: [Signature]

Received By: 2.

Signature: _____ Time: _____

Printed Name: _____ Date: _____

Company: _____

Received By: 3.

Signature: _____ Time: _____

Printed Name: _____ Date: _____

Company: _____

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
 Yellow - w/shipment - for consignee files
 Pink - Shannon & Wilson - job file

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11/16/2021



CHAIN-OF-CUSTODY RECORD

Analytical Methods (include preservative if used)

Turn Around Time:

Normal Rush

Please Specify

Quote No:

MSA Number:

J-Flags: Yes No

PFAS - 18 and 45

537

Sample Identity	Lab No.	Time	Date Sampled	Analytical Methods					Total Number of Containers	Remarks/Matrix Composition/Grab? Sample Containers
MW-121-45		1142	11-21	X					2	GW
MW-14-31		1620	↓	X					2	↓
MW-14-15		1650	↓	X					2	↓

Project Information

Number: 102599-008

Name: SC Wat's #3

Contact: Kristen

Ongoing Project? Yes No

Sampler: APW/KRF/JKR/MS

Sample Receipt

Total No. of Containers: _____

COC Seals/Intact? Y/N/NA _____

Received Good Cond./Cold _____

Temp: _____

Delivery Method: _____

Relinquished By: 1.

Signature: _____ Time: 730

Printed Name: Kristen Freiboyer Date: 11-22

Company: SW

Relinquished By: 2.

Signature: _____ Time: _____

Printed Name: _____ Date: _____

Company: _____

Relinquished By: 3.

Signature: _____ Time: _____

Printed Name: _____ Date: _____

Company: _____

Notes:

Received By: 1.

Signature: _____ Time: _____

Printed Name: Jerson Jimenez Date: _____

Company: _____

Received By: 2.

Signature: _____ Time: _____

Printed Name: _____ Date: _____

Company: _____

Received By: 3.

Signature: _____ Time: _____

Printed Name: _____ Date: _____

Company: _____

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
 Yellow - w/shipment - for consignee files
 Pink - Shannon & Wilson - job file



Login Sample Receipt Checklist

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 \leq background as measured by a survey meter.	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 <math><6\text{mm}</math> (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.

Laboratory Name:

Eurofins / TestAmerica Laboratories, Inc. (TestAmerica)

Laboratory Report Number:

320-81258-1

Laboratory Report Date:

11/16/2021

CS Site Name:

ADOT&PF Gustavus Airport Statewide PFAS

ADEC File Number:

1507.38.017

Hazard Identification Number:

26904

Laboratory Report Date:

Note: Any N/A or No box checked must have an explanation in the comments box.

1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform 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 No N/A 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 No N/A Comments:

3. 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.

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 No N/A 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.

4. Case Narrative

- a. Present and understandable?

Yes No N/A Comments:

Laboratory 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 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* 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 at 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 at 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: *MW-13-20, MW-13-45, MW-113-45, MW-21-45, MW-14-31, MW-121-45, and 21GST-TWP-4.*

c. Were all corrective actions documented?

Yes No N/A Comments:

Sample *21GST-TWP-4* was diluted due to the concentrations of target analytes exceeding the instrument's calibration range. The laboratory corrected the internal standard counts with the dilution factor.

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.

Laboratory Report Date:

5. Samples 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:

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 No N/A 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.

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 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.

Laboratory Report Date:

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.

v. Data quality or usability affected?

Comments:

The data quality/usability is not affected.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

Yes No N/A Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

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 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.

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.

Laboratory Report Date:

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

i. Organics – One MS/MSD reported per matrix, analysis and 20 samples?

Yes No N/A Comments:

MS/MSD samples were not analyzed with this work order; however, the laboratory analyzed LCS and LCSD samples to assess method accuracy and precision.

ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?

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 limits and project specified objectives, if applicable?

Yes No N/A 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 No N/A 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.

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 No N/A 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:

iii. Do the sample results with failed surrogate/IDA recoveries have data flags? If so, are the data flags clearly defined?

Yes No N/A 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 No N/A 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 No N/A Comments:

A trip blank is not required for the requested analysis.

Laboratory 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 No N/A Comments:

ii. Submitted blind to lab?

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)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

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)?

Yes No N/A Comments:

Reusable equipment was not used in the sampling procedure; therefore, an equipment blank is not required.

Laboratory Report Date:

i. All results less than LOQ and project specified objectives?

Yes No N/A 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 No N/A Comments:

The perfluorobutanesulfonic acid (PFBS) result of sample *MW-22-15* was affected by a transition mass ratio failure and quantitated manually. We consider this result an estimate and have applied the 'J' qualifier.

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

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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Definitions/Glossary

Client: Shannon & Wilson, Inc
Project/Site: Gustavus PFAS

Job ID: 320-81504-1

Qualifiers

LCMS

Qualifier	Qualifier Description
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.
α	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

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 (320-81504-4), GAC (320-81504-10), 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.

Detection Summary

Client: Shannon & Wilson, Inc
Project/Site: Gustavus PFAS

Job ID: 320-81504-1

Client Sample ID: MW-16

Lab Sample ID: 320-81504-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	56		1.7	0.50	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	25		1.7	0.22	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	8.6		1.7	0.74	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	4.0		1.7	0.23	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	13		1.7	0.27	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	14		1.7	0.49	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	49		1.7	0.47	ng/L	1		EPA 537(Mod)	Total/NA

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	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	1.3	J	1.7	0.73	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	10		1.7	0.49	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	22		1.7	0.46	ng/L	1		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	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	21		1.8	0.51	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	51		1.8	0.48	ng/L	1		EPA 537(Mod)	Total/NA

Client Sample ID: MW-20-40

Lab Sample ID: 320-81504-6

No Detections.

Client Sample ID: MW-118-50

Lab Sample ID: 320-81504-7

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

Lab Sample ID: 320-81504-8

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

Lab Sample ID: 320-81504-9

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

Lab Sample ID: 320-81504-10

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

Detection Summary

Client: Shannon & Wilson, Inc
Project/Site: Gustavus PFAS

Job ID: 320-81504-1

Client Sample ID: MW-19-15

Lab Sample ID: 320-81504-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	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

Client Sample ID: MW-19-50

Lab Sample ID: 320-81504-12

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

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: Gustavus PFAS

Job ID: 320-81504-1

Client Sample ID: MW-16

Lab Sample ID: 320-81504-1

Date Collected: 11/02/21 11:22

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	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.3	1.0	ng/L		11/10/21 18:53	11/14/21 12:27	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.3	1.1	ng/L		11/10/21 18:53	11/14/21 12:27	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 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 - 150	11/10/21 18:53	11/14/21 12:27	1
13C2 PFUnA	84		50 - 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 - 150	11/10/21 18:53	11/14/21 12:27	1
13C3 PFBS	102		50 - 150	11/10/21 18:53	11/14/21 12:27	1
18O2 PFHxS	95		50 - 150	11/10/21 18:53	11/14/21 12:27	1
13C4 PFOS	94		50 - 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 - 150	11/10/21 18:53	11/14/21 12:27	1
13C3 HFPO-DA	93		50 - 150	11/10/21 18:53	11/14/21 12:27	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: Gustavus PFAS

Job ID: 320-81504-1

Client Sample ID: MW-15-15

Lab Sample ID: 320-81504-2

Date Collected: 11/03/21 16:11

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	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.3	1.0	ng/L		11/10/21 18:53	11/14/21 12:38	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.3	1.1	ng/L		11/10/21 18:53	11/14/21 12:38	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 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 - 150	11/10/21 18:53	11/14/21 12:38	1
13C2 PFUnA	72		50 - 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
13C2 PFTeDA	83		50 - 150	11/10/21 18:53	11/14/21 12:38	1
13C3 PFBS	98		50 - 150	11/10/21 18:53	11/14/21 12:38	1
18O2 PFHxS	95		50 - 150	11/10/21 18:53	11/14/21 12:38	1
13C4 PFOS	88		50 - 150	11/10/21 18:53	11/14/21 12:38	1
d3-NMeFOSAA	70		50 - 150	11/10/21 18:53	11/14/21 12:38	1
d5-NEtFOSAA	66		50 - 150	11/10/21 18:53	11/14/21 12:38	1
13C3 HFPO-DA	79		50 - 150	11/10/21 18:53	11/14/21 12:38	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: Gustavus PFAS

Job ID: 320-81504-1

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

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		1.7	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.3	1.0	ng/L		11/10/21 18:53	11/14/21 12:48	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.3	1.1	ng/L		11/10/21 18:53	11/14/21 12:48	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 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 - 150	11/10/21 18:53	11/14/21 12:48	1
13C3 PFBS	76		50 - 150	11/10/21 18:53	11/14/21 12:48	1
18O2 PFHxS	86		50 - 150	11/10/21 18:53	11/14/21 12:48	1
13C4 PFOS	84		50 - 150	11/10/21 18:53	11/14/21 12:48	1
d3-NMeFOSAA	64		50 - 150	11/10/21 18:53	11/14/21 12:48	1
d5-NEtFOSAA	58		50 - 150	11/10/21 18:53	11/14/21 12:48	1
13C3 HFPO-DA	66		50 - 150	11/10/21 18:53	11/14/21 12:48	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: Gustavus PFAS

Job ID: 320-81504-1

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

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		1.7	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.3	1.0	ng/L		11/10/21 18:53	11/14/21 12:59	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.3	1.1	ng/L		11/10/21 18:53	11/14/21 12:59	1
9-Chlorohexadecafluoro-3-oxanonane-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-oxaundecane-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 - 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
18O2 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 - 150	11/10/21 18:53	11/14/21 12:59	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: Gustavus PFAS

Job ID: 320-81504-1

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

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	0.52	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.5	1.1	ng/L		11/10/21 18:53	11/14/21 13:09	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.5	1.2	ng/L		11/10/21 18:53	11/14/21 13:09	1
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosafuoro-3-oxaundecane-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	1
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	11/10/21 18:53	11/14/21 13:09	1
13C3 PFBS	97		50 - 150	11/10/21 18:53	11/14/21 13:09	1
18O2 PFHxS	101		50 - 150	11/10/21 18:53	11/14/21 13:09	1
13C4 PFOS	98		50 - 150	11/10/21 18:53	11/14/21 13:09	1
d3-NMeFOSAA	76		50 - 150	11/10/21 18:53	11/14/21 13:09	1
d5-NEtFOSAA	68		50 - 150	11/10/21 18:53	11/14/21 13:09	1
13C3 HFPO-DA	81		50 - 150	11/10/21 18:53	11/14/21 13:09	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: Gustavus PFAS

Job ID: 320-81504-1

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

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		1.7	0.50	ng/L		11/10/21 18:53	11/14/21 13:19	1
Perfluoroheptanoic acid (PFHpA)	ND		1.7	0.22	ng/L		11/10/21 18:53	11/14/21 13:19	1
Perfluorooctanoic acid (PFOA)	ND		1.7	0.74	ng/L		11/10/21 18:53	11/14/21 13:19	1
Perfluorononanoic acid (PFNA)	ND		1.7	0.23	ng/L		11/10/21 18:53	11/14/21 13:19	1
Perfluorodecanoic acid (PFDA)	ND		1.7	0.27	ng/L		11/10/21 18:53	11/14/21 13:19	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.95	ng/L		11/10/21 18:53	11/14/21 13:19	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.48	ng/L		11/10/21 18:53	11/14/21 13:19	1
Perfluorotridecanoic acid (PFTriA)	ND		1.7	1.1	ng/L		11/10/21 18:53	11/14/21 13:19	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.63	ng/L		11/10/21 18:53	11/14/21 13:19	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.7	0.17	ng/L		11/10/21 18:53	11/14/21 13:19	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.7	0.49	ng/L		11/10/21 18:53	11/14/21 13:19	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.7	0.47	ng/L		11/10/21 18:53	11/14/21 13:19	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.3	1.0	ng/L		11/10/21 18:53	11/14/21 13:19	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.3	1.1	ng/L		11/10/21 18:53	11/14/21 13:19	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.7	0.21	ng/L		11/10/21 18:53	11/14/21 13:19	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.5	1.3	ng/L		11/10/21 18:53	11/14/21 13:19	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		1.7	0.28	ng/L		11/10/21 18:53	11/14/21 13:19	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.7	0.35	ng/L		11/10/21 18:53	11/14/21 13:19	1

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
18O2 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

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: Gustavus PFAS

Job ID: 320-81504-1

Client Sample ID: MW-118-50

Lab Sample ID: 320-81504-7

Date Collected: 11/04/21 09:23

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	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	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-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	ND		4.6	1.1	ng/L		11/10/21 18:53	11/14/21 13:30	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	ND		4.6	1.2	ng/L		11/10/21 18:53	11/14/21 13:30	1
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosafuoro-3-oxaundecane-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	Qualifier	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 - 150	11/10/21 18:53	11/14/21 13:30	1
18O2 PFHxS	85		50 - 150	11/10/21 18:53	11/14/21 13:30	1
13C4 PFOS	74		50 - 150	11/10/21 18:53	11/14/21 13:30	1
d3-NMeFOSAA	63		50 - 150	11/10/21 18:53	11/14/21 13:30	1
d5-NEtFOSAA	59		50 - 150	11/10/21 18:53	11/14/21 13:30	1
13C3 HFPO-DA	63		50 - 150	11/10/21 18:53	11/14/21 13:30	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: Gustavus PFAS

Job ID: 320-81504-1

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

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	0.53	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-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	ND		4.6	1.1	ng/L		11/10/21 18:53	11/14/21 14:01	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	ND		4.6	1.2	ng/L		11/10/21 18:53	11/14/21 14:01	1
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosafuoro-3-oxaundecane-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 - 150	11/10/21 18:53	11/14/21 14:01	1
13C2 PFUnA	85		50 - 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 - 150	11/10/21 18:53	11/14/21 14:01	1
13C3 PFBS	88		50 - 150	11/10/21 18:53	11/14/21 14:01	1
18O2 PFHxS	100		50 - 150	11/10/21 18:53	11/14/21 14:01	1
13C4 PFOS	86		50 - 150	11/10/21 18:53	11/14/21 14:01	1
d3-NMeFOSAA	73		50 - 150	11/10/21 18:53	11/14/21 14:01	1
d5-NEtFOSAA	74		50 - 150	11/10/21 18:53	11/14/21 14:01	1
13C3 HFPO-DA	74		50 - 150	11/10/21 18:53	11/14/21 14:01	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: Gustavus PFAS

Job ID: 320-81504-1

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

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)	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.2	1.0	ng/L		11/10/21 18:53	11/14/21 14:11	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.2	1.1	ng/L		11/10/21 18:53	11/14/21 14:11	1
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosafuoro-3-oxaundecane-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 - 150	11/10/21 18:53	11/14/21 14:11	1
13C5 PFNA	75		50 - 150	11/10/21 18:53	11/14/21 14:11	1
13C2 PFDA	88		50 - 150	11/10/21 18:53	11/14/21 14:11	1
13C2 PFUnA	79		50 - 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 - 150	11/10/21 18:53	11/14/21 14:11	1
13C3 PFBS	77		50 - 150	11/10/21 18:53	11/14/21 14:11	1
18O2 PFHxS	92		50 - 150	11/10/21 18:53	11/14/21 14:11	1
13C4 PFOS	86		50 - 150	11/10/21 18:53	11/14/21 14:11	1
d3-NMeFOSAA	66		50 - 150	11/10/21 18:53	11/14/21 14:11	1
d5-NEtFOSAA	67		50 - 150	11/10/21 18:53	11/14/21 14:11	1
13C3 HFPO-DA	71		50 - 150	11/10/21 18:53	11/14/21 14:11	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: Gustavus PFAS

Job ID: 320-81504-1

Client Sample ID: GAC

Lab Sample ID: 320-81504-10

Date Collected: 11/05/21 14:40

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	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.7	0.48	ng/L		11/10/21 18:53	11/14/21 14:22	1
Perfluoroheptanoic acid (PFHpA)	ND		1.7	0.21	ng/L		11/10/21 18:53	11/14/21 14:22	1
Perfluorooctanoic acid (PFOA)	ND		1.7	0.70	ng/L		11/10/21 18:53	11/14/21 14:22	1
Perfluorononanoic acid (PFNA)	ND		1.7	0.22	ng/L		11/10/21 18:53	11/14/21 14:22	1
Perfluorodecanoic acid (PFDA)	ND		1.7	0.26	ng/L		11/10/21 18:53	11/14/21 14:22	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.91	ng/L		11/10/21 18:53	11/14/21 14:22	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.46	ng/L		11/10/21 18:53	11/14/21 14:22	1
Perfluorotridecanoic acid (PFTriA)	ND		1.7	1.1	ng/L		11/10/21 18:53	11/14/21 14:22	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.61	ng/L		11/10/21 18:53	11/14/21 14:22	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.7	0.17	ng/L		11/10/21 18:53	11/14/21 14:22	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.7	0.47	ng/L		11/10/21 18:53	11/14/21 14:22	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.7	0.45	ng/L		11/10/21 18:53	11/14/21 14:22	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.1	1.0	ng/L		11/10/21 18:53	11/14/21 14:22	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.1	1.1	ng/L		11/10/21 18:53	11/14/21 14:22	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.7	0.20	ng/L		11/10/21 18:53	11/14/21 14:22	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.3	1.2	ng/L		11/10/21 18:53	11/14/21 14:22	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		1.7	0.27	ng/L		11/10/21 18:53	11/14/21 14:22	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.7	0.33	ng/L		11/10/21 18:53	11/14/21 14:22	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	72		50 - 150	11/10/21 18:53	11/14/21 14:22	1
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
18O2 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

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: Gustavus PFAS

Job ID: 320-81504-1

Client Sample ID: MW-19-15

Lab Sample ID: 320-81504-11

Date Collected: 11/05/21 12:58

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	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.5	1.1	ng/L		11/10/21 18:53	11/14/21 14:32	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.5	1.2	ng/L		11/10/21 18:53	11/14/21 14:32	1
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosafuoro-3-oxaundecane-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
18O2 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 - 150	11/10/21 18:53	11/14/21 14:32	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: Gustavus PFAS

Job ID: 320-81504-1

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

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)	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.5	1.1	ng/L		11/10/21 18:53	11/14/21 14:43	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.5	1.2	ng/L		11/10/21 18:53	11/14/21 14:43	1
9-Chlorohexadecafluoro-3-oxanonane-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	1.3	ng/L		11/10/21 18:53	11/14/21 14:43	1
11-Chloroeicosafluoro-3-oxaundecane-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
18O2 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 - 150	11/10/21 18:53	11/14/21 14:43	1

Client Sample Results

Client: Shannon & Wilson, Inc
Project/Site: Gustavus PFAS

Job ID: 320-81504-1

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

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)	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	ng/L		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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.5	1.1	ng/L		11/10/21 18:53	11/14/21 14:53	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.5	1.2	ng/L		11/10/21 18:53	11/14/21 14:53	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.8	0.22	ng/L		11/10/21 18:53	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-oxaundecane-1-sulfonic acid	ND		1.8	0.29	ng/L		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	Qualifier	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 - 150	11/10/21 18:53	11/14/21 14:53	1
13C3 PFBS	85		50 - 150	11/10/21 18:53	11/14/21 14:53	1
18O2 PFHxS	82		50 - 150	11/10/21 18:53	11/14/21 14:53	1
13C4 PFOS	80		50 - 150	11/10/21 18:53	11/14/21 14:53	1
d3-NMeFOSAA	67		50 - 150	11/10/21 18:53	11/14/21 14:53	1
d5-NEtFOSAA	67		50 - 150	11/10/21 18:53	11/14/21 14:53	1
13C3 HFPO-DA	76		50 - 150	11/10/21 18:53	11/14/21 14:53	1

Isotope Dilution Summary

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

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFHxA (50-150)	C4PFHA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)	PFDaA (50-150)	PFTDA (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
LCS 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

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	C3PFBS (50-150)	PFHxS (50-150)	PFOS (50-150)	d3NMFOS (50-150)	d5NEFOS (50-150)	HFPODA (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
LCS 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
- PFDaA = 13C2 PFDaA
- PFTDA = 13C2 PFTeDA
- C3PFBS = 13C3 PFBS
- PFHxS = 18O2 PFHxS
- PFOS = 13C4 PFOS
- d3NMFOS = d3-NMeFOSAA
- d5NEFOS = d5-NEtFOSAA

Eurofins TestAmerica, Sacramento

Isotope Dilution Summary

Client: Shannon & Wilson, Inc
Project/Site: Gustavus PFAS
HFPODA = 13C3 HFPO-DA

Job ID: 320-81504-1

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QC Sample Results

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		11/10/21 18:53	11/14/21 11:56	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		11/10/21 18:53	11/14/21 11:56	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		11/10/21 18:53	11/14/21 11:56	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		11/10/21 18:53	11/14/21 11:56	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		11/10/21 18:53	11/14/21 11:56	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		11/10/21 18:53	11/14/21 11:56	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		11/10/21 18:53	11/14/21 11:56	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		11/10/21 18:53	11/14/21 11:56	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.73	ng/L		11/10/21 18:53	11/14/21 11:56	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		11/10/21 18:53	11/14/21 11:56	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.57	ng/L		11/10/21 18:53	11/14/21 11:56	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		11/10/21 18:53	11/14/21 11:56	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		5.0	1.2	ng/L		11/10/21 18:53	11/14/21 11:56	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		5.0	1.3	ng/L		11/10/21 18:53	11/14/21 11:56	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		2.0	0.24	ng/L		11/10/21 18:53	11/14/21 11:56	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		4.0	1.5	ng/L		11/10/21 18:53	11/14/21 11:56	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		2.0	0.32	ng/L		11/10/21 18:53	11/14/21 11:56	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	0.40	ng/L		11/10/21 18:53	11/14/21 11:56	1

Isotope Dilution	MB %Recovery	MB 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
18O2 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 Sample
Prep Type: Total/NA
Prep Batch: 541736

Analyte	Spike Added	LCS Result	LCS 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

Eurofins TestAmerica, Sacramento

QC Sample Results

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 (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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorodecanoic acid (PFDA)	40.0	39.2		ng/L		98	71 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	38.3		ng/L		96	69 - 133
Perfluorododecanoic acid (PFDoA)	40.0	38.5		ng/L		96	72 - 134
Perfluorotridecanoic acid (PFTriA)	40.0	40.2		ng/L		101	65 - 144
Perfluorotetradecanoic acid (PFTeA)	40.0	35.3		ng/L		88	71 - 132
Perfluorobutanesulfonic acid (PFBS)	35.4	27.9		ng/L		79	72 - 130
Perfluorohexanesulfonic acid (PFHxS)	36.4	32.8		ng/L		90	68 - 131
Perfluorooctanesulfonic acid (PFOS)	37.1	36.7		ng/L		99	65 - 140
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	40.0	34.3		ng/L		86	65 - 136
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	40.0	39.5		ng/L		99	61 - 135
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	37.3	34.1		ng/L		91	77 - 137
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	40.0	35.6		ng/L		89	72 - 132
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	37.7	34.5		ng/L		91	76 - 136
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	37.7	36.0		ng/L		95	81 - 141

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
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
18O2 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

Lab Sample ID: LCSD 320-541736/3-A
Matrix: Water
Analysis Batch: 542623

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 541736

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.	
							Limits	RPD
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

Eurofins TestAmerica, Sacramento

QC Sample Results

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 (Continued)

Lab Sample ID: LCSD 320-541736/3-A
Matrix: Water
Analysis Batch: 542623

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 541736

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	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-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	34.2		ng/L		86	65 - 136	0	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	38.9		ng/L		97	61 - 135	2	30
9-Chlorohexadecafluoro-3-oxanonane-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-Chloroeicosafuoro-3-oxaundecane-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

Isotope Dilution	LCSD		Limits
	%Recovery	Qualifier	
13C2 PFHxA	88		50 - 150
13C4 PFHpA	88		50 - 150
13C4 PFOA	102		50 - 150
13C5 PFNA	100		50 - 150
13C2 PFDA	90		50 - 150
13C2 PFUnA	91		50 - 150
13C2 PFDoA	85		50 - 150
13C2 PFTeDA	87		50 - 150
13C3 PFBS	105		50 - 150
18O2 PFHxS	96		50 - 150
13C4 PFOS	94		50 - 150
d3-NMeFOSAA	91		50 - 150
d5-NEtFOSAA	79		50 - 150
13C3 HFPO-DA	93		50 - 150

QC Association Summary

Client: Shannon & Wilson, Inc
 Project/Site: Gustavus PFAS

Job ID: 320-81504-1

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

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: Gustavus PFAS

Job ID: 320-81504-1

Client Sample ID: MW-16

Date Collected: 11/02/21 11:22

Date Received: 11/09/21 15:07

Lab Sample ID: 320-81504-1

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			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

Client Sample ID: MW-15-15

Date Collected: 11/03/21 16:11

Date Received: 11/09/21 15:07

Lab Sample ID: 320-81504-2

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			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

Date Collected: 11/03/21 17:28

Date Received: 11/09/21 15:07

Lab Sample ID: 320-81504-3

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			288.1 mL	10.0 mL	541736	11/10/21 18:53	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542623	11/14/21 12:48	D1R	TAL SAC

Client Sample ID: MW-115-45

Date Collected: 11/03/21 17:18

Date Received: 11/09/21 15:07

Lab Sample ID: 320-81504-4

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			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

Date Collected: 11/04/21 10:14

Date Received: 11/09/21 15:07

Lab Sample ID: 320-81504-5

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			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

Date Collected: 11/04/21 15:39

Date Received: 11/09/21 15:07

Lab Sample ID: 320-81504-6

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			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

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: Gustavus PFAS

Job ID: 320-81504-1

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared 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

Date Received: 11/09/21 15:07

Lab Sample ID: 320-81504-8

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			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

Date Collected: 11/04/21 16:18

Date Received: 11/09/21 15:07

Lab Sample ID: 320-81504-9

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			296.4 mL	10.0 mL	541736	11/10/21 18:53	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			542623	11/14/21 14:11	D1R	TAL SAC

Client Sample ID: GAC

Date Collected: 11/05/21 14:40

Date Received: 11/09/21 15:07

Lab Sample ID: 320-81504-10

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			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

Date Received: 11/09/21 15:07

Lab Sample ID: 320-81504-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			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

Date Received: 11/09/21 15:07

Lab Sample ID: 320-81504-12

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			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

Eurofins TestAmerica, Sacramento

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: Gustavus PFAS

Job ID: 320-81504-1

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

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared 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
Project/Site: Gustavus PFAS

Job ID: 320-81504-1

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) 3535	PFAS for QSM 5.3, Table B-15 Solid-Phase Extraction (SPE)	EPA SW846	TAL SAC 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: 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
320-81504-13	MW-119-50	Water	11/05/21 12:12	11/09/21 15:07

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CHAIN-OF-CUSTODY RECORD

Analytical Methods (include preservative if used)

Turn Around Time:
 Normal Rush
 Please Specify

Quote No:

J-Flags: Yes No

PFAS (18)									
-----------	--	--	--	--	--	--	--	--	--

Total Number of Containers

Remarks/Matrix Composition/Grab? Sample Containers

Sample Identity	Lab No.	Time	Date Sampled	Analytical Methods						Total Number of Containers	Remarks/Matrix Composition/Grab? Sample Containers
MW-19-15		1258	11-5-21	1						2	Groundwater
MW-19-50		1223	11-5-21	1						1	
MW-119-50		1212	11-5-21	1						1	

Project Information

Number: _____
 Name: SEE PAGE
 Contact: _____
 Ongoing Project? Yes No
 Sampler: _____

Sample Receipt

Total No. of Containers: _____
 COC Seals/Intact? Y/N/NA Y/N/A
 Received Good Cond./Cold Y/N/A
 Temp: _____
 Delivery Method: _____

Relinquished By: 1.

Signature: Justin Risley Time: 8:00
 Printed Name: Justin Risley Date: 11-6-21
 Company: Shannon + Wilson

Relinquished By: 2.

Signature: [Signature] Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Relinquished By: 3.

Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Notes:

[Handwritten Note]

Received By: 1.

Signature: [Signature] Time: 1:50
 Printed Name: Jessie Simmes Date: 11/9/21
 Company: BBTBC

Received By: 2.

Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Received By: 3.

Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
 Yellow - w/shipment - for consignee files
 Pink - Shannon & Wilson - job file

-time on both 1222 5011-9-21

5.9°C

No. 36469



Login Sample Receipt Checklist

Client: Shannon & Wilson, Inc

Job Number: 320-81504-1

Login Number: 81504

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.	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)

Laboratory Report Number:

320-81504-1

Laboratory Report Date:

11/16/2021

CS Site Name:

Gustavus PFAS

ADEC File Number:

1507.38.017

Hazard Identification Number:

26904

Laboratory Report Date:

Note: Any N/A or No box checked must have an explanation in the comments box.

1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform all of 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)

a. CoC information completed, signed, and dated (including released/received by)?

Yes No N/A Comments:

b. Correct analyses requested?

Yes No N/A Comments:

3. 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.

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 No N/A Comments:

The container labels for sample *MW-19-50* listed a sample time of 1222 while the COC noted that the sample time was 1223. The sample was logged in per the COC.

- e. Data quality or usability affected?

Comments:

The data quality/usability was not affected. A one-minute sample time discrepancy has no bearing on method holding time.

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:

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 exhibited a yellow hue and contained a thin layer of sediment at the bottom of the bottle prior to extraction: *MW-15-45*, *MW-115-45*, *GAC*, *MW-19-15*, *MW-19-50*, 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 extraction.

Method 3535: The samples *MW-15-45* and *MW-115-45* were yellow after final volume/extraction.

Method 3535: The samples *MW-118-50* and *MW-18-50* were orange after final volume/extraction.

- c. Were all corrective actions documented?

Yes No N/A Comments:

No corrective actions were documented in the case narrative.

Laboratory 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.

5. Samples 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:

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 No N/A 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.

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 objectives?

Yes No N/A 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 No N/A 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)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

Yes No N/A Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

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 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.

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:

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.

ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?

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 limits and project specified objectives, if applicable?

Yes No N/A 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 No N/A 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.

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 No N/A 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:

iii. Do the sample results with failed surrogate/IDA recoveries have data flags? If so, are the data flags clearly defined?

Yes No N/A 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 No N/A 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 No N/A Comments:

A trip blank is not required for the requested analysis.

Laboratory 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 and/or usability was not affected; see above.

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 No N/A Comments:The field duplicate pairs are labeled *MW-15-45 / MW-115-45*, *MW-18-50 / MW-118-50*, and *MW-19-50 / MW-119-50*.iii. Precision – All relative percent differences (RPD) less than specified project objectives?
(Recommended: 30% water, 50% soil)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where R_1 = Sample Concentration R_2 = Field Duplicate ConcentrationYes 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)?

Yes No N/A Comments:

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.

Laboratory Report Date:

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 No N/A Comments:

No additional data flags/qualifiers were required.

Appendix E

Updated Conceptual Site Model

CONTENTS

- Updated Conceptual Site Model Scoping Form
- Updated Conceptual Site Model Graphic Form

Appendix C - Human Health Conceptual Site Model Scoping Form and Standardized Graphic

Site Name:

File Number:

Completed by:

Introduction

The form should be used to reach agreement with the Alaska Department of Environmental Conservation (DEC) about which exposure pathways should be further investigated during site characterization. From this information, summary text about the CSM and a graphic depicting exposure pathways should be submitted with the site characterization work plan and updated as needed in later reports.

General Instructions: Follow the italicized instructions in each section below.

1. General Information:

Sources *(check potential sources at the site)*

- | | |
|--|--|
| <input type="checkbox"/> USTs | <input type="checkbox"/> Vehicles |
| <input type="checkbox"/> ASTs | <input type="checkbox"/> Landfills |
| <input type="checkbox"/> Dispensers/fuel loading racks | <input type="checkbox"/> Transformers |
| <input type="checkbox"/> Drums | <input checked="" type="checkbox"/> Other: <input type="text" value="Fire-training activities"/> |

Release Mechanisms *(check potential release mechanisms at the site)*

- | | |
|---------------------------------|--|
| <input type="checkbox"/> Spills | <input checked="" type="checkbox"/> Direct discharge |
| <input type="checkbox"/> Leaks | <input type="checkbox"/> Burning |
| | <input type="checkbox"/> Other: <input type="text"/> |

Impacted Media *(check potentially-impacted media at the site)*

- | | |
|---|--|
| <input checked="" type="checkbox"/> Surface soil (0-2 feet bgs*) | <input checked="" type="checkbox"/> Groundwater |
| <input checked="" type="checkbox"/> Subsurface soil (>2 feet bgs) | <input checked="" type="checkbox"/> Surface water |
| <input type="checkbox"/> Air | <input checked="" type="checkbox"/> Biota |
| <input checked="" type="checkbox"/> Sediment | <input type="checkbox"/> Other: <input type="text"/> |

Receptors *(check receptors that could be affected by contamination at the site)*

- | | |
|---|---|
| <input checked="" type="checkbox"/> Residents (adult or child) | <input checked="" type="checkbox"/> Site visitor |
| <input checked="" type="checkbox"/> Commercial or industrial worker | <input checked="" type="checkbox"/> Trespasser |
| <input checked="" type="checkbox"/> Construction worker | <input checked="" type="checkbox"/> Recreational user |
| <input checked="" type="checkbox"/> Subsistence harvester (i.e. gathers wild foods) | <input checked="" type="checkbox"/> Farmer |
| <input checked="" type="checkbox"/> Subsistence consumer (i.e. eats wild foods) | <input type="checkbox"/> Other: <input type="text"/> |

* bgs - below ground surface

2. Exposure Pathways: *(The answers to the following questions will identify complete exposure pathways at the site. Check each box where the answer to the question is "yes".)*

a) Direct Contact -

1. Incidental Soil Ingestion

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site-specific basis.)

If the box is checked, label this pathway complete:

Complete

Comments:

PFOS and/or PFOA were identified above soil-cleanup levels at near the ARFF building and the Alaska Air Terminal, and at the southern end of Runway 2-20. All of these locations are within the GST restricted area.

2. Dermal Absorption of Contaminants from Soil

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site specific basis.)

Can the soil contaminants permeate the skin (see Appendix B in the guidance document)?

If both boxes are checked, label this pathway complete:

Complete

Comments:

We note PFOS and PFOA are present on the Appendix B guidance document; however, 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.

b) Ingestion -

1. Ingestion of Groundwater

Have contaminants been detected or are they expected to be detected in the groundwater, or are contaminants expected to migrate to groundwater in the future?

Could the potentially affected groundwater be used as a current or future drinking water source? Please note, only leave the box unchecked if DEC has determined the groundwater is not a currently or reasonably expected future source of drinking water according to 18 AAC 75.350.

If both boxes are checked, label this pathway complete:

Complete

Comments:

PFOS and PFOA have been detected at concentrations exceeding the EPA lifetime health advisory level in onsite and offsite residential and commercial drinking water wells. Properties with known exceedances of drinking water standards are being supplied bottled water.

2. Ingestion of Surface Water

Have contaminants been detected or are they expected to be detected in surface water, 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 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 harvesting of wild or farmed foods?

Do the site contaminants have the potential to bioaccumulate (see Appendix C in the guidance document)?

Are site contaminants located where they would have the potential to be taken up into 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 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 or placed on the site in an area that could be affected by contaminant vapors? (within 30 horizontal or vertical feet of petroleum contaminated soil or groundwater; within 100 feet of non-petroleum contaminated soil or groundwater; or subject to "preferential pathways," which promote easy airflow like utility conduits or rock fractures)

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. 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.
- Climate permits exposure to groundwater during activities, such as construction.
- 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:



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.
- Dust particles are less than 10 micrometers (Particulate Matter - PM₁₀). 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.

Check the box if further evaluation of this pathway is needed:



Comments:

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 the contaminants are able to permeate the skin (see Appendix B in the guidance document). This type of exposure should be investigated if:

- 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.

Check the box if further evaluation of this pathway is needed:



Comments:

Sediment analytical samples were not above current cleanup levels.

4. Other Comments *(Provide other comments as necessary to support the information provided in this form.)*

[Empty rectangular box for providing other comments]

HUMAN HEALTH CONCEPTUAL SITE MODEL GRAPHIC FORM

Site: Gustavus Airport Terminal

Completed By: Shannon & Wilson, Inc.

Date Completed: Updated 1/13/2022

Instructions: Follow the numbered directions below. Do not consider contaminant concentrations or engineering/land use controls when describing pathways.

(1) Media	(2) Transport Mechanisms	
<input checked="" type="checkbox"/> Surface Soil (0-2 ft bgs)	<input checked="" type="checkbox"/> Direct release to surface soil <i>check soil</i> <input checked="" type="checkbox"/> Migration to subsurface <i>check soil</i> <input checked="" type="checkbox"/> Migration to groundwater <i>check groundwater</i> <input type="checkbox"/> Volatilization <i>check air</i> <input checked="" type="checkbox"/> Runoff or erosion <i>check surface water</i> <input checked="" type="checkbox"/> Uptake by plants or animals <i>check biota</i> <input type="checkbox"/> Other (list): _____	
	<input checked="" type="checkbox"/> Subsurface Soil (2-15 ft bgs)	<input checked="" type="checkbox"/> Direct release to subsurface soil <i>check soil</i> <input checked="" type="checkbox"/> Migration to groundwater <i>check groundwater</i> <input type="checkbox"/> Volatilization <i>check air</i> <input checked="" type="checkbox"/> Uptake by plants or animals <i>check biota</i> <input type="checkbox"/> Other (list): _____
	<input checked="" type="checkbox"/> Ground-water	<input checked="" type="checkbox"/> Direct release to groundwater <i>check groundwater</i> <input type="checkbox"/> Volatilization <i>check air</i> <input checked="" type="checkbox"/> Flow to surface water body <i>check surface water</i> <input checked="" type="checkbox"/> Flow to sediment <i>check sediment</i> <input checked="" type="checkbox"/> Uptake by plants or animals <i>check biota</i> <input type="checkbox"/> Other (list): _____
	<input checked="" type="checkbox"/> Surface Water	<input checked="" type="checkbox"/> Direct release to surface water <i>check surface water</i> <input type="checkbox"/> Volatilization <i>check air</i> <input checked="" type="checkbox"/> Sedimentation <i>check sediment</i> <input checked="" type="checkbox"/> Uptake by plants or animals <i>check biota</i> <input type="checkbox"/> Other (list): _____
	<input checked="" type="checkbox"/> Sediment	<input checked="" type="checkbox"/> Direct release to sediment <i>check sediment</i> <input checked="" type="checkbox"/> Resuspension, runoff, or erosion <i>check surface water</i> <input checked="" type="checkbox"/> Uptake by plants or animals <i>check biota</i> <input type="checkbox"/> Other (list): _____

(3) Exposure Media	(4) Exposure Pathway/Route	(5) Current & Future Receptors						
		Residents (adults or children)	Commercial or Industrial workers	Site visitors, trespassers, or recreational users	Construction workers	Farmers or subsistence harvesters	Subsistence consumers	Other
<input checked="" type="checkbox"/> soil	<input checked="" type="checkbox"/> Incidental Soil Ingestion <input checked="" type="checkbox"/> Dermal Absorption of Contaminants from Soil <input checked="" type="checkbox"/> Inhalation of Fugitive Dust	C/F	C/F	C/F	C/F	C/F	C/F	
<input checked="" type="checkbox"/> groundwater	<input checked="" type="checkbox"/> Ingestion of Groundwater <input checked="" type="checkbox"/> Dermal Absorption of Contaminants in Groundwater <input type="checkbox"/> Inhalation of Volatile Compounds in Tap Water	C/F	C/F	C/F	C/F	C/F		
<input type="checkbox"/> air	<input type="checkbox"/> Inhalation of Outdoor Air <input type="checkbox"/> Inhalation of Indoor Air <input type="checkbox"/> Inhalation of Fugitive Dust							
<input checked="" type="checkbox"/> surface water	<input checked="" type="checkbox"/> Ingestion of Surface Water <input checked="" type="checkbox"/> Dermal Absorption of Contaminants in Surface Water <input type="checkbox"/> Inhalation of Volatile Compounds in Tap Water	C/F	C/F	C/F	C/F	C/F		
<input checked="" type="checkbox"/> sediment	<input checked="" type="checkbox"/> Direct Contact with Sediment	C/F	C/F	C/F	C/F	C/F	C/F	
<input checked="" type="checkbox"/> biota	<input checked="" type="checkbox"/> Ingestion of Wild or Farmed Foods	C/F	C/F	C/F	C/F	C/F	C/F	

Important Information

About Your Geotechnical/Environmental Report

IMPORTANT INFORMATION

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

IMPORTANT INFORMATION