REGION 9 Enforcement and Compliance Assurance Division

Safe Drinking Water Act (SDWA) INSPECTION REPORT

Inspection Entry Date/Time:	June 3, 2024 / 0800	**Announced:** Yes
Inspection Exit Date/Time:	June 7, 2024 / 1530	**Access:** Granted
Statute(s)/Program(s):	Safe Drinking Water Act – Public Water System Supervision (SDWA-PWSS) and Hawaii Department of Health Administrative Rules	
In-Person Inspection:	Yes	
System Name:	Joint Base Pearl Harbor-Hickam (JBPHH)	
System Physical Address:	[redacted]	
(City, state, zip code)	Pearl Harbor, HI 96860	
County:	Honolulu	
System GPS Coordinates:	[redacted]	
Mailing address: (if different)	850 Ticonderoga St, Ste 110	
(City, state, zip code)	Joint Base Pearl Harbor-Hickam, HI 96860	
System Contact:	Captain Robert Kleinman, P.E. / Naval Facilities Engineering Systems Command (NAVFAC) Public Works Officer	
	[redacted]	
Environmental Justice Area:	Yes	
Public Water System (PWS) ID:	HI0000360	
System/Site Identifier:	110027175624	
Primacy Agency:	Hawaii Department of Health (HDOH)	

Persons Participating in Inspection:

Name	Title/Organization	Phone	Email	Present in Opening Conf.	Present in Closing Conf.	Present during Site Walkthrough
Mike McFadden	Lead Inspector/EPA Contractor – ERG	717-418-3573	mike.mcfadden@erg.com	Yes	Yes	Yes
Mike Beck	Inspector/EPA Contractor – ERG	331-633-9987	mike.beck@erg.com	Yes	Yes	Yes
Chris Chen	Inspector/EPA Region 9	213-244-1853	chen.christopher@epa.gov	Yes	Yes	Yes
Claire Ong	Inspector/EPA Region 9	415-972-3351	ong.claire@epa.gov	Yes	Yes	Yes
Jeffrey Tsai	EPA on detail to HDOH	415-972-3459	yun-jui.tsai@doh.hawaii.gov	Yes	Yes	Yes*
Melvin Tokuda	HDOH	808-506-4280	melvin.tokuda@doh.hawaii.gov	Yes	Yes	Yes*
James Sullivan	NAVFAC	NA	[redacted]	Yes	Yes	Yes

Captain Robert Kleinman, P.E.	Public Works Officer / NAVFAC	[redacted]	[redacted]	Yes	Yes	Yes*
[redacted]	NAVFAC	[redacted]	[redacted]	Yes	Yes	Yes*
[redacted]	Environmental Engineer / NAVFAC	[redacted]	[redacted]	Yes	Yes	Yes*
[redacted]	NAVFAC	[redacted]	[redacted]	Yes	Yes	Yes*
[redacted]	NAVFAC	[redacted]	[redacted]	Yes	Yes	Yes*
Genalyn Wagner	USAG-HI, DPW	NA	[redacted]	Yes	Yes	Yes*
Jacqueline Alvarez-Martinez	USAG-HI, DPW	[redacted]	[redacted]	Yes	Yes	Yes*
Kyle Sasahara	USAG-HI, DPW	[redacted]	[redacted]	Yes	Yes	Yes*
Phi Dang	USAG-HI	[redacted]	[redacted]	Yes	Yes	Yes*

*Present at part of the site walkthrough

Report Preparer:			
Mike McFadden			Date: 08/30/2024
	ERG	mike.mcfadden@erg.com	717-418-3573
EPA Inspector:			
Christopher Chen			
	EPA Region 9	chen.christopher@epa.gov	213-244-1853
EPA Supervisor:			
Lawrence Torres			
	EPA Region 9	lawrence.torres@epa.gov	415-947-4211

TABLE OF CONTENTS

SECTION I – INTRODUCTION

The following subsections describe the system and the authority and purpose of the inspection.

Inspection Objectives

From June 3 through June 7, 2024, the United States Environmental Protection Agency (EPA) and the EPA's contract inspectors from ERG (referred to as the EPA inspection team) conducted an announced Compliance Evaluation Inspection under Section 1445 of the Safe Drinking Water Act (SDWA), 42 U.S.C. §300j-4, of the NAVFAC's Joint Base Pearl Harbor-Hickam PWS (HI0000360) (System or JBPHH). The purpose of the inspection was to evaluate the System's compliance with the SDWA and the National Primary Drinking Water Regulations (NPDWR) found in Title 40 of the Code of Federal Regulations (40 C.F.R.) Part 141 and the EPA Administrative Consent Order the System signed on June 2, 2023. The inspection also included a special sampling event to help EPA assess the System's compliance with the SDWA as well as other applicable regulations, including the Hawaii Department of Health Administrative Rules. The scope of the inspection was an onsite review of the water source, treatment facilities, equipment, operation, maintenance, and monitoring compliance of a PWS to evaluate the adequacy of the PWS, its sources and operations, and the distribution of safe drinking water. Personnel from the Hawaii Department of Health (HDOH) accompanied the EPA inspection team. While HDOH has assumed primary enforcement responsibility to implement the SDWA PWSS program for the state of Hawaii, EPA still retains inspection and enforcement authority in Hawaii.

EPA notified Rear Admiral Steve Barnett of the System via letter delivered by electronic mail that an inspection would be conducted on June 3 through 7, 2024. The Notice of Inspection is provided in Appendix B. Information regarding the reason and statutory authority for the inspection was discussed with System representatives during the inspection.

This report is based on information supplied by the System representatives through interviews and written statements, observations made by the EPA inspection team, and records and reports maintained by the System. As part of the inspection process, the EPA inspection team made direct observations, took photographs, took measurements, and reviewed relevant documents. Information gathered from EPA, State, and public records prior to, during, or after the onsite inspection are referenced in this report as applicable.

System Description

According to the Safe Drinking Water Information System (SDWIS) database, the System serves a population of 65,230 people. It is a community water system as defined by 40 C.F.R., Part 141, Subpart A. The EPA inspection team confirmed the population served with System representatives during the inspection process via conversations and document review. The System is a groundwater system that serves military installations and military housing through unmetered connections.

The NAVFAC operates and manages four PWSs (JBPHH, Camp Stover, Naval Computer and Telecommunications Area Master Station Pacific, and Pacific Missile Range Facility Kauai) in the state of Hawaii. System representatives informed the EPA inspection team that NAVFAC operates and maintains its four PWSs primarily with the same personnel, Supervisory Control and Data Acquisition System (SCADA), emergency response equipment, and other shared resources. Due to the NAVFAC's management practice, some system information such as the amount of operational hours expended solely on JBPHH could not be confirmed. The PWSs are not interconnected to supply JBPHH with either an emergency or routine water source. The System has emergency interconnections with the Honolulu Board of Water Supply (BWS) and System representatives estimated that those interconnections may provide up to 3 million gallons per day (MGD) if activated.

The System employs water treatment operators who have various responsibilities across the PWSs that NAVFAC operates and manages. The HDOH provided a list of three Class 4 distribution system operators who are registered with HDOH to operate the System. The EPA inspection team requested but did not receive an organizational chart of the System personnel or a list of certified operators with operator information prior to the end of the inspection. Post-inspection, the System provided a list of certified operators, of which four were at the Class 4 level – the document did not go into detail on what responsibilities the operators have within the operation. Refer to Appendix D for a log of documents the EPA inspection team requested before and during the inspection.

The System's source water is three groundwater sources from a system of tunnels and shafts. [redacted] The System draws the Waiawa Shaft supply with [redacted], always operating [redacted] to meet water demand. Water demand at the time of the inspection was approximately [redacted]. System representatives stated that water demand can routinely fluctuate from approximately [redacted] to [redacted]. The System disinfects with sodium hypochlorite and fluoridates with sodium fluoride before the entry point to the distribution system. [redacted] sources include the Aiea Halawa Shaft and the Red Hill Shaft, which were also equipped to disinfect and fluoridate when in operation. These sources were not in production at the time of the inspection and were physically disconnected from the distribution system. The System removed the groundwater supplies from production in 2021 due to concern of fuel contamination in the water supply.

The System was the sole water supply to the Aliamanu Military Reservation (AMR), which is a consecutive water system (PWS HI0000337).

The System has approximately [redacted] of water mains, a series of [redacted] booster pump stations, and [redacted] finished water storage ground tanks/reservoirs to distribute the water supply throughout the varied topography of the area to maintain an approximate average of [redacted] pounds per square inch (psi) of water pressure within the distribution system. A newly installed [redacted] main was in service at the time of the inspection and [redacted] of the [redacted] reservoirs were in service. [redacted]

SECTION II– INSPECTION ACTIVITIES

The following subsections describe the inspection activities completed by the EPA inspection team. Appendix A includes photographs taken during this inspection that support the report findings.

Opening Conference

The EPA inspection team arrived at the System, located at [redacted], at 0800 HST on June 3, 2024, for the inspection. Refer to Appendix C for the opening conference sign-in sheet. Personnel from the United States Department of the Army (Army) were also present as the EPA inspection team was conducting an inspection of AMR and JBPHH concurrently throughout the week. Mike McFadden and Christopher Chen presented credentials to Captain Robert Kleinman, P.E., NAVFAC Public Works Officer, and informed him that this was an EPA Region 9 inspection to determine compliance with the Primacy Agency requirements, the NPDWR, and the SDWA.

The opening conference included a discussion of System details; active and inactive sources; treatment; distribution system; staffing; operations and SCADA systems; maintenance and asset management; and emergency response planning. In addition, the opening conference also included discussion on EPA's plan to collect drinking water samples at multiple locations, including the three JBPHH sources, AMR's entry point to the distribution system (EPDS), and a few residences and childcare centers within the JBPHH and AMR distribution systems.

The EPA inspection team collected sampling at all sample sites for a subset of analytes listed in Navy's Extended Drinking Water Monitoring (EDWM) Plan[1], and are listed below (see Appendix G for analytical results):

- 1,2 dibromoethane (commonly known as ethylene dibromide)
- Benzene
- Ethyl benzene
- Toluene
- 1,2,4-trimethylbenzene
- 1,3,5-trimethylbenzene
- Xylenes (total)
- M,p-xylenes
- o-xylenes
- JP-5 as combined TPH – gasoline range
- JP-5 as combined TPH – diesel and oil ranges
- Copper
- Lead
- Beryllium
- Mercury
- 1-methylnaphthalene
- 2-methylnaphthalene
- Naphthalene
- Benzo[a]pyrene

In addition, PFAS samples were collected at the locations below. The PFAS samples were tested for over 70 different PFAS analytes (see Appendix G for a full list of analytes and results from the three shafts).

- Waiawa Shaft
- Red Hill Shaft
- Aiea Halawa Shaft
- AMR EPDS

Navy raised four concerns regarding EPA's collection of PFAS samples that they believed exceeded EPA's authority:

1. The collection of PFAS samples at the two [redacted] sources (Red Hill Shaft and Aiea Halawa Shaft);

[1] A copy of the latest version of the EDWM Plan can be found at JBPHH Drinking Water Monitoring (jbphh-safewaters.org)

2. Alleged that PFAS sampling at AMR was unprecedented as AMR was part of the distribution system[2];
3. Raised concerns about the extensive PFAS sampling relying on a modified EPA method 537.1; and
4. PFAS sampling beyond the 29 PFAS analytes listed within EPA's Unregulated Contaminant Monitoring Rule.

These concerns were annotated directly onto the Notice of Inspection for JBPHH. The EPA inspection team acknowledged the concerns and its intent to move forward with the inspection and sampling plan under the authority granted by the SDWA; any concerns may also be communicated to EPA's leadership. While Navy and Army disagreed with the PFAS sampling, both clearly stated they would not impede the collection of any samples.

Physical Assets Inspected

The EPA inspection team conducted an array of field activities to evaluate the drinking water system, including the assets listed here in the remainder of Section II. The physical inspection occurred over five consecutive days.

The following descriptions are based on information provided to the EPA inspection team by the System and observations made during the inspection. Observations are described in Section III of this report.

<u>Halawa Reservoirs S-1 and S-2</u>

The two reservoirs share a fenced perimeter and [redacted]. At this site are [redacted] steel ground tanks (Halawa Reservoirs S-1 and S-2) at the same approximate elevation. [redacted] The EPA inspection team observed the location of the Halawa Reservoir S-2's isolation valves, one below-grade and one above-grade, that System representatives stated were closed to isolate and drain the reservoir. The System representatives operated a spigot on the reservoir side of one isolation valve and no water flowed from it. The EPA inspection team observed from ground level a considerable amount of corrosion and a failed coating on the reservoir but did not fully evaluate the structure or the interior [redacted] (Photograph 1 and Photograph 2).

The coating on the sidewalls of the Halawa S-1 Reservoir had failed, exposing a substantial percentage of the reservoir sidewall primer layer and steel to the weather, and resulting corrosion has impacted the sidewall structural integrity (Photograph 3). The sidewall has evidence of dozens of exterior patch repairs (Photograph 4 and Photograph 5). The sidewall also has unrepaired areas of corrosion with metal loss in multiple locations that ranged in size from 1 to 6 inches in diameter. The reservoir base is corroded with metal loss around the perimeter (Photograph 6, Photograph 7, and Photograph 8).

The Halawa S-1 Reservoir had a locked shoebox-style hatch access that was gasketed to prevent contamination. The EPA inspection team observed isolated vertical corrosion streaks above the water line that

[2] Note: Army collected samples for six PFAS analytes under the Unregulated Contaminant Monitoring Rule (UCMR) 3 and collected samples for 29 PFAS analytes in 2023 under UCMR 5. Results were non-detect.

indicated some areas of corrosion on interior roof features (Photograph 9). The EPA inspection team observed that the water was clear to the floor of the reservoir and there was a sediment layer on the floor of the reservoir. The amount of sediment could not be estimated due to limited visibility through the access hatch (Photograph 10). The roof had evidence of some exterior patch repairs and unrepaired areas of corrosion that ranged in size from 1 to 6 inches in diameter (Photograph 11 and Photograph 12). Multiple locations along the roof perimeter had evidence of ponded water with corrosion at some weld seams (Photograph 13).

The Halawa S-1 Reservoir vent was intact with fine mesh screening. The System representatives stated that the overflows of both reservoirs at the site combine to one below-grade access pit. The overflow was flush to the floor of the access pit with fine mesh screening. The access pit contained the drain outfall and the storm water outlet of the access pit, according to System representatives (Photograph 14).

Aiea Halawa Shaft and Halawa Booster Pump Station

[redacted] System representatives operated a shaft pump during the inspection to provide water for sampling. [redacted] and was rerouted with temporary hose connections to an offsite area to discharge onto the surface when the shaft pumps are periodically operated (Photograph 15 and Photograph 16). System representatives described the status of the [redacted]. Two line-shaft pumps were in place and System representatives stated that [redacted] was operational. When operated, the System uses [redacted] pump at less than the permitted water allocation and the shaft capacity to reduce the risk of introducing elevated chloride levels to the supply.

The EPA inspection team observed a garden hose connected to a shaft pump air relief discharge that was not screened and resting on the floor (Photograph 17). A penetration in the pump room floor above the shaft supply had a plug inserted that was loose around its perimeter and had a cable inserted through it, potentially not sealed from contaminants (Photograph 18). A shaft site tube and access point had corroded electrical conduit connections near floor level with openings to the shaft not sealed from contaminants (Photograph 19 and Photograph 20).

The onsite water treatment facilities have a [redacted] and disinfection and fluoridation equipment in place. Chemical feed systems were out of operation since the source is considered non-potable.

The EPA inspection team observed a free chlorine analyzer in the sodium hypochlorite chemical building that tested sample flow from the distribution system, not from the Aiea Halawa Shaft entry point. The value on the analyzer read 0.54 milligrams per liter (mg/L). The EPA inspection team tested a grab sample from the same sample point for comparison that resulted in a value of 0.66 mg/L.

Although the sodium hypochlorite feed was out of service, System representatives stated that it could be reactivated within a day if needed. The EPA inspection team observed corrosion on a chemical system pump in the chemical feed area (Photograph 21).

The [redacted] is in the [redacted]. It is equipped with [redacted] horizontal pumps that pump to the [redacted] through a new [redacted]-inch transmission

main. System representatives stated that a distribution system operator controls the pumps remotely to maintain an approximate water level of [redacted] to [redacted] feet in the [redacted].

Red Hill Shaft and Red Hill Booster Pump Station

The Red Hill Shaft groundwater source was taken out of operation in late 2021 due to concern of fuel contamination in the water supply and was not in operation as a water supply source at the time of the inspection. System representatives operated a shaft pump during the inspection to provide water for sampling. The [redacted] was physically disconnected from the System's distribution system and was [redacted] that was designed to treat the source and [redacted] (Photograph 22). The shaft is designed for [redacted] pumps of [redacted] capacity each. System representatives described efforts to troubleshoot vibration issues and stated that [redacted] was fully operational, [redacted] was physically disconnected to accommodate the emergency GAC effluent connection, and the remaining [redacted] were offline for an ongoing repair project.

The EPA inspection team observed an open access through the floor of the pumproom above the shaft supply that was not sealed from contaminants. The opening is typically sealed via a water tight cover; however, it was accessible for ongoing well recovery and remediation-related efforts. The immediate area is adjacent to the sodium fluoride chemical feed area and active construction activity (Photograph 23 and Photograph 24). All [redacted] treatment tanks for sodium fluoride application had been taken out of service but [redacted] retained solution and/or chemical (Photograph 25 and Photograph 26).

The Red Hill Booster Pump Station [redacted] is equipped with two split-case horizontal pumps that pump to the Red Hill Tanks. System representatives stated that a distribution system operator controls the pumps remotely to maintain water level in the tanks above [redacted].

Red Hill Tanks S-316 and S-685

The tanks on this site are bolted steel tanks with a capacity of [redacted] each and are [redacted] housing units. The tanks [redacted].

The Red Hill Tank S-316 had vegetation up to 3 feet tall within the fenced area at the bottom of the access steps and sporadic vegetation elsewhere around the tank foundation (Photograph 27 and Photograph 28). The roof had a locked and gasketed access hatch. The vent was screened with fine mesh. The interior floor was not visible to assess if a sediment layer had accumulated. The overflow discharged outside of the fenced area and was not visible from the tanks without scaling down a short embankment. The overflow flapper valve had a gasket and closed completely; it did not have an internal fine mesh screen.

The Red Hill Tank S-685 had vegetation at the bottom of the access steps and sporadic vegetation elsewhere around the tank foundation (Photograph 29, Photograph 30, and Photograph 31). The tank base had a gap between the metal bottom flange and the concrete foundation that was not sealed from water or vegetation (Photograph 31). The roof had a locked and gasketed access hatch. The vent was screened with fine mesh. The interior floor was not visible to assess if a sediment layer had collected. The overflow discharged outside of the fenced area and was not visible from the tanks without scaling down a short embankment. The overflow flapper valve had a gasket and closed completely; it did not have an internal fine mesh screen.

Waiawa Shaft and [redacted]

The Waiawa Shaft site [redacted] of the [redacted] NAVFAC operates and manages. The EPA inspection team interviewed several System personnel at this location about the [redacted] The EPA inspection team requested copies of logbook daily entries at the time of the inspection but did not receive them.

[redacted]

[redacted] of the [redacted] pumps are rated for [redacted] and [redacted] are rated for [redacted]. At the time of the inspection, the System was operating [redacted] pump and [redacted] pump to meet the average daily water demand of approximately [redacted] MGD. System representatives stated that they [redacted] to operate the [redacted] MGD and [redacted] MGD pumps [redacted]. The System representatives stated that they cannot operate [redacted] of the [redacted] pumps [redacted] or operate [redacted] pumps of any combination to change the production rate.

The EPA inspection team observed that the sodium hypochlorite disinfection system consisted of one 330-gallon tote stored outside the day tank room (exposed to direct sunlight), two 330-gallon totes with containment serving as day tanks in the day tank room, four 330-gallon totes in a chemical storage room under cover, and a separate chemical application room with two chemical feed pumps and accessory equipment (Photograph 32 and Photograph 33). System representatives explained that the tote exposed to direct sunlight was temporarily stored there for transfer and would be moved shortly after. System representatives stated that operators record the chlorine level in the day tank daily, refill the day tanks from the totes in the chemical storage area as needed, relocate any exterior 330-gallon totes to the chemical storage area as space allows, and reorder sodium hypochlorite at an approximate rate of [redacted]-gallon totes per week. The System has an inline chlorine analyzer [redacted] and displayed a result of 0.61 mg/L at the time of the inspection.

The EPA inspection team observed that the sodium fluoride disinfection system consisted of approximately 70 50-lb sodium fluoride bags stored on a pallet in the center of the chemical feed room, [redacted] chemical saturator tanks, and [redacted] chemical feed pumps with accessory equipment. The EPA inspection team observed that the sodium fluoride chemical feed suction lines were suspended unsupported across a walkway at risk of being displaced by personnel (Photograph 47). System representatives stated that operators refill the saturator unit with [redacted] based upon observations of the fluoride residual. The System has an inline [redacted] and displayed a result of 0.527 parts per million (ppm) at the time of the inspection.

<u>Camp Smith Tanks S-327/S-684, S-326, and S-325</u>

The Camp Smith Tanks are [redacted] to supply the Marine Corps Camp H.M. Smith installation. The Camp Smith Tanks S-326 and S-325 on this site share a perimeter fence.

The Camp Smith Tank S-325 was [redacted] full of drinking water at the time of the inspection. The tank capacity is [redacted] gallons. System representatives stated that the System [redacted] initially to conduct a temporary inspection and cleaning; however, [redacted] on the interior that included concrete spalling, [redacted]. System representatives stated that the [redacted]. System representatives stated that the [redacted] for replacement but the date of replacement was uncertain.

The Camp Smith Tank S-326 is similar to Camp Smith Tank S-325 in location, type, construction, and size but according to System representatives has not been inspected since approximately May 2013 (Photograph 34). The tank capacity is [redacted] gallons. The roof had an access hatch and vent in a locked rooftop shelter. The aluminum access cover was flush to the floor level, loosely attached, and not gasketed (Photograph 35 and Photograph 36). The vent was screened with fine mesh. The EPA inspection team observed that the interior floor had a sediment layer covering all visible areas, but the depth could not be determined. The overflow discharged to ground level and was not downturned. The overflow flapper valve was counterweighted and had a seal but did not close completely and had no internal fine mesh screen (Photograph 37). When the overflow flapper was lifted for inspection, a gecko or lizard ran out of the overflow.

The Camp Smith Tank S-327 was labeled S-684 but referred to by System personnel also as S-327 (Photograph 38). The System information states that the tank capacity is [redacted] gallons but System personnel stated that the maximum volume it can be filled to is [redacted] gallons due to the elevation of the tank (Photograph 39). The roof had a locked and gasketed access hatch and a vent that was screened with fine mesh. The EPA inspection team observed that the center safety climb rail on the access ladder extended above the top ladder rung, which restricted access to the roof (Photograph 40). Tree limbs extended over the aluminum roof of the tank (Photograph 41). The roof perimeter had collected several inches of debris from the trees and had vegetation growing from it (Photograph 42). The EPA inspection team observed that sediment covered the floor of the tank and was estimated to be at least 1 inch deep (Photograph 43 and Photograph 44). The sidewall of the glass-fused to steel tank had weathered, chalky, cracking, and missing caulk sealant at the bolted panel junctions (Photograph 45). The interior overflow discharged below grade within a grated stormwater pit. The discharge end was at the bottom of the pit and had a flapper valve that was not accessible for further evaluation at the time of the inspection (Photograph 46).

Cybersecurity Review

The EPA inspection team conducted a cybersecurity review with System staff. Refer to Appendix C for Sign-In Sheet related to the review. Any observations associated with this review were discussed onsite and are not included in this report for security reasons.

Records Review

Records were reviewed before, during, or after the onsite inspection. Appendix D lists documents requested or reviewed during this inspection that support the report findings. The System did not provide the majority of the documents requested by the EPA inspection team prior to the conclusion of the inspection. During the inspection, the System stated that documents were available to be reviewed.

System representatives provided the EPA inspection team with a Risk and Resiliency Assessment (RRA) and an Emergency Response Plan (ERP), which were reviewed onsite. The RRA was certified on July 3, 2023 and the ERP was certified July 31, 2023.

Sampling and Field Monitoring

The EPA inspection team collected both raw and treated water samples on June 3 through 7, 2024. Table 1 summarizes the samples taken during the inspection and the analyses performed. In summary, these samples were analyzed for the 75 per- and polyfluoroalkyl substances (PFAS) analytes listed in Table 2, semivolatile organic compounds (SVOCs) listed in Table 4, volatile organic compounds (VOCs) listed in Table 6, total petroleum hydrocarbons (TPHs) listed in Table 8, metals (including mercury) listed in Table 10, and ethylene dibromide (EDB). Prior to sample collection, the EPA inspection team determined if the raw water source or entry point was producing water at the time of arrival. System representatives operated each source (e.g., pump-to-waste, pump-to-entry point) and entry point for a minimum of 10 minutes prior to the EPA inspection team taking a sample. The System's authorized contractor removed sample tap fixtures (e.g., aerators), closed hot water plumbing valves to isolate treated sample taps, and otherwise prepared each raw and treated sample site prior to sampling. The EPA inspection team flushed each raw and treated sample tap for a minimum of five minutes prior to sample collection. The EPA inspection team measured free chlorine, total chlorine, temperature, and pH of each sample at the time of the first sample collected at each sample location. These field measurements are also compiled in Table 1 below. Photographs referenced in these tables are included in the photograph log in Appendix A.

The System collected split samples immediately before or after for all the EPA samples unless otherwise indicated below. The System's split sample results are included in the tables below for comparison. This report does not cover data quality considerations for the System's split sample results.

Table 1. Summary of Locations Sampled for Each Analysis

Asset	*Sample Location*	*Sample Identifier*	*Sample Date/Time*	*Analysis Performed*	*Free Chlorine (mg/L)*	*Total Chlorine (mg/L)*	*Temp (deg. C)*	*pH*	*Relevant Photos*
Waiawa Shaft	Waiawa Shaft pre-chlorine sample point	002	06/03/24 15:38	PFAS	0.00	0.03	27.6	7.2	Photograph 48
			06/03/24 15:41	SVOC					
			06/03/24 15:39	VOC					
			06/03/24 15:40	TPH					
			06/03/24 15:42	Metals					
			06/03/24 15:38	EDB					
Waiawa Shaft	Waiawa Shaft post chlorina-tion sample point*	003	06/03/24 16:38	PFAS	0.47	0.48	26.0	7.2	Photograph 49
			06/03/24 16:34	SVOC					
			06/03/24 16:32	VOC					
			06/03/24 16:33	TPH					
			06/03/24 16:35	Metals					
			06/03/24 16:31	EDB					
Aiea Halawa Shaft	Aiea Halawa Shaft pre-chlorine sample point	004	06/04/24 09:54	PFAS	0.00	0.04	24.8	7.1	Photograph 50
			06/04/24 10:07	SVOC					
			06/04/24 10:15	VOC					
			06/04/24 10:16	TPH					
			06/04/24 10:18	Metals					
			06/04/24 10:14	EDB					
		004D	06/04/24 09:46	PFAS	0.00	0.04	24.8	7.1	

Table 1. Summary of Locations Sampled for Each Analysis

Asset	Sample Location	Sample Identifier	Sample Date/Time	Analysis Performed	Free Chlorine (mg/L)	Total Chlorine (mg/L)	Temp (deg. C)	pH	Relevant Photos
			06/04/24 10:19	SVOC					
			06/04/24 10:33	VOC					
			06/04/24 10:19	TPH					
			06/04/24 10:25	Metals					
			06/04/24 10:33	EDB					
	Field Blank	004FB	06/04/24 09:46	PFAS	n/a	n/a	n/a	n/a	n/a
Distribution System	Building 570, Child Develop-ment Center	005	06/04/24 11:37	SVOC	0.56	0.57	24.9	7.4	Photograph 51
			06/04/24 11:40	VOC					
			06/04/24 11:35	TPH					
			06/04/24 11:40	Metals					
			06/04/24 11:40	EDB					
Red Hill Shaft	Red Hill Shaft sample pre-chlorine sample point	006	06/04/24 14:50	PFAS	0.00	0.01	29.0	7.5	Photograph 52
			06/04/24 15:04	SVOC					
			06/04/24 15:08	VOC					
			06/04/24 14:58	TPH					
			06/04/24 15:06	Metals					
			06/04/24 15:08	EDB					
Distribution System	Residence 1	008	06/05/24 10:20	SVOC	0.56	0.56	25.3	7.3	Photograph 53
			06/05/24 10:17	VOC					
			06/05/24 10:13	TPH					
			06/05/24 10:14	Metals					
			06/05/24 10:17	EDB					
Distribution System	Building 4655, Catlin School Age Center	010	06/05/24 12:53	SVOC	0.54	0.55	26.0	7.3	Photograph 54
			06/05/24 12:59	VOC					
			06/05/24 12:53	TPH					
			06/05/24 12:56	Metals					
			06/05/24 12:59	EDB					
Distribution System	Hickam Elementary School	011	06/05/24 14:24	SVOC	0.43	0.20	28.5	7.3	Photograph 55
			06/05/24 14:28	VOC					
			06/05/24 14:24	TPH					
			06/05/24 14:25	Metals					
			06/05/24 14:28	EDB					
Distribution System	Residence 2	012	06/06/24 13:30	SVOC	0.01	0.01	26.1	7.2	Photograph 56
			06/06/24 13:34	VOC					
			06/06/24 13:34	TPH					
			06/06/24 13:33	Metals					
			06/06/24 13:24	EDB					
Distribution System	Residence 3**	013	06/06/24 14:15	SVOC	0.78	0.77	25.6	7.3	No photo
			06/06/24 14:22	VOC					
			06/06/24 14:17	TPH					
			06/06/24 14:19	Metals					
			06/06/24 14:22	EDB					
n/a	n/a	Trip Blank	n/a – trip blank	PFAS	n/a	n/a	n/a	n/a	n/a
n/a	n/a	TB-1	n/a – trip blank	EDB	n/a	n/a	n/a	n/a	n/a
n/a	n/a	TB-2	n/a – trip blank	VOC	n/a	n/a	n/a	n/a	n/a

Table 1. Summary of Locations Sampled for Each Analysis

Asset	Sample Location	Sample Identifier	Sample Date/Time	Analysis Performed	Free Chlorine (mg/L)	Total Chlorine (mg/L)	Temp (deg. C)	pH	Relevant Photos
n/a	n/a	TB-02	n/a – trip blank	TPH	n/a	n/a	n/a	n/a	n/a
n/a	n/a	TB-3	n/a – trip blank	TPH	n/a	n/a	n/a	n/a	n/a
n/a	n/a	TB-03	n/a – trip blank	VOC	n/a	n/a	n/a	n/a	n/a
n/a	n/a	TB-04	n/a – trip blank	VOC	n/a	n/a	n/a	n/a	n/a
n/a	n/a	TB-05	n/a – trip blank	EDB	n/a	n/a	n/a	n/a	n/a
n/a	n/a	TB-06	n/a – trip blank	EDB	n/a	n/a	n/a	n/a	n/a
n/a	n/a	TB-7	n/a – trip blank	TPH	n/a	n/a	n/a	n/a	n/a
n/a	n/a	TB-8	n/a – trip blank	TPH	n/a	n/a	n/a	n/a	n/a

n/a – Not applicable
* *The System's authorized contractor removed pipe thread sealant tape from the sample tap prior to sampling*
** *Location was equipped with a point of entry home treatment system that was not bypassed*

PFAS Sampling

For the PFAS analysis, the laboratory used a modified version of EPA Method 537 with both liquid chromatography tandem mass spectrometry (LC-MS-MS) and gas chromatography tandem mass spectrometry (GC-MS-MS). Table 2 summarizes EPA's and HDOH's maximum contaminant levels (MCLs) for PFAS in drinking water and HDOH's final action levels (Als) for PFAS in drinking water (rounded to two significant figures). Some of EPA's MCLs are reported in units of Hazard Index (HI). The Hazard Index is displayed in Equation 1, with all concentrations in parts per trillion (ppt), and connotated with brackets, ("[xx]").

$$\text{Hazard Index (1 unitless)} = \left(\frac{[\text{HFPO} - \text{DA}_{\text{ppt}}]}{[10\ \text{ppt}]}\right) + \left(\frac{[\text{PFBS}_{\text{ppt}}]}{[2000\ \text{ppt}]}\right) + \left(\frac{[\text{PFNA}_{\text{ppt}}]}{[10\ \text{ppt}]}\right) + \left(\frac{[\text{PFHxS}_{\text{ppt}}]}{[10\ \text{ppt}]}\right) \quad \text{(Equation 1)}$$

Table 2. List of Analytes Included in the PFAS Analysis and Associated Drinking Water Regulations

PFAS Compound	Abbreviation	CAS Number	EPA and HI MCLs (ppt)	HDOH ALs (ppt)
Method FTOH				
4:2 FTOH-2-Perfluorobutyl ethanol	4:2 FTOH	2043-47-2	-	-
7:2 FTOH-1-Perfluoroheptyl ethanol	7:2 FTOH	24015-83-6	-	-
6:2 FTOH-2-Perfluorohexyl ethanol	6:2 FTOH	647-42-7	-	5,000
8:2 FTOH-2-Perfluorooctyl ethanol	8:2 FTOH	678-39-7	-	4,200
10:2 FTOH-2-Perfluorodecyl ethanol	10:2 FTOH	N/A	-	-
Method 537 IDA				
Perfluoro(2-ethoxyethane) sulfonic acid	PFEESA	113507-82-7	-	-
10:2 Fluorotelomer Sulfonate	10:2 FTS	120226-60-0	-	-
Perfluoromethoxypropyl carboxylic acid	PMPA	13140-29-9	-	-
Hexafluoropropylene oxide dimer acid	HFPO-DA	13252-13-6	10	10
Perfluoroethylcyclohexane sulfonate	PFECHS	133201-07-7	-	-
Perfluoro-3,6-dioxaheptanoic acid	PFECA B	151772-58-6	-	-
Perfluoro-n-octadecanoic acid	PFODA	16517-11-6	-	-
N-ethyl perfluorooctane sulfonamido ethanol	NEtFOSE	1691-99-2	-	-
Perfluorooctanesulfonic acid	PFOS	1763-23-1	4.0	4.0

Table 2. List of Analytes Included in the PFAS Analysis and Associated Drinking Water Regulations

PFAS Compound	*Abbreviation*	*CAS Number*	*EPA and HI MCLs (ppt)*	*HDOH ALs (ppt)*
Perfluoroundecanoic acid	PFUnA	2058-94-8	-	-
N-methyl perfluorooctane sulfonamido acetic acid	NMeFOSAA	2355-31-9	-	-
Nafion Byproduct 4	R-PSDA	2416366-18-0	-	-
Nafion Byproduct 5	Hydrolyzed PSDA	2416366-19-1	-	-
Nafion Byproduct 6	R-PSDCA	2416366-21-5	-	-
-4(2-carboxy-1,1,2,2-tetrafluoroethoxy)-2,2,3,3,4,5,5,5-octafluoro-pentanoic acid	R-EVE	2416366-22-6	-	-
N-methyl perfluorooctane sulfonamido ethanol	NMeFOSE	24448-09-7	-	-
Perfluoroethoxypropyl carboxylic acid	PEPA	267239-61-2	-	-
Perfluoropentanoic acid	PFPeA	2706-90-3	-	1,500
Perfluoropentanesulfonic acid	PFPeS	2706-91-4	-	620
6:2 Fluorotelomer Sulfonate	6:2 FTS	27619-97-2	-	1,500
8:2 Fluorotelomer Carboxylic Acid	8:2 FTCA	27854-31-5	-	-
Nafion Byproduct 1	PS Acid	29311-67-9	-	-
N-ethyl perfluorooctane sulfonamido acetic acid	NEtFOSAA	2991-50-6	-	-
Perfluorohexanoic acid	PFHxA	307-24-4	-	1,900
Perfluorododecanoic acid	PFDoA	307-55-1	-	-
N-methyl perfluorooctane sulfonamide	NMeFOSA	31506-32-8	-	-
Perfluorooctanoic acid	PFOA	335-67-1	4.0	4.0
Perfluorodecanoic acid	PFDA	335-76-2	-	7.7
Perfluorodecanesulfonic acid	PFDS	335-77-3	-	38
Perfluorohexanesulfonic acid	PFHxS	355-46-4	10	10
3:3 Fluorotelomer Carboxylic Acid	3:3 FTCA	356-02-5	-	-
Perfluorobutanoic acid	PFBA	375-22-4	-	15,000
Perfluorobutanesulfonic acid	PFBS	375-73-5	2,000	2,000
Perfluoroheptanoic acid	PFHpA	375-85-9	-	77
Perfluoroheptanesulfonic Acid	PFHpS	375-92-8	-	38
Perfluorononanoic acid	PFNA	375-95-1	10	10
Perfluorotetradecanoic acid	PFTeA	376-06-7	-	-
Perfluoro-3-methoxypropanoic acid	PFECA F	377-73-1	-	-
8:2 Fluorotelomer Sulfonate	8:2 FTS	39108-34-4	-	-
Perfluoro(3,5-dioxahexanoic) acid	PFO2HxA	39492-88-1	-	-
Perfluoro(3,5,7-trioxaoctanoic) acid	PFO3OA	39492-89-2	-	-
Perfluoro(3,5,7,9-tetraoxadecanoic) acid	PFO4DA	39492-90-5	-	-
Perfluoro-3,5,7,9,11-pentaoxadodecanoic acid	TAF	39492-91-6	-	-
N-ethyl perfluorooctane sulfonamide	NEtFOSA	4151-50-2	-	-
Perfluoropropionic acid	PFPrA	422-64-0	-	510
Perfluoropropanesulfonic acid	PFPrS	423-41-6	-	-
6:2 Fluorotelomer Carboxylic Acid	6:2 FTCA	53826-12-3	-	-
10:2 Fluorotelomer Carboxylic Acid	10:2 FTCA	53826-13-4	-	-
Perfluoro-2-methoxyaceticacid	PFMOAA	674-13-5	-	-
Perfluoro-n-hexadecanoic acid	PFHxDA	67905-19-5	-	-
Perfluorononanesulfonic acid	PFNS	68259-12-1	-	-
Perfluoroethoxypropionic acid	EVE Acid	69087-46-3	-	-
8:2 Fluorotelomer Unsaturated Carboxylic Acid	8:2 FTUCA	70887-84-2	-	-
6:2 Fluorotelomer Unsaturated Carboxylic Acid	6:2 FTUCA	70887-88-6	-	-
10:2 Fluorotelomer Unsaturated Carboxylic Acid	10:2 FTUCA	70887-94-4	-	-
Perfluorotridecanoic acid	PFTrDA	72629-94-8	-	26

Table 2. List of Analytes Included in the PFAS Analysis and Associated Drinking Water Regulations

PFAS Compound	*Abbreviation*	*CAS Number*	*EPA and HI MCLs (ppt)*	*HDOH ALs (ppt)*
Nafion Byproduct 2	Hydro-PS Acid	749836-20-2	-	-
Perfluorooctanesulfonamide	PFOSA	754-91-6	-	46
9Cl-PF3ONS	9Cl-PF3ONS	756426-58-1	-	-
4:2 Fluorotelomer Sulfonate	4:2 FTS	757124-72-4	-	-
11Cl-PF3OUdS	11Cl-PF3OUdS	763051-92-9	-	-
Perfluoroethoxypropanoic acid	Hydro-EVE Acid	773804-62-9	-	-
Perfluorododecanesulfonic acid	PFDoS	79780-39-5	-	-
Perfluoroethoxysulfonic acid	NVHOS	801209-99-4	-	-
Perfluoro-4-isopropoxybutanoic acid	PFECA G	801212-59-9	-	-
7:3 Fluorotelomer Carboxylic Acid	7:3 FTCA	812-70-4	-	-
Perfluoro-4-methoxybutanoic acid	PFMBA	863090-89-5	-	-
5:3 Fluorotelomer Carboxylic Acid	5:3 FTCA	914637-49-3	-	-
4,8-Dioxa-3H-perfluorononanoic acid	ADONA	919005-14-4	-	1,200
-3(Methoxy)tetrafluoropropionic acid	MTP	93449-21-9	-	-
Mixtures containing two or more of PFHxS, PFNA, HFPO-DA, and PFBS			1.0 (unitless) Hazard Index	-

Table 3 contains a summary of EPA's results and the System's split sample results, including a summary of the number of PFAS analytes detected, their detection range, and EPA MCLs that were exceeded for each sample. Note the following quality considerations for EPA's sample results:

Method FTOH Samples

- According to the laboratory, samples were received with less than 2 days remaining on the holding time or less than one shift (8 hours) remaining on a test with a holding time of 48 hours or less. As such, the laboratory had insufficient time remaining to perform the analysis within holding time for the following samples: 002, 003, 004D, 004 FB, 004, 006, and Trip Blank. All samples were received by the lab three days after collection. The samples were analyzed between two and eight days after their 14-day holding time.

Method 537 IDA

- Reporting limits were raised for sample 004D due to limited sample volume.
- Target analyte HFPODA was detected in the method blank associated with the following samples: 002, 003, and Trip Blank. Therefore, the detection of HFPODA in these samples is not reliable.

The full EPA sample results are included in Table 15 and the laboratory reports in Attachment 1. Table 15 also contains the PFAS analysis results for all environmental and quality control samples taken.

In summary:

- Exceedances: EPA's sample (004) its duplicate (004D), and the System's split sample, taken at the Aiea Halawa Shaft, exceeded the EPA and HI MCL for PFOA and PFOS. No additional exceedances in any other samples were recorded.
- PFAS Detection: For the EPA samples, between one and 13 PFAS were detected in the samples – PFAS concentrations were between 0.286 J and 10.9 ppt for all assets. For the System's split samples,

between 0 and 10 PFAS were detected in the samples – PFAS concentrations were between 0.402 J and 8.7 ppt for all assets.

- Duplicate 004 Samples: The same 13 PFAS were detected in the native (004) and duplicate sample (004D). The results for the 13 PFAS were 0.82% to 13.8% different between the two samples, which meets the acceptance criteria of 30% relative difference or less for duplicate samples.
- Field Blank and Trip Blank: There were no detections in the field blank (004FB). HFPODA was detected in the trip blank; however, since this compound was detected in the laboratory method blank, this detection is not reliable.

Table 3. PFAS Sample Results Summary with MCL Exceedances

Sample Identifier	*Number of PFAS Detected* [a]	*Detection Range (ppt)*[a]	*Number of MCL/AL Exceedances*[b]
002	EPA: 1 Navy: 0	EPA: 2.99 (PFOSA) Navy: No detections	EPA: 0 Navy: 0
003	EPA: 2 Navy: 0	EPA: 0.286 J – 1.66 J (PFOA – PFOSA) Navy: No detections	EPA: 0 Navy: 0
004	EPA: 13 Navy: 10	EPA: 0.364 J – 10.90 (PFPrS - PFPrA) Navy: 0.44 – 8.7 (PFPrS – PFOS)	EPA: 2 (PFOA and PFOS) Navy: 2 (PFOA and PFOS)
004D	EPA: 13	EPA: 0.418 J – 10.60 (PFNA - PFPrA)	EPA: 2 (PFOA and PFOS)
004FB	EPA: 0	EPA: No detections	EPA: 0
006	EPA: 7 Navy: 5	EPA: 0.402 J – 0.745 J (PFHpA – PFOS) Navy: 0.48 – 0.7 (PFBS – PFOS)	EPA: 0 Navy: 0
Trip Blank	EPA: 0	EPA: No detections	EPA: 0

J = Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.
a – This range is only of the detected PFAS, meaning it does not include non-detect results. The analytes that the low-end and high-end concentrations represent are provided in parenthesis. This excludes detections of HFPODA in samples 002, 003, and Trip Blank due to laboratory method blank contamination.
b – The exceedances for PFOA and PFOS were for EPA MCLs, HI MCLs, and HI ALs, since these limits are the same for all three.

SVOC Sampling

The laboratory used EPA Method 525.3 and EPA Method 8270E for the four SVOC analytes. Table 4 summarizes HDOH's MCLs and ALs for SVOCs in drinking water.

Table 4. List of Analytes Included in the SVOC Analysis and Associated Drinking Water Regulations

SVOC Compound	*CAS Number*	*HDOH MCLs (ug/L)*	*HDOH ALs (ug/L)*
Method 525.3			
Benzo(a)pyrene	50-32-8	0.20	0.20
Method 8270E			
1-Methylnaphthalene	90-12-0	-	11
2-Methylnaphthalene	91-57-6	-	30
Naphthalene	91-20-3	-	17

Table 5 provides the results for the four SVOCs tested. The EPA laboratory reports can be found in Attachment 2. Note the following quality considerations for the EPA sample results:

Method EPA 8270E Samples

- According to the laboratory, sample 008 was received above temperature (no ice in cooler; 12.8°C). These samples were rejected for analysis.

Method EPA 525.3 Samples

- According to the laboratory, samples 008 was received above temperature (no ice in cooler; 12.8°C). These samples were rejected for analysis.
- 2-Methylnaphthalene was detected above the method detection limit (MDL) in the method blank associated with samples 012 and 013. No material impact on reported result as samples were ND for this parameter.

In summary:

- Exceedances: None of the samples exceeded the HDOH MCLs or ALs for SVOCs.
- Entry Point Samples: For EPA's results, SVOCs were detected at the inactive Aiea Halawa Shaft and Red Hill Shaft (samples 004 and 006). Sample results were below HDOH ALs and had a "J" flag – the results were less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value. For the System's split sample results, there were no detections.

Table 5. SVOCs Sample Results Summary and MCL/AL Exceedances

Sample Identifier	*Sample Results (ug/L)*				
	Benzo(a)pyrene	*1-Methylnaphthalene*	*2-Methylnaphthalene*	*Naphthalene*	*System Split Sample Results*
002	ND	ND	ND	ND	All ND
003	ND	ND	ND	ND	All ND
004	ND	ND	ND	0.0070 J	All ND
004D	ND	ND	ND	0.0084 J	-
005	ND	ND	ND	ND	All ND
006	ND	ND	0.0040 J	0.0099 J	All ND

Table 5. SVOCs Sample Results Summary and MCL/AL Exceedances

Sample Identifier	*Sample Results (ug/L)*				
	Benzo(a)pyrene	*1-Methylnaphthalene*	*2-Methylnaphthalene*	*Naphthalene*	*System Split Sample Results*
008	NA*	NA*	NA*	NA*	All ND
010	ND	ND	ND	ND	All ND
011	ND	ND	ND	ND	All ND
012	ND	ND	ND B2.1	ND	All ND
013	ND	ND	ND B2.1	ND	All ND

HDOH MCL/AL exceedances appear in bold.
J = Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.
B2.1 = Analyte detected in associated method blank below the reporting limit. No material impact on reported result as sample is non-detect for this analyte.
ND = Result is non-detect for the analyte(s).
NA* = Sample analysis not available due to quality observations explained above.

Volatile Organic Compounds (VOCs) Sampling

The laboratory used EPA Method 524.2 for the VOC analytes. Table 6 summarizes HDOH's MCLs and ALs for VOCs in drinking water. HI HDOH ALs are the same as the MCLs and, therefore, not separately summarized in Table 6.

Table 6. List of Analytes Included in the VOC Analysis and Associated Drinking Water Regulations

VOC Compound	*CAS Number*	*HDOH MCLs/ALs (ug/L)*
Method 524.2		
Chloroform	67-66-3	- / 70
Benzene	71-43-2	5.0 / 5.0
Bromodichloromethane	75-27-4	- / 13
Toluene	108-88-3	1000 / 1000
Chlorodibromomethane	124-48-1	- / 0.87
Ethylbenzene	100-41-4	700 / 700
Xylenes (Total) m-Xylenes, p-Xylenes, o-Xylenes	108-38-3 106-42-3 95-47-6	1000 / 1000
Bromoform	75-25-2	80 / 80
1,2,4- Trimethylbenzene	95-63-6	-
1,3,5- Trimethylbenzene	108-67-8	-

Table 7 provides the results for the samples tested for VOCs. The EPA laboratory reports can be found in Attachment 3. In summary, no samples contained detectable levels of VOCs for EPA and System split samples.

Table 7. VOCs Sample Results Summary and MCL/AL Exceedances

Sample Identifier	Sample Results (ug/L)											
	Chloro form	Benzene	Bromo dichloro methane	Toluene	Chloro dibromo methane	Ethyl benzene	m&p-Xylene	o-Xylene	Bromo form	1,3,5-Trimethyl benzene	1,2,4-Trimethyl benzene	System Split Sample Results
002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	All ND
003	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	All ND
004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	All ND
004D	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	All ND
006	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	All ND
008	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	All ND
010	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	All ND
011	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	All ND
012	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	All ND
013	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	All ND
TB-2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
TB-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
TB-04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-

HDOH MCL/AL exceedances appear in bold.
ND = Result is non-detect for the analyte(s).

Total Petroleum Hydrocarbons (TPH) Sampling

The laboratory used EPA Method 8015 for the TPH analytes. Table 8 summarizes HDOH's MCLs and ALs for TPH in drinking water.

Table 8. List of Analytes Included in the TPH Analysis and Associated Drinking Water Regulations

TPH Compound	CAS Number	HDOH MCLs/ALs (ug/L)
Method 8015C		
TPH-g	n/a	-
TPH-d	n/a	-
TPH-o	n/a	-

Table 9 provides the results for the samples tested for TPH. The EPA laboratory reports can be found in Attachment 3. Note the following quality considerations for the EPA sample results:

- Samples 12 and 13 were prepped or analyzed past the recommended holding time for analytes TPH-d and TPH-o.
- The calibration verification check for sample 013 did not meet the percent difference criteria for TPH-o.

In summary:

- Exceedances: There were no MCLs or ALs for TPH at the time of this report.
- Detections: For EPA's results, TPH-d was detected in both Waiawa Shaft locations (002, and 003), one Aiea Halawa Shaft location (004) and in two distribution system samples (005 and 010). For the TPH-d detects at the three source locations, the compositions were unknown and could not be confirmed at

the time of this report. The System's split sample results did not have detections for TPH-g, TPH-d, TPH-o.

- Duplicates: For EPA's results, the duplicate sample for site 004 (004D) was non-detect for TPH-d while sample 004 was 68 ug/L for TPH-d. The reporting limit for this analyte is 50 ug/L, therefore the percent difference is not within quality criteria (within 30% difference).

To appropriately review and understand EPA's TPH sample results, there are important qualifiers for consideration. Certain results have flags that provide additional context.

A3 = The sample was prepped/analyzed past the recommended holding time.
C1 = The reported concentration for this analyte is below the quantitation limit.
C4 = The calibration verification check did not meet % difference criteria for this analyte.
F1 = Type is not a fuel or hydrocarbon mixture.
F13 = Fuel or product type: mixed or unknown.
J = Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.
ND = Result is non-detect for the analyte(s).
n/a = Sample analysis not applicable.

Table 9. TPH Sample Results Summary

Sample Identifier	*Sample Results (ug/L)*			
	TPH-g	*TPH-d*	*TPH-o*	*System Split Sample Results*
002	ND	68 C1, F13, J	ND	All ND
003	ND	51 C1, F13, J	ND	All ND
004	ND	68 C1, F13, J	ND	All ND
004D	ND	ND	ND	-
005	ND	50 C1, F1, J	ND	All ND
006	ND	ND	ND	All ND
008	ND	ND	ND	All ND
010	ND	53 C1, F1, J	ND	All ND
011	ND	ND	ND	All ND
012	ND	ND A3	ND A3	All ND
013	ND	ND A3	ND A3 C4	All ND
TB-02	ND	n/a	n/a	-
TB-3	ND	n/a	n/a	-
TB-7	ND	n/a	n/a	-
TB-8	ND	n/a	n/a	-

A3 = The sample was prepped/analyzed past the recommended holding time.
C1 = The reported concentration for this analyte is below the quantitation limit.
C4 = The calibration verification check did not meet % difference criteria for this analyte.
F1 = Type is not a fuel or hydrocarbon mixture.
F13 = Fuel or product type: mixed or unknown.
J = Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.
ND = Result is non-detect for the analyte(s).
n/a = Sample analysis not applicable.

Metals Sampling

The laboratory used EPA Method 200.8 and 245.1 for the metal analytes. Table 10 summarizes HDOH's MCLs for four metal elements in drinking water. HI HDOH ALs are the same as the MCLs and, therefore, not separately summarized in Table 10. Water was flushed before sample collection.

Table 10. List of Analytes Included in the Metals Analysis and Associated Drinking Water Regulations

Metal Elements	*CAS Number*	*HDOH MCLs/ALs (ug/L)*
Method 200.8		
Copper	7440-50-8	1300
Lead	7439-92-1	15
Beryllium	7440-41-7	4.0
Method 245.1		
Mercury	7439-97-6	2.0

Table 11 provides the results for the samples tested for metals. The EPA laboratory reports can be found in Attachment 3.

In summary:

- Exceedances: None of the samples exceeded the HDOH MCLs or ALs for any metals.
- Detections: For EPA's results, copper was detected in three source locations (002, 003, and 004 and its duplicate 004D) and in six distribution system locations (005, 008, 010, 011, 012, 013). Lead was detected in one entry point location (004D) and one distribution system location (008). No beryllium or mercury was detected in any of the samples. For the System's split samples, lead was detected in two source locations (003 and 004) and in two distribution system locations (008 and 011).
- Duplicates: The same metal (copper) was detected in the native (004) and duplicate sample (004D). The result for the copper was 21.2% different between the two samples, which meets the acceptance criteria of 30% relative difference or less for duplicate samples. Lead was not detected in the native sample (004) but was detected in the duplicate sample (004D). Since the detection limit is 0.13 ug/L and the concentration in the duplicate sample was 0.19 ug/L, the relative difference is 37.5% and does not meet the acceptance criteria of 30% relative difference or less for duplicate samples.

Table 11. Metals Sample Results Summary and MCL/AL Exceedances

Sample Identifier	*Sample Results (ug/L)*				
	Copper	*Lead*	*Beryllium*	*Mercury*	*System Split Sample Results (only detects listed)*
002	36	ND	ND	ND	Copper: 43.2
003	12	ND	ND	ND	Copper: 12 Lead: 0.160
004	97	ND	ND	ND	Copper: 124 Lead: 0.330
004D	120	0.19	ND	ND	-
005	35	ND	ND	ND	Copper: 16.6
006	ND	ND	ND	ND	All ND
008	35	0.28	ND	ND	Copper: 30.8 Lead: 0.170
010	22	ND	ND	ND	Copper: 34.1

Table 11. Metals Sample Results Summary and MCL/AL Exceedances

Sample Identifier	*Sample Results (ug/L)*				
	Copper	*Lead*	*Beryllium*	*Mercury*	*System Split Sample Results (only detects listed)*
011	130	ND	ND	ND	Copper: 168 Lead: 0.220
012	39	ND	ND	ND	Copper: 19.7
013	26	ND	ND	ND	Copper: 42.6

HDOH MCL/AL exceedances appear in bold.
ND = Result is non-detect for the analyte(s).

Ethylene Dibromide (EDB) Sampling

The laboratory used EPA Method 524.2 SIM for EDB. Table 12 also summarizes HDOH's MCL for EDB in drinking water. HI HDOH's AL is equal to the MCL and, therefore, not separately summarized in Table 12.

Table 12. List of Analytes Included in the EDB Analysis and Associated Drinking Water Regulations

VOC Compound	*CAS Number*	*HDOH MCLs/ALs (ug/L)*
Method 524.2 SIM		
1,2 Dibromoethane (Ethylene Dibromide - EDB)	106-93-4	0.04

Table 13 provides the results for the samples tested for metals. The EPA laboratory reports can be found in Attachment 3.

In summary, there were no detections of EDB in any of the EPA or System samples.

Table 13. EDB Sample Results Summary and MCL/AL Exceedances

Sample Identifier	*Sample Results (ng/L)*	
	Ethylene Dibromide	*System Split Sample Results*
002	ND	ND
003	ND	-
004	ND	ND
004D	ND	-
005	ND	ND
006	ND	ND
008	ND	ND
010	ND	ND
011	ND	ND
012	ND	ND
013	ND	ND
TB-1	ND	-

Table 13. EDB Sample Results Summary and MCL/AL Exceedances

Sample Identifier	*Sample Results (ng/L)*	
	Ethylene Dibromide	*System Split Sample Results*
TB-05	ND	-
TB-06	ND	-

HDOH MCL/AL exceedances appear in bold.
ND = Result is non-detect for the analyte(s).

Closing Conference

The EPA inspection team held a closing conference with System personnel at 1500 HST on June 7, 2024 at [redacted] The EPA inspection team discussed preliminary observations identified during the field component of the inspection. The EPA inspection team reiterated to the System representatives that these preliminary observations were not compliance determinations. Preliminary observations shared during the closing conference are subject to further investigation by EPA upon the review of additional records and documentation. Therefore, this inspection report may include observations that were not identified at the time of the closing conference.

The inspection concluded at approximately 1530 HST.

SECTION III– OBSERVATIONS

The following subsections describe the EPA inspection team's observations based on the inspection.

Primary Observations

The EPA inspection team identified the following primary observations (i.e., observations that pose a threat to water quality and/or quantity) based on the facilities inspected and review of documentation.

Citation:
SDWA section 1433, 42 U.S.C. section 300i-2, Community Water System Risk and Resilience
(a) Risk and resilience assessments
(1) In general
Each community water system serving a population of greater than 3,300 persons shall conduct an assessment of the risks to, and resilience of, its system. Such an assessment—
(A) shall include an assessment of—
(ii) the resilience of the pipes and constructed conveyances, physical barriers, source water, water collection and intake, pretreatment, treatment, storage and distribution facilities, electronic, computer, or other automated systems (including the security of such systems) which are utilized by the system;
(iv) the financial infrastructure of the system;
(v) the use, storage, or handling of various chemicals by the system; and
(vi) the operation and maintenance of the system; and

Observation 1

Summary: The System RRA did not contain the required information.

Relevant Activity/Asset: Management and Operation

Citation:
Title 42 – The Public Health and Welfare (42 CFR) Chapter 6A – Public Health Service Subchapter XII – Safety of Public Water Systems Part E – General Provisions
§300j–4. Records and inspections

b) Entry of establishments, facilities, or other property; inspections; conduct of certain tests; audit and examination of records; entry restrictions; prohibition against informing of a proposed entry
(1) Except as provided in paragraph (2), the Administrator, or representatives of the Administrator duly designated by him, upon presenting appropriate credentials and a written notice to any supplier of water or other person subject to (A) a national primary drinking water regulation prescribed under section 300g–1 of this title, (B) an applicable underground injection control program, or (C) any requirement to monitor an unregulated contaminant pursuant to subsection (a), or person in charge of any of the property of such supplier or other person referred to in clause (A), (B), or (C), is authorized to enter any establishment, facility, or other property of such supplier or other person in order to determine whether such supplier or other person has acted or is acting in compliance with this subchapter, including for this purpose, inspection, at reasonable times, of records, files, papers, processes, controls, and facilities, or in order to test any feature of a public water system, including its raw water source.

Observation 2

Summary: On May 15, 2024, the EPA inspection team requested records, listed in Appendix D, to be provided during or prior to the inspection. The System did not provide all the requested documents before the completion of the inspection on June 7, 2024. The System provided some documents post-inspection, on the dates listed in the Document Log.

Relevant Activity/Asset: Management and Operation (Appendix D)

Citation:

Title 11 Chapter 20 Hawaii Administrative Rules Section 29.5 (§11-20-29.5) Capacity demonstration and evaluation

(b) A public water system with adequate technical capacity has at least the following items:

(2) Adequate water source(s), including:

(A) Sufficient water available to serve all customers or water users based on the public water system's average daily and peak water usage, and the system's treated water output;

(B) Sufficient water resources for the future, based on the maximum flow or pumping capacity of each source and a five year or more projected growth rate study which shall be submitted;

(C) Adequate protection of water source(s) or watershed(s), based on the identification of existing and potential contamination hazards as required under the source water protection program and a description of how a protective area will be maintained around the source(s) or the watershed(s);

and

(D) Contracts or agreements to obtain water when the water source(s) are not owned by the public water system, and contracts or agreements for supplementary water sources for systems affected by drought. The contracts and agreements shall be identified and copies shall be provided if requested by the director

(4) An adequate infrastructure replacement plan which includes estimates of the useful life and plans for the eventual replacement of the public water system's infrastructure, including:

(A) Wells;

(B) Pumping facilities;

(C) Storage tanks;

(D) Treatment facilities; and

(E) Distribution system (pipes, valves, meters, etc.);

(5) An adequate operation plan which shows that the public water system has:

(C) Adequate preventive and corrective maintenance program to identify, schedule, perform, and record inspections, repairs, and replacements in a timely manner;

Citation:

Recommended Standards for Water Works, (Ten States Standards) (2022 Edition) Section 7.1.1 states, "Storage facilities should have sufficient capacity, as determined from engineering studies, to meet domestic demands, and where fire protection is provided, fire flow demands. (a) The minimum storage capacity (or equivalent capacity) for systems not providing fire protection shall be equal to the average daily consumption. This requirement may be reduced when the source and treatment facilities have sufficient capacity with standby power to supplement peak demands of the system."

Observation 3

Summary: The EPA inspection team observed that the System has [redacted].

Relevant Activity/Asset: Management and Operation

Observation 4

Summary: The EPA inspection team observed that the [redacted] through a change in pump or valve operation.

Relevant Activity/Asset: Waiawa Shaft

Observation 5

Summary: The EPA inspection team observed that the System [redacted] (estimated [redacted]) in [redacted] storage tank ([redacted] in [redacted]), and the [redacted].

Relevant Activity/Asset: Management and Operation

Citation:

Title 11 Chapter 25 Hawaii Administrative Rules Section 2.50 (§11-25-2.50)
Public water system operation and management
(a) This chapter applies to all community and non-transient noncommunity public water systems.
(1) Each public water system covered by this chapter shall be under the responsible charge of an operator(s) holding a valid certification equal to or greater than the classification of the [water treatment plant] (WTP) or [distribution system] (DS);
(2) All operating personnel making daily process control or system integrity decisions about water quality or quantity that affect public health shall be certified; and
(3) A designated certified operator shall be available for each operating shift.
(b) This chapter applies to all WTPs in community and non-transient noncommunity public water systems and all WTPs serving surface water or ground water under the direct influence of surface water. All WTPs covered by this chapter shall be operated by certified WTP operators. Each WTP shall at all times be under the responsible charge of an operator holding a valid certification equal to or greater than the WTP classification.
(c) All fluoridation facilities shall be operated by certified operators who have received board-approved fluoridation training.
(d) Each DS shall at all times be under the responsible charge of an operator holding a valid certification equal to or greater than the DS classification.

Observation 6

Summary: The System did not provide the EPA inspection team with the following requested information that would allow evaluation of the System's ability to operate the JBPHH PWS separately from the [redacted] additional PWSs that the NAVFAC operates and manages: Example [redacted].

Relevant Activity/Asset: Management and Operation (Appendix D)

Citation:
Title 11 Chapter 20 Hawaii Administrative Rules Section 29.5 (§11-20-29.5)
Capacity demonstration and evaluation
(b) A public water system with adequate technical capacity has at least the following items:
(5) An adequate operation plan which shows that the public water system has:
(B) A program identifying the responsibilities, qualifications, and training requirements of the operations personnel;
(C) Adequate preventive and corrective maintenance program to identify, schedule, perform, and record inspections, repairs, and replacements in a timely manner;
(c) A public water system with adequate managerial capacity has at least the following items:
(3) An adequate information management system, including:
(A) Procedures to collect, receive, and distribute necessary information quickly from and to public water system personnel, and where applicable, any contractor(s), and actual or potential users.

Observation 7

Summary: In response to the EPA inspection team's request for an Operation & Maintenance Manual (or Standard Operating Procedures (SOP)) for the System, the System provided fifteen individual SOPs. The SOPs did not fully address the proper operation and maintenance of the shaft treatment facility start-up and shutdown, booster pump stations, storage tanks, daily inspections, or operator daily log requirements.

Relevant Activity/Asset: Management and Operation (Appendix D)

Citation:
Title 11 Chapter 20 Hawaii Administrative Rules Section 29.5 (§11-20-29.5)
Capacity demonstration and evaluation
(b) A public water system with adequate technical capacity has at least the following items:
(4) An adequate infrastructure replacement plan which includes estimates of the useful life and plans for the eventual replacement of the public water system's infrastructure, including:
(A) Wells;
(B) Pumping facilities;
(C) Storage tanks;
(D) Treatment facilities; and
(E) Distribution system (pipes, valves, meters, etc.);
(5) An adequate operation plan which shows that the public water system has:
(C) Adequate preventive and corrective maintenance program to identify, schedule, perform, and record inspections, repairs, and replacements in a timely manner;

Citation:
AWWA G200-15 Distribution Systems Operation and Management, 4.3.1.4 Maintenance
"The utility shall have a maintenance program that includes periodic cleaning and refurbishing of facilities, as required. Cleaning of covered storage shall be based on internal inspection conducted at a minimum of every five years…The utility shall perform a full internal and external inspection according to AWWA Manual M42. The utility shall conduct an external visual inspection of the storage facility at least seasonally to assess and repair environmental damage and verify the integrity of vents and screens. The inspection shall include an assessment of the physical security of the facility."

Observation 8
Summary: The System did not provide the EPA inspection team with the EPA-requested tank inspection reports (Storage Tank Inspection (the most recent 1 for each tank) / Cleaning and Maintenance Records (within the past 10 years)). System representatives stated that several tanks had not been cleaned or inspected since 2013.
Relevant Activity/Asset: Finished Storage (Appendix D)
Observation 9
Summary: The EPA inspection team observed that the [redacted] at the time of the inspection. The System's [redacted]. The total current System storage capacity is [redacted] percent of the System's average daily production flow ([redacted] MGD).
Relevant Activity/Asset: [redacted]
Observation 10
Summary: The EPA inspection team observed that the [redacted] MG [redacted] accounts for the vast majority of the System's finished water storage capacity (estimated [redacted]) and has advanced corrosion with metal loss at multiple locations. The sidewall had unrepaired areas of advanced corrosion with metal loss in multiple locations that ranged in size from 1 to 6 inches in diameter. The reservoir base was corroded with metal loss around the perimeter. The exterior reservoir coating had failed down to the primer and bare steel on large surface areas around the reservoir.
Relevant Activity/Asset: [redacted] (Photograph 3, Photograph 4, Photograph 5, Photograph 6, Photograph 7, and Photograph 8)
Observation 11
Summary: The EPA inspection team observed that various reservoir's floors had a sediment layer. The amount of sediment could not be estimated due to limited visibility through the access hatch.
Relevant Activity/Asset: [redacted] (Photograph 10), [redacted] (Photograph 43 and Photograph 44)
Observation 12
Summary: The EPA inspection team observed the sidewall of the glass-fused to steel tank had weathered, chalky, cracking, and missing caulk sealant at the bolted panel junctions.
Relevant Activity/Asset: [redacted] (Photograph 45)
Observation 13
Summary: The EPA inspection team observed vegetation growing on the roof around the perimeter of the tank.
Relevant Activity/Asset: [redacted] (Photograph 42)
Observation 14
Summary: The EPA inspection team observed adjacent trees growing over the aluminum roof.
Relevant Activity/Asset: [redacted] (Photograph 41)

Citation:
Title 11 Chapter 20 Hawaii Administrative Rules Section 29.5 (§11-20-29.5)
Capacity demonstration and evaluation
(b) A public water system with adequate technical capacity has at least the following items:
(4) An adequate infrastructure replacement plan which includes estimates of the useful life and plans for the eventual replacement of the public water system's infrastructure, including:
(A) Wells;
(B) Pumping facilities;
(C) Storage tanks;
(D) Treatment facilities; and
(E) Distribution system (pipes, valves, meters, etc.);
(5) An adequate operation plan which shows that the public water system has:
(C) Adequate preventive and corrective maintenance program to identify, schedule, perform, and record inspections, repairs, and replacements in a timely manner;
Citation:
Recommended Standards for Water Works, (Ten States Standards) (2022 Edition) Section 7.1.7
"All water storage structures shall be provided with an overflow that extends down to an elevation between 12 and 24 inches above the ground surface, and discharges over a drainage inlet structure or a splash plate. No overflow may be connected directly to any drain, sanitary sewer, or storm sewer. All overflow pipes shall be located so that any discharge is visible…c. The overflow shall open downward and be screened with twenty-four mesh non-corrodible screen. The screen shall be installed within the overflow pipe at a location least susceptible to damage by vandalism. A mesh-fitted mechanical flap valve is acceptable provided the flapper is supplied with non-corroding and non-seizing hinges. The flap valve shall be spring loaded or counterweighted, so it closes and forms a tight seal after the overflow event".

Observation 15

Summary: The EPA inspection team observed that the overflow discharged at ground level, was not downturned, and the flap valve did not seal or have internal mesh.

Relevant Activity/Asset: Camp Smith S-326 (Photograph 37)

Citation:
Title 11 Chapter 20 Hawaii Administrative Rules Section 29.5 (§11-20-29.5)
Capacity demonstration and evaluation
(b) A public water system with adequate technical capacity has at least the following items:
(5) An adequate operation plan which shows that the public water system has:
(C) Adequate preventive and corrective maintenance program to identify, schedule, perform, and record inspections, repairs, and replacements in a timely manner;
Citation:
Recommended Standards for Water Works, (Ten States Standards) (2022 Edition) Section 7.1.10
"The roof and sidewalls of all water storage structures must be watertight with no openings except properly constructed vents, manholes, overflows, risers, drains, pump mountings, control ports, or piping for inflow and outflow. Particular attention shall be given to the sealing of roof structures which are not integral to the tank body, including access tubes."

Observation 16

Summary: The EPA inspection team observed that an access lid with vent secured to it was flush to roof level and did not seal on all edges.

Relevant Activity/Asset: Camp Smith Tank S-326 (Photograph 35 and Photograph 36).

Citation:

Title 11 Chapter 20 Hawaii Administrative Rules Section 29.5 (§11-20-29.5)
Capacity demonstration and evaluation
(b) A public water system with adequate technical capacity has at least the following items:
(7) A cross connection and backflow prevention program to ensure that there is an accurate inventory of backflow prevention devices throughout the public water system, and that devices are regularly tested and maintained;

Citation:

"Recommended Standards for Water Works, (Ten States Standards) (2022 Edition) Section 3.2.4.10
(f) The wellhead shall be constructed to prevent contamination from entering the well.
(g) Where well appurtenances protrude through the wellhead, the connections to the wellhead shall be mechanical or welded connections that are watertight".

Observation 17

Summary: The EPA inspection team observed a shaft pump with an air relief discharge connected to a garden hose with its end on the floor.

Relevant Activity/Asset: Aiea Halawa Shaft (Photograph 17)

Observation 18

Summary:
The EPA inspection team observed corroded electrical conduit connections near floor level into openings of an access point that were not sealed from contaminants. There was also a plug inserted into a penetration in the pumproom floor above the shaft supply, which was loose and potentially not sealed from contaminants.

Relevant Activity/Asset: Aiea Halawa Shaft (Photograph 18, Photograph 19, and Photograph 20)

Observation 19

Summary:
The EPA inspection team observed an access point (approximately 2-feet diameter) through the floor of the pumproom to the supply shaft that was open to contaminants.

Relevant Activity/Asset: Red Hill Shaft (Photograph 23 and Photograph 24).

Citation:

Title 11 Chapter 20 Hawaii Administrative Rules Section 38 (§11-20-38)
Additives
(d) The use of any chemical, material, or product in drinking water treatment or supply shall conform to the manufacturer's instructions or recommendations for use, maximum dosage, application rates, installation, restrictions, and any other conditions imposed by the product certification organization accredited by the American National Standards Institute or the director.

Observation 20
Summary: The EPA inspection team observed that the sodium fluoride chemical application system was removed from service but the System retained sodium fluoride chemical and solution in the treatment tanks.
Relevant Activity/Asset: Red Hill Shaft (Photograph 25 and Photograph 26)
Observation 21
Summary: The EPA inspection team observed one 330-gallon sodium hypochlorite tote stored outside of the chemical storage area exposed to direct sunlight, which could contribute to degradation of the disinfectant. System representatives stated that the area was used to store totes for up to a couple of days when the chemical storage area is at maximum capacity. The EPA inspection team observed that the System used the sodium hypochlorite chemical storage area for non-chemical storage. There was limited space for accessing the chemical storage totes and there was not sufficient space to contain all sodium hypochlorite totes.
Relevant Activity/Asset: Waiawa Shaft (Photograph 32 and Photograph 33)
Observation 22
Summary: The EPA inspection team observed that the sodium fluoride chemical feed suction lines were suspended unsupported across a walkway at risk of being displaced by personnel.
Relevant Activity/Asset: Waiawa Shaft (Photograph 47)
Observation 23
Summary: The EPA inspection team observed that the sodium hypochlorite chemical feed pump was corroded.
Relevant Activity/Asset: Aiea Halawa Shaft (Photograph 21)

Additional Observations

The following additional observations are based on the inspection and review of documents received.

Citation: *Title 11 Chapter 20 Hawaii Administrative Rules Section 29.5 (§11-20-29.5)* *Capacity demonstration and evaluation* *(b) A public water system with adequate technical capacity has at least the following items:* *(5) An adequate operation plan which shows that the public water system has:* *(C) Adequate preventive and corrective maintenance program to identify, schedule, perform, and record inspections, repairs, and replacements in a timely manner;* **Citation:** *Recommended Standards for Water Works, (Ten States Standards) (2022 Edition) Section 7.1.7* *"All water storage structures shall be provided with an overflow that extends down to an elevation between 12 and 24 inches above the ground surface, and discharges over a drainage inlet structure or a splash plate. No overflow may be connected directly to any drain, sanitary sewer, or storm sewer. All overflow pipes shall be located so that any discharge is visible…c. The overflow shall open downward and be screened with*

twenty-four mesh non-corrodible screen. The screen shall be installed within the overflow pipe at a location least susceptible to damage by vandalism. A mesh-fitted mechanical flap valve is acceptable provided the flapper is supplied with non-corroding and non-seizing hinges. The flap valve shall be spring loaded or counterweighted, so it closes and forms a tight seal after the overflow event"

Observation 24

Summary: The EPA inspection team observed that the overflow discharge was not above grade with a designed air gap above a storm grate. The discharge was below grade at the bottom of a pit, not downturned or in plain view from outside the facility. The pit drained offsite via a storm drainpipe.

Relevant Activity/Asset: [redacted] (Photograph 14), [redacted] (Photograph 46)

Citation:
Title 11 Chapter 20 Hawaii Administrative Rules Section 29.5 (§11-20-29.5)
Capacity demonstration and evaluation
(b) A public water system with adequate technical capacity has at least the following items:
(5) An adequate operation plan which shows that the public water system has:
(C) Adequate preventive and corrective maintenance program to identify, schedule, perform, and record inspections, repairs, and replacements in a timely manner;

Citation:
EPA How to Conduct a Sanitary Survey of Drinking Water Systems (2022) Section 10.4.8
"Concrete foundations should be inspected to ensure that there is minimal spalling (ground level tanks) and no cracks (elevated tanks). Anchor bolts should not be rusted so much that their material strength has been compromised. Column shoes should be clean and painted, and grout under the shoes and riser plates should be in good condition. There should not be any pooled water, erosion, weeds, or shrubs around a tank's foundation."

Observation 25

Summary: The EPA inspection team observed unmaintained vegetation was growing from the base of the concrete foundation and at the base of the foundation to the tank.

Relevant Activity/Asset: Red Hill Tank S-316 (Photograph 27 and Photograph 28) and S-685 (Photograph 29, Photograph 30, and Photograph 31)

Citation:
2023 Administrative Order on Consent, EPA Docket No. PWS-AO-2023-001, Section 6.7.2
Operator Logs/Schedules
"Navy shall maintain a work schedule showing who the ORC is for every available shift on-site, i.e., twentyfour (24) hours per day, seven (7) days a week, available to all operators and EPA inspectors, as well as operator logs that show when the distribution system ORCs are responsive to the on-site operator(s) of the JBPHH System."

Observation 26

Summary: The EPA inspection team observed a work schedule that did not list the Operator(s) in Responsible Charge for each shift.

Relevant Activity/Asset: Management and Operation

Citation:
2023 Administrative Order on Consent, EPA Docket No. PWS-AO-2023-001, Section 6.7.2 Records
"Navy shall separate and organize all Navy-operated public water system records, Roving Operator Daily Logs, Supervisory Control and Data Acquisition ("SCADA") system operator logs, and other applicable records, by public water system identification number."

Observation 27

Summary: The EPA inspection team observed a copy of a blank Roving Operator Daily Log and it was not organized by public water system identification number. Operators stated that the SCADA logs were not separated and organized by public water system identification number.

Relevant Activity/Asset: Management and Operation

APPENDIX A: PHOTOGRAPH LOG

Unless otherwise indicated herein, all photographs were taken by Mike McFadden and Mike Beck of ERG during the inspection. The displayed date and time are the local time. Where the date and time stamp is inaccurate, that is noted in the caption. Photographs were not manipulated beyond minor cropping for sizing and labels or callouts to draw attention to the subject of the photograph.

Photograph 1. JBPHH Date/Time Stamp is inaccurate. P6010007.JPG
Description: [redacted]

Photograph 2. JBPHH Date/Time Stamp is inaccurate. P6010009.JPG
Description: [redacted] with closed and locked isolation valve. System representatives operated the spigot (callout arrow) during the inspection and [redacted].

Photograph 3. JBPHH Date/Time Stamp is inaccurate. P6010011.JPG
Description: [redacted] Coating had biogrowth and was weathered to primer and bare metal.

Photograph 4. JBPHH Date/Time Stamp is inaccurate. P6010024.JPG
Description: [redacted] Coating had biogrowth and was weathered to bare metal. White rectangular repairs (examples called out) were covering the sidewall.

Photograph 5. JBPHH Date/Time Stamp is inaccurate. P6010026.JPG
Description: [redacted] Closeup view of rectangular repairs shown in Photograph 4.

Photograph 6. JBPHH Date/Time Stamp is inaccurate. P6010016.JPG
Description: [redacted] Corrosion areas with metal loss on the sidewall and the metal base. Pen (bottom) shown for scale.

Photograph 7. JBPHH Date/Time Stamp is inaccurate. P6010015.JPG
Description: [redacted] Closeup of corrosion area with metal loss on the sidewall shown in Photograph 6. Pen shown for scale.

Photograph 8. JBPHH Date/Time Stamp is inaccurate. P6010017.JPG
Description: [redacted] Closeup of corrosion area with metal loss at the base shown in Photograph 6. Pen shown for scale.

Photograph 9. JBPHH Date/Time Stamp is inaccurate. P6010035.JPG
Description: [redacted] Corrosion at the joints of the roof interior (callout arrows).

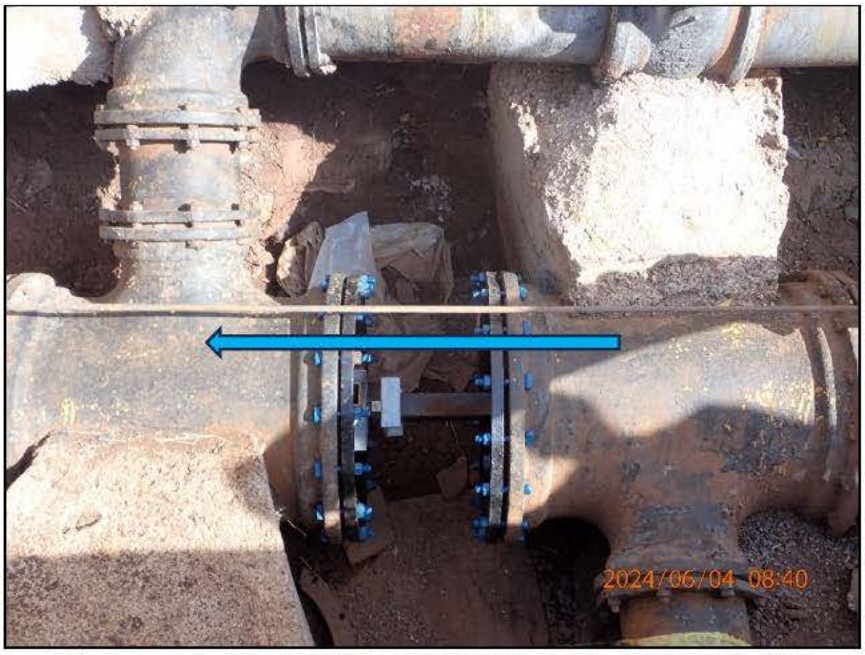
Photograph 10. JBPHH Date/Time Stamp is inaccurate. P6010032.JPG
Description: [redacted] Sediment accumulation on floor.

Photograph 11. JBPHH Date/Time Stamp is inaccurate. P6010043.JPG
Description: [redacted]. Corrosion areas scattered over the light colored roof.

Photograph 12. JBPHH Date/Time Stamp is inaccurate. P6010040.JPG
Description: [redacted]. Corrosion area on roof.

Photograph 13. JBPHH Date/Time Stamp is inaccurate. P6010041.JPG
Description: [redacted] Area where ponded water collects at the perimeter of the roof with corrosion along the seam (callout arrow) at the edge.

Photograph 14. JBPHH Date/Time Stamp is inaccurate. P6010028.JPG
Description: Combined screened overflow for [redacted] (in service) and [redacted] at the bottom of a pit below grade. System representatives stated the outlet to the left in photograph was a combined reservoir [redacted] drain outlet. There was a stormwater outlet pipe on the opposite side of pit (not shown).



Photograph 15. JBPHH 6/4/2024 08:40 P6040024.JPG
Description: Aiea Halawa Shaft disconnected discharge to the distribution system. Callout arrow shows normal flow prior to the disconnection.

Photograph 16. JBPHH 6/4/2024 09:11 P6040037.JPG
Description: Aiea Halawa Shaft (raw water) pumped to waste on the surface.

Photograph 17. JBPHH 6/4/2024 08:19 P6040017.JPG
Description: Aiea Halawa Shaft pump discharge with garden hose connected to an air relief. Callout arrow shows the end of the garden hose on the floor of the pumproom.

Photograph 18. JBPHH 6/4/2024 08:04 P6040006.JPG
Description: Aiea Halawa Shaft plug in the floor of the pumproom above the shaft source, with cable threaded through the plug.

Photograph 19. JBPHH 6/4/2024 08:03 P6040005.JPG
Description: Aiea Halawa Shaft access point. Callout arrow indicates conduit connections on the side of the access.

Photograph 20. JBPHH 6/4/2024 08:09 P6040010.JPG
Description: Aiea Halawa Shaft closeup of Photograph 19. Corrosion and unsealed opening at the conduit connection.

Photograph 21. JBPHH 6/4/2024 08:54 P6040034.JPG
Description: Aiea Halawa Shaft disinfection building. Corrosion on sodium hypochlorite chemical pump, which was out of service.

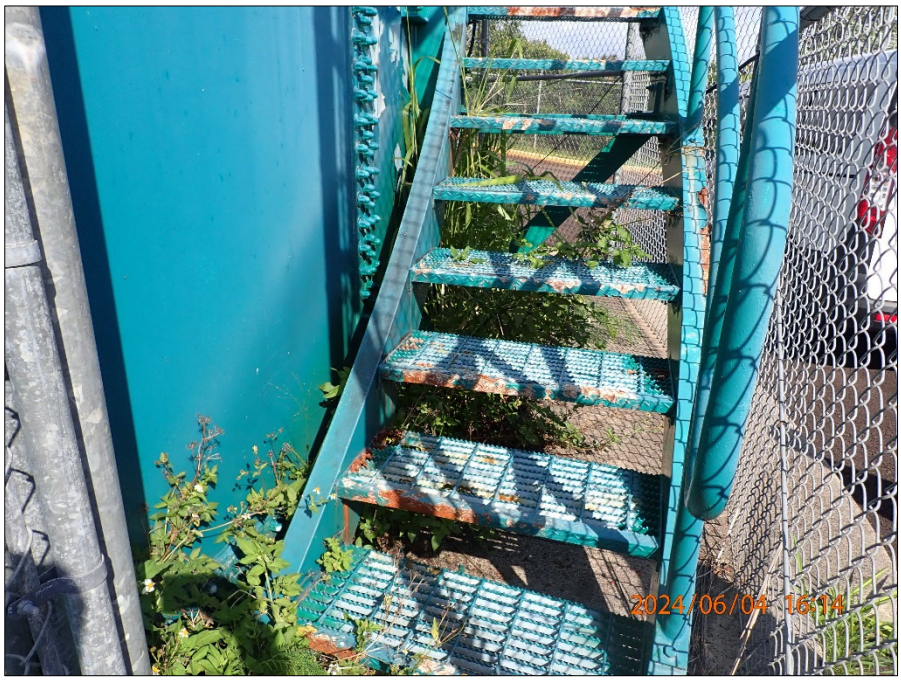
Photograph 22. JBPHH 6/4/2024 14:44 P6040048.JPG
Description: Red Hill Shaft disconnected discharge to the distribution system. Callout arrow shows normal flow prior to the disconnection.

Photograph 23. JBPHH 6/4/2024 15:20 P6040056.JPG
Description: Red Hill Shaft access, open to the pumproom with equipment staged for operation/maintenance. Sodium fluoride treatment tanks are in rear of photograph (callout arrow).

Photograph 24. JBPHH 6/4/2024 15:21 P6040058.JPG
Description: Red Hill Shaft access, circular access open to the pumproom with equipment staged for operation/maintenance.

Photograph 25. JBPHH 6/4/2024 15:23 P6040062.JPG
Description: Red Hill Shaft sodium fluoride treatment tanks filled with varying volumes of sodium fluoride powder and solution, near an open access to the shaft (callout arrow).

Photograph 26. JBPHH 6/4/2024 15:27 P6040063.JPG
Description: Red Hill Shaft closeup of the far left tank in Photograph 25 with sodium fluoride on the bottom of the tank and solution on the top.



Photograph 27. JBPHH 6/4/2024 16:14 P6040067.JPG
Description: Red Hill Tank S-316 vegetation around the base, foundation, and sidewall of the tank within the fenced ladder access area.

Photograph 28. JBPHH 6/4/2024 16:26 P6040073.JPG
Description: Red Hill Tank S-316 vegetation at the concrete foundation. The overflow pipe shown discharges outside of the fenced area.

Photograph 29. JBPHH 6/4/2024 16:37 P6040082.JPG
Description: Red Hill Tank S-685 vegetation around the base, foundation, and sidewall of the tank at the ladder access area.

Photograph 30. JBPHH 6/4/2024 16:50 P6040089.JPG
Description: Red Hill S-685 vegetation at the base and concrete foundation.

Photograph 31. JBPHH 6/4/2024 16:50 P6040088.JPG
Description: Red Hill S-685 vegetation at the base and concrete foundation. Pen shown for scale.

Photograph 32. JBPHH and AMR 6/5/2024 17:39 P6050027.JPG
Description: Sodium hypochlorite 330-gallon tote stored without cover at Waiawa Shaft.

Photograph 33. JBPHH and AMR 6/5/2024 17:40 P6050029.JPG
Description: Sodium hypochlorite 330-gallon totes stored in chemical room with additional supplies at Waiawa Shaft.

Photograph 34. JBPHH 6/6/2024 09:59 P6060043.JPG
Description: Camp Smith Tank [redacted] [redacted] in the background.

Photograph 35. JBPHH 6/6/2024 10:25 P6060058.JPG
Description: Camp Smith Tank S-326 concrete roof shelter, which housed an access point and vent.

Photograph 36. JBPHH 6/6/2024 10:28 P6060067.JPG
Description: Camp Smith Tank S-326 interior of shelter shown in Photograph 35. The access point was flush to the floor and fitted with an unsealed, loose metal cover.

Photograph 37. JBPHH 6/6/2024 10:10 P6060052.JPG
Description: Camp Smith Tank S-326 overflow at ground level. The flapper valve appeared to not fully close.

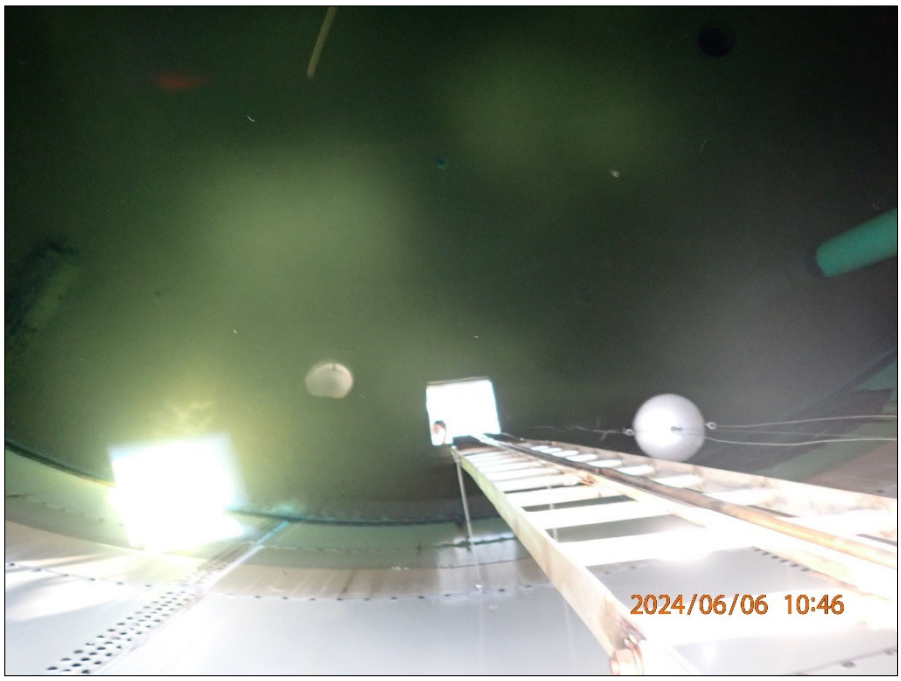
Photograph 38. JBPHH 6/6/2024 10:41 P6060070.JPG
Description: Camp Smith Tank S-684 (also referred to as S-327).

Photograph 39. JBPHH 6/6/2024 10:47 P6060082.JPG
Description: [redacted] filled to approximately 1 foot below the System's high water mark, indicated by the sidewall discoloration and the callout arrow.

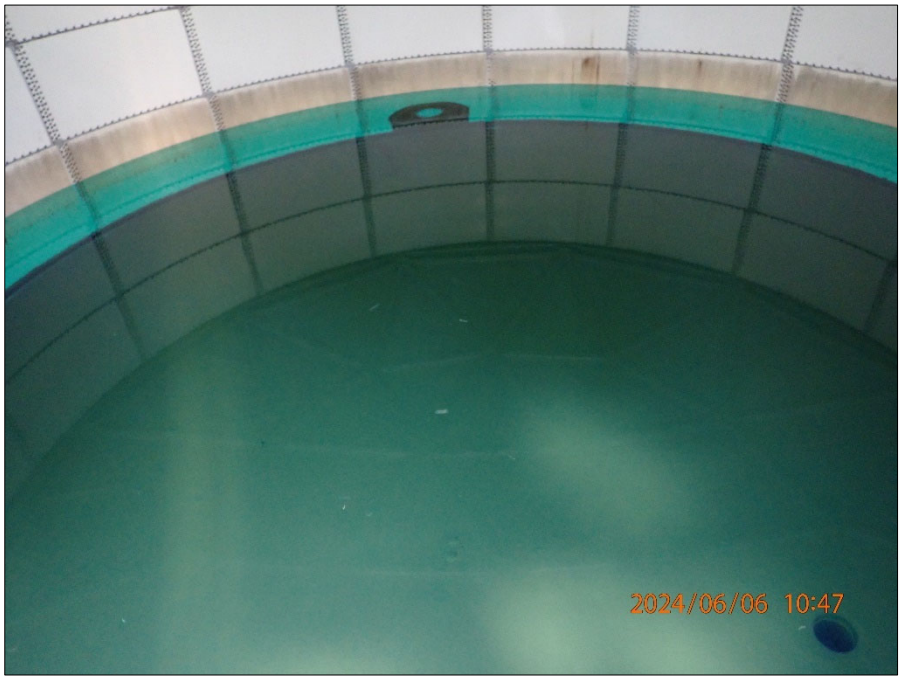
Photograph 40. JBPHH 6/6/2024 10:43 P6060073.JPG
Description: The top of the Camp Smith Tank S-684 access ladder partially obstructed by the center safety rail indicated by the callout arrow.

Photograph 41. JBPHH 6/6/2024 10:57 P6060097.JPG
Description: Trees extended above and over the aluminum roof of Camp Smith Tank S-684.

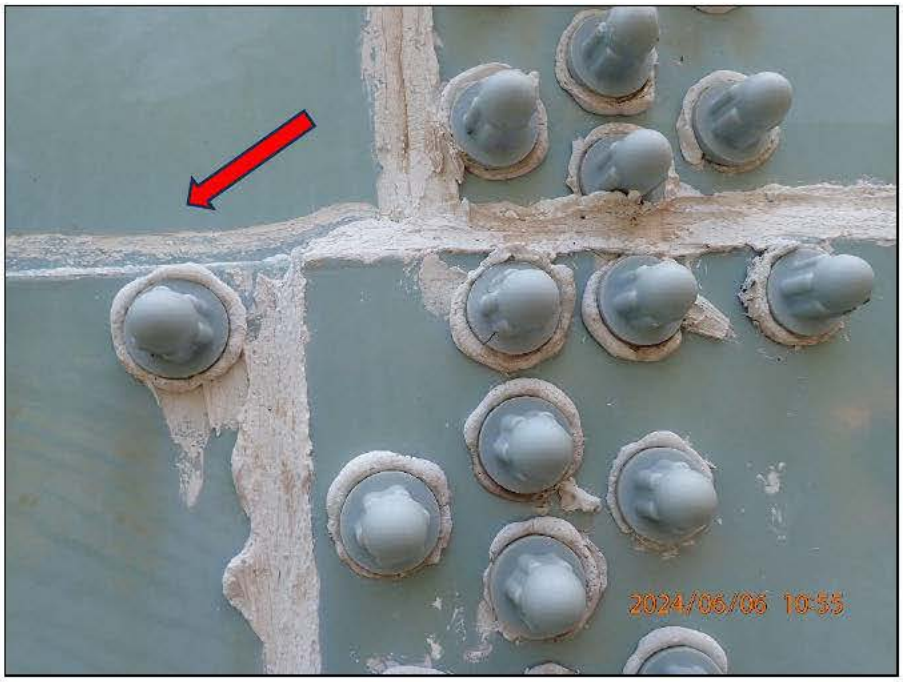
Photograph 42. JBPHH 6/6/2024 10:59 P6060102.JPG
Description: Debris accumulated along the perimeter of Camp Smith Tank S-684 roof with vegetation growing out of the debris.



Photograph 43. JBPHH 6/6/2024 10:46 P6060078.JPG
Description: Sediment layer on the floor of Camp Smith Tank S-684.



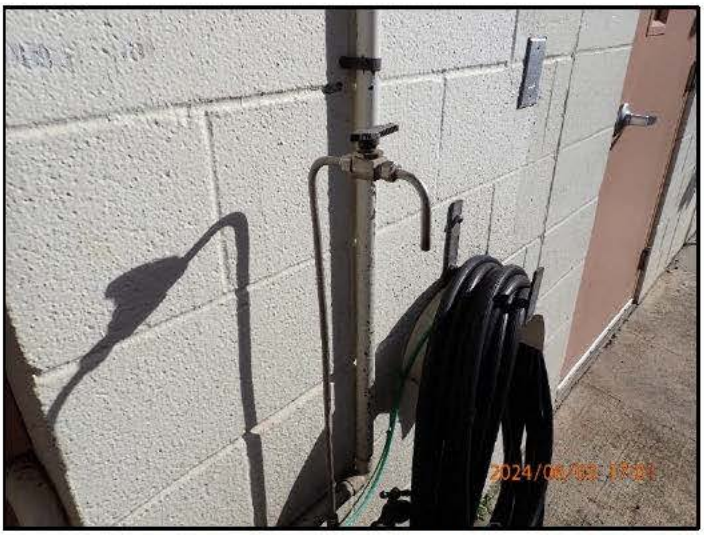
Photograph 44. JBPHH 6/6/2024 10:47 P6060085.JPG
Description: Sediment layer on the floor of [redacted].



Photograph 45. JBPHH 6/6/2024 10:55 P6060094.JPG
Description: Bolted tank sealant on [redacted] weathered to chalky and cracked condition. Sealant was missing in locations indicated by callout arrow.

Photograph 46. JBPHH 6/6/2024 11:05 P6060105.JPG
Description: [redacted] overflow to the bottom of a pit with limited visibility and access.

Photograph 47. JBPHH and AMR 6/5/2024 17:53 P6050037.JPG
Description: Waiawa Shaft sodium fluoride lines suspended across walkway indicated by callout arrows.



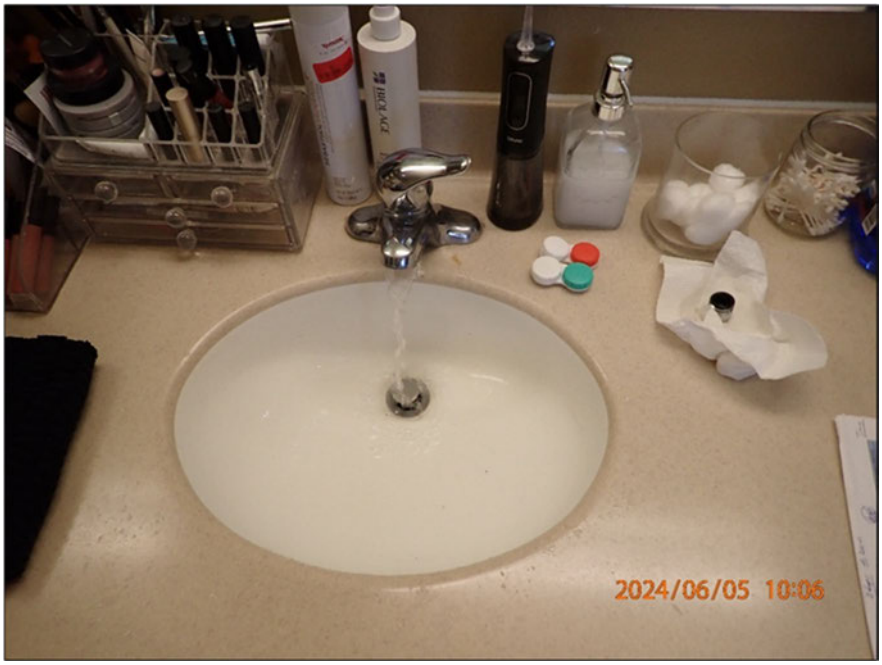
Photograph 48. JBPHH 6/3/2024 17:01 P6030078.JPG
Description: Sample location for Sample 002 Waiawa Shaft pre-chlorine sample point.

Photograph 49. JBPHH 6/3/2024 17:00 P6030072.JPG
Description: Sample location for Sample 003 Waiawa Shaft post chlorination sample point.

Photograph 50. JBPHH 6/4/2024 10:35 P6040039.JPG
Description: Sample location for Samples 004 and 004D Aiea Halawa Shaft pre-chlorine sample point.

Photograph 51. JBPHH 6/4/2024 11:45 P6040040.JPG
Description: Sample location for Sample 005 Building 570, Child Development Center.

Photograph 52. JBPHH 6/4/2024 14:43 P6040045.JPG
Description: Sample location for Sample 006 Red Hill Shaft sample pre-chlorine sample point.



Photograph 53. JBPHH 6/5/2024 10:06 P6050003.JPG
Description: Sample location for Sample 008, Residence 1.

Photograph 54. JBPHH 6/5/2024 12:38 P6050006.JPG
Description: Sample location for Sample 010 Building 4655, Catlin School Age Center.

Photograph 55. JBPHH 6/5/2024 14:13 P6050010.JPG
Description: Sample location for Sample 011 Hickam Elementary School.

Photograph 56. JBPHH 6/6/2024 13:25 P6060147.JPG
Description: Sample location for Sample 012, Residence 2.

APPENDIX B: NOTICES OF INSPECTION

REGION 9
SAN FRANCISCO, CA 94105

Sent via Electronic Mail
Read Receipt Requested

RDML Steve Barnett, USN
Commander, Navy Region Hawaii
850 Ticonderoga St, Ste 110
JBPHH, HI 96860-5101

Subject: Notice of Inspection of Joint Base Pearl Harbor Hickam, PWS I.D. No. HI0000360

Dear Rear Admiral Barnett:

From June 3-7, 2024, the United States Environmental Protection Agency, Region 9 (EPA) plans to conduct an inspection of the Joint Base Pearl Harbor Hickam public water system (System) to determine compliance with the requirements of the federal Safe Drinking Water Act (SDWA), 42 U.S.C. § 300f *et seq*. EPA inspections may include an evaluation of records, files, papers, processes, controls, facilities and sources to determine whether public water systems or other persons have acted or are acting in compliance with the SDWA.

The Hawaii Department of Health (HDOH) has primary enforcement responsibility under Section 1413(a) of the SDWA, 42 U.S.C. § 300g-2(a), to ensure that suppliers of water in Hawaii comply with the SDWA's requirements. However, EPA maintains federal oversight responsibilities of the SDWA as well as direct enforcement authority to ensure water systems are complying with national and EPA-approved state drinking water laws. This inspection will be conducted under the authority vested in the Administrator of the EPA by Section 1445(b)(c) of the SDWA, 42 U.S.C. §300 j-4 (b)(c), and duly delegated to the Drinking Water Section of the Enforcement and Compliance Assurance Division.

EPA plans to conduct this inspection as part of EPA's comprehensive investigation of the Red Hill Bulk Fuel Storage Facility to help ensure residents are receiving safe drinking water that is in compliance with SDWA regulations and EPA's Administrative Consent Order signed on June 2, 2023.

Christopher Chen and Claire Ong, from my staff, Michael McFadden and Michael Beck, EPA contractors from ERG, and HDOH staff plan to conduct the inspection and will need access to decision-making personnel at that time. We look forward to your cooperation and if you have any questions concerning this letter or the details of the inspection, please feel free to have your staff contact Christopher Chen at (213) 244-1853 or via email at chen.christopher@epa.gov.

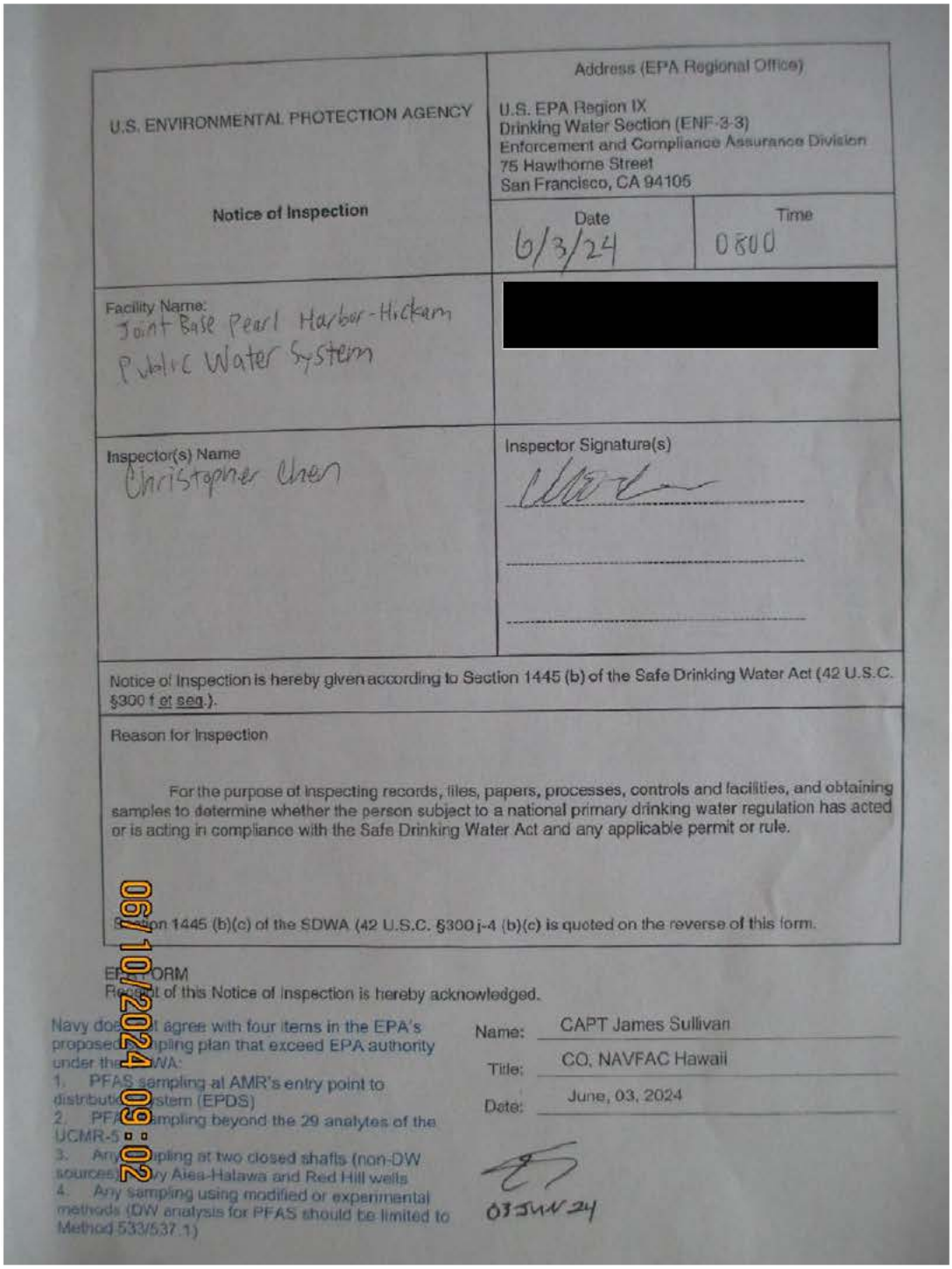
Sincerely,

AMY MILLER-BOWEN

Digitally signed by AMY MILLER-BOWEN
Date: 2024.05.08 09:01:19 -07'00'

Amy C. Miller-Bowen, Director
Enforcement and Compliance Assurance Division

Cc: Karnig Ohannessian, U.S. Navy
Captain Marc Williams, U.S. Navy
Colonel Steven McGunegle, U.S. Army
Kathleen Ho, Hawaii Department of Health



U.S. ENVIRONMENTAL PROTECTION AGENCY

Notice of Inspection

Address (EPA Regional Office)

U.S. EPA Region IX
Drinking Water Section (ENF-3-3)
Enforcement and Compliance Assurance Division
75 Hawthorne Street
San Francisco, CA 94105

Date	Time
6/3/24	0800

Facility Name:
Joint Base Pearl Harbor-Hickam
Public Water System

[redacted]

Inspector(s) Name
Christopher Chen

Inspector Signature(s)

Notice of Inspection is hereby given according to Section 1445 (b) of the Safe Drinking Water Act (42 U.S.C. §300 f et seq.).

Reason for Inspection

For the purpose of inspecting records, files, papers, processes, controls and facilities, and obtaining samples to determine whether the person subject to a national primary drinking water regulation has acted or is acting in compliance with the Safe Drinking Water Act and any applicable permit or rule.

Section 1445 (b)(c) of the SDWA (42 U.S.C. §300 j-4 (b)(c) is quoted on the reverse of this form.

06/10/2024 09:02

EPA FORM
Receipt of this Notice of Inspection is hereby acknowledged.

Navy does not agree with four items in the EPA's proposed sampling plan that exceed EPA authority under the SDWA:
1. PFAS sampling at AMR's entry point to distribution system (EPDS)
2. PFAS sampling beyond the 29 analytes of the UCMR-5
3. Any sampling at two closed shafts (non-DW sources) by Aiea-Halawa and Red Hill wells
4. Any sampling using modified or experimental methods (DW analysis for PFAS should be limited to Method 533/537.1)

Name: CAPT James Sullivan
Title: CO, NAVFAC Hawaii
Date: June, 03, 2024

03 Jun 24

APPENDIX C: SIGN-IN SHEETS

SDWA PWSS Inspection Sign-In Sheet
System Name: Joint Base Pearl Harbor-Hickam Meeting: Opening Conference Date: June 3, 2024

Name	Affiliation, Title	Email Address	Phone Number
Michael McFadden	ERG	Mike.McFadden@erg.com	717-418-3573
Mike Beck	ERG	Beck.Mike@erg.com	703-633-9987
[redacted]	NCTF - ACO Manager	[redacted]	
	RH E&R (NAVFAC HI)		
	NCTF-RH NHS Deputy		
	NCTF-RH E&R NAVFAC		
	NCTF-RH E&R NAVFAC HI		
	NAVFAC SE, EVII		
	NAVFAC HI, Drinking water media		
	NAVFAC HI		
	NAVFAC HI		
	NAVFAC HI		
	USAG-HI contractor		
	USAG-HI, DPW		

1

SDWA PWSS Inspection Sign-In Sheet
System Name: Joint Base Pearl Harbor-Hickam Meeting: Opening Conference Date: June 3, 2024

Name	Affiliation, Title	Email Address	Phone Number
[redacted]	USAG-HI, DPW	[redacted]	
	USAG-HI, DPW ENV		
Jeffrey Tsai	EPA on detail to HDOH	yun-jui.tsai@doh.hawaii.gov	415-972-3459
Melvin Tokuda	HDOH	melvin.tokuda@doh.hawaii.gov	808-586-4280
[redacted]	NAVFAC HI	[redacted]	
	USAG-H DPW Environmental		
Claire Ong	EPA R9	ong.claire@epa.gov	415-972-3351
Christopher Chen	EPA R9	Chen.Christopher@epa.gov	213-244-1853
[redacted]	USAG-HI	[redacted]	
James Sullivan	NAVFAC HI		
Robert D. Kleinman	Joint Base Pearl-Harbor Hick		
[redacted]	NAVFAC HI		
	NAVFAC HI EV		
	NAVFAC HI EV		

JBPH H

SDWA PWSS Inspection Sign-In Sheet

AWIA/ Cybersecurity

System Name: ~~Aflamanu Military Reservation~~ Meeting: ~~Closing~~ Conference Date: June 7, 2024

Name	Affiliation, Title	Email Address	Phone Number
Mike McFadden	ERG	Mike.McFadden@erg.com	717-418-3573
~~Mike Beck~~	~~ERG~~	~~Beck.Mike@erg.com~~	~~703-633-9987~~
Christopher Chen	EPA R9	Chen.Christopher@epa.gov	213-244-1853
[redacted]	NAVFAC HI ICS Prg Mgr	[redacted]	
	NAVFAC HI - UMPOTABLE WATER		
	NAVFAC HI EIDM		
	NAVFAC HI EV		
Claire Ong	EPA R9	ong.claire@epa.gov	451-972-3351
[redacted]	NFH PWD Utilities	[redacted]	
	NFH PWD		
	NAVFAC SE EV		
	NAVFAC Pac EV		
	NFH UM POTABLE WATER		
Melvin Tokuda	HDOH	melvin.tokuda@doh.hawaii.gov	808-586-4280

1

JBPHH

SDWA PWSS Inspection Sign-In Sheet

AWIA Cybersecurity

System Name: ~~Aliamanu Military Reservation~~ Meeting: ~~Opening~~ Conference Date: June 7, 2024

Name	Affiliation, Title	Email Address		Phone Number
[redacted]	NAVFAC HI	[redacted]		
	NAVFAC HI			

[redacted]

SDWA PWSS Inspection Sign-In Sheet +AMR
System Name: Joint Base Pearl Harbor-Hickam Meeting: Closing Conference Date: June 7, 2024

Name	Affiliation, Title	Email Address	Phone Number
Mike McFadden MM	ERG	Mike.McFadden@erg.com	717-418-3573
Mike Beck MB	ERG	Beck.Mike@erg.com	703-633-9987
[redacted]	USAG-HI	[redacted]	
	NCTF-RH / NAVFAC HI		
	NAVFAC HI		
	NAVFAC HI UM - POTABLE WATER		
	NAVFAC HI EV		
	NAVFACHI		
	NFM M UM - POT WAT		
	NFP		
	11		
	NCTF-ER		
	+ NCTF-RH-NAVFAC E		
	NAVFAC SE		

SDWA PWSS Inspection Sign-In Sheet + AMR
System Name: Joint Base Pearl Harbor-Hickam Meeting: Closing Conference Date: June 7, 2024

Name	Affiliation, Title	Email Address	Phone Number
Melvin Takuda	HDOH - EHS V	melvin.takuda@doh.hawaii.gov	808-586-4280
Jeffrey Tsai	HDOH / EPA	yun-jui.tsai@doh.hawaii.gov	415-972-3459
[redacted]	USAG-HI / ~~SDWA Primacy~~ Contractor support + USAG DPW Environ.	[redacted]	
Claire Ong	EPA-9	~~ong.claire~~ ong.claire@epa.gov	415-972-3351
[redacted]	NAVFAC HI EV	[redacted]	
Chris Chen	EPA R9	chen.christopher@epa.gov	213-244-1853

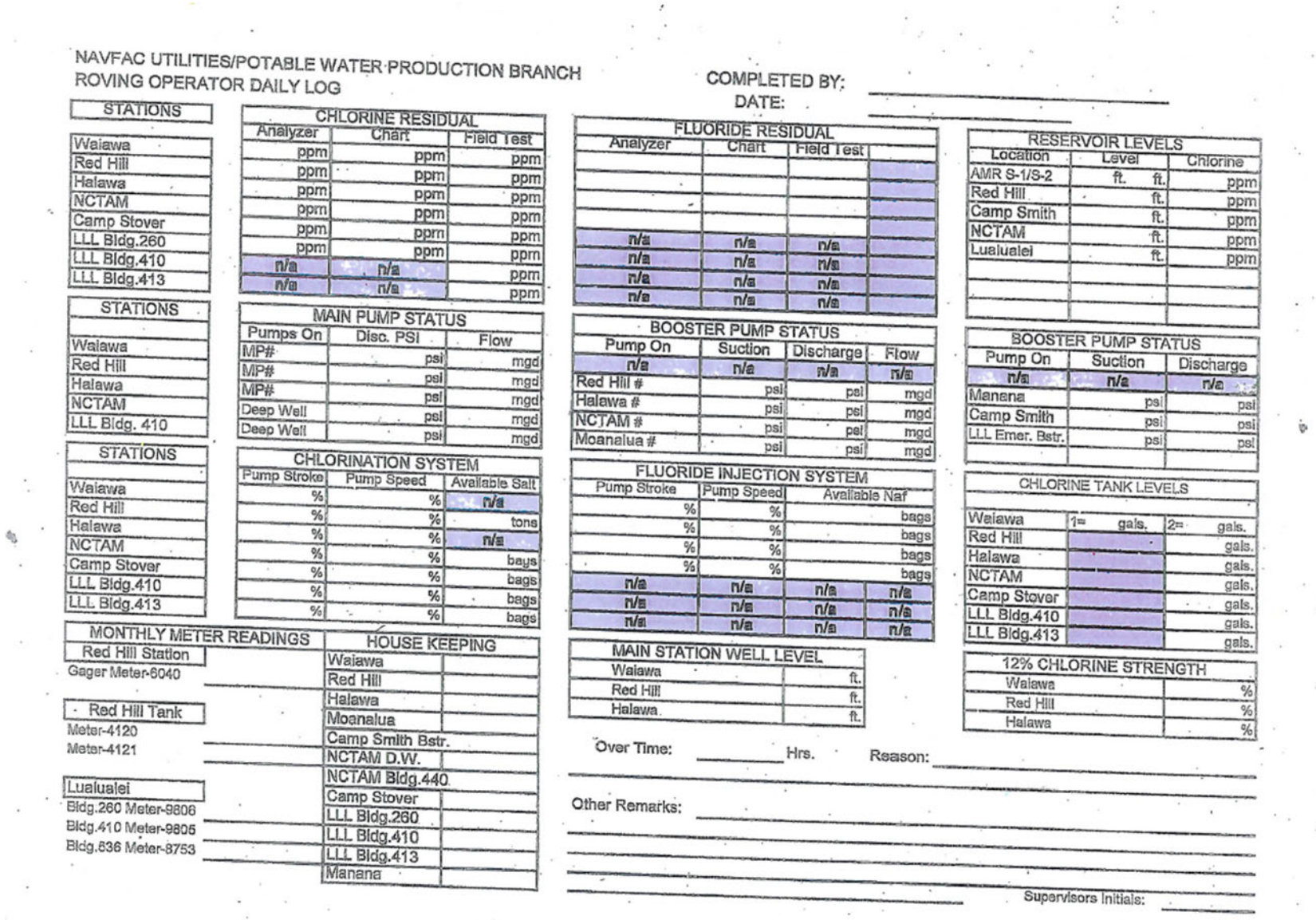
APPENDIX D: DOCUMENT LOG

The document log is a summary, in table form, of the documents obtained related to the inspection (pre-inspection, during the inspection, or post-inspection).

Description of Documents Requested	Documents Provided and Date
Requests made May 15, 2024 (pre-inspection):	
Description and schematic of the treatment processes from source water to entry point (including chemicals used in the water treatment process)	July 8, 2024
Description of the distribution system from entry point to customer tap (including chemicals used in the distribution system)	July 8, 2024
Operation & Maintenance Manual (or Standard Operating Procedures) for the system (a hard copy may be made readily available for inspector review onsite in lieu of an electronic copy).	July 8, 2024
List of online and laboratory equipment used for compliance reporting	July 8, 2024
Organizational chart for the system	July 8, 2024
List of certified operators with certification information	July 8, 2024
Meter calibration records for all equipment used for compliance reporting (within the past 12 months)	Not provided
Storage Tank Inspection (the most recent 1 for each tank) / Cleaning and Maintenance Records (within the past 10 years)	Not provided
Customer Complaint Log (the most recent 2 years)	Not provided
Water main break log (the most recent 12 months)	July 8, 2024
Chlorine residual data (all distribution and entry point results within the past 1 year)	July 8, 2024
All PFAS Sampling results collected by the system	Not provided
Risk and Resiliency Assessment (American Water Infrastructure Act required document)	June 7, 2024*
Emergency Response Plan (American Water Infrastructure Act required document)	June 7, 2024*
Requests made during inspection:	
Quality Assurance Project Plan for extended drinking water monitoring	Not provided
Sample of operator daily logbook entries	Not provided
Sample of Waiawa production daily volumes and flows	Not provided
Work order program (Maximo) hydrant work order summary	Not provided
JBPHH Opening Conference Power Point Presentation	July 8, 2024
Roving Operator Daily Log (blank form), refer to Appendix E	June 5, 2024
Opening Conference video call attendee list	July 8, 2024
Closing Conference video call attendee list	July 8, 2024

*EPA inspection team reviewed onsite and did not take possession

APPENDIX E: ROVING OPERATOR DAILY LOG



NAVFAC UTILITIES/POTABLE WATER PRODUCTION BRANCH
ROVING OPERATOR DAILY LOG

COMPLETED BY: _____
DATE: _____

STATIONS
Waiawa
Red Hill
Halawa
NCTAM
Camp Stover
LLL Bldg.260
LLL Bldg.410
LLL Bldg.413

CHLORINE RESIDUAL		
Analyzer	Chart	Field Test
ppm	ppm	ppm
ppm	ppm	ppm
ppm	ppm	ppm
ppm	ppm	ppm
ppm	ppm	ppm
ppm	ppm	ppm
n/a	n/a	ppm
n/a	n/a	ppm

FLUORIDE RESIDUAL			
Analyzer	Chart	Field Test	
n/a	n/a	n/a	
n/a	n/a	n/a	
n/a	n/a	n/a	
n/a	n/a	n/a	

RESERVOIR LEVELS		
Location	Level	Chlorine
AMR S-1/S-2	ft. ft.	ppm
Red Hill	ft.	ppm
Camp Smith	ft.	ppm
NCTAM	ft.	ppm
Lualualei	ft.	ppm

STATIONS
Waiawa
Red Hill
Halawa
NCTAM
LLL Bldg. 410

MAIN PUMP STATUS		
Pumps On	Disc. PSI	Flow
MP#	psi	mgd
MP#	psi	mgd
MP#	psi	mgd
Deep Well	psi	mgd
Deep Well	psi	mgd

BOOSTER PUMP STATUS			
Pump On	Suction	Discharge	Flow
n/a	n/a	n/a	n/a
Red Hill #	psi	psi	mgd
Halawa #	psi	psi	mgd
NCTAM #	psi	psi	mgd
Moanalua #	psi	psi	mgd

BOOSTER PUMP STATUS		
Pump On	Suction	Discharge
n/a	n/a	n/a
Manana	psi	psi
Camp Smith	psi	psi
LLL Emer. Bstr.	psi	psi

STATIONS
Waiawa
Red Hill
Halawa
NCTAM
Camp Stover
LLL Bldg.410
LLL Bldg.413

CHLORINATION SYSTEM		
Pump Stroke	Pump Speed	Available Salt
%	%	n/a
%	%	tons
%	%	n/a
%	%	bags
%	%	bags
%	%	bags
%	%	bags

FLUORIDE INJECTION SYSTEM			
Pump Stroke	Pump Speed	Available Naf	
%	%	bags	
%	%	bags	
%	%	bags	
%	%	bags	
n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a

CHLORINE TANK LEVELS		
Waiawa	1= gals.	2= gals.
Red Hill		gals.
Halawa		gals.
NCTAM		gals.
Camp Stover		gals.
LLL Bldg.410		gals.
LLL Bldg.413		gals.

MONTHLY METER READINGS
Red Hill Station
Gager Meter-6040
Red Hill Tank
Meter-4120
Meter-4121
Lualualei
Bldg.260 Meter-9806
Bldg.410 Meter-9805
Bldg.636 Meter-8753

HOUSE KEEPING	
Waiawa	
Red Hill	
Halawa	
Moanalua	
Camp Smith Bstr.	
NCTAM D.W.	
NCTAM Bldg.440	
Camp Stover	
LLL Bldg.260	
LLL Bldg.410	
LLL Bldg.413	
Manana	

MAIN STATION WELL LEVEL	
Waiawa	ft.
Red Hill	ft.
Halawa	ft.

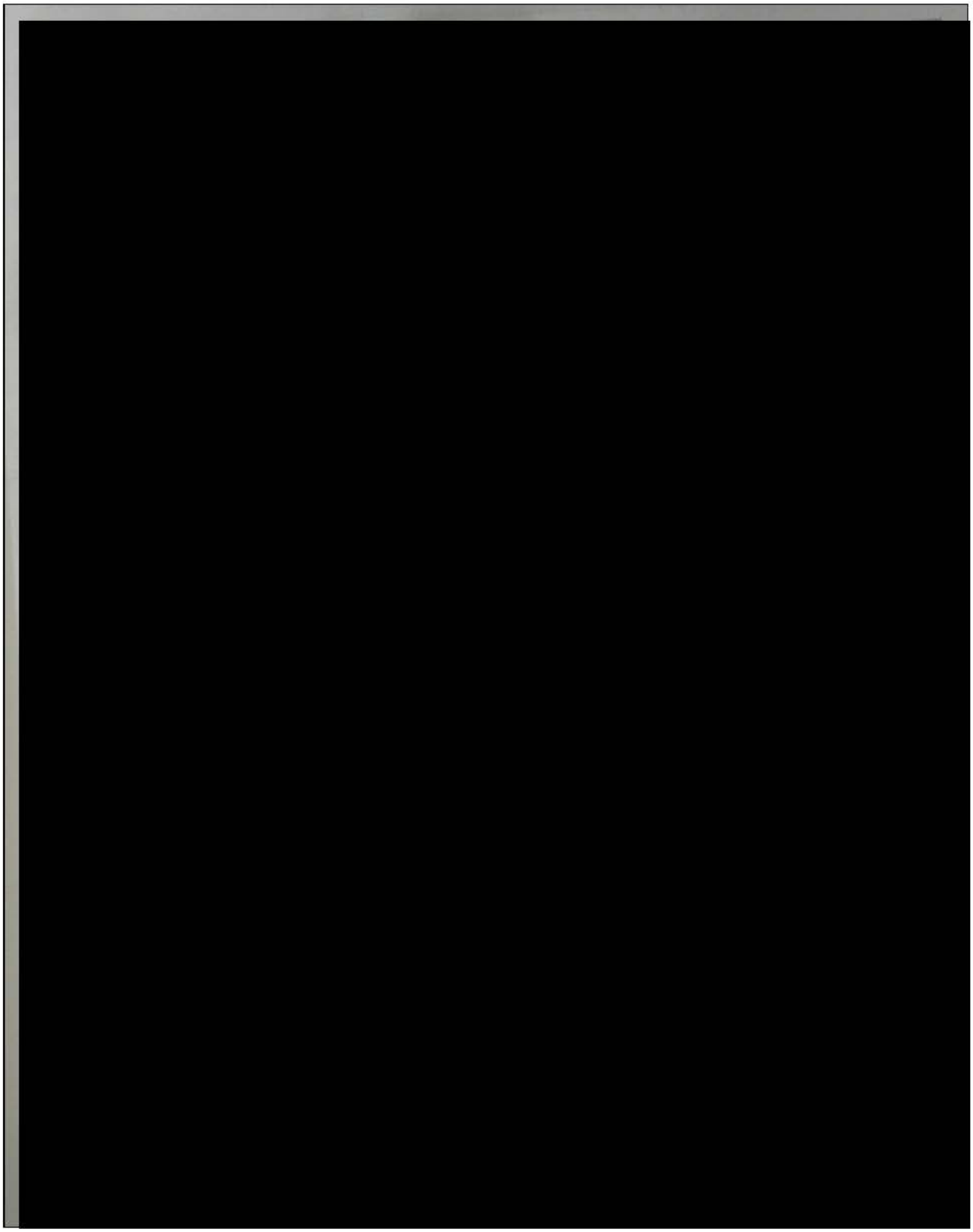
12% CHLORINE STRENGTH	
Waiawa	%
Red Hill	%
Halawa	%

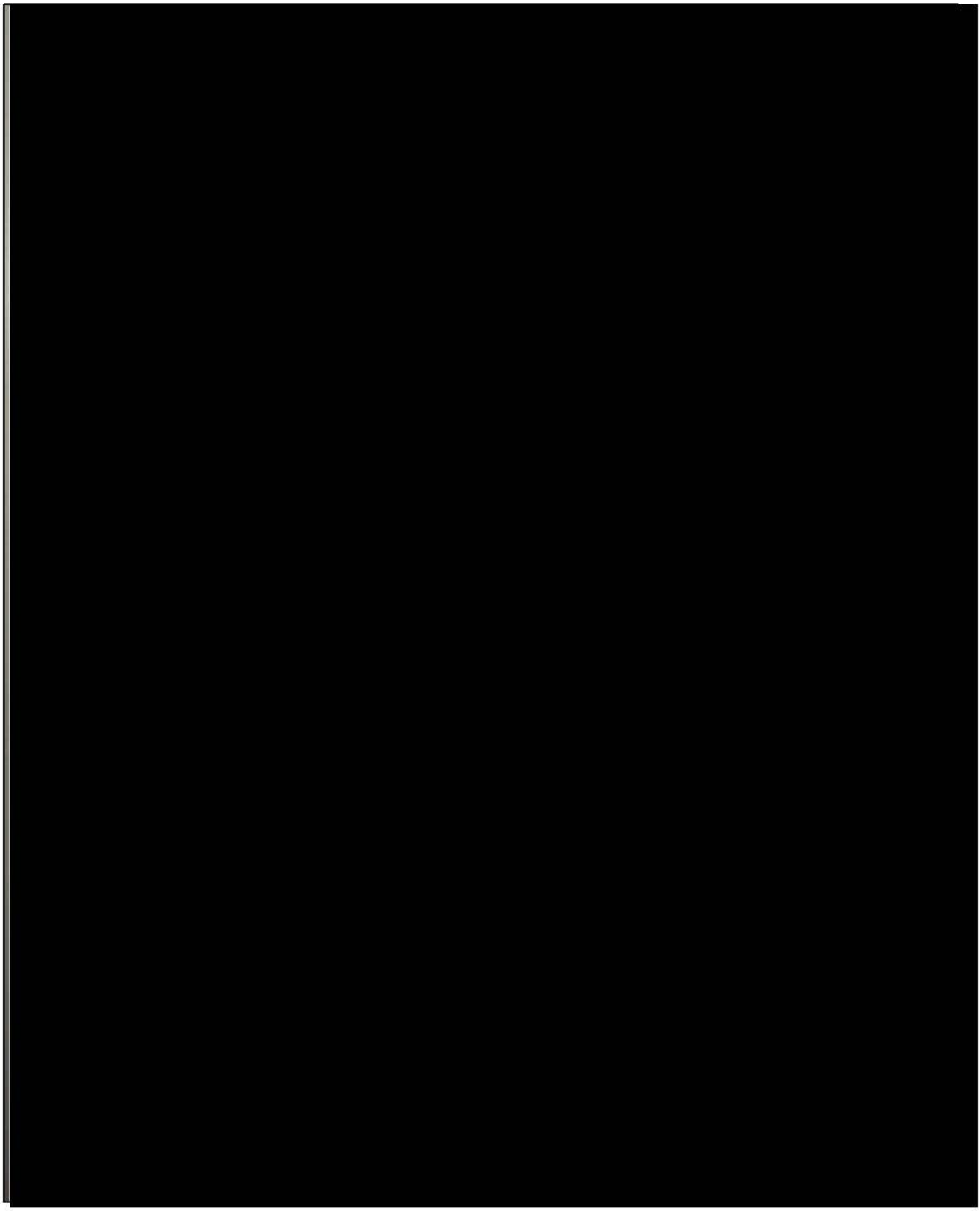
Over Time: _____ Hrs. Reason: _____

Other Remarks: _____

Supervisors Initials: _____

[redacted]





APPENDIX G: LABORATORY ANALYTICAL RESULTS – SUMMARY TABLE

This appendix contains a summary of the PFAS sample results in tabular format. The full laboratory reports are included as Attachment 1.

Sample results are presented with qualifiers, which are defined in Table 14. Table 15 contains the PFAS analysis results for each sample.

Table 14. Sample Result Qualifier Descriptions

Qualifier	Qualifier Description
*1	LCS/LCSD relative percent difference exceeds control limits.
H3	Sample was received and analyzed past holding time.
H	Sample was prepped or analyzed beyond the specified holding time.
B	Compound was found in the blank and sample.
J	Result is less than the reporting limit (RL) but greater than or equal to the method detection limit (MDL) and the concentration is an approximate value.

Table 15. PFAS Analysis Results for All Samples Tested

Analyte	Sample Result (ppt)						
	002	003	004	004D	004 Field Blank	006	Trip Blank
4:2 FTOH	<0.174 H *1	<0.165 H *1	<0.200 H *1	<0.190 H *1	<0.181 H *1	<0.194 H *1	<0.175 H H3 *1
7:2 FTOH	<0.174 H *1	<0.165 H *1	<0.200 H *1	<0.190 H *1	<0.181 H *1	<0.194 H *1	<0.175 H H3 *1
6:2 FTOH	<0.174 H	<0.165 H	<0.200 H	<0.190 H	<0.181 H	<0.194 H	<0.175 H H3
8:2 FTOH	<0.174 H	<0.165 H	<0.200 H	<0.190 H	<0.181 H	<0.194 H	<0.175 H H3
10:2 FTOH	<0.262 H	<0.247 H	<0.300 H	<0.285 H	<0.271 H	<0.291 H	<0.262 H H3
PFEESA	<0.268	<0.253	<0.287	<0.316	<0.264	<0.290	<0.259
10:2 FTS	<0.715	<0.673	<0.766	<0.844	<0.705	<0.774	<0.692
PMPA	<0.536	<0.505	<0.574	<0.633	<0.529	<0.580	<0.519
HFPO-DA	0.482 J B	0.715 J B	<0.383	0.491 J	<0.352	0.406 J	0.649 J B
PFECHS	<0.268	<0.253	<0.287	<0.316	<0.264	<0.290	<0.259
PFECA B	<0.268	<0.253	<0.287	<0.316	<0.264	<0.290	<0.259
PFODA	<0.447	<0.421	<0.479	<0.527	<0.441	<0.484	<0.432
NEtFOSE	<0.357	<0.337	<0.383	<0.422	<0.352	<0.387	<0.346
PFOS	<0.447	<0.421	6.78	7.59	<0.441	0.745 J	<0.432
PFUnA	<0.268	<0.253	<0.287	<0.316	<0.264	<0.290	<0.259
NMeFOSAA	<0.357	<0.337	<0.383	<0.422	<0.352	<0.387	<0.346
R-PSDA	<0.625	<0.589	<0.670	<0.738	<0.617	<0.677	<0.605
Hydrolyzed PSDA	<0.357	<0.337	<0.383	<0.422	<0.352	<0.387	<0.346
R-PSDCA	<0.268	<0.253	<0.287	<0.316	<0.264	<0.290	<0.259
R-EVE	<0.447	<0.421	<0.479	<0.527	<0.441	<0.484	<0.432
NMeFOSE	<0.357	<0.337	<0.383	<0.422	<0.352	<0.387	<0.346
PEPA	<0.536	<0.505	<0.574	<0.633	<0.529	<0.580	<0.519
PFPeA	<0.268	<0.253	6.1	6.56	<0.264	0.713 J	<0.259
PFPeS	<0.268	<0.253	0.612 J	0.607 J	<0.264	<0.290	<0.259
6:2 FTS	<0.447	<0.421	<0.479	<0.527	<0.441	<0.484	<0.432
8:2 FTCA	<0.357	<0.337	<0.383	<0.422	<0.352	<0.387	<0.346

Analyte	Sample Result (ppt)						
	002	003	004	004D	004 Field Blank	006	Trip Blank
PS Acid	<0.536	<0.505	<0.574	<0.633	<0.529	<0.580	<0.519
NEtFOSAA	<0.447	<0.421	<0.479	<0.527	<0.441	<0.484	<0.432
PFHxA	<0.893	<0.842	4.59	5.23	<0.881	<0.967	<0.865
PFDoA	<0.357	<0.337	<0.383	<0.422	<0.352	<0.387	<0.346
NMeFOSA	<0.625	<0.589	<0.670	<0.738	<0.617	<0.677	<0.605
PFOA	<0.268	0.286 J	5.09	5.44	<0.264	0.61 J	<0.259
PFDA	<0.268	<0.253	<0.287	<0.316	<0.264	<0.290	<0.259
PFDS	<0.268	<0.253	<0.287	<0.316	<0.264	<0.290	<0.259
PFHxS	<0.179	<0.168	4.16	4.41	<0.176	0.564 J	<0.173
3:3 FTCA	<0.447	<0.421	<0.479	<0.527	<0.441	<0.484	<0.432
PFBA	<0.893	<0.842	2.29	2.46	<0.881	<0.967	<0.865
PFBS	<0.268	<0.253	3.26	3.47	<0.264	0.662 J	<0.259
PFHpA	<0.268	<0.253	2.63	2.88	<0.264	0.402 J	<0.259
PFHpS	<0.268	<0.253	<0.287	<0.316	<0.264	<0.290	<0.259
PFNA	<0.179	<0.168	0.364 J	0.418 J	<0.176	<0.193	<0.173
PFTeA	<0.357	<0.337	<0.383	<0.422	<0.352	<0.387	<0.346
PFECA F	<0.268	<0.253	<0.287	<0.316	<0.264	<0.290	<0.259
8:2 FTS	<0.536	<0.505	<0.574	<0.633	<0.529	<0.580	<0.519
PFO2HxA	<0.625	<0.589	<0.670	<0.738	<0.617	<0.677	<0.605
PFO3OA	<0.893	<0.842	<0.957	<1.05	<0.881	<0.967	<0.865
PFO4DA	<0.715	<0.673	<0.766	<0.844	<0.705	<0.774	<0.692
TAF	<0.447	<0.421	<0.479	<0.527	<0.441	<0.484	<0.432
NEtFOSA	<0.357	<0.337	<0.383	<0.422	<0.352	<0.387	<0.346
PFPrA [a]	<4.47	<4.21	10.9	10.6	<4.41	<4.84	<4.32
PFPrS	<0.357	<0.337	0.384 J	<0.422	<0.352	<0.387	<0.346
6:2 FTCA	<0.625	<0.589	<0.670	<0.738	<0.617	<0.677	<0.605
10:2 FTCA	<0.447	<0.421	<0.479	<0.527	<0.441	<0.484	<0.432
PFMOAA	<0.268	<0.253	<0.287	<0.316	<0.264	<0.290	<0.259
PFHxDA	<0.447	<0.421	<0.479	<0.527	<0.441	<0.484	<0.432
PFNS	<0.268	<0.253	<0.287	<0.316	<0.264	<0.290	<0.259
EVE Acid	<0.447	<0.421	<0.479	<0.527	<0.441	<0.484	<0.432
8:2 FTUCA	<0.357	<0.337	<0.383	<0.422	<0.352	<0.387	<0.346
6:2 FTUCA	<0.357	<0.337	<0.383	<0.422	<0.352	<0.387	<0.346
10:2 FTUCA	<0.357	<0.337	<0.383	<0.422	<0.352	<0.387	<0.346
PFTrDA	<0.357	<0.337	<0.383	<0.422	<0.352	<0.387	<0.346
Hydro-PS Acid	<0.447	<0.421	<0.479	<0.527	<0.441	<0.484	<0.432
FOSA	2.99	1.66 J	7.84	7.26	<0.264	<0.290	<0.259
9Cl-PF3ONS	<0.447	<0.421	<0.479	<0.527	<0.441	<0.484	<0.432
4:2 FTS	<0.447	<0.421	<0.479	<0.527	<0.441	<0.484	<0.432
11Cl-PF3OUdS	<0.447	<0.421	<0.479	<0.527	<0.441	<0.484	<0.432
Hydro-EVE Acid	<0.447	<0.421	<0.479	<0.527	<0.441	<0.484	<0.432
PFDoS	<0.268	<0.253	<0.287	<0.316	<0.264	<0.290	<0.259
NVHOS	<0.357	<0.337	<0.383	<0.422	<0.352	<0.387	<0.346
PFECA G	<0.447	<0.421	<0.479	<0.527	<0.441	<0.484	<0.432
7:3 FTCA	<0.983	<0.926	<1.05	<1.16	<0.969	<1.06	<0.951

Analyte	Sample Result (ppt)						
	002	003	004	004D	004 Field Blank	006	Trip Blank
PFMBA	<0.268	<0.253	<0.287	<0.316	<0.264	<0.290	<0.259
5:3 FTCA	<0.447	<0.421	<0.479	<0.527	<0.441	<0.484	<0.432
ADONA	<0.447	<0.421	<0.479	<0.527	<0.441	<0.484	<0.432
MTP	<0.536	<0.505	<0.574	<0.633	<0.529	<0.580	<0.519

ATTACHMENT 1: PFAS LABORATORY REPORT

The laboratory reports may reference sample ID numbers that are not referenced within this inspection report; any additional sample locations are unrelated to this inspection and their location is intentionally not provided.

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Michelle Spiezio
Eastern Research Group, Inc.
14555 Avion Parkway
Suite 200
Chantilly, Virginia 20151-1102

Generated 7/16/2024 10:10:25 AM

JOB DESCRIPTION

SDWA Region 9 - ERG

JOB NUMBER

410-175226-1

Eurofins Lancaster Laboratories Environment Testing, LLC
2425 New Holland Pike
Lancaster PA 17601

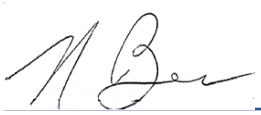
See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



Generated
7/16/2024 10:10:25 AM

Authorized for release by
Nicole Brown, Project Manager
Nicole.Brown@et.eurofinsus.com
(717)471-3265

Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

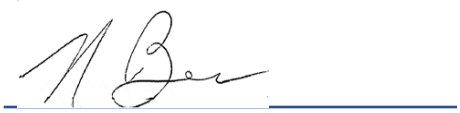


Table of Contents

Definitions/Glossary

Client: Eastern Research Group, Inc.
Job ID: 410-175226-1
Project/Site: SDWA Region 9 - ERG

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
*1	LCS/LCSD RPD exceeds control limits.
cn	Refer to Case Narrative for further detail
H	Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements.
H3	Sample was received and analyzed past holding time. This does not meet regulatory requirements.
I	Value is EMPC (estimated maximum possible concentration).

LCMS

Qualifier	Qualifier Description
*5-	Isotope dilution analyte is outside acceptance limits, low biased.
B	Compound was found in the blank and sample.
cn	Refer to Case Narrative for further detail
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

Job ID: 410-175226-1 Eurofins Lancaster Laboratories Environment

Job Narrative
410-175226-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 6/8/2024 9:35 AM. 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 time was 2.2°C.

Receipt Exceptions
The Chain-of-Custody (COC) was incomplete as received. The COC is missing Sample State, Sample Preservation, Number of containers per sample, amd Sample Type (Grab or Composite). This does not meet regulatory requirements. The client was contacted and responded that the sample state of collection is Hawaii, the samples were unpreserved and 4 X 250 ml bottles were submitted for each sample and that all were grab samples.

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): 004-D (410-175226-5). The container labels list time of 09:50, while the COC lists time of 09:46. The client was contacted, and the lab was instructed to login as listed on the COC.

GC/MS Semi VOA
Method FTOH: The initial calibration verification (ICV) result for batch 410-520647 was above the upper control limit. Sample results were non-detects, and have been reported as qualified data.

004 FB (410-175226-6), 004 (410-175226-7), 006 (410-175226-8) and Trip Blank (410-175226-9)

Method FTOH: The initial calibration verification (ICV) result for batch 410-519643 was above the upper control limit. Sample results were non-detects, and have been reported as qualified data.

Method FTOH: The following sample(s) was received with less than 2 days remaining on the holding time or less than one shift (8 hours) remaining on a test with a holding time of 48 hours or less. As such, the laboratory had insufficient time remaining to perform the analysis within holding time: 001 P (410-175226-2), 002 (410-175226-3), 003 (410-175226-4), 004-D (410-175226-5), 004 FB (410-175226-6), 004 (410-175226-7), 006 (410-175226-8) and Trip Blank (410-175226-9).

Method FTOH: For the original extraction, the following sample was received with less than 2 days remaining on the holding time or less than one shift (8 hours) remaining on a test with a holding time of 48 hours or less. As such, the laboratory had insufficient time remaining to perform the analysis within holding time: 001 P (410-175226-2).

The re-extraction was also out of hold, but all surrogates are within specified windows.

The initial calibration verification (ICV) result for batch 410-521665 was above the upper control limit. Sample results were non-detects, and have been reported as qualified data.

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

PFAS
Method PFC_IDA: The recovery for the internal standard peak areas is outside of QC acceptance limits in the laboratory control spike duplicate sample (LCSD) associated with samples: 004-D (410-175226-5), 004 FB (410-175226-6) and 006 (410-175226-8). Since the recovery for the labeled isotopes and targets are within QC acceptance limits in this LCSD, the data is reported.

Job ID: 410-175226-1 (Continued) Eurofins Lancaster Laboratories Environment

Method PFC_IDA: The recovery for target analyte 3:3 FTCA is outside of QC acceptance limits in the initial calibration verification standard (ICV) associated with samples: 004-D (410-175226-5), 004 FB (410-175226-6) and 006 (410-175226-8). Since the recovery is high and this target analyte is not detected, the data is reported

Method PFC_IDA: Reporting limits were raised for the following sample: 004-D (410-175226-5) due to limited sample volume.

Method PFC_IDA: The recovery for target analyte 3:3 FTCAis outside of QC acceptance limits in the initial calibration verification standard (ICV) associated with sample: 004 (410-175226-7). Since the recovery is high and this target analyte is not detected, the data is reported

Method PFC_IDA: The recovery for the internal standard peak areas is outside of QC acceptance limits in the laboratory control spike duplicate sample (LCSD) associated with samples: 004 (410-175226-7). Since the recovery for the labeled isotopes and targets are within QC acceptance limits in this LCSD, the data is reported.

Method PFC_IDA: The recovery for target analyte 3:3 FTCA in the initial calibration verification standard associated with the following samples: 001 FBP (410-175226-1) and 001 P (410-175226-2) is outside of QC acceptance limits, biased high. Since the recovery is high and the native analyte is not detected in the sample(s), the result(s) is reported.

Method PFC_IDA: Isotope dilution analyte (IDA) recoveries were outside QC acceptance criteria in sample 001 FBP (410-175226-1). The isotope dilution technique corrects the results for the target analytes for any losses that occur during the sample extraction and/or concentration. For all IDA's, the signal to noise was greater than 10:1, therefore the data is reported.

Method PFC_IDA: Target analyte(s) HFPODA were detected in the method blank associated with the following samples: 002 (410-175226-3), 003 (410-175226-4) and Trip Blank (410-175226-9). The following action was taken: This sample(s) was re-extracted outside the required holding time and target analyte(s) were not detected in the re-extracted method blank.

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

Detection Summary

Client: Eastern Research Group, Inc.
Project/Site: SDWA Region 9 - ERG

Job ID: 410-175226-1

Client Sample ID: 001 FBP — Lab Sample ID: 410-175226-1

No Detections.

Client Sample ID: 001 P — Lab Sample ID: 410-175226-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonamide (PFOSA)	1.74		1.74	0.260	ng/L	1		537 IDA	Total/NA

Client Sample ID: 002 — Lab Sample ID: 410-175226-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
HFPODA	0.482	J B cn	1.79	0.357	ng/L	1		537 IDA	Total/NA
Perfluorooctanesulfonamide (PFOSA)	2.99		1.79	0.268	ng/L	1		537 IDA	Total/NA

Client Sample ID: 003 — Lab Sample ID: 410-175226-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
HFPODA	0.715	J B cn	1.68	0.337	ng/L	1		537 IDA	Total/NA
Perfluorooctanesulfonamide (PFOSA)	1.66	J	1.68	0.253	ng/L	1		537 IDA	Total/NA
Perfluorooctanoic acid (PFOA)	0.286	J	1.68	0.253	ng/L	1		537 IDA	Total/NA

Client Sample ID: 004-D — Lab Sample ID: 410-175226-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
HFPODA	0.491	J cn	2.11	0.422	ng/L	1		537 IDA	Total/NA
Perfluorobutanesulfonic acid (PFBS)	3.47	cn	2.11	0.316	ng/L	1		537 IDA	Total/NA
Perfluorobutanoic acid (PFBA)	2.46	cn	2.11	1.05	ng/L	1		537 IDA	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.88	cn	2.11	0.316	ng/L	1		537 IDA	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	4.41	cn	2.11	0.211	ng/L	1		537 IDA	Total/NA
Perfluorohexanoic acid (PFHxA)	5.23	cn	2.11	1.05	ng/L	1		537 IDA	Total/NA
Perfluorononanoic acid (PFNA)	0.418	J cn	2.11	0.211	ng/L	1		537 IDA	Total/NA
Perfluorooctanesulfonamide (PFOSA)	7.26	cn	2.11	0.316	ng/L	1		537 IDA	Total/NA
Perfluorooctanesulfonic acid (PFOS)	7.59	cn	2.11	0.527	ng/L	1		537 IDA	Total/NA
Perfluorooctanoic acid (PFOA)	5.44	cn	2.11	0.316	ng/L	1		537 IDA	Total/NA
Perfluoropentanesulfonic acid (PFPeS)	0.607	J cn	2.11	0.316	ng/L	1		537 IDA	Total/NA
Perfluoropentanoic acid (PFPeA)	6.56	cn	2.11	0.316	ng/L	1		537 IDA	Total/NA
Perfluoropropionic acid (PFPrA)	10.6	cn	10.5	5.27	ng/L	1		537 IDA	Total/NA

Client Sample ID: 004 FB — Lab Sample ID: 410-175226-6

No Detections.

Client Sample ID: 004 — Lab Sample ID: 410-175226-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanesulfonic acid (PFBS)	3.26	cn	1.91	0.287	ng/L	1		537 IDA	Total/NA
Perfluorobutanoic acid (PFBA)	2.29	cn	1.91	0.957	ng/L	1		537 IDA	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.63	cn	1.91	0.287	ng/L	1		537 IDA	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	4.16	cn	1.91	0.191	ng/L	1		537 IDA	Total/NA
Perfluorohexanoic acid (PFHxA)	4.59	cn	1.91	0.957	ng/L	1		537 IDA	Total/NA
Perfluorononanoic acid (PFNA)	0.364	J cn	1.91	0.191	ng/L	1		537 IDA	Total/NA
Perfluorooctanesulfonamide (PFOSA)	7.84	cn	1.91	0.287	ng/L	1		537 IDA	Total/NA
Perfluorooctanesulfonic acid (PFOS)	6.78	cn	1.91	0.479	ng/L	1		537 IDA	Total/NA
Perfluorooctanoic acid (PFOA)	5.09	cn	1.91	0.287	ng/L	1		537 IDA	Total/NA
Perfluoropentanesulfonic acid (PFPeS)	0.612	J cn	1.91	0.287	ng/L	1		537 IDA	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: 004 (Continued)

Lab Sample ID: 410-175226-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluoropentanoic acid (PFPeA)	6.10	cn	1.91	0.287	ng/L	1		537 IDA	Total/NA
Perfluoropropanesulfonic acid	0.384	J cn	1.91	0.383	ng/L	1		537 IDA	Total/NA
Perfluoropropionic acid (PFPrA)	10.9	cn	9.57	4.79	ng/L	1		537 IDA	Total/NA

Client Sample ID: 006

Lab Sample ID: 410-175226-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
HFPODA	0.406	J cn	1.93	0.387	ng/L	1		537 IDA	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.662	J cn	1.93	0.290	ng/L	1		537 IDA	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.402	J cn	1.93	0.290	ng/L	1		537 IDA	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.564	J cn	1.93	0.193	ng/L	1		537 IDA	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.745	J cn	1.93	0.484	ng/L	1		537 IDA	Total/NA
Perfluorooctanoic acid (PFOA)	0.610	J cn	1.93	0.290	ng/L	1		537 IDA	Total/NA
Perfluoropentanoic acid (PFPeA)	0.713	J cn	1.93	0.290	ng/L	1		537 IDA	Total/NA

Client Sample ID: Trip Blank

Lab Sample ID: 410-175226-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
HFPODA	0.649	J B cn	1.73	0.346	ng/L	1		537 IDA	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: 001 FBP
Date Collected: 06/05/24 09:15
Date Received: 06/08/24 09:35

Lab Sample ID: 410-175226-1
Matrix: Water

Method: ELLE - Lancaster SOP - SOP T-SSG-WI7750

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
10:2 FTOH-2-Perfluorodecyl ethanol	<0.208	cn	0.692	0.208	ug/L		06/12/24 22:15	06/20/24 18:17	1
8:2 FTOH-2-Perfluorooctyl ethanol	<0.138	cn	0.692	0.138	ug/L		06/12/24 22:15	06/20/24 18:17	1
7:2 FTOH-1-Perfluoroheptyl ethanol	<0.138	*1 cn	0.692	0.138	ug/L		06/12/24 22:15	06/20/24 18:17	1
6:2 FTOH-2-Perfluorohexyl ethanol	<0.138	cn	0.692	0.138	ug/L		06/12/24 22:15	06/20/24 18:17	1
4:2 FTOH-2-Perfluorobutyl ethanol	<0.138	*1 cn	0.692	0.138	ug/L		06/12/24 22:15	06/20/24 18:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Perfluorooctyl-[1,1-2H2]-[1,2-13C2]-ethanol(8:2)	*29*	*cn*	*14 - 120*	*06/12/24 22:15*	*06/20/24 18:17*	*1*
2-Perfluorodecyl-[1,1-2H2]-[1,2-13C2]-ethanol(10:2)	*73*	*cn*	*43 - 151*	*06/12/24 22:15*	*06/20/24 18:17*	*1*

Method: EPA 537 IDA - EPA 537 Isotope Dilution

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
10:2 Fluorotelomer sulfonic acid	<0.809	cn	2.02	0.809	ng/L		07/01/24 16:44	07/10/24 02:14	1
10:2 FTCA	<0.505	cn	2.02	0.505	ng/L		07/01/24 16:44	07/10/24 02:14	1
10:2 FTUCA	<0.404	cn	2.02	0.404	ng/L		07/01/24 16:44	07/10/24 02:14	1
11Cl-PF3OUdS	<0.505	cn	2.02	0.505	ng/L		07/01/24 16:44	07/10/24 02:14	1
3:3 FTCA	<0.505	cn	2.02	0.505	ng/L		07/01/24 16:44	07/10/24 02:14	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.505	cn	2.02	0.505	ng/L		07/01/24 16:44	07/10/24 02:14	1
4:2 Fluorotelomer sulfonic acid	<0.505	cn	2.02	0.505	ng/L		07/01/24 16:44	07/10/24 02:14	1
5:3 FTCA	<0.505	cn	2.02	0.505	ng/L		07/01/24 16:44	07/10/24 02:14	1
6:2 Fluorotelomer sulfonic acid	<0.505	cn	2.02	0.505	ng/L		07/01/24 16:44	07/10/24 02:14	1
6:2 FTCA	<0.708	cn	2.02	0.708	ng/L		07/01/24 16:44	07/10/24 02:14	1
6:2 FTUCA	<0.404	cn	2.02	0.404	ng/L		07/01/24 16:44	07/10/24 02:14	1
7:3 FTCA	<1.11	cn	2.02	1.11	ng/L		07/01/24 16:44	07/10/24 02:14	1
8:2 Fluorotelomer sulfonic acid	<0.607	cn	2.02	0.607	ng/L		07/01/24 16:44	07/10/24 02:14	1
8:2 FTCA	<0.404	cn	2.02	0.404	ng/L		07/01/24 16:44	07/10/24 02:14	1
8:2 FTUCA	<0.404	cn	2.02	0.404	ng/L		07/01/24 16:44	07/10/24 02:14	1
9Cl-PF3ONS	<0.505	cn	2.02	0.505	ng/L		07/01/24 16:44	07/10/24 02:14	1
EVE Acid	<0.505	cn	2.02	0.505	ng/L		07/01/24 16:44	07/10/24 02:14	1
HFPODA	<0.404	cn	2.02	0.404	ng/L		07/01/24 16:44	07/10/24 02:14	1
Hydro-EVE Acid	<0.505	cn	2.02	0.505	ng/L		07/01/24 16:44	07/10/24 02:14	1
Hydrolyzed PSDA	<0.404	cn	2.02	0.404	ng/L		07/01/24 16:44	07/10/24 02:14	1
Hydro-PS Acid	<0.505	cn	2.02	0.505	ng/L		07/01/24 16:44	07/10/24 02:14	1
MTP	<0.607	cn	2.02	0.607	ng/L		07/01/24 16:44	07/10/24 02:14	1
NEtFOSA	<0.404	cn	2.02	0.404	ng/L		07/01/24 16:44	07/10/24 02:14	1
NEtFOSAA	<0.505	cn	2.02	0.505	ng/L		07/01/24 16:44	07/10/24 02:14	1
NEtFOSE	<0.404	cn	2.02	0.404	ng/L		07/01/24 16:44	07/10/24 02:14	1
NMeFOSA	<0.708	cn	2.02	0.708	ng/L		07/01/24 16:44	07/10/24 02:14	1
NMeFOSAA	<0.404	cn	2.02	0.404	ng/L		07/01/24 16:44	07/10/24 02:14	1
NMeFOSE	<0.404	cn	2.02	0.404	ng/L		07/01/24 16:44	07/10/24 02:14	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.303	cn	2.02	0.303	ng/L		07/01/24 16:44	07/10/24 02:14	1
NVHOS	<0.404	cn	2.02	0.404	ng/L		07/01/24 16:44	07/10/24 02:14	1
PEPA	<0.607	cn	2.02	0.607	ng/L		07/01/24 16:44	07/10/24 02:14	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.303	cn	2.02	0.303	ng/L		07/01/24 16:44	07/10/24 02:14	1
Perfluoro-3,5,7,9,11-pentaoxadodecanoic acid	<0.505	cn	2.02	0.505	ng/L		07/01/24 16:44	07/10/24 02:14	1

Client Sample ID: 001 FBP
Date Collected: 06/05/24 09:15
Date Received: 06/08/24 09:35

Lab Sample ID: 410-175226-1
Matrix: Water

Method: EPA 537 IDA - EPA 537 Isotope Dilution (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.303	cn	2.02	0.303	ng/L		07/01/24 16:44	07/10/24 02:14	1
Perfluoro-4-isopropoxybutanoic acid (PFIpOBA)	<0.505	cn	2.02	0.505	ng/L		07/01/24 16:44	07/10/24 02:14	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.303	cn	2.02	0.303	ng/L		07/01/24 16:44	07/10/24 02:14	1
Perfluorobutanesulfonic acid (PFBS)	<0.303	cn	2.02	0.303	ng/L		07/01/24 16:44	07/10/24 02:14	1
Perfluorobutanoic acid (PFBA)	<1.01	cn	2.02	1.01	ng/L		07/01/24 16:44	07/10/24 02:14	1
Perfluorodecanesulfonic acid (PFDS)	<0.303	cn	2.02	0.303	ng/L		07/01/24 16:44	07/10/24 02:14	1
Perfluorodecanoic acid (PFDA)	<0.303	cn	2.02	0.303	ng/L		07/01/24 16:44	07/10/24 02:14	1
Perfluorododecanesulfonic acid (PFDoS)	<0.303	cn	2.02	0.303	ng/L		07/01/24 16:44	07/10/24 02:14	1
Perfluorododecanoic acid (PFDoA)	<0.404	cn	2.02	0.404	ng/L		07/01/24 16:44	07/10/24 02:14	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.303	cn	2.02	0.303	ng/L		07/01/24 16:44	07/10/24 02:14	1
Perfluoroheptanoic acid (PFHpA)	<0.303	cn	2.02	0.303	ng/L		07/01/24 16:44	07/10/24 02:14	1
Perfluorohexanesulfonic acid (PFHxS)	<0.202	cn	2.02	0.202	ng/L		07/01/24 16:44	07/10/24 02:14	1
Perfluorohexanoic acid (PFHxA)	<1.01	cn	2.02	1.01	ng/L		07/01/24 16:44	07/10/24 02:14	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.505	cn	2.02	0.505	ng/L		07/01/24 16:44	07/10/24 02:14	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.505	cn	2.02	0.505	ng/L		07/01/24 16:44	07/10/24 02:14	1
Perfluorononanesulfonic acid (PFNS)	<0.303	cn	2.02	0.303	ng/L		07/01/24 16:44	07/10/24 02:14	1
Perfluorononanoic acid (PFNA)	<0.202	cn	2.02	0.202	ng/L		07/01/24 16:44	07/10/24 02:14	1
Perfluorooctanesulfonamide (PFOSA)	<0.303	cn	2.02	0.303	ng/L		07/01/24 16:44	07/10/24 02:14	1
Perfluorooctanesulfonic acid (PFOS)	<0.505	cn	2.02	0.505	ng/L		07/01/24 16:44	07/10/24 02:14	1
Perfluorooctanoic acid (PFOA)	<0.303	cn	2.02	0.303	ng/L		07/01/24 16:44	07/10/24 02:14	1
Perfluoropentanesulfonic acid (PFPeS)	<0.303	cn	2.02	0.303	ng/L		07/01/24 16:44	07/10/24 02:14	1
Perfluoropentanoic acid (PFPeA)	<0.303	cn	2.02	0.303	ng/L		07/01/24 16:44	07/10/24 02:14	1
Perfluoropropanesulfonic acid	<0.404	cn	2.02	0.404	ng/L		07/01/24 16:44	07/10/24 02:14	1
Perfluoropropionic acid (PFPrA)	<5.05	cn	10.1	5.05	ng/L		07/01/24 16:44	07/10/24 02:14	1
Perfluorotetradecanoic acid (PFTeDA)	<0.404	cn	2.02	0.404	ng/L		07/01/24 16:44	07/10/24 02:14	1
Perfluorotridecanoic acid (PFTrDA)	<0.404	cn	2.02	0.404	ng/L		07/01/24 16:44	07/10/24 02:14	1
Perfluoroundecanoic acid (PFUnA)	<0.303	cn	2.02	0.303	ng/L		07/01/24 16:44	07/10/24 02:14	1
PFECHS	<0.303	cn	2.02	0.303	ng/L		07/01/24 16:44	07/10/24 02:14	1
PFMOAA	<0.303	cn	2.02	0.303	ng/L		07/01/24 16:44	07/10/24 02:14	1
PFO2HxA	<0.708	cn	2.02	0.708	ng/L		07/01/24 16:44	07/10/24 02:14	1
PFO3OA	<1.01	cn	2.02	1.01	ng/L		07/01/24 16:44	07/10/24 02:14	1
PFO4DA	<0.809	cn	2.02	0.809	ng/L		07/01/24 16:44	07/10/24 02:14	1
PMPA	<0.607	cn	2.02	0.607	ng/L		07/01/24 16:44	07/10/24 02:14	1
PS Acid	<0.607	cn	2.02	0.607	ng/L		07/01/24 16:44	07/10/24 02:14	1
R-EVE	<0.505	cn	2.02	0.505	ng/L		07/01/24 16:44	07/10/24 02:14	1
R-PSDA	<0.708	cn	2.02	0.708	ng/L		07/01/24 16:44	07/10/24 02:14	1
R-PSDCA	<0.303	cn	2.02	0.303	ng/L		07/01/24 16:44	07/10/24 02:14	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-10:2 FTCA	*68*	*cn*	*11 - 200*	*07/01/24 16:44*	*07/10/24 02:14*	*1*
13C-10:2 FTUCA	*77*	*cn*	*10 - 166*	*07/01/24 16:44*	*07/10/24 02:14*	*1*
13C2 PFTeDA	*70*	*cn*	*10 - 171*	*07/01/24 16:44*	*07/10/24 02:14*	*1*
13C2-PFDoDA	*72*	*cn*	*22 - 165*	*07/01/24 16:44*	*07/10/24 02:14*	*1*
13C3 HFPO-DA	*75*	*cn*	*13 - 170*	*07/01/24 16:44*	*07/10/24 02:14*	*1*

Client Sample ID: 001 FBP

Lab Sample ID: 410-175226-1

Date Collected: 06/05/24 09:15
Date Received: 06/08/24 09:35

Matrix: Water

Method: EPA 537 IDA - EPA 537 Isotope Dilution (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 PFBS	91	cn	34 - 200	07/01/24 16:44	07/10/24 02:14	1
13C3 PFHxS	71	cn	48 - 169	07/01/24 16:44	07/10/24 02:14	1
13C3-PFPrA	19	*5- cn	21 - 157	07/01/24 16:44	07/10/24 02:14	1
13C4 PFBA	61	cn	22 - 174	07/01/24 16:44	07/10/24 02:14	1
13C4 PFHpA	66	cn	40 - 165	07/01/24 16:44	07/10/24 02:14	1
13C5 PFHxA	76	cn	28 - 166	07/01/24 16:44	07/10/24 02:14	1
13C5 PFPeA	80	cn	33 - 196	07/01/24 16:44	07/10/24 02:14	1
13C6 PFDA	81	cn	53 - 151	07/01/24 16:44	07/10/24 02:14	1
13C-6:2 FTCA	74	cn	10 - 200	07/01/24 16:44	07/10/24 02:14	1
13C-6:2 FTUCA	68	cn	10 - 173	07/01/24 16:44	07/10/24 02:14	1
13C7 PFUnA	76	cn	41 - 163	07/01/24 16:44	07/10/24 02:14	1
13C8 FOSA	91	cn	10 - 155	07/01/24 16:44	07/10/24 02:14	1
13C8 PFOA	77	cn	52 - 153	07/01/24 16:44	07/10/24 02:14	1
13C8 PFOS	87	cn	59 - 155	07/01/24 16:44	07/10/24 02:14	1
13C-8:2 FTCA	77	cn	20 - 200	07/01/24 16:44	07/10/24 02:14	1
13C-8:2 FTUCA	81	cn	18 - 175	07/01/24 16:44	07/10/24 02:14	1
13C9 PFNA	79	cn	52 - 168	07/01/24 16:44	07/10/24 02:14	1
d3-NMeFOSAA	74	cn	38 - 168	07/01/24 16:44	07/10/24 02:14	1
d3-NMePFOSA	56	cn	10 - 130	07/01/24 16:44	07/10/24 02:14	1
d5-NEtFOSAA	71	cn	34 - 181	07/01/24 16:44	07/10/24 02:14	1
d5-NEtPFOSA	56	cn	10 - 130	07/01/24 16:44	07/10/24 02:14	1
d7-N-MeFOSE-M	75	cn	10 - 149	07/01/24 16:44	07/10/24 02:14	1
d9-N-EtFOSE-M	70	cn	10 - 151	07/01/24 16:44	07/10/24 02:14	1
M2-4:2 FTS	111	cn	35 - 200	07/01/24 16:44	07/10/24 02:14	1
M2-6:2 FTS	165	cn	40 - 200	07/01/24 16:44	07/10/24 02:14	1
M2-8:2 FTS	100	cn	37 - 200	07/01/24 16:44	07/10/24 02:14	1

Client Sample ID: 001 P

Lab Sample ID: 410-175226-2

Date Collected: 06/05/24 09:17
Date Received: 06/08/24 09:35

Matrix: Water

Method: ELLE - Lancaster SOP - SOP T-SSG-WI7750

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
10:2 FTOH-2-Perfluorodecyl ethanol	<0.267	H cn	0.890	0.267	ug/L		06/26/24 08:13	06/26/24 12:43	1
8:2 FTOH-2-Perfluorooctyl ethanol	<0.178	H cn	0.890	0.178	ug/L		06/26/24 08:13	06/26/24 12:43	1
7:2 FTOH-1-Perfluoroheptyl ethanol	<0.178	H cn	0.890	0.178	ug/L		06/26/24 08:13	06/26/24 12:43	1
6:2 FTOH-2-Perfluorohexyl ethanol	<0.178	H cn	0.890	0.178	ug/L		06/26/24 08:13	06/26/24 12:43	1
4:2 FTOH-2-Perfluorobutyl ethanol	<0.178	H cn	0.890	0.178	ug/L		06/26/24 08:13	06/26/24 12:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Perfluorooctyl-[1,1-2H2]-[1,2-13C2]-ethanol(8:2)	33	cn	14 - 120	06/26/24 08:13	06/26/24 12:43	1
2-Perfluorodecyl-[1,1-2H2]-[1,2-13C2]-ethanol(10:2)	79	cn	43 - 151	06/26/24 08:13	06/26/24 12:43	1

Method: EPA 537 IDA - EPA 537 Isotope Dilution

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
10:2 Fluorotelomer sulfonic acid	<0.694		1.74	0.694	ng/L		07/01/24 16:44	07/10/24 02:28	1
10:2 FTCA	<0.434		1.74	0.434	ng/L		07/01/24 16:44	07/10/24 02:28	1
10:2 FTUCA	<0.347		1.74	0.347	ng/L		07/01/24 16:44	07/10/24 02:28	1
11Cl-PF3OUdS	<0.434		1.74	0.434	ng/L		07/01/24 16:44	07/10/24 02:28	1

Client Sample ID: 001 P
Date Collected: 06/05/24 09:17
Date Received: 06/08/24 09:35

Lab Sample ID: 410-175226-2
Matrix: Water

Method: EPA 537 IDA - EPA 537 Isotope Dilution (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3:3 FTCA	<0.434	cn	1.74	0.434	ng/L		07/01/24 16:44	07/10/24 02:28	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.434		1.74	0.434	ng/L		07/01/24 16:44	07/10/24 02:28	1
4:2 Fluorotelomer sulfonic acid	<0.434		1.74	0.434	ng/L		07/01/24 16:44	07/10/24 02:28	1
5:3 FTCA	<0.434		1.74	0.434	ng/L		07/01/24 16:44	07/10/24 02:28	1
6:2 Fluorotelomer sulfonic acid	<0.434		1.74	0.434	ng/L		07/01/24 16:44	07/10/24 02:28	1
6:2 FTCA	<0.607		1.74	0.607	ng/L		07/01/24 16:44	07/10/24 02:28	1
6:2 FTUCA	<0.347		1.74	0.347	ng/L		07/01/24 16:44	07/10/24 02:28	1
7:3 FTCA	<0.955		1.74	0.955	ng/L		07/01/24 16:44	07/10/24 02:28	1
8:2 Fluorotelomer sulfonic acid	<0.521		1.74	0.521	ng/L		07/01/24 16:44	07/10/24 02:28	1
8:2 FTCA	<0.347		1.74	0.347	ng/L		07/01/24 16:44	07/10/24 02:28	1
8:2 FTUCA	<0.347		1.74	0.347	ng/L		07/01/24 16:44	07/10/24 02:28	1
9Cl-PF3ONS	<0.434		1.74	0.434	ng/L		07/01/24 16:44	07/10/24 02:28	1
EVE Acid	<0.434		1.74	0.434	ng/L		07/01/24 16:44	07/10/24 02:28	1
HFPODA	<0.347		1.74	0.347	ng/L		07/01/24 16:44	07/10/24 02:28	1
Hydro-EVE Acid	<0.434		1.74	0.434	ng/L		07/01/24 16:44	07/10/24 02:28	1
Hydrolyzed PSDA	<0.347		1.74	0.347	ng/L		07/01/24 16:44	07/10/24 02:28	1
Hydro-PS Acid	<0.434		1.74	0.434	ng/L		07/01/24 16:44	07/10/24 02:28	1
MTP	<0.521		1.74	0.521	ng/L		07/01/24 16:44	07/10/24 02:28	1
NEtFOSA	<0.347		1.74	0.347	ng/L		07/01/24 16:44	07/10/24 02:28	1
NEtFOSAA	<0.434		1.74	0.434	ng/L		07/01/24 16:44	07/10/24 02:28	1
NEtFOSE	<0.347		1.74	0.347	ng/L		07/01/24 16:44	07/10/24 02:28	1
NMeFOSA	<0.607		1.74	0.607	ng/L		07/01/24 16:44	07/10/24 02:28	1
NMeFOSAA	<0.347		1.74	0.347	ng/L		07/01/24 16:44	07/10/24 02:28	1
NMeFOSE	<0.347		1.74	0.347	ng/L		07/01/24 16:44	07/10/24 02:28	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.260		1.74	0.260	ng/L		07/01/24 16:44	07/10/24 02:28	1
NVHOS	<0.347		1.74	0.347	ng/L		07/01/24 16:44	07/10/24 02:28	1
PEPA	<0.521		1.74	0.521	ng/L		07/01/24 16:44	07/10/24 02:28	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.260		1.74	0.260	ng/L		07/01/24 16:44	07/10/24 02:28	1
Perfluoro-3,5,7,9,11-pentaoxadodecanoic acid	<0.434		1.74	0.434	ng/L		07/01/24 16:44	07/10/24 02:28	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.260		1.74	0.260	ng/L		07/01/24 16:44	07/10/24 02:28	1
Perfluoro-4-isopropoxybutanoic acid (PFIpOBA)	<0.434		1.74	0.434	ng/L		07/01/24 16:44	07/10/24 02:28	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.260		1.74	0.260	ng/L		07/01/24 16:44	07/10/24 02:28	1
Perfluorobutanesulfonic acid (PFBS)	<0.260		1.74	0.260	ng/L		07/01/24 16:44	07/10/24 02:28	1
Perfluorobutanoic acid (PFBA)	<0.868		1.74	0.868	ng/L		07/01/24 16:44	07/10/24 02:28	1
Perfluorodecanesulfonic acid (PFDS)	<0.260		1.74	0.260	ng/L		07/01/24 16:44	07/10/24 02:28	1
Perfluorodecanoic acid (PFDA)	<0.260		1.74	0.260	ng/L		07/01/24 16:44	07/10/24 02:28	1
Perfluorododecanesulfonic acid (PFDoS)	<0.260		1.74	0.260	ng/L		07/01/24 16:44	07/10/24 02:28	1
Perfluorododecanoic acid (PFDoA)	<0.347		1.74	0.347	ng/L		07/01/24 16:44	07/10/24 02:28	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.260		1.74	0.260	ng/L		07/01/24 16:44	07/10/24 02:28	1
Perfluoroheptanoic acid (PFHpA)	<0.260		1.74	0.260	ng/L		07/01/24 16:44	07/10/24 02:28	1
Perfluorohexanesulfonic acid (PFHxS)	<0.174		1.74	0.174	ng/L		07/01/24 16:44	07/10/24 02:28	1
Perfluorohexanoic acid (PFHxA)	<0.868		1.74	0.868	ng/L		07/01/24 16:44	07/10/24 02:28	1

Client Sample ID: 001 P
Date Collected: 06/05/24 09:17
Date Received: 06/08/24 09:35

Lab Sample ID: 410-175226-2
Matrix: Water

Method: EPA 537 IDA - EPA 537 Isotope Dilution (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.434		1.74	0.434	ng/L		07/01/24 16:44	07/10/24 02:28	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.434		1.74	0.434	ng/L		07/01/24 16:44	07/10/24 02:28	1
Perfluorononanesulfonic acid (PFNS)	<0.260		1.74	0.260	ng/L		07/01/24 16:44	07/10/24 02:28	1
Perfluorononanoic acid (PFNA)	<0.174		1.74	0.174	ng/L		07/01/24 16:44	07/10/24 02:28	1
Perfluorooctanesulfonamide (PFOSA)	**1.74**		1.74	0.260	ng/L		07/01/24 16:44	07/10/24 02:28	1
Perfluorooctanesulfonic acid (PFOS)	<0.434		1.74	0.434	ng/L		07/01/24 16:44	07/10/24 02:28	1
Perfluorooctanoic acid (PFOA)	<0.260		1.74	0.260	ng/L		07/01/24 16:44	07/10/24 02:28	1
Perfluoropentanesulfonic acid (PFPeS)	<0.260		1.74	0.260	ng/L		07/01/24 16:44	07/10/24 02:28	1
Perfluoropentanoic acid (PFPeA)	<0.260		1.74	0.260	ng/L		07/01/24 16:44	07/10/24 02:28	1
Perfluoropropanesulfonic acid	<0.347		1.74	0.347	ng/L		07/01/24 16:44	07/10/24 02:28	1
Perfluoropropionic acid (PFPrA)	<4.34		8.68	4.34	ng/L		07/01/24 16:44	07/10/24 02:28	1
Perfluorotetradecanoic acid (PFTeDA)	<0.347		1.74	0.347	ng/L		07/01/24 16:44	07/10/24 02:28	1
Perfluorotridecanoic acid (PFTrDA)	<0.347		1.74	0.347	ng/L		07/01/24 16:44	07/10/24 02:28	1
Perfluoroundecanoic acid (PFUnA)	<0.260		1.74	0.260	ng/L		07/01/24 16:44	07/10/24 02:28	1
PFECHS	<0.260		1.74	0.260	ng/L		07/01/24 16:44	07/10/24 02:28	1
PFMOAA	<0.260		1.74	0.260	ng/L		07/01/24 16:44	07/10/24 02:28	1
PFO2HxA	<0.607		1.74	0.607	ng/L		07/01/24 16:44	07/10/24 02:28	1
PFO3OA	<0.868		1.74	0.868	ng/L		07/01/24 16:44	07/10/24 02:28	1
PFO4DA	<0.694		1.74	0.694	ng/L		07/01/24 16:44	07/10/24 02:28	1
PMPA	<0.521		1.74	0.521	ng/L		07/01/24 16:44	07/10/24 02:28	1
PS Acid	<0.521		1.74	0.521	ng/L		07/01/24 16:44	07/10/24 02:28	1
R-EVE	<0.434		1.74	0.434	ng/L		07/01/24 16:44	07/10/24 02:28	1
R-PSDA	<0.607		1.74	0.607	ng/L		07/01/24 16:44	07/10/24 02:28	1
R-PSDCA	<0.260		1.74	0.260	ng/L		07/01/24 16:44	07/10/24 02:28	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-10:2 FTCA	*79*		*11 - 200*	*07/01/24 16:44*	*07/10/24 02:28*	*1*
13C-10:2 FTUCA	*81*		*10 - 166*	*07/01/24 16:44*	*07/10/24 02:28*	*1*
13C2 PFTeDA	*81*		*10 - 171*	*07/01/24 16:44*	*07/10/24 02:28*	*1*
13C2-PFDoDA	*78*		*22 - 165*	*07/01/24 16:44*	*07/10/24 02:28*	*1*
13C3 HFPO-DA	*79*		*13 - 170*	*07/01/24 16:44*	*07/10/24 02:28*	*1*
13C3 PFBS	*91*		*34 - 200*	*07/01/24 16:44*	*07/10/24 02:28*	*1*
13C3 PFHxS	*80*		*48 - 169*	*07/01/24 16:44*	*07/10/24 02:28*	*1*
13C3-PFPrA	*53*		*21 - 157*	*07/01/24 16:44*	*07/10/24 02:28*	*1*
13C4 PFBA	*88*		*22 - 174*	*07/01/24 16:44*	*07/10/24 02:28*	*1*
13C4 PFHpA	*74*		*40 - 165*	*07/01/24 16:44*	*07/10/24 02:28*	*1*
13C5 PFHxA	*71*		*28 - 166*	*07/01/24 16:44*	*07/10/24 02:28*	*1*
13C5 PFPeA	*80*		*33 - 196*	*07/01/24 16:44*	*07/10/24 02:28*	*1*
13C6 PFDA	*87*		*53 - 151*	*07/01/24 16:44*	*07/10/24 02:28*	*1*
13C-6:2 FTCA	*78*		*10 - 200*	*07/01/24 16:44*	*07/10/24 02:28*	*1*
13C-6:2 FTUCA	*72*		*10 - 173*	*07/01/24 16:44*	*07/10/24 02:28*	*1*
13C7 PFUnA	*80*		*41 - 163*	*07/01/24 16:44*	*07/10/24 02:28*	*1*
13C8 FOSA	*88*		*10 - 155*	*07/01/24 16:44*	*07/10/24 02:28*	*1*
13C8 PFOA	*84*		*52 - 153*	*07/01/24 16:44*	*07/10/24 02:28*	*1*
13C8 PFOS	*93*		*59 - 155*	*07/01/24 16:44*	*07/10/24 02:28*	*1*
13C-8:2 FTCA	*79*		*20 - 200*	*07/01/24 16:44*	*07/10/24 02:28*	*1*
13C-8:2 FTUCA	*82*		*18 - 175*	*07/01/24 16:44*	*07/10/24 02:28*	*1*

Client Sample ID: 001 P

Lab Sample ID: 410-175226-2

Date Collected: 06/05/24 09:17

Matrix: Water

Date Received: 06/08/24 09:35

Method: EPA 537 IDA - EPA 537 Isotope Dilution (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C9 PFNA	87		52 - 168	07/01/24 16:44	07/10/24 02:28	1
d3-NMeFOSAA	83		38 - 168	07/01/24 16:44	07/10/24 02:28	1
d3-NMePFOSA	28		10 - 130	07/01/24 16:44	07/10/24 02:28	1
d5-NEtFOSAA	79		34 - 181	07/01/24 16:44	07/10/24 02:28	1
d5-NEtPFOSA	27		10 - 130	07/01/24 16:44	07/10/24 02:28	1
d7-N-MeFOSE-M	83		10 - 149	07/01/24 16:44	07/10/24 02:28	1
d9-N-EtFOSE-M	76		10 - 151	07/01/24 16:44	07/10/24 02:28	1
M2-4:2 FTS	74		35 - 200	07/01/24 16:44	07/10/24 02:28	1
M2-6:2 FTS	149		40 - 200	07/01/24 16:44	07/10/24 02:28	1
M2-8:2 FTS	99		37 - 200	07/01/24 16:44	07/10/24 02:28	1

Client Sample ID: 002

Lab Sample ID: 410-175226-3

Date Collected: 06/03/24 15:38

Matrix: Water

Date Received: 06/08/24 09:35

Method: ELLE - Lancaster SOP - SOP T-SSG-WI7750

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
10:2 FTOH-2-Perfluorodecyl ethanol	<0.262	H cn	0.872	0.262	ug/L		06/13/24 08:24	06/20/24 19:12	1
8:2 FTOH-2-Perfluorooctyl ethanol	<0.174	H cn	0.872	0.174	ug/L		06/13/24 08:24	06/20/24 19:12	1
7:2 FTOH-1-Perfluoroheptyl ethanol	<0.174	H *1 cn	0.872	0.174	ug/L		06/13/24 08:24	06/20/24 19:12	1
6:2 FTOH-2-Perfluorohexyl ethanol	<0.174	H cn	0.872	0.174	ug/L		06/13/24 08:24	06/20/24 19:12	1
4:2 FTOH-2-Perfluorobutyl ethanol	<0.174	H *1 cn	0.872	0.174	ug/L		06/13/24 08:24	06/20/24 19:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Perfluorooctyl-[1,1-2H2]-[1,2-13C2]-ethanol(8:2)	53	cn	14 - 120	06/13/24 08:24	06/20/24 19:12	1
2-Perfluorodecyl-[1,1-2H2]-[1,2-13C2]-ethanol(10:2)	95	cn	43 - 151	06/13/24 08:24	06/20/24 19:12	1

Method: EPA 537 IDA - EPA 537 Isotope Dilution

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
10:2 Fluorotelomer sulfonic acid	<0.715		1.79	0.715	ng/L		06/26/24 16:17	06/30/24 05:19	1
10:2 FTCA	<0.447		1.79	0.447	ng/L		06/26/24 16:17	06/30/24 05:19	1
10:2 FTUCA	<0.357		1.79	0.357	ng/L		06/26/24 16:17	06/30/24 05:19	1
11Cl-PF3OUdS	<0.447		1.79	0.447	ng/L		06/26/24 16:17	06/30/24 05:19	1
3:3 FTCA	<0.447		1.79	0.447	ng/L		06/26/24 16:17	06/30/24 05:19	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.447		1.79	0.447	ng/L		06/26/24 16:17	06/30/24 05:19	1
4:2 Fluorotelomer sulfonic acid	<0.447		1.79	0.447	ng/L		06/26/24 16:17	06/30/24 05:19	1
5:3 FTCA	<0.447		1.79	0.447	ng/L		06/26/24 16:17	06/30/24 05:19	1
6:2 Fluorotelomer sulfonic acid	<0.447		1.79	0.447	ng/L		06/26/24 16:17	06/30/24 05:19	1
6:2 FTCA	<0.625		1.79	0.625	ng/L		06/26/24 16:17	06/30/24 05:19	1
6:2 FTUCA	<0.357		1.79	0.357	ng/L		06/26/24 16:17	06/30/24 05:19	1
7:3 FTCA	<0.983		1.79	0.983	ng/L		06/26/24 16:17	06/30/24 05:19	1
8:2 Fluorotelomer sulfonic acid	<0.536		1.79	0.536	ng/L		06/26/24 16:17	06/30/24 05:19	1
8:2 FTCA	<0.357		1.79	0.357	ng/L		06/26/24 16:17	06/30/24 05:19	1
8:2 FTUCA	<0.357		1.79	0.357	ng/L		06/26/24 16:17	06/30/24 05:19	1
9Cl-PF3ONS	<0.447		1.79	0.447	ng/L		06/26/24 16:17	06/30/24 05:19	1
EVE Acid	<0.447		1.79	0.447	ng/L		06/26/24 16:17	06/30/24 05:19	1
HFPODA	**0.482**	**J B cn**	1.79	0.357	ng/L		06/26/24 16:17	06/30/24 05:19	1
Hydro-EVE Acid	<0.447		1.79	0.447	ng/L		06/26/24 16:17	06/30/24 05:19	1

Client: Eastern Research Group, Inc.
Project/Site: SDWA Region 9 - ERG

Job ID: 410-175226-1

Client Sample ID: 002
Date Collected: 06/03/24 15:38
Date Received: 06/08/24 09:35

Lab Sample ID: 410-175226-3
Matrix: Water

Method: EPA 537 IDA - EPA 537 Isotope Dilution (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hydrolyzed PSDA	<0.357		1.79	0.357	ng/L		06/26/24 16:17	06/30/24 05:19	1
Hydro-PS Acid	<0.447		1.79	0.447	ng/L		06/26/24 16:17	06/30/24 05:19	1
MTP	<0.536		1.79	0.536	ng/L		06/26/24 16:17	06/30/24 05:19	1
NEtFOSA	<0.357		1.79	0.357	ng/L		06/26/24 16:17	06/30/24 05:19	1
NEtFOSAA	<0.447		1.79	0.447	ng/L		06/26/24 16:17	06/30/24 05:19	1
NEtFOSE	<0.357		1.79	0.357	ng/L		06/26/24 16:17	06/30/24 05:19	1
NMeFOSA	<0.625		1.79	0.625	ng/L		06/26/24 16:17	06/30/24 05:19	1
NMeFOSAA	<0.357		1.79	0.357	ng/L		06/26/24 16:17	06/30/24 05:19	1
NMeFOSE	<0.357		1.79	0.357	ng/L		06/26/24 16:17	06/30/24 05:19	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.268		1.79	0.268	ng/L		06/26/24 16:17	06/30/24 05:19	1
NVHOS	<0.357		1.79	0.357	ng/L		06/26/24 16:17	06/30/24 05:19	1
PEPA	<0.536		1.79	0.536	ng/L		06/26/24 16:17	06/30/24 05:19	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.268		1.79	0.268	ng/L		06/26/24 16:17	06/30/24 05:19	1
Perfluoro-3,5,7,9,11-pentaoxadodecanoic acid	<0.447		1.79	0.447	ng/L		06/26/24 16:17	06/30/24 05:19	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.268		1.79	0.268	ng/L		06/26/24 16:17	06/30/24 05:19	1
Perfluoro-4-isopropoxybutanoic acid (PFIpOBA)	<0.447		1.79	0.447	ng/L		06/26/24 16:17	06/30/24 05:19	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.268		1.79	0.268	ng/L		06/26/24 16:17	06/30/24 05:19	1
Perfluorobutanesulfonic acid (PFBS)	<0.268		1.79	0.268	ng/L		06/26/24 16:17	06/30/24 05:19	1
Perfluorobutanoic acid (PFBA)	<0.893		1.79	0.893	ng/L		06/26/24 16:17	06/30/24 05:19	1
Perfluorodecanesulfonic acid (PFDS)	<0.268		1.79	0.268	ng/L		06/26/24 16:17	06/30/24 05:19	1
Perfluorodecanoic acid (PFDA)	<0.268		1.79	0.268	ng/L		06/26/24 16:17	06/30/24 05:19	1
Perfluorododecanesulfonic acid (PFDoS)	<0.268		1.79	0.268	ng/L		06/26/24 16:17	06/30/24 05:19	1
Perfluorododecanoic acid (PFDoA)	<0.357		1.79	0.357	ng/L		06/26/24 16:17	06/30/24 05:19	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.268		1.79	0.268	ng/L		06/26/24 16:17	06/30/24 05:19	1
Perfluoroheptanoic acid (PFHpA)	<0.268		1.79	0.268	ng/L		06/26/24 16:17	06/30/24 05:19	1
Perfluorohexanesulfonic acid (PFHxS)	<0.179		1.79	0.179	ng/L		06/26/24 16:17	06/30/24 05:19	1
Perfluorohexanoic acid (PFHxA)	<0.893		1.79	0.893	ng/L		06/26/24 16:17	06/30/24 05:19	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.447		1.79	0.447	ng/L		06/26/24 16:17	06/30/24 05:19	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.447		1.79	0.447	ng/L		06/26/24 16:17	06/30/24 05:19	1
Perfluorononanesulfonic acid (PFNS)	<0.268		1.79	0.268	ng/L		06/26/24 16:17	06/30/24 05:19	1
Perfluorononanoic acid (PFNA)	<0.179		1.79	0.179	ng/L		06/26/24 16:17	06/30/24 05:19	1
Perfluorooctanesulfonamide (PFOSA)	**2.99**		1.79	0.268	ng/L		06/26/24 16:17	06/30/24 05:19	1
Perfluorooctanesulfonic acid (PFOS)	<0.447		1.79	0.447	ng/L		06/26/24 16:17	06/30/24 05:19	1
Perfluorooctanoic acid (PFOA)	<0.268		1.79	0.268	ng/L		06/26/24 16:17	06/30/24 05:19	1
Perfluoropentanesulfonic acid (PFPeS)	<0.268		1.79	0.268	ng/L		06/26/24 16:17	06/30/24 05:19	1
Perfluoropentanoic acid (PFPeA)	<0.268		1.79	0.268	ng/L		06/26/24 16:17	06/30/24 05:19	1
Perfluoropropanesulfonic acid	<0.357		1.79	0.357	ng/L		06/26/24 16:17	06/30/24 05:19	1
Perfluoropropionic acid (PFPrA)	<4.47		8.93	4.47	ng/L		06/26/24 16:17	06/30/24 05:19	1
Perfluorotetradecanoic acid (PFTeDA)	<0.357		1.79	0.357	ng/L		06/26/24 16:17	06/30/24 05:19	1
Perfluorotridecanoic acid (PFTrDA)	<0.357		1.79	0.357	ng/L		06/26/24 16:17	06/30/24 05:19	1

Client Sample ID: 002
Date Collected: 06/03/24 15:38
Date Received: 06/08/24 09:35

Lab Sample ID: 410-175226-3
Matrix: Water

Method: EPA 537 IDA - EPA 537 Isotope Dilution (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroundecanoic acid (PFUnA)	<0.268		1.79	0.268	ng/L		06/26/24 16:17	06/30/24 05:19	1
PFECHS	<0.268		1.79	0.268	ng/L		06/26/24 16:17	06/30/24 05:19	1
PFMOAA	<0.268		1.79	0.268	ng/L		06/26/24 16:17	06/30/24 05:19	1
PFO2HxA	<0.625		1.79	0.625	ng/L		06/26/24 16:17	06/30/24 05:19	1
PFO3OA	<0.893		1.79	0.893	ng/L		06/26/24 16:17	06/30/24 05:19	1
PFO4DA	<0.715		1.79	0.715	ng/L		06/26/24 16:17	06/30/24 05:19	1
PMPA	<0.536		1.79	0.536	ng/L		06/26/24 16:17	06/30/24 05:19	1
PS Acid	<0.536		1.79	0.536	ng/L		06/26/24 16:17	06/30/24 05:19	1
R-EVE	<0.447		1.79	0.447	ng/L		06/26/24 16:17	06/30/24 05:19	1
R-PSDA	<0.625		1.79	0.625	ng/L		06/26/24 16:17	06/30/24 05:19	1
R-PSDCA	<0.268		1.79	0.268	ng/L		06/26/24 16:17	06/30/24 05:19	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-10:2 FTCA	*101*		*11 - 200*	*06/26/24 16:17*	*06/30/24 05:19*	*1*
13C-10:2 FTUCA	*101*		*10 - 166*	*06/26/24 16:17*	*06/30/24 05:19*	*1*
13C2 PFTeDA	*83*		*10 - 171*	*06/26/24 16:17*	*06/30/24 05:19*	*1*
13C2-PFDoDA	*93*		*22 - 165*	*06/26/24 16:17*	*06/30/24 05:19*	*1*
13C3 HFPO-DA	*105*		*13 - 170*	*06/26/24 16:17*	*06/30/24 05:19*	*1*
13C3 PFBS	*126*		*34 - 200*	*06/26/24 16:17*	*06/30/24 05:19*	*1*
13C3 PFHxS	*101*		*48 - 169*	*06/26/24 16:17*	*06/30/24 05:19*	*1*
13C3-PFPrA	*62*		*21 - 157*	*06/26/24 16:17*	*06/30/24 05:19*	*1*
13C4 PFBA	*110*		*22 - 174*	*06/26/24 16:17*	*06/30/24 05:19*	*1*
13C4 PFHpA	*103*		*40 - 165*	*06/26/24 16:17*	*06/30/24 05:19*	*1*
13C5 PFHxA	*120*		*28 - 166*	*06/26/24 16:17*	*06/30/24 05:19*	*1*
13C5 PFPeA	*104*		*33 - 196*	*06/26/24 16:17*	*06/30/24 05:19*	*1*
13C6 PFDA	*106*		*53 - 151*	*06/26/24 16:17*	*06/30/24 05:19*	*1*
13C-6:2 FTCA	*122*		*10 - 200*	*06/26/24 16:17*	*06/30/24 05:19*	*1*
13C-6:2 FTUCA	*109*		*10 - 173*	*06/26/24 16:17*	*06/30/24 05:19*	*1*
13C7 PFUnA	*111*		*41 - 163*	*06/26/24 16:17*	*06/30/24 05:19*	*1*
13C8 FOSA	*90*		*10 - 155*	*06/26/24 16:17*	*06/30/24 05:19*	*1*
13C8 PFOA	*102*		*52 - 153*	*06/26/24 16:17*	*06/30/24 05:19*	*1*
13C8 PFOS	*111*		*59 - 155*	*06/26/24 16:17*	*06/30/24 05:19*	*1*
13C-8:2 FTCA	*114*		*20 - 200*	*06/26/24 16:17*	*06/30/24 05:19*	*1*
13C-8:2 FTUCA	*103*		*18 - 175*	*06/26/24 16:17*	*06/30/24 05:19*	*1*
13C9 PFNA	*94*		*52 - 168*	*06/26/24 16:17*	*06/30/24 05:19*	*1*
d3-NMeFOSAA	*103*		*38 - 168*	*06/26/24 16:17*	*06/30/24 05:19*	*1*
d3-NMePFOSA	*53*		*10 - 130*	*06/26/24 16:17*	*06/30/24 05:19*	*1*
d5-NEtFOSAA	*109*		*34 - 181*	*06/26/24 16:17*	*06/30/24 05:19*	*1*
d5-NEtPFOSA	*46*		*10 - 130*	*06/26/24 16:17*	*06/30/24 05:19*	*1*
d7-N-MeFOSE-M	*75*		*10 - 149*	*06/26/24 16:17*	*06/30/24 05:19*	*1*
d9-N-EtFOSE-M	*69*		*10 - 151*	*06/26/24 16:17*	*06/30/24 05:19*	*1*
M2-4:2 FTS	*124*		*35 - 200*	*06/26/24 16:17*	*06/30/24 05:19*	*1*
M2-6:2 FTS	*109*		*40 - 200*	*06/26/24 16:17*	*06/30/24 05:19*	*1*
M2-8:2 FTS	*110*		*37 - 200*	*06/26/24 16:17*	*06/30/24 05:19*	*1*

Client Sample ID: 003

Date Collected: 06/03/24 16:38
Date Received: 06/08/24 09:35

Lab Sample ID: 410-175226-4

Matrix: Water

Method: ELLE - Lancaster SOP - SOP T-SSG-WI7750

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
10:2 FTOH-2-Perfluorodecyl ethanol	<0.247	H cn	0.823	0.247	ug/L		06/13/24 08:24	06/20/24 19:26	1
8:2 FTOH-2-Perfluorooctyl ethanol	<0.165	H cn	0.823	0.165	ug/L		06/13/24 08:24	06/20/24 19:26	1
7:2 FTOH-1-Perfluoroheptyl ethanol	<0.165	H *1 cn	0.823	0.165	ug/L		06/13/24 08:24	06/20/24 19:26	1
6:2 FTOH-2-Perfluorohexyl ethanol	<0.165	H cn	0.823	0.165	ug/L		06/13/24 08:24	06/20/24 19:26	1
4:2 FTOH-2-Perfluorobutyl ethanol	<0.165	H *1 cn	0.823	0.165	ug/L		06/13/24 08:24	06/20/24 19:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Perfluorooctyl-[1,1-2H2]-[1,2-13C2]-ethanol(8:2)	*55*	*cn*	*14 - 120*	*06/13/24 08:24*	*06/20/24 19:26*	*1*
2-Perfluorodecyl-[1,1-2H2]-[1,2-13C2]-ethanol(10:2)	*101*	*cn*	*43 - 151*	*06/13/24 08:24*	*06/20/24 19:26*	*1*

Method: EPA 537 IDA - EPA 537 Isotope Dilution

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
10:2 Fluorotelomer sulfonic acid	<0.673		1.68	0.673	ng/L		06/26/24 16:17	06/30/24 05:32	1
10:2 FTCA	<0.421		1.68	0.421	ng/L		06/26/24 16:17	06/30/24 05:32	1
10:2 FTUCA	<0.337		1.68	0.337	ng/L		06/26/24 16:17	06/30/24 05:32	1
11Cl-PF3OUdS	<0.421		1.68	0.421	ng/L		06/26/24 16:17	06/30/24 05:32	1
3:3 FTCA	<0.421		1.68	0.421	ng/L		06/26/24 16:17	06/30/24 05:32	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.421		1.68	0.421	ng/L		06/26/24 16:17	06/30/24 05:32	1
4:2 Fluorotelomer sulfonic acid	<0.421		1.68	0.421	ng/L		06/26/24 16:17	06/30/24 05:32	1
5:3 FTCA	<0.421		1.68	0.421	ng/L		06/26/24 16:17	06/30/24 05:32	1
6:2 Fluorotelomer sulfonic acid	<0.421		1.68	0.421	ng/L		06/26/24 16:17	06/30/24 05:32	1
6:2 FTCA	<0.589		1.68	0.589	ng/L		06/26/24 16:17	06/30/24 05:32	1
6:2 FTUCA	<0.337		1.68	0.337	ng/L		06/26/24 16:17	06/30/24 05:32	1
7:3 FTCA	<0.926		1.68	0.926	ng/L		06/26/24 16:17	06/30/24 05:32	1
8:2 Fluorotelomer sulfonic acid	<0.505		1.68	0.505	ng/L		06/26/24 16:17	06/30/24 05:32	1
8:2 FTCA	<0.337		1.68	0.337	ng/L		06/26/24 16:17	06/30/24 05:32	1
8:2 FTUCA	<0.337		1.68	0.337	ng/L		06/26/24 16:17	06/30/24 05:32	1
9Cl-PF3ONS	<0.421		1.68	0.421	ng/L		06/26/24 16:17	06/30/24 05:32	1
EVE Acid	<0.421		1.68	0.421	ng/L		06/26/24 16:17	06/30/24 05:32	1
HFPODA	**0.715**	**J B cn**	1.68	0.337	ng/L		06/26/24 16:17	06/30/24 05:32	1
Hydro-EVE Acid	<0.421		1.68	0.421	ng/L		06/26/24 16:17	06/30/24 05:32	1
Hydrolyzed PSDA	<0.337		1.68	0.337	ng/L		06/26/24 16:17	06/30/24 05:32	1
Hydro-PS Acid	<0.421		1.68	0.421	ng/L		06/26/24 16:17	06/30/24 05:32	1
MTP	<0.505		1.68	0.505	ng/L		06/26/24 16:17	06/30/24 05:32	1
NEtFOSA	<0.337		1.68	0.337	ng/L		06/26/24 16:17	06/30/24 05:32	1
NEtFOSAA	<0.421		1.68	0.421	ng/L		06/26/24 16:17	06/30/24 05:32	1
NEtFOSE	<0.337		1.68	0.337	ng/L		06/26/24 16:17	06/30/24 05:32	1
NMeFOSA	<0.589		1.68	0.589	ng/L		06/26/24 16:17	06/30/24 05:32	1
NMeFOSAA	<0.337		1.68	0.337	ng/L		06/26/24 16:17	06/30/24 05:32	1
NMeFOSE	<0.337		1.68	0.337	ng/L		06/26/24 16:17	06/30/24 05:32	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.253		1.68	0.253	ng/L		06/26/24 16:17	06/30/24 05:32	1
NVHOS	<0.337		1.68	0.337	ng/L		06/26/24 16:17	06/30/24 05:32	1
PEPA	<0.505		1.68	0.505	ng/L		06/26/24 16:17	06/30/24 05:32	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.253		1.68	0.253	ng/L		06/26/24 16:17	06/30/24 05:32	1
Perfluoro-3,5,7,9,11-pentaoxadodecanoic acid	<0.421		1.68	0.421	ng/L		06/26/24 16:17	06/30/24 05:32	1

Client: Eastern Research Group, Inc.
Project/Site: SDWA Region 9 - ERG

Job ID: 410-175226-1

Client Sample ID: 003
Date Collected: 06/03/24 16:38
Date Received: 06/08/24 09:35

Lab Sample ID: 410-175226-4
Matrix: Water

Method: EPA 537 IDA - EPA 537 Isotope Dilution (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.253		1.68	0.253	ng/L		06/26/24 16:17	06/30/24 05:32	1
Perfluoro-4-isopropoxybutanoic acid (PFIpOBA)	<0.421		1.68	0.421	ng/L		06/26/24 16:17	06/30/24 05:32	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.253		1.68	0.253	ng/L		06/26/24 16:17	06/30/24 05:32	1
Perfluorobutanesulfonic acid (PFBS)	<0.253		1.68	0.253	ng/L		06/26/24 16:17	06/30/24 05:32	1
Perfluorobutanoic acid (PFBA)	<0.842		1.68	0.842	ng/L		06/26/24 16:17	06/30/24 05:32	1
Perfluorodecanesulfonic acid (PFDS)	<0.253		1.68	0.253	ng/L		06/26/24 16:17	06/30/24 05:32	1
Perfluorodecanoic acid (PFDA)	<0.253		1.68	0.253	ng/L		06/26/24 16:17	06/30/24 05:32	1
Perfluorododecanesulfonic acid (PFDoS)	<0.253		1.68	0.253	ng/L		06/26/24 16:17	06/30/24 05:32	1
Perfluorododecanoic acid (PFDoA)	<0.337		1.68	0.337	ng/L		06/26/24 16:17	06/30/24 05:32	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.253		1.68	0.253	ng/L		06/26/24 16:17	06/30/24 05:32	1
Perfluoroheptanoic acid (PFHpA)	<0.253		1.68	0.253	ng/L		06/26/24 16:17	06/30/24 05:32	1
Perfluorohexanesulfonic acid (PFHxS)	<0.168		1.68	0.168	ng/L		06/26/24 16:17	06/30/24 05:32	1
Perfluorohexanoic acid (PFHxA)	<0.842		1.68	0.842	ng/L		06/26/24 16:17	06/30/24 05:32	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.421		1.68	0.421	ng/L		06/26/24 16:17	06/30/24 05:32	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.421		1.68	0.421	ng/L		06/26/24 16:17	06/30/24 05:32	1
Perfluorononanesulfonic acid (PFNS)	<0.253		1.68	0.253	ng/L		06/26/24 16:17	06/30/24 05:32	1
Perfluorononanoic acid (PFNA)	<0.168		1.68	0.168	ng/L		06/26/24 16:17	06/30/24 05:32	1
Perfluorooctanesulfonamide (PFOSA)	**1.66**	**J**	1.68	0.253	ng/L		06/26/24 16:17	06/30/24 05:32	1
Perfluorooctanesulfonic acid (PFOS)	<0.421		1.68	0.421	ng/L		06/26/24 16:17	06/30/24 05:32	1
Perfluorooctanoic acid (PFOA)	**0.286**	**J**	1.68	0.253	ng/L		06/26/24 16:17	06/30/24 05:32	1
Perfluoropentanesulfonic acid (PFPeS)	<0.253		1.68	0.253	ng/L		06/26/24 16:17	06/30/24 05:32	1
Perfluoropentanoic acid (PFPeA)	<0.253		1.68	0.253	ng/L		06/26/24 16:17	06/30/24 05:32	1
Perfluoropropanesulfonic acid	<0.337		1.68	0.337	ng/L		06/26/24 16:17	06/30/24 05:32	1
Perfluoropropionic acid (PFPrA)	<4.21		8.42	4.21	ng/L		06/26/24 16:17	06/30/24 05:32	1
Perfluorotetradecanoic acid (PFTeDA)	<0.337		1.68	0.337	ng/L		06/26/24 16:17	06/30/24 05:32	1
Perfluorotridecanoic acid (PFTrDA)	<0.337		1.68	0.337	ng/L		06/26/24 16:17	06/30/24 05:32	1
Perfluoroundecanoic acid (PFUnA)	<0.253		1.68	0.253	ng/L		06/26/24 16:17	06/30/24 05:32	1
PFECHS	<0.253		1.68	0.253	ng/L		06/26/24 16:17	06/30/24 05:32	1
PFMOAA	<0.253		1.68	0.253	ng/L		06/26/24 16:17	06/30/24 05:32	1
PFO2HxA	<0.589		1.68	0.589	ng/L		06/26/24 16:17	06/30/24 05:32	1
PFO3OA	<0.842		1.68	0.842	ng/L		06/26/24 16:17	06/30/24 05:32	1
PFO4DA	<0.673		1.68	0.673	ng/L		06/26/24 16:17	06/30/24 05:32	1
PMPA	<0.505		1.68	0.505	ng/L		06/26/24 16:17	06/30/24 05:32	1
PS Acid	<0.505		1.68	0.505	ng/L		06/26/24 16:17	06/30/24 05:32	1
R-EVE	<0.421		1.68	0.421	ng/L		06/26/24 16:17	06/30/24 05:32	1
R-PSDA	<0.589		1.68	0.589	ng/L		06/26/24 16:17	06/30/24 05:32	1
R-PSDCA	<0.253		1.68	0.253	ng/L		06/26/24 16:17	06/30/24 05:32	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-10:2 FTCA	*120*		*11 - 200*	*06/26/24 16:17*	*06/30/24 05:32*	*1*
13C-10:2 FTUCA	*114*		*10 - 166*	*06/26/24 16:17*	*06/30/24 05:32*	*1*
13C2 PFTeDA	*90*		*10 - 171*	*06/26/24 16:17*	*06/30/24 05:32*	*1*
13C2-PFDoDA	*107*		*22 - 165*	*06/26/24 16:17*	*06/30/24 05:32*	*1*

Client Sample ID: 003

Lab Sample ID: 410-175226-4

Date Collected: 06/03/24 16:38

Matrix: Water

Date Received: 06/08/24 09:35

Method: EPA 537 IDA - EPA 537 Isotope Dilution (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	127		13 - 170	06/26/24 16:17	06/30/24 05:32	1
13C3 PFBS	142		34 - 200	06/26/24 16:17	06/30/24 05:32	1
13C3 PFHxS	121		48 - 169	06/26/24 16:17	06/30/24 05:32	1
13C3-PFPrA	51		21 - 157	06/26/24 16:17	06/30/24 05:32	1
13C4 PFBA	119		22 - 174	06/26/24 16:17	06/30/24 05:32	1
13C4 PFHpA	127		40 - 165	06/26/24 16:17	06/30/24 05:32	1
13C5 PFHxA	133		28 - 166	06/26/24 16:17	06/30/24 05:32	1
13C5 PFPeA	119		33 - 196	06/26/24 16:17	06/30/24 05:32	1
13C6 PFDA	115		53 - 151	06/26/24 16:17	06/30/24 05:32	1
13C-6:2 FTCA	136		10 - 200	06/26/24 16:17	06/30/24 05:32	1
13C-6:2 FTUCA	120		10 - 173	06/26/24 16:17	06/30/24 05:32	1
13C7 PFUnA	113		41 - 163	06/26/24 16:17	06/30/24 05:32	1
13C8 FOSA	94		10 - 155	06/26/24 16:17	06/30/24 05:32	1
13C8 PFOA	120		52 - 153	06/26/24 16:17	06/30/24 05:32	1
13C8 PFOS	126		59 - 155	06/26/24 16:17	06/30/24 05:32	1
13C-8:2 FTCA	121		20 - 200	06/26/24 16:17	06/30/24 05:32	1
13C-8:2 FTUCA	111		18 - 175	06/26/24 16:17	06/30/24 05:32	1
13C9 PFNA	114		52 - 168	06/26/24 16:17	06/30/24 05:32	1
d3-NMeFOSAA	105		38 - 168	06/26/24 16:17	06/30/24 05:32	1
d3-NMePFOSA	47		10 - 130	06/26/24 16:17	06/30/24 05:32	1
d5-NEtFOSAA	111		34 - 181	06/26/24 16:17	06/30/24 05:32	1
d5-NEtPFOSA	42		10 - 130	06/26/24 16:17	06/30/24 05:32	1
d7-N-MeFOSE-M	78		10 - 149	06/26/24 16:17	06/30/24 05:32	1
d9-N-EtFOSE-M	71		10 - 151	06/26/24 16:17	06/30/24 05:32	1
M2-4:2 FTS	150		35 - 200	06/26/24 16:17	06/30/24 05:32	1
M2-6:2 FTS	132		40 - 200	06/26/24 16:17	06/30/24 05:32	1
M2-8:2 FTS	118		37 - 200	06/26/24 16:17	06/30/24 05:32	1

Client Sample ID: 004-D

Lab Sample ID: 410-175226-5

Date Collected: 06/04/24 09:46

Matrix: Water

Date Received: 06/08/24 09:35

Method: ELLE - Lancaster SOP - SOP T-SSG-WI7750

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
10:2 FTOH-2-Perfluorodecyl ethanol	<0.285	H cn	0.949	0.285	ug/L		06/13/24 08:24	06/20/24 19:40	1
8:2 FTOH-2-Perfluorooctyl ethanol	<0.190	H cn	0.949	0.190	ug/L		06/13/24 08:24	06/20/24 19:40	1
7:2 FTOH-1-Perfluoroheptyl ethanol	<0.190	H *1 cn	0.949	0.190	ug/L		06/13/24 08:24	06/20/24 19:40	1
6:2 FTOH-2-Perfluorohexyl ethanol	<0.190	H cn	0.949	0.190	ug/L		06/13/24 08:24	06/20/24 19:40	1
4:2 FTOH-2-Perfluorobutyl ethanol	<0.190	H *1 cn	0.949	0.190	ug/L		06/13/24 08:24	06/20/24 19:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Perfluorooctyl-[1,1-2H2]-[1,2-13C2]-ethanol(8:2)	62	cn	14 - 120	06/13/24 08:24	06/20/24 19:40	1
2-Perfluorodecyl-[1,1-2H2]-[1,2-13C2]-ethanol(10:2)	111	cn	43 - 151	06/13/24 08:24	06/20/24 19:40	1

Method: EPA 537 IDA - EPA 537 Isotope Dilution

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
10:2 Fluorotelomer sulfonic acid	<0.844	cn	2.11	0.844	ng/L		06/27/24 14:30	07/05/24 23:54	1
10:2 FTCA	<0.527	cn	2.11	0.527	ng/L		06/27/24 14:30	07/05/24 23:54	1
10:2 FTUCA	<0.422	cn	2.11	0.422	ng/L		06/27/24 14:30	07/05/24 23:54	1

Client Sample ID: 004-D
Date Collected: 06/04/24 09:46
Date Received: 06/08/24 09:35

Lab Sample ID: 410-175226-5
Matrix: Water

Method: EPA 537 IDA - EPA 537 Isotope Dilution (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
11Cl-PF3OUdS	<0.527	cn	2.11	0.527	ng/L		06/27/24 14:30	07/05/24 23:54	1
3:3 FTCA	<0.527	cn	2.11	0.527	ng/L		06/27/24 14:30	07/05/24 23:54	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.527	cn	2.11	0.527	ng/L		06/27/24 14:30	07/05/24 23:54	1
4:2 Fluorotelomer sulfonic acid	<0.527	cn	2.11	0.527	ng/L		06/27/24 14:30	07/05/24 23:54	1
5:3 FTCA	<0.527	cn	2.11	0.527	ng/L		06/27/24 14:30	07/05/24 23:54	1
6:2 Fluorotelomer sulfonic acid	<0.527	cn	2.11	0.527	ng/L		06/27/24 14:30	07/05/24 23:54	1
6:2 FTCA	<0.738	cn	2.11	0.738	ng/L		06/27/24 14:30	07/05/24 23:54	1
6:2 FTUCA	<0.422	cn	2.11	0.422	ng/L		06/27/24 14:30	07/05/24 23:54	1
7:3 FTCA	<1.16	cn	2.11	1.16	ng/L		06/27/24 14:30	07/05/24 23:54	1
8:2 Fluorotelomer sulfonic acid	<0.633	cn	2.11	0.633	ng/L		06/27/24 14:30	07/05/24 23:54	1
8:2 FTCA	<0.422	cn	2.11	0.422	ng/L		06/27/24 14:30	07/05/24 23:54	1
8:2 FTUCA	<0.422	cn	2.11	0.422	ng/L		06/27/24 14:30	07/05/24 23:54	1
9Cl-PF3ONS	<0.527	cn	2.11	0.527	ng/L		06/27/24 14:30	07/05/24 23:54	1
EVE Acid	<0.527	cn	2.11	0.527	ng/L		06/27/24 14:30	07/05/24 23:54	1
HFPODA	**0.491**	**J cn**	2.11	0.422	ng/L		06/27/24 14:30	07/05/24 23:54	1
Hydro-EVE Acid	<0.527	cn	2.11	0.527	ng/L		06/27/24 14:30	07/05/24 23:54	1
Hydrolyzed PSDA	<0.422	cn	2.11	0.422	ng/L		06/27/24 14:30	07/05/24 23:54	1
Hydro-PS Acid	<0.527	cn	2.11	0.527	ng/L		06/27/24 14:30	07/05/24 23:54	1
MTP	<0.633	cn	2.11	0.633	ng/L		06/27/24 14:30	07/05/24 23:54	1
NEtFOSA	<0.422	cn	2.11	0.422	ng/L		06/27/24 14:30	07/05/24 23:54	1
NEtFOSAA	<0.527	cn	2.11	0.527	ng/L		06/27/24 14:30	07/05/24 23:54	1
NEtFOSE	<0.422	cn	2.11	0.422	ng/L		06/27/24 14:30	07/05/24 23:54	1
NMeFOSA	<0.738	cn	2.11	0.738	ng/L		06/27/24 14:30	07/05/24 23:54	1
NMeFOSAA	<0.422	cn	2.11	0.422	ng/L		06/27/24 14:30	07/05/24 23:54	1
NMeFOSE	<0.422	cn	2.11	0.422	ng/L		06/27/24 14:30	07/05/24 23:54	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.316	cn	2.11	0.316	ng/L		06/27/24 14:30	07/05/24 23:54	1
NVHOS	<0.422	cn	2.11	0.422	ng/L		06/27/24 14:30	07/05/24 23:54	1
PEPA	<0.633	cn	2.11	0.633	ng/L		06/27/24 14:30	07/05/24 23:54	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.316	cn	2.11	0.316	ng/L		06/27/24 14:30	07/05/24 23:54	1
Perfluoro-3,5,7,9,11-pentaoxadodecanoic acid	<0.527	cn	2.11	0.527	ng/L		06/27/24 14:30	07/05/24 23:54	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.316	cn	2.11	0.316	ng/L		06/27/24 14:30	07/05/24 23:54	1
Perfluoro-4-isopropoxybutanoic acid (PFIpOBA)	<0.527	cn	2.11	0.527	ng/L		06/27/24 14:30	07/05/24 23:54	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.316	cn	2.11	0.316	ng/L		06/27/24 14:30	07/05/24 23:54	1
Perfluorobutanesulfonic acid (PFBS)	**3.47**	**cn**	2.11	0.316	ng/L		06/27/24 14:30	07/05/24 23:54	1
Perfluorobutanoic acid (PFBA)	**2.46**	**cn**	2.11	1.05	ng/L		06/27/24 14:30	07/05/24 23:54	1
Perfluorodecanesulfonic acid (PFDS)	<0.316	cn	2.11	0.316	ng/L		06/27/24 14:30	07/05/24 23:54	1
Perfluorodecanoic acid (PFDA)	<0.316	cn	2.11	0.316	ng/L		06/27/24 14:30	07/05/24 23:54	1
Perfluorododecanesulfonic acid (PFDoS)	<0.316	cn	2.11	0.316	ng/L		06/27/24 14:30	07/05/24 23:54	1
Perfluorododecanoic acid (PFDoA)	<0.422	cn	2.11	0.422	ng/L		06/27/24 14:30	07/05/24 23:54	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.316	cn	2.11	0.316	ng/L		06/27/24 14:30	07/05/24 23:54	1
Perfluoroheptanoic acid (PFHpA)	**2.88**	**cn**	2.11	0.316	ng/L		06/27/24 14:30	07/05/24 23:54	1

Client Sample ID: 004-D
Date Collected: 06/04/24 09:46
Date Received: 06/08/24 09:35

Lab Sample ID: 410-175226-5
Matrix: Water

Method: EPA 537 IDA - EPA 537 Isotope Dilution (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanesulfonic acid (PFHxS)	**4.41**	**cn**	2.11	0.211	ng/L		06/27/24 14:30	07/05/24 23:54	1
Perfluorohexanoic acid (PFHxA)	**5.23**	**cn**	2.11	1.05	ng/L		06/27/24 14:30	07/05/24 23:54	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.527	cn	2.11	0.527	ng/L		06/27/24 14:30	07/05/24 23:54	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.527	cn	2.11	0.527	ng/L		06/27/24 14:30	07/05/24 23:54	1
Perfluorononanesulfonic acid (PFNS)	<0.316	cn	2.11	0.316	ng/L		06/27/24 14:30	07/05/24 23:54	1
Perfluorononanoic acid (PFNA)	**0.418**	**J cn**	2.11	0.211	ng/L		06/27/24 14:30	07/05/24 23:54	1
Perfluorooctanesulfonamide (PFOSA)	**7.26**	**cn**	2.11	0.316	ng/L		06/27/24 14:30	07/05/24 23:54	1
Perfluorooctanesulfonic acid (PFOS)	**7.59**	**cn**	2.11	0.527	ng/L		06/27/24 14:30	07/05/24 23:54	1
Perfluorooctanoic acid (PFOA)	**5.44**	**cn**	2.11	0.316	ng/L		06/27/24 14:30	07/05/24 23:54	1
Perfluoropentanesulfonic acid (PFPeS)	**0.607**	**J cn**	2.11	0.316	ng/L		06/27/24 14:30	07/05/24 23:54	1
Perfluoropentanoic acid (PFPeA)	**6.56**	**cn**	2.11	0.316	ng/L		06/27/24 14:30	07/05/24 23:54	1
Perfluoropropanesulfonic acid	<0.422	cn	2.11	0.422	ng/L		06/27/24 14:30	07/05/24 23:54	1
Perfluoropropionic acid (PFPrA)	**10.6**	**cn**	10.5	5.27	ng/L		06/27/24 14:30	07/05/24 23:54	1
Perfluorotetradecanoic acid (PFTeDA)	<0.422	cn	2.11	0.422	ng/L		06/27/24 14:30	07/05/24 23:54	1
Perfluorotridecanoic acid (PFTrDA)	<0.422	cn	2.11	0.422	ng/L		06/27/24 14:30	07/05/24 23:54	1
Perfluoroundecanoic acid (PFUnA)	<0.316	cn	2.11	0.316	ng/L		06/27/24 14:30	07/05/24 23:54	1
PFECHS	<0.316	cn	2.11	0.316	ng/L		06/27/24 14:30	07/05/24 23:54	1
PFMOAA	<0.316	cn	2.11	0.316	ng/L		06/27/24 14:30	07/05/24 23:54	1
PFO2HxA	<0.738	cn	2.11	0.738	ng/L		06/27/24 14:30	07/05/24 23:54	1
PFO3OA	<1.05	cn	2.11	1.05	ng/L		06/27/24 14:30	07/05/24 23:54	1
PFO4DA	<0.844	cn	2.11	0.844	ng/L		06/27/24 14:30	07/05/24 23:54	1
PMPA	<0.633	cn	2.11	0.633	ng/L		06/27/24 14:30	07/05/24 23:54	1
PS Acid	<0.633	cn	2.11	0.633	ng/L		06/27/24 14:30	07/05/24 23:54	1
R-EVE	<0.527	cn	2.11	0.527	ng/L		06/27/24 14:30	07/05/24 23:54	1
R-PSDA	<0.738	cn	2.11	0.738	ng/L		06/27/24 14:30	07/05/24 23:54	1
R-PSDCA	<0.316	cn	2.11	0.316	ng/L		06/27/24 14:30	07/05/24 23:54	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-10:2 FTCA	*80*	*cn*	*11 - 200*	*06/27/24 14:30*	*07/05/24 23:54*	*1*
13C-10:2 FTUCA	*85*	*cn*	*10 - 166*	*06/27/24 14:30*	*07/05/24 23:54*	*1*
13C2 PFTeDA	*75*	*cn*	*10 - 171*	*06/27/24 14:30*	*07/05/24 23:54*	*1*
13C2-PFDoDA	*75*	*cn*	*22 - 165*	*06/27/24 14:30*	*07/05/24 23:54*	*1*
13C3 HFPO-DA	*76*	*cn*	*13 - 170*	*06/27/24 14:30*	*07/05/24 23:54*	*1*
13C3 PFBS	*94*	*cn*	*34 - 200*	*06/27/24 14:30*	*07/05/24 23:54*	*1*
13C3 PFHxS	*92*	*cn*	*48 - 169*	*06/27/24 14:30*	*07/05/24 23:54*	*1*
13C3-PFPrA	*28*	*cn*	*21 - 157*	*06/27/24 14:30*	*07/05/24 23:54*	*1*
13C4 PFBA	*89*	*cn*	*22 - 174*	*06/27/24 14:30*	*07/05/24 23:54*	*1*
13C4 PFHpA	*86*	*cn*	*40 - 165*	*06/27/24 14:30*	*07/05/24 23:54*	*1*
13C5 PFHxA	*83*	*cn*	*28 - 166*	*06/27/24 14:30*	*07/05/24 23:54*	*1*
13C5 PFPeA	*88*	*cn*	*33 - 196*	*06/27/24 14:30*	*07/05/24 23:54*	*1*
13C6 PFDA	*88*	*cn*	*53 - 151*	*06/27/24 14:30*	*07/05/24 23:54*	*1*
13C-6:2 FTCA	*87*	*cn*	*10 - 200*	*06/27/24 14:30*	*07/05/24 23:54*	*1*
13C-6:2 FTUCA	*84*	*cn*	*10 - 173*	*06/27/24 14:30*	*07/05/24 23:54*	*1*
13C7 PFUnA	*88*	*cn*	*41 - 163*	*06/27/24 14:30*	*07/05/24 23:54*	*1*
13C8 FOSA	*83*	*cn*	*10 - 155*	*06/27/24 14:30*	*07/05/24 23:54*	*1*
13C8 PFOA	*92*	*cn*	*52 - 153*	*06/27/24 14:30*	*07/05/24 23:54*	*1*

Client Sample ID: 004-D

Lab Sample ID: 410-175226-5

Date Collected: 06/04/24 09:46

Matrix: Water

Date Received: 06/08/24 09:35

Method: EPA 537 IDA - EPA 537 Isotope Dilution (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	87	cn	59 - 155	06/27/24 14:30	07/05/24 23:54	1
13C-8:2 FTCA	85	cn	20 - 200	06/27/24 14:30	07/05/24 23:54	1
13C-8:2 FTUCA	85	cn	18 - 175	06/27/24 14:30	07/05/24 23:54	1
13C9 PFNA	89	cn	52 - 168	06/27/24 14:30	07/05/24 23:54	1
d3-NMeFOSAA	79	cn	38 - 168	06/27/24 14:30	07/05/24 23:54	1
d3-NMePFOSA	42	cn	10 - 130	06/27/24 14:30	07/05/24 23:54	1
d5-NEtFOSAA	93	cn	34 - 181	06/27/24 14:30	07/05/24 23:54	1
d5-NEtPFOSA	36	cn	10 - 130	06/27/24 14:30	07/05/24 23:54	1
d7-N-MeFOSE-M	76	cn	10 - 149	06/27/24 14:30	07/05/24 23:54	1
d9-N-EtFOSE-M	71	cn	10 - 151	06/27/24 14:30	07/05/24 23:54	1
M2-4:2 FTS	89	cn	35 - 200	06/27/24 14:30	07/05/24 23:54	1
M2-6:2 FTS	115	cn	40 - 200	06/27/24 14:30	07/05/24 23:54	1
M2-8:2 FTS	92	cn	37 - 200	06/27/24 14:30	07/05/24 23:54	1

Client Sample ID: 004 FB

Lab Sample ID: 410-175226-6

Date Collected: 06/04/24 09:46

Matrix: Water

Date Received: 06/08/24 09:35

Method: ELLE - Lancaster SOP - SOP T-SSG-WI7750

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
10:2 FTOH-2-Perfluorodecyl ethanol	<0.271	H cn	0.904	0.271	ug/L		06/13/24 08:24	06/24/24 15:00	1
8:2 FTOH-2-Perfluorooctyl ethanol	<0.181	H cn	0.904	0.181	ug/L		06/13/24 08:24	06/24/24 15:00	1
7:2 FTOH-1-Perfluoroheptyl ethanol	<0.181	H *1 cn	0.904	0.181	ug/L		06/13/24 08:24	06/24/24 15:00	1
6:2 FTOH-2-Perfluorohexyl ethanol	<0.181	H cn	0.904	0.181	ug/L		06/13/24 08:24	06/24/24 15:00	1
4:2 FTOH-2-Perfluorobutyl ethanol	<0.181	H *1 cn	0.904	0.181	ug/L		06/13/24 08:24	06/24/24 15:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Perfluorooctyl-[1,1-2H2]-[1,2-13C2]-ethanol(8:2)	54	cn	14 - 120	06/13/24 08:24	06/24/24 15:00	1
2-Perfluorodecyl-[1,1-2H2]-[1,2-13C2]-ethanol(10:2)	89	cn	43 - 151	06/13/24 08:24	06/24/24 15:00	1

Method: EPA 537 IDA - EPA 537 Isotope Dilution

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
10:2 Fluorotelomer sulfonic acid	<0.705	cn	1.76	0.705	ng/L		06/27/24 14:30	07/06/24 00:07	1
10:2 FTCA	<0.441	cn	1.76	0.441	ng/L		06/27/24 14:30	07/06/24 00:07	1
10:2 FTUCA	<0.352	cn	1.76	0.352	ng/L		06/27/24 14:30	07/06/24 00:07	1
11Cl-PF3OUdS	<0.441	cn	1.76	0.441	ng/L		06/27/24 14:30	07/06/24 00:07	1
3:3 FTCA	<0.441	cn	1.76	0.441	ng/L		06/27/24 14:30	07/06/24 00:07	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.441	cn	1.76	0.441	ng/L		06/27/24 14:30	07/06/24 00:07	1
4:2 Fluorotelomer sulfonic acid	<0.441	cn	1.76	0.441	ng/L		06/27/24 14:30	07/06/24 00:07	1
5:3 FTCA	<0.441	cn	1.76	0.441	ng/L		06/27/24 14:30	07/06/24 00:07	1
6:2 Fluorotelomer sulfonic acid	<0.441	cn	1.76	0.441	ng/L		06/27/24 14:30	07/06/24 00:07	1
6:2 FTCA	<0.617	cn	1.76	0.617	ng/L		06/27/24 14:30	07/06/24 00:07	1
6:2 FTUCA	<0.352	cn	1.76	0.352	ng/L		06/27/24 14:30	07/06/24 00:07	1
7:3 FTCA	<0.969	cn	1.76	0.969	ng/L		06/27/24 14:30	07/06/24 00:07	1
8:2 Fluorotelomer sulfonic acid	<0.529	cn	1.76	0.529	ng/L		06/27/24 14:30	07/06/24 00:07	1
8:2 FTCA	<0.352	cn	1.76	0.352	ng/L		06/27/24 14:30	07/06/24 00:07	1
8:2 FTUCA	<0.352	cn	1.76	0.352	ng/L		06/27/24 14:30	07/06/24 00:07	1
9Cl-PF3ONS	<0.441	cn	1.76	0.441	ng/L		06/27/24 14:30	07/06/24 00:07	1

Client Sample ID: 004 FB
Date Collected: 06/04/24 09:46
Date Received: 06/08/24 09:35

Lab Sample ID: 410-175226-6
Matrix: Water

Method: EPA 537 IDA - EPA 537 Isotope Dilution (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
EVE Acid	<0.441	cn	1.76	0.441	ng/L		06/27/24 14:30	07/06/24 00:07	1
HFPODA	<0.352	cn	1.76	0.352	ng/L		06/27/24 14:30	07/06/24 00:07	1
Hydro-EVE Acid	<0.441	cn	1.76	0.441	ng/L		06/27/24 14:30	07/06/24 00:07	1
Hydrolyzed PSDA	<0.352	cn	1.76	0.352	ng/L		06/27/24 14:30	07/06/24 00:07	1
Hydro-PS Acid	<0.441	cn	1.76	0.441	ng/L		06/27/24 14:30	07/06/24 00:07	1
MTP	<0.529	cn	1.76	0.529	ng/L		06/27/24 14:30	07/06/24 00:07	1
NEtFOSA	<0.352	cn	1.76	0.352	ng/L		06/27/24 14:30	07/06/24 00:07	1
NEtFOSAA	<0.441	cn	1.76	0.441	ng/L		06/27/24 14:30	07/06/24 00:07	1
NEtFOSE	<0.352	cn	1.76	0.352	ng/L		06/27/24 14:30	07/06/24 00:07	1
NMeFOSA	<0.617	cn	1.76	0.617	ng/L		06/27/24 14:30	07/06/24 00:07	1
NMeFOSAA	<0.352	cn	1.76	0.352	ng/L		06/27/24 14:30	07/06/24 00:07	1
NMeFOSE	<0.352	cn	1.76	0.352	ng/L		06/27/24 14:30	07/06/24 00:07	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.264	cn	1.76	0.264	ng/L		06/27/24 14:30	07/06/24 00:07	1
NVHOS	<0.352	cn	1.76	0.352	ng/L		06/27/24 14:30	07/06/24 00:07	1
PEPA	<0.529	cn	1.76	0.529	ng/L		06/27/24 14:30	07/06/24 00:07	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.264	cn	1.76	0.264	ng/L		06/27/24 14:30	07/06/24 00:07	1
Perfluoro-3,5,7,9,11-pentaoxadodecanoic acid	<0.441	cn	1.76	0.441	ng/L		06/27/24 14:30	07/06/24 00:07	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.264	cn	1.76	0.264	ng/L		06/27/24 14:30	07/06/24 00:07	1
Perfluoro-4-isopropoxybutanoic acid (PFIpOBA)	<0.441	cn	1.76	0.441	ng/L		06/27/24 14:30	07/06/24 00:07	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.264	cn	1.76	0.264	ng/L		06/27/24 14:30	07/06/24 00:07	1
Perfluorobutanesulfonic acid (PFBS)	<0.264	cn	1.76	0.264	ng/L		06/27/24 14:30	07/06/24 00:07	1
Perfluorobutanoic acid (PFBA)	<0.881	cn	1.76	0.881	ng/L		06/27/24 14:30	07/06/24 00:07	1
Perfluorodecanesulfonic acid (PFDS)	<0.264	cn	1.76	0.264	ng/L		06/27/24 14:30	07/06/24 00:07	1
Perfluorodecanoic acid (PFDA)	<0.264	cn	1.76	0.264	ng/L		06/27/24 14:30	07/06/24 00:07	1
Perfluorododecanesulfonic acid (PFDoS)	<0.264	cn	1.76	0.264	ng/L		06/27/24 14:30	07/06/24 00:07	1
Perfluorododecanoic acid (PFDoA)	<0.352	cn	1.76	0.352	ng/L		06/27/24 14:30	07/06/24 00:07	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.264	cn	1.76	0.264	ng/L		06/27/24 14:30	07/06/24 00:07	1
Perfluoroheptanoic acid (PFHpA)	<0.264	cn	1.76	0.264	ng/L		06/27/24 14:30	07/06/24 00:07	1
Perfluorohexanesulfonic acid (PFHxS)	<0.176	cn	1.76	0.176	ng/L		06/27/24 14:30	07/06/24 00:07	1
Perfluorohexanoic acid (PFHxA)	<0.881	cn	1.76	0.881	ng/L		06/27/24 14:30	07/06/24 00:07	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.441	cn	1.76	0.441	ng/L		06/27/24 14:30	07/06/24 00:07	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.441	cn	1.76	0.441	ng/L		06/27/24 14:30	07/06/24 00:07	1
Perfluorononanesulfonic acid (PFNS)	<0.264	cn	1.76	0.264	ng/L		06/27/24 14:30	07/06/24 00:07	1
Perfluorononanoic acid (PFNA)	<0.176	cn	1.76	0.176	ng/L		06/27/24 14:30	07/06/24 00:07	1
Perfluorooctanesulfonamide (PFOSA)	<0.264	cn	1.76	0.264	ng/L		06/27/24 14:30	07/06/24 00:07	1
Perfluorooctanesulfonic acid (PFOS)	<0.441	cn	1.76	0.441	ng/L		06/27/24 14:30	07/06/24 00:07	1
Perfluorooctanoic acid (PFOA)	<0.264	cn	1.76	0.264	ng/L		06/27/24 14:30	07/06/24 00:07	1
Perfluoropentanesulfonic acid (PFPeS)	<0.264	cn	1.76	0.264	ng/L		06/27/24 14:30	07/06/24 00:07	1
Perfluoropentanoic acid (PFPeA)	<0.264	cn	1.76	0.264	ng/L		06/27/24 14:30	07/06/24 00:07	1
Perfluoropropanesulfonic acid	<0.352	cn	1.76	0.352	ng/L		06/27/24 14:30	07/06/24 00:07	1
Perfluoropropionic acid (PFPrA)	<4.41	cn	8.81	4.41	ng/L		06/27/24 14:30	07/06/24 00:07	1

Client: Eastern Research Group, Inc.
Project/Site: SDWA Region 9 - ERG

Job ID: 410-175226-1

Client Sample ID: 004 FB
Date Collected: 06/04/24 09:46
Date Received: 06/08/24 09:35

Lab Sample ID: 410-175226-6
Matrix: Water

Method: EPA 537 IDA - EPA 537 Isotope Dilution (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorotetradecanoic acid (PFTeDA)	<0.352	cn	1.76	0.352	ng/L		06/27/24 14:30	07/06/24 00:07	1
Perfluorotridecanoic acid (PFTrDA)	<0.352	cn	1.76	0.352	ng/L		06/27/24 14:30	07/06/24 00:07	1
Perfluoroundecanoic acid (PFUnA)	<0.264	cn	1.76	0.264	ng/L		06/27/24 14:30	07/06/24 00:07	1
PFECHS	<0.264	cn	1.76	0.264	ng/L		06/27/24 14:30	07/06/24 00:07	1
PFMOAA	<0.264	cn	1.76	0.264	ng/L		06/27/24 14:30	07/06/24 00:07	1
PFO2HxA	<0.617	cn	1.76	0.617	ng/L		06/27/24 14:30	07/06/24 00:07	1
PFO3OA	<0.881	cn	1.76	0.881	ng/L		06/27/24 14:30	07/06/24 00:07	1
PFO4DA	<0.705	cn	1.76	0.705	ng/L		06/27/24 14:30	07/06/24 00:07	1
PMPA	<0.529	cn	1.76	0.529	ng/L		06/27/24 14:30	07/06/24 00:07	1
PS Acid	<0.529	cn	1.76	0.529	ng/L		06/27/24 14:30	07/06/24 00:07	1
R-EVE	<0.441	cn	1.76	0.441	ng/L		06/27/24 14:30	07/06/24 00:07	1
R-PSDA	<0.617	cn	1.76	0.617	ng/L		06/27/24 14:30	07/06/24 00:07	1
R-PSDCA	<0.264	cn	1.76	0.264	ng/L		06/27/24 14:30	07/06/24 00:07	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-10:2 FTCA	*70*	*cn*	*11 - 200*	*06/27/24 14:30*	*07/06/24 00:07*	*1*
13C-10:2 FTUCA	*81*	*cn*	*10 - 166*	*06/27/24 14:30*	*07/06/24 00:07*	*1*
13C2 PFTeDA	*75*	*cn*	*10 - 171*	*06/27/24 14:30*	*07/06/24 00:07*	*1*
13C2-PFDoDA	*75*	*cn*	*22 - 165*	*06/27/24 14:30*	*07/06/24 00:07*	*1*
13C3 HFPO-DA	*76*	*cn*	*13 - 170*	*06/27/24 14:30*	*07/06/24 00:07*	*1*
13C3 PFBS	*90*	*cn*	*34 - 200*	*06/27/24 14:30*	*07/06/24 00:07*	*1*
13C3 PFHxS	*87*	*cn*	*48 - 169*	*06/27/24 14:30*	*07/06/24 00:07*	*1*
13C3-PFPrA	*22*	*cn*	*21 - 157*	*06/27/24 14:30*	*07/06/24 00:07*	*1*
13C4 PFBA	*74*	*cn*	*22 - 174*	*06/27/24 14:30*	*07/06/24 00:07*	*1*
13C4 PFHpA	*83*	*cn*	*40 - 165*	*06/27/24 14:30*	*07/06/24 00:07*	*1*
13C5 PFHxA	*83*	*cn*	*28 - 166*	*06/27/24 14:30*	*07/06/24 00:07*	*1*
13C5 PFPeA	*88*	*cn*	*33 - 196*	*06/27/24 14:30*	*07/06/24 00:07*	*1*
13C6 PFDA	*88*	*cn*	*53 - 151*	*06/27/24 14:30*	*07/06/24 00:07*	*1*
13C-6:2 FTCA	*86*	*cn*	*10 - 200*	*06/27/24 14:30*	*07/06/24 00:07*	*1*
13C-6:2 FTUCA	*82*	*cn*	*10 - 173*	*06/27/24 14:30*	*07/06/24 00:07*	*1*
13C7 PFUnA	*88*	*cn*	*41 - 163*	*06/27/24 14:30*	*07/06/24 00:07*	*1*
13C8 FOSA	*85*	*cn*	*10 - 155*	*06/27/24 14:30*	*07/06/24 00:07*	*1*
13C8 PFOA	*85*	*cn*	*52 - 153*	*06/27/24 14:30*	*07/06/24 00:07*	*1*
13C8 PFOS	*89*	*cn*	*59 - 155*	*06/27/24 14:30*	*07/06/24 00:07*	*1*
13C-8:2 FTCA	*81*	*cn*	*20 - 200*	*06/27/24 14:30*	*07/06/24 00:07*	*1*
13C-8:2 FTUCA	*85*	*cn*	*18 - 175*	*06/27/24 14:30*	*07/06/24 00:07*	*1*
13C9 PFNA	*94*	*cn*	*52 - 168*	*06/27/24 14:30*	*07/06/24 00:07*	*1*
d3-NMeFOSAA	*74*	*cn*	*38 - 168*	*06/27/24 14:30*	*07/06/24 00:07*	*1*
d3-NMePFOSA	*46*	*cn*	*10 - 130*	*06/27/24 14:30*	*07/06/24 00:07*	*1*
d5-NEtFOSAA	*88*	*cn*	*34 - 181*	*06/27/24 14:30*	*07/06/24 00:07*	*1*
d5-NEtPFOSA	*43*	*cn*	*10 - 130*	*06/27/24 14:30*	*07/06/24 00:07*	*1*
d7-N-MeFOSE-M	*75*	*cn*	*10 - 149*	*06/27/24 14:30*	*07/06/24 00:07*	*1*
d9-N-EtFOSE-M	*68*	*cn*	*10 - 151*	*06/27/24 14:30*	*07/06/24 00:07*	*1*
M2-4:2 FTS	*83*	*cn*	*35 - 200*	*06/27/24 14:30*	*07/06/24 00:07*	*1*
M2-6:2 FTS	*104*	*cn*	*40 - 200*	*06/27/24 14:30*	*07/06/24 00:07*	*1*
M2-8:2 FTS	*94*	*cn*	*37 - 200*	*06/27/24 14:30*	*07/06/24 00:07*	*1*

Client Sample ID: 004
Date Collected: 06/04/24 09:54
Date Received: 06/08/24 09:35

Lab Sample ID: 410-175226-7
Matrix: Water

Method: ELLE - Lancaster SOP - SOP T-SSG-WI7750

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
10:2 FTOH-2-Perfluorodecyl ethanol	<0.300	H cn	0.999	0.300	ug/L		06/13/24 08:24	06/24/24 15:13	1
8:2 FTOH-2-Perfluorooctyl ethanol	<0.200	H cn	0.999	0.200	ug/L		06/13/24 08:24	06/24/24 15:13	1
7:2 FTOH-1-Perfluoroheptyl ethanol	<0.200	H *1 cn	0.999	0.200	ug/L		06/13/24 08:24	06/24/24 15:13	1
6:2 FTOH-2-Perfluorohexyl ethanol	<0.200	H cn	0.999	0.200	ug/L		06/13/24 08:24	06/24/24 15:13	1
4:2 FTOH-2-Perfluorobutyl ethanol	<0.200	H *1 cn	0.999	0.200	ug/L		06/13/24 08:24	06/24/24 15:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Perfluorooctyl-[1,1-2H2]-[1,2-13C2]-ethanol(8:2)	*47*	*cn*	*14 - 120*	*06/13/24 08:24*	*06/24/24 15:13*	*1*
2-Perfluorodecyl-[1,1-2H2]-[1,2-13C2]-ethanol(10:2)	*82*	*cn*	*43 - 151*	*06/13/24 08:24*	*06/24/24 15:13*	*1*

Method: EPA 537 IDA - EPA 537 Isotope Dilution

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
10:2 Fluorotelomer sulfonic acid	<0.766	cn	1.91	0.766	ng/L		06/27/24 14:30	07/09/24 17:24	1
10:2 FTCA	<0.479	cn	1.91	0.479	ng/L		06/27/24 14:30	07/09/24 17:24	1
10:2 FTUCA	<0.383	cn	1.91	0.383	ng/L		06/27/24 14:30	07/09/24 17:24	1
11Cl-PF3OUdS	<0.479	cn	1.91	0.479	ng/L		06/27/24 14:30	07/09/24 17:24	1
3:3 FTCA	<0.479	cn	1.91	0.479	ng/L		06/27/24 14:30	07/09/24 17:24	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.479	cn	1.91	0.479	ng/L		06/27/24 14:30	07/09/24 17:24	1
4:2 Fluorotelomer sulfonic acid	<0.479	cn	1.91	0.479	ng/L		06/27/24 14:30	07/09/24 17:24	1
5:3 FTCA	<0.479	cn	1.91	0.479	ng/L		06/27/24 14:30	07/09/24 17:24	1
6:2 Fluorotelomer sulfonic acid	<0.479	cn	1.91	0.479	ng/L		06/27/24 14:30	07/09/24 17:24	1
6:2 FTCA	<0.670	cn	1.91	0.670	ng/L		06/27/24 14:30	07/09/24 17:24	1
6:2 FTUCA	<0.383	cn	1.91	0.383	ng/L		06/27/24 14:30	07/09/24 17:24	1
7:3 FTCA	<1.05	cn	1.91	1.05	ng/L		06/27/24 14:30	07/09/24 17:24	1
8:2 Fluorotelomer sulfonic acid	<0.574	cn	1.91	0.574	ng/L		06/27/24 14:30	07/09/24 17:24	1
8:2 FTCA	<0.383	cn	1.91	0.383	ng/L		06/27/24 14:30	07/09/24 17:24	1
8:2 FTUCA	<0.383	cn	1.91	0.383	ng/L		06/27/24 14:30	07/09/24 17:24	1
9Cl-PF3ONS	<0.479	cn	1.91	0.479	ng/L		06/27/24 14:30	07/09/24 17:24	1
EVE Acid	<0.479	cn	1.91	0.479	ng/L		06/27/24 14:30	07/09/24 17:24	1
HFPODA	<0.383	cn	1.91	0.383	ng/L		06/27/24 14:30	07/09/24 17:24	1
Hydro-EVE Acid	<0.479	cn	1.91	0.479	ng/L		06/27/24 14:30	07/09/24 17:24	1
Hydrolyzed PSDA	<0.383	cn	1.91	0.383	ng/L		06/27/24 14:30	07/09/24 17:24	1
Hydro-PS Acid	<0.479	cn	1.91	0.479	ng/L		06/27/24 14:30	07/09/24 17:24	1
MTP	<0.574	cn	1.91	0.574	ng/L		06/27/24 14:30	07/09/24 17:24	1
NEtFOSA	<0.383	cn	1.91	0.383	ng/L		06/27/24 14:30	07/09/24 17:24	1
NEtFOSAA	<0.479	cn	1.91	0.479	ng/L		06/27/24 14:30	07/09/24 17:24	1
NEtFOSE	<0.383	cn	1.91	0.383	ng/L		06/27/24 14:30	07/09/24 17:24	1
NMeFOSA	<0.670	cn	1.91	0.670	ng/L		06/27/24 14:30	07/09/24 17:24	1
NMeFOSAA	<0.383	cn	1.91	0.383	ng/L		06/27/24 14:30	07/09/24 17:24	1
NMeFOSE	<0.383	cn	1.91	0.383	ng/L		06/27/24 14:30	07/09/24 17:24	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.287	cn	1.91	0.287	ng/L		06/27/24 14:30	07/09/24 17:24	1
NVHOS	<0.383	cn	1.91	0.383	ng/L		06/27/24 14:30	07/09/24 17:24	1
PEPA	<0.574	cn	1.91	0.574	ng/L		06/27/24 14:30	07/09/24 17:24	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.287	cn	1.91	0.287	ng/L		06/27/24 14:30	07/09/24 17:24	1
Perfluoro-3,5,7,9,11-pentaoxadodecanoic acid	<0.479	cn	1.91	0.479	ng/L		06/27/24 14:30	07/09/24 17:24	1

Client Sample ID: 004
Date Collected: 06/04/24 09:54
Date Received: 06/08/24 09:35

Lab Sample ID: 410-175226-7
Matrix: Water

Method: EPA 537 IDA - EPA 537 Isotope Dilution (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.287	cn	1.91	0.287	ng/L		06/27/24 14:30	07/09/24 17:24	1
Perfluoro-4-isopropoxybutanoic acid (PFIpOBA)	<0.479	cn	1.91	0.479	ng/L		06/27/24 14:30	07/09/24 17:24	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.287	cn	1.91	0.287	ng/L		06/27/24 14:30	07/09/24 17:24	1
Perfluorobutanesulfonic acid (PFBS)	**3.26**	**cn**	1.91	0.287	ng/L		06/27/24 14:30	07/09/24 17:24	1
Perfluorobutanoic acid (PFBA)	**2.29**	**cn**	1.91	0.957	ng/L		06/27/24 14:30	07/09/24 17:24	1
Perfluorodecanesulfonic acid (PFDS)	<0.287	cn	1.91	0.287	ng/L		06/27/24 14:30	07/09/24 17:24	1
Perfluorodecanoic acid (PFDA)	<0.287	cn	1.91	0.287	ng/L		06/27/24 14:30	07/09/24 17:24	1
Perfluorododecanesulfonic acid (PFDoS)	<0.287	cn	1.91	0.287	ng/L		06/27/24 14:30	07/09/24 17:24	1
Perfluorododecanoic acid (PFDoA)	<0.383	cn	1.91	0.383	ng/L		06/27/24 14:30	07/09/24 17:24	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.287	cn	1.91	0.287	ng/L		06/27/24 14:30	07/09/24 17:24	1
Perfluoroheptanoic acid (PFHpA)	**2.63**	**cn**	1.91	0.287	ng/L		06/27/24 14:30	07/09/24 17:24	1
Perfluorohexanesulfonic acid (PFHxS)	**4.16**	**cn**	1.91	0.191	ng/L		06/27/24 14:30	07/09/24 17:24	1
Perfluorohexanoic acid (PFHxA)	**4.59**	**cn**	1.91	0.957	ng/L		06/27/24 14:30	07/09/24 17:24	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.479	cn	1.91	0.479	ng/L		06/27/24 14:30	07/09/24 17:24	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.479	cn	1.91	0.479	ng/L		06/27/24 14:30	07/09/24 17:24	1
Perfluorononanesulfonic acid (PFNS)	<0.287	cn	1.91	0.287	ng/L		06/27/24 14:30	07/09/24 17:24	1
Perfluorononanoic acid (PFNA)	**0.364**	**J cn**	1.91	0.191	ng/L		06/27/24 14:30	07/09/24 17:24	1
Perfluorooctanesulfonamide (PFOSA)	**7.84**	**cn**	1.91	0.287	ng/L		06/27/24 14:30	07/09/24 17:24	1
Perfluorooctanesulfonic acid (PFOS)	**6.78**	**cn**	1.91	0.479	ng/L		06/27/24 14:30	07/09/24 17:24	1
Perfluorooctanoic acid (PFOA)	**5.09**	**cn**	1.91	0.287	ng/L		06/27/24 14:30	07/09/24 17:24	1
Perfluoropentanesulfonic acid (PFPeS)	**0.612**	**J cn**	1.91	0.287	ng/L		06/27/24 14:30	07/09/24 17:24	1
Perfluoropentanoic acid (PFPeA)	**6.10**	**cn**	1.91	0.287	ng/L		06/27/24 14:30	07/09/24 17:24	1
Perfluoropropanesulfonic acid	**0.384**	**J cn**	1.91	0.383	ng/L		06/27/24 14:30	07/09/24 17:24	1
Perfluoropropionic acid (PFPrA)	**10.9**	**cn**	9.57	4.79	ng/L		06/27/24 14:30	07/09/24 17:24	1
Perfluorotetradecanoic acid (PFTeDA)	<0.383	cn	1.91	0.383	ng/L		06/27/24 14:30	07/09/24 17:24	1
Perfluorotridecanoic acid (PFTrDA)	<0.383	cn	1.91	0.383	ng/L		06/27/24 14:30	07/09/24 17:24	1
Perfluoroundecanoic acid (PFUnA)	<0.287	cn	1.91	0.287	ng/L		06/27/24 14:30	07/09/24 17:24	1
PFECHS	<0.287	cn	1.91	0.287	ng/L		06/27/24 14:30	07/09/24 17:24	1
PFMOAA	<0.287	cn	1.91	0.287	ng/L		06/27/24 14:30	07/09/24 17:24	1
PFO2HxA	<0.670	cn	1.91	0.670	ng/L		06/27/24 14:30	07/09/24 17:24	1
PFO3OA	<0.957	cn	1.91	0.957	ng/L		06/27/24 14:30	07/09/24 17:24	1
PFO4DA	<0.766	cn	1.91	0.766	ng/L		06/27/24 14:30	07/09/24 17:24	1
PMPA	<0.574	cn	1.91	0.574	ng/L		06/27/24 14:30	07/09/24 17:24	1
PS Acid	<0.574	cn	1.91	0.574	ng/L		06/27/24 14:30	07/09/24 17:24	1
R-EVE	<0.479	cn	1.91	0.479	ng/L		06/27/24 14:30	07/09/24 17:24	1
R-PSDA	<0.670	cn	1.91	0.670	ng/L		06/27/24 14:30	07/09/24 17:24	1
R-PSDCA	<0.287	cn	1.91	0.287	ng/L		06/27/24 14:30	07/09/24 17:24	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-10:2 FTCA	*95*	*cn*	*11 - 200*	*06/27/24 14:30*	*07/09/24 17:24*	*1*
13C-10:2 FTUCA	*107*	*cn*	*10 - 166*	*06/27/24 14:30*	*07/09/24 17:24*	*1*

Client Sample ID: 004

Lab Sample ID: 410-175226-7

Date Collected: 06/04/24 09:54

Matrix: Water

Date Received: 06/08/24 09:35

Method: EPA 537 IDA - EPA 537 Isotope Dilution (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFTeDA	113	cn	10 - 171	06/27/24 14:30	07/09/24 17:24	1
13C2-PFDoDA	102	cn	22 - 165	06/27/24 14:30	07/09/24 17:24	1
13C3 HFPO-DA	130	cn	13 - 170	06/27/24 14:30	07/09/24 17:24	1
13C3 PFBS	129	cn	34 - 200	06/27/24 14:30	07/09/24 17:24	1
13C3 PFHxS	132	cn	48 - 169	06/27/24 14:30	07/09/24 17:24	1
13C3-PFPrA	39	cn	21 - 157	06/27/24 14:30	07/09/24 17:24	1
13C4 PFBA	122	cn	22 - 174	06/27/24 14:30	07/09/24 17:24	1
13C4 PFHpA	118	cn	40 - 165	06/27/24 14:30	07/09/24 17:24	1
13C5 PFHxA	116	cn	28 - 166	06/27/24 14:30	07/09/24 17:24	1
13C5 PFPeA	111	cn	33 - 196	06/27/24 14:30	07/09/24 17:24	1
13C6 PFDA	114	cn	53 - 151	06/27/24 14:30	07/09/24 17:24	1
13C-6:2 FTCA	113	cn	10 - 200	06/27/24 14:30	07/09/24 17:24	1
13C-6:2 FTUCA	123	cn	10 - 173	06/27/24 14:30	07/09/24 17:24	1
13C7 PFUnA	110	cn	41 - 163	06/27/24 14:30	07/09/24 17:24	1
13C8 FOSA	117	cn	10 - 155	06/27/24 14:30	07/09/24 17:24	1
13C8 PFOA	117	cn	52 - 153	06/27/24 14:30	07/09/24 17:24	1
13C8 PFOS	125	cn	59 - 155	06/27/24 14:30	07/09/24 17:24	1
13C-8:2 FTCA	106	cn	20 - 200	06/27/24 14:30	07/09/24 17:24	1
13C-8:2 FTUCA	113	cn	18 - 175	06/27/24 14:30	07/09/24 17:24	1
13C9 PFNA	118	cn	52 - 168	06/27/24 14:30	07/09/24 17:24	1
d3-NMeFOSAA	114	cn	38 - 168	06/27/24 14:30	07/09/24 17:24	1
d3-NMePFOSA	59	cn	10 - 130	06/27/24 14:30	07/09/24 17:24	1
d5-NEtFOSAA	114	cn	34 - 181	06/27/24 14:30	07/09/24 17:24	1
d5-NEtPFOSA	49	cn	10 - 130	06/27/24 14:30	07/09/24 17:24	1
d7-N-MeFOSE-M	112	cn	10 - 149	06/27/24 14:30	07/09/24 17:24	1
d9-N-EtFOSE-M	101	cn	10 - 151	06/27/24 14:30	07/09/24 17:24	1
M2-4:2 FTS	130	cn	35 - 200	06/27/24 14:30	07/09/24 17:24	1
M2-6:2 FTS	154	cn	40 - 200	06/27/24 14:30	07/09/24 17:24	1
M2-8:2 FTS	139	cn	37 - 200	06/27/24 14:30	07/09/24 17:24	1

Client Sample ID: 006

Lab Sample ID: 410-175226-8

Date Collected: 06/04/24 14:50

Matrix: Water

Date Received: 06/08/24 09:35

Method: ELLE - Lancaster SOP - SOP T-SSG-WI7750

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
10:2 FTOH-2-Perfluorodecyl ethanol	<0.291	H cn	0.972	0.291	ug/L		06/13/24 08:24	06/24/24 15:27	1
8:2 FTOH-2-Perfluorooctyl ethanol	<0.194	H cn	0.972	0.194	ug/L		06/13/24 08:24	06/24/24 15:27	1
7:2 FTOH-1-Perfluoroheptyl ethanol	<0.194	H *1 cn	0.972	0.194	ug/L		06/13/24 08:24	06/24/24 15:27	1
6:2 FTOH-2-Perfluorohexyl ethanol	<0.194	H cn	0.972	0.194	ug/L		06/13/24 08:24	06/24/24 15:27	1
4:2 FTOH-2-Perfluorobutyl ethanol	<0.194	H *1 cn	0.972	0.194	ug/L		06/13/24 08:24	06/24/24 15:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Perfluorooctyl-[1,1-2H2]-[1,2-13C2]-ethanol(8:2)	51	cn	14 - 120	06/13/24 08:24	06/24/24 15:27	1
2-Perfluorodecyl-[1,1-2H2]-[1,2-13C2]-ethanol(10:2)	88	cn	43 - 151	06/13/24 08:24	06/24/24 15:27	1

Method: EPA 537 IDA - EPA 537 Isotope Dilution

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
10:2 Fluorotelomer sulfonic acid	<0.774	cn	1.93	0.774	ng/L		06/27/24 14:30	07/06/24 00:21	1

Client Sample ID: 006
Date Collected: 06/04/24 14:50
Date Received: 06/08/24 09:35

Lab Sample ID: 410-175226-8
Matrix: Water

Method: EPA 537 IDA - EPA 537 Isotope Dilution (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
10:2 FTCA	<0.484	cn	1.93	0.484	ng/L		06/27/24 14:30	07/06/24 00:21	1
10:2 FTUCA	<0.387	cn	1.93	0.387	ng/L		06/27/24 14:30	07/06/24 00:21	1
11Cl-PF3OUdS	<0.484	cn	1.93	0.484	ng/L		06/27/24 14:30	07/06/24 00:21	1
3:3 FTCA	<0.484	cn	1.93	0.484	ng/L		06/27/24 14:30	07/06/24 00:21	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.484	cn	1.93	0.484	ng/L		06/27/24 14:30	07/06/24 00:21	1
4:2 Fluorotelomer sulfonic acid	<0.484	cn	1.93	0.484	ng/L		06/27/24 14:30	07/06/24 00:21	1
5:3 FTCA	<0.484	cn	1.93	0.484	ng/L		06/27/24 14:30	07/06/24 00:21	1
6:2 Fluorotelomer sulfonic acid	<0.484	cn	1.93	0.484	ng/L		06/27/24 14:30	07/06/24 00:21	1
6:2 FTCA	<0.677	cn	1.93	0.677	ng/L		06/27/24 14:30	07/06/24 00:21	1
6:2 FTUCA	<0.387	cn	1.93	0.387	ng/L		06/27/24 14:30	07/06/24 00:21	1
7:3 FTCA	<1.06	cn	1.93	1.06	ng/L		06/27/24 14:30	07/06/24 00:21	1
8:2 Fluorotelomer sulfonic acid	<0.580	cn	1.93	0.580	ng/L		06/27/24 14:30	07/06/24 00:21	1
8:2 FTCA	<0.387	cn	1.93	0.387	ng/L		06/27/24 14:30	07/06/24 00:21	1
8:2 FTUCA	<0.387	cn	1.93	0.387	ng/L		06/27/24 14:30	07/06/24 00:21	1
9Cl-PF3ONS	<0.484	cn	1.93	0.484	ng/L		06/27/24 14:30	07/06/24 00:21	1
EVE Acid	<0.484	cn	1.93	0.484	ng/L		06/27/24 14:30	07/06/24 00:21	1
HFPODA	**0.406**	**J cn**	1.93	0.387	ng/L		06/27/24 14:30	07/06/24 00:21	1
Hydro-EVE Acid	<0.484	cn	1.93	0.484	ng/L		06/27/24 14:30	07/06/24 00:21	1
Hydrolyzed PSDA	<0.387	cn	1.93	0.387	ng/L		06/27/24 14:30	07/06/24 00:21	1
Hydro-PS Acid	<0.484	cn	1.93	0.484	ng/L		06/27/24 14:30	07/06/24 00:21	1
MTP	<0.580	cn	1.93	0.580	ng/L		06/27/24 14:30	07/06/24 00:21	1
NEtFOSA	<0.387	cn	1.93	0.387	ng/L		06/27/24 14:30	07/06/24 00:21	1
NEtFOSAA	<0.484	cn	1.93	0.484	ng/L		06/27/24 14:30	07/06/24 00:21	1
NEtFOSE	<0.387	cn	1.93	0.387	ng/L		06/27/24 14:30	07/06/24 00:21	1
NMeFOSA	<0.677	cn	1.93	0.677	ng/L		06/27/24 14:30	07/06/24 00:21	1
NMeFOSAA	<0.387	cn	1.93	0.387	ng/L		06/27/24 14:30	07/06/24 00:21	1
NMeFOSE	<0.387	cn	1.93	0.387	ng/L		06/27/24 14:30	07/06/24 00:21	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.290	cn	1.93	0.290	ng/L		06/27/24 14:30	07/06/24 00:21	1
NVHOS	<0.387	cn	1.93	0.387	ng/L		06/27/24 14:30	07/06/24 00:21	1
PEPA	<0.580	cn	1.93	0.580	ng/L		06/27/24 14:30	07/06/24 00:21	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.290	cn	1.93	0.290	ng/L		06/27/24 14:30	07/06/24 00:21	1
Perfluoro-3,5,7,9,11-pentaoxadodecanoic acid	<0.484	cn	1.93	0.484	ng/L		06/27/24 14:30	07/06/24 00:21	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.290	cn	1.93	0.290	ng/L		06/27/24 14:30	07/06/24 00:21	1
Perfluoro-4-isopropoxybutanoic acid (PFIpOBA)	<0.484	cn	1.93	0.484	ng/L		06/27/24 14:30	07/06/24 00:21	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.290	cn	1.93	0.290	ng/L		06/27/24 14:30	07/06/24 00:21	1
Perfluorobutanesulfonic acid (PFBS)	**0.662**	**J cn**	1.93	0.290	ng/L		06/27/24 14:30	07/06/24 00:21	1
Perfluorobutanoic acid (PFBA)	<0.967	cn	1.93	0.967	ng/L		06/27/24 14:30	07/06/24 00:21	1
Perfluorodecanesulfonic acid (PFDS)	<0.290	cn	1.93	0.290	ng/L		06/27/24 14:30	07/06/24 00:21	1
Perfluorodecanoic acid (PFDA)	<0.290	cn	1.93	0.290	ng/L		06/27/24 14:30	07/06/24 00:21	1
Perfluorododecanesulfonic acid (PFDoS)	<0.290	cn	1.93	0.290	ng/L		06/27/24 14:30	07/06/24 00:21	1
Perfluorododecanoic acid (PFDoA)	<0.387	cn	1.93	0.387	ng/L		06/27/24 14:30	07/06/24 00:21	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.290	cn	1.93	0.290	ng/L		06/27/24 14:30	07/06/24 00:21	1

Client Sample ID: 006
Date Collected: 06/04/24 14:50
Date Received: 06/08/24 09:35

Lab Sample ID: 410-175226-8
Matrix: Water

Method: EPA 537 IDA - EPA 537 Isotope Dilution (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanoic acid (PFHpA)	**0.402**	**J cn**	1.93	0.290	ng/L		06/27/24 14:30	07/06/24 00:21	1
Perfluorohexanesulfonic acid (PFHxS)	**0.564**	**J cn**	1.93	0.193	ng/L		06/27/24 14:30	07/06/24 00:21	1
Perfluorohexanoic acid (PFHxA)	<0.967	cn	1.93	0.967	ng/L		06/27/24 14:30	07/06/24 00:21	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.484	cn	1.93	0.484	ng/L		06/27/24 14:30	07/06/24 00:21	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.484	cn	1.93	0.484	ng/L		06/27/24 14:30	07/06/24 00:21	1
Perfluorononanesulfonic acid (PFNS)	<0.290	cn	1.93	0.290	ng/L		06/27/24 14:30	07/06/24 00:21	1
Perfluorononanoic acid (PFNA)	<0.193	cn	1.93	0.193	ng/L		06/27/24 14:30	07/06/24 00:21	1
Perfluorooctanesulfonamide (PFOSA)	<0.290	cn	1.93	0.290	ng/L		06/27/24 14:30	07/06/24 00:21	1
Perfluorooctanesulfonic acid (PFOS)	**0.745**	**J cn**	1.93	0.484	ng/L		06/27/24 14:30	07/06/24 00:21	1
Perfluorooctanoic acid (PFOA)	**0.610**	**J cn**	1.93	0.290	ng/L		06/27/24 14:30	07/06/24 00:21	1
Perfluoropentanesulfonic acid (PFPeS)	<0.290	cn	1.93	0.290	ng/L		06/27/24 14:30	07/06/24 00:21	1
Perfluoropentanoic acid (PFPeA)	**0.713**	**J cn**	1.93	0.290	ng/L		06/27/24 14:30	07/06/24 00:21	1
Perfluoropropanesulfonic acid	<0.387	cn	1.93	0.387	ng/L		06/27/24 14:30	07/06/24 00:21	1
Perfluoropropionic acid (PFPrA)	<4.84	cn	9.67	4.84	ng/L		06/27/24 14:30	07/06/24 00:21	1
Perfluorotetradecanoic acid (PFTeDA)	<0.387	cn	1.93	0.387	ng/L		06/27/24 14:30	07/06/24 00:21	1
Perfluorotridecanoic acid (PFTrDA)	<0.387	cn	1.93	0.387	ng/L		06/27/24 14:30	07/06/24 00:21	1
Perfluoroundecanoic acid (PFUnA)	<0.290	cn	1.93	0.290	ng/L		06/27/24 14:30	07/06/24 00:21	1
PFECHS	<0.290	cn	1.93	0.290	ng/L		06/27/24 14:30	07/06/24 00:21	1
PFMOAA	<0.290	cn	1.93	0.290	ng/L		06/27/24 14:30	07/06/24 00:21	1
PFO2HxA	<0.677	cn	1.93	0.677	ng/L		06/27/24 14:30	07/06/24 00:21	1
PFO3OA	<0.967	cn	1.93	0.967	ng/L		06/27/24 14:30	07/06/24 00:21	1
PFO4DA	<0.774	cn	1.93	0.774	ng/L		06/27/24 14:30	07/06/24 00:21	1
PMPA	<0.580	cn	1.93	0.580	ng/L		06/27/24 14:30	07/06/24 00:21	1
PS Acid	<0.580	cn	1.93	0.580	ng/L		06/27/24 14:30	07/06/24 00:21	1
R-EVE	<0.484	cn	1.93	0.484	ng/L		06/27/24 14:30	07/06/24 00:21	1
R-PSDA	<0.677	cn	1.93	0.677	ng/L		06/27/24 14:30	07/06/24 00:21	1
R-PSDCA	<0.290	cn	1.93	0.290	ng/L		06/27/24 14:30	07/06/24 00:21	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-10:2 FTCA	*77*	*cn*	*11 - 200*	*06/27/24 14:30*	*07/06/24 00:21*	*1*
13C-10:2 FTUCA	*82*	*cn*	*10 - 166*	*06/27/24 14:30*	*07/06/24 00:21*	*1*
13C2 PFTeDA	*76*	*cn*	*10 - 171*	*06/27/24 14:30*	*07/06/24 00:21*	*1*
13C2-PFDoDA	*76*	*cn*	*22 - 165*	*06/27/24 14:30*	*07/06/24 00:21*	*1*
13C3 HFPO-DA	*85*	*cn*	*13 - 170*	*06/27/24 14:30*	*07/06/24 00:21*	*1*
13C3 PFBS	*99*	*cn*	*34 - 200*	*06/27/24 14:30*	*07/06/24 00:21*	*1*
13C3 PFHxS	*97*	*cn*	*48 - 169*	*06/27/24 14:30*	*07/06/24 00:21*	*1*
13C3-PFPrA	*37*	*cn*	*21 - 157*	*06/27/24 14:30*	*07/06/24 00:21*	*1*
13C4 PFBA	*98*	*cn*	*22 - 174*	*06/27/24 14:30*	*07/06/24 00:21*	*1*
13C4 PFHpA	*94*	*cn*	*40 - 165*	*06/27/24 14:30*	*07/06/24 00:21*	*1*
13C5 PFHxA	*90*	*cn*	*28 - 166*	*06/27/24 14:30*	*07/06/24 00:21*	*1*
13C5 PFPeA	*96*	*cn*	*33 - 196*	*06/27/24 14:30*	*07/06/24 00:21*	*1*
13C6 PFDA	*87*	*cn*	*53 - 151*	*06/27/24 14:30*	*07/06/24 00:21*	*1*
13C-6:2 FTCA	*95*	*cn*	*10 - 200*	*06/27/24 14:30*	*07/06/24 00:21*	*1*
13C-6:2 FTUCA	*91*	*cn*	*10 - 173*	*06/27/24 14:30*	*07/06/24 00:21*	*1*
13C7 PFUnA	*82*	*cn*	*41 - 163*	*06/27/24 14:30*	*07/06/24 00:21*	*1*
13C8 FOSA	*83*	*cn*	*10 - 155*	*06/27/24 14:30*	*07/06/24 00:21*	*1*

Client Sample ID: 006

Lab Sample ID: 410-175226-8

Date Collected: 06/04/24 14:50

Matrix: Water

Date Received: 06/08/24 09:35

Method: EPA 537 IDA - EPA 537 Isotope Dilution (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOA	101	cn	52 - 153	06/27/24 14:30	07/06/24 00:21	1
13C8 PFOS	96	cn	59 - 155	06/27/24 14:30	07/06/24 00:21	1
13C-8:2 FTCA	79	cn	20 - 200	06/27/24 14:30	07/06/24 00:21	1
13C-8:2 FTUCA	85	cn	18 - 175	06/27/24 14:30	07/06/24 00:21	1
13C9 PFNA	99	cn	52 - 168	06/27/24 14:30	07/06/24 00:21	1
d3-NMeFOSAA	83	cn	38 - 168	06/27/24 14:30	07/06/24 00:21	1
d3-NMePFOSA	47	cn	10 - 130	06/27/24 14:30	07/06/24 00:21	1
d5-NEtFOSAA	90	cn	34 - 181	06/27/24 14:30	07/06/24 00:21	1
d5-NEtPFOSA	46	cn	10 - 130	06/27/24 14:30	07/06/24 00:21	1
d7-N-MeFOSE-M	77	cn	10 - 149	06/27/24 14:30	07/06/24 00:21	1
d9-N-EtFOSE-M	70	cn	10 - 151	06/27/24 14:30	07/06/24 00:21	1
M2-4:2 FTS	93	cn	35 - 200	06/27/24 14:30	07/06/24 00:21	1
M2-6:2 FTS	113	cn	40 - 200	06/27/24 14:30	07/06/24 00:21	1
M2-8:2 FTS	92	cn	37 - 200	06/27/24 14:30	07/06/24 00:21	1

Client Sample ID: Trip Blank

Lab Sample ID: 410-175226-9

Date Collected: 05/30/24 00:00

Matrix: Water

Date Received: 06/08/24 09:35

Method: ELLE - Lancaster SOP - SOP T-SSG-WI7750

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
10:2 FTOH-2-Perfluorodecyl ethanol	<0.262	H H3 cn	0.873	0.262	ug/L		06/13/24 08:24	06/24/24 15:41	1
8:2 FTOH-2-Perfluorooctyl ethanol	<0.175	H H3 cn	0.873	0.175	ug/L		06/13/24 08:24	06/24/24 15:41	1
7:2 FTOH-1-Perfluoroheptyl ethanol	<0.175	H H3 *1 cn	0.873	0.175	ug/L		06/13/24 08:24	06/24/24 15:41	1
6:2 FTOH-2-Perfluorohexyl ethanol	<0.175	H H3 cn	0.873	0.175	ug/L		06/13/24 08:24	06/24/24 15:41	1
4:2 FTOH-2-Perfluorobutyl ethanol	<0.175	H H3 *1 cn	0.873	0.175	ug/L		06/13/24 08:24	06/24/24 15:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Perfluorooctyl-[1,1-2H2]-[1,2-13C2]-ethanol(8:2)	45	cn	14 - 120	06/13/24 08:24	06/24/24 15:41	1
2-Perfluorodecyl-[1,1-2H2]-[1,2-13C2]-ethanol(10:2)	76	cn	43 - 151	06/13/24 08:24	06/24/24 15:41	1

Method: EPA 537 IDA - EPA 537 Isotope Dilution

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
10:2 Fluorotelomer sulfonic acid	<0.692		1.73	0.692	ng/L		06/26/24 15:46	06/30/24 01:07	1
10:2 FTCA	<0.432		1.73	0.432	ng/L		06/26/24 15:46	06/30/24 01:07	1
10:2 FTUCA	<0.346		1.73	0.346	ng/L		06/26/24 15:46	06/30/24 01:07	1
11Cl-PF3OUdS	<0.432		1.73	0.432	ng/L		06/26/24 15:46	06/30/24 01:07	1
3:3 FTCA	<0.432		1.73	0.432	ng/L		06/26/24 15:46	06/30/24 01:07	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.432		1.73	0.432	ng/L		06/26/24 15:46	06/30/24 01:07	1
4:2 Fluorotelomer sulfonic acid	<0.432		1.73	0.432	ng/L		06/26/24 15:46	06/30/24 01:07	1
5:3 FTCA	<0.432		1.73	0.432	ng/L		06/26/24 15:46	06/30/24 01:07	1
6:2 Fluorotelomer sulfonic acid	<0.432		1.73	0.432	ng/L		06/26/24 15:46	06/30/24 01:07	1
6:2 FTCA	<0.605		1.73	0.605	ng/L		06/26/24 15:46	06/30/24 01:07	1
6:2 FTUCA	<0.346		1.73	0.346	ng/L		06/26/24 15:46	06/30/24 01:07	1
7:3 FTCA	<0.951		1.73	0.951	ng/L		06/26/24 15:46	06/30/24 01:07	1
8:2 Fluorotelomer sulfonic acid	<0.519		1.73	0.519	ng/L		06/26/24 15:46	06/30/24 01:07	1
8:2 FTCA	<0.346		1.73	0.346	ng/L		06/26/24 15:46	06/30/24 01:07	1
8:2 FTUCA	<0.346		1.73	0.346	ng/L		06/26/24 15:46	06/30/24 01:07	1

Client Sample ID: Trip Blank
Date Collected: 05/30/24 00:00
Date Received: 06/08/24 09:35

Lab Sample ID: 410-175226-9
Matrix: Water

Method: EPA 537 IDA - EPA 537 Isotope Dilution (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
9Cl-PF3ONS	<0.432		1.73	0.432	ng/L		06/26/24 15:46	06/30/24 01:07	1
EVE Acid	<0.432		1.73	0.432	ng/L		06/26/24 15:46	06/30/24 01:07	1
HFPODA	**0.649**	**J B cn**	1.73	0.346	ng/L		06/26/24 15:46	06/30/24 01:07	1
Hydro-EVE Acid	<0.432		1.73	0.432	ng/L		06/26/24 15:46	06/30/24 01:07	1
Hydrolyzed PSDA	<0.346		1.73	0.346	ng/L		06/26/24 15:46	06/30/24 01:07	1
Hydro-PS Acid	<0.432		1.73	0.432	ng/L		06/26/24 15:46	06/30/24 01:07	1
MTP	<0.519		1.73	0.519	ng/L		06/26/24 15:46	06/30/24 01:07	1
NEtFOSA	<0.346		1.73	0.346	ng/L		06/26/24 15:46	06/30/24 01:07	1
NEtFOSAA	<0.432		1.73	0.432	ng/L		06/26/24 15:46	06/30/24 01:07	1
NEtFOSE	<0.346		1.73	0.346	ng/L		06/26/24 15:46	06/30/24 01:07	1
NMeFOSA	<0.605		1.73	0.605	ng/L		06/26/24 15:46	06/30/24 01:07	1
NMeFOSAA	<0.346		1.73	0.346	ng/L		06/26/24 15:46	06/30/24 01:07	1
NMeFOSE	<0.346		1.73	0.346	ng/L		06/26/24 15:46	06/30/24 01:07	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.259		1.73	0.259	ng/L		06/26/24 15:46	06/30/24 01:07	1
NVHOS	<0.346		1.73	0.346	ng/L		06/26/24 15:46	06/30/24 01:07	1
PEPA	<0.519		1.73	0.519	ng/L		06/26/24 15:46	06/30/24 01:07	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.259		1.73	0.259	ng/L		06/26/24 15:46	06/30/24 01:07	1
Perfluoro-3,5,7,9,11-pentaoxadodecanoic acid	<0.432		1.73	0.432	ng/L		06/26/24 15:46	06/30/24 01:07	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.259		1.73	0.259	ng/L		06/26/24 15:46	06/30/24 01:07	1
Perfluoro-4-isopropoxybutanoic acid (PFIpOBA)	<0.432		1.73	0.432	ng/L		06/26/24 15:46	06/30/24 01:07	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.259		1.73	0.259	ng/L		06/26/24 15:46	06/30/24 01:07	1
Perfluorobutanesulfonic acid (PFBS)	<0.259		1.73	0.259	ng/L		06/26/24 15:46	06/30/24 01:07	1
Perfluorobutanoic acid (PFBA)	<0.865		1.73	0.865	ng/L		06/26/24 15:46	06/30/24 01:07	1
Perfluorodecanesulfonic acid (PFDS)	<0.259		1.73	0.259	ng/L		06/26/24 15:46	06/30/24 01:07	1
Perfluorodecanoic acid (PFDA)	<0.259		1.73	0.259	ng/L		06/26/24 15:46	06/30/24 01:07	1
Perfluorododecanesulfonic acid (PFDoS)	<0.259		1.73	0.259	ng/L		06/26/24 15:46	06/30/24 01:07	1
Perfluorododecanoic acid (PFDoA)	<0.346		1.73	0.346	ng/L		06/26/24 15:46	06/30/24 01:07	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.259		1.73	0.259	ng/L		06/26/24 15:46	06/30/24 01:07	1
Perfluoroheptanoic acid (PFHpA)	<0.259		1.73	0.259	ng/L		06/26/24 15:46	06/30/24 01:07	1
Perfluorohexanesulfonic acid (PFHxS)	<0.173		1.73	0.173	ng/L		06/26/24 15:46	06/30/24 01:07	1
Perfluorohexanoic acid (PFHxA)	<0.865		1.73	0.865	ng/L		06/26/24 15:46	06/30/24 01:07	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.432		1.73	0.432	ng/L		06/26/24 15:46	06/30/24 01:07	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.432		1.73	0.432	ng/L		06/26/24 15:46	06/30/24 01:07	1
Perfluorononanesulfonic acid (PFNS)	<0.259		1.73	0.259	ng/L		06/26/24 15:46	06/30/24 01:07	1
Perfluorononanoic acid (PFNA)	<0.173		1.73	0.173	ng/L		06/26/24 15:46	06/30/24 01:07	1
Perfluorooctanesulfonamide (PFOSA)	<0.259		1.73	0.259	ng/L		06/26/24 15:46	06/30/24 01:07	1
Perfluorooctanesulfonic acid (PFOS)	<0.432		1.73	0.432	ng/L		06/26/24 15:46	06/30/24 01:07	1
Perfluorooctanoic acid (PFOA)	<0.259		1.73	0.259	ng/L		06/26/24 15:46	06/30/24 01:07	1
Perfluoropentanesulfonic acid (PFPeS)	<0.259		1.73	0.259	ng/L		06/26/24 15:46	06/30/24 01:07	1
Perfluoropentanoic acid (PFPeA)	<0.259		1.73	0.259	ng/L		06/26/24 15:46	06/30/24 01:07	1
Perfluoropropanesulfonic acid	<0.346		1.73	0.346	ng/L		06/26/24 15:46	06/30/24 01:07	1

Client: Eastern Research Group, Inc.
Project/Site: SDWA Region 9 - ERG

Job ID: 410-175226-1

Client Sample ID: Trip Blank
Date Collected: 05/30/24 00:00
Date Received: 06/08/24 09:35

Lab Sample ID: 410-175226-9
Matrix: Water

Method: EPA 537 IDA - EPA 537 Isotope Dilution (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropropionic acid (PFPrA)	<4.32		8.65	4.32	ng/L		06/26/24 15:46	06/30/24 01:07	1
Perfluorotetradecanoic acid (PFTeDA)	<0.346		1.73	0.346	ng/L		06/26/24 15:46	06/30/24 01:07	1
Perfluorotridecanoic acid (PFTrDA)	<0.346		1.73	0.346	ng/L		06/26/24 15:46	06/30/24 01:07	1
Perfluoroundecanoic acid (PFUnA)	<0.259		1.73	0.259	ng/L		06/26/24 15:46	06/30/24 01:07	1
PFECHS	<0.259		1.73	0.259	ng/L		06/26/24 15:46	06/30/24 01:07	1
PFMOAA	<0.259		1.73	0.259	ng/L		06/26/24 15:46	06/30/24 01:07	1
PFO2HxA	<0.605		1.73	0.605	ng/L		06/26/24 15:46	06/30/24 01:07	1
PFO3OA	<0.865		1.73	0.865	ng/L		06/26/24 15:46	06/30/24 01:07	1
PFO4DA	<0.692		1.73	0.692	ng/L		06/26/24 15:46	06/30/24 01:07	1
PMPA	<0.519		1.73	0.519	ng/L		06/26/24 15:46	06/30/24 01:07	1
PS Acid	<0.519		1.73	0.519	ng/L		06/26/24 15:46	06/30/24 01:07	1
R-EVE	<0.432		1.73	0.432	ng/L		06/26/24 15:46	06/30/24 01:07	1
R-PSDA	<0.605		1.73	0.605	ng/L		06/26/24 15:46	06/30/24 01:07	1
R-PSDCA	<0.259		1.73	0.259	ng/L		06/26/24 15:46	06/30/24 01:07	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-10:2 FTCA	*73*		*11 - 200*	*06/26/24 15:46*	*06/30/24 01:07*	*1*
13C-10:2 FTUCA	*72*		*10 - 166*	*06/26/24 15:46*	*06/30/24 01:07*	*1*
13C2 PFTeDA	*61*		*10 - 171*	*06/26/24 15:46*	*06/30/24 01:07*	*1*
13C2-PFDoDA	*73*		*22 - 165*	*06/26/24 15:46*	*06/30/24 01:07*	*1*
13C3 HFPO-DA	*83*		*13 - 170*	*06/26/24 15:46*	*06/30/24 01:07*	*1*
13C3 PFBS	*95*		*34 - 200*	*06/26/24 15:46*	*06/30/24 01:07*	*1*
13C3 PFHxS	*78*		*48 - 169*	*06/26/24 15:46*	*06/30/24 01:07*	*1*
13C3-PFPrA	*70*		*21 - 157*	*06/26/24 15:46*	*06/30/24 01:07*	*1*
13C4 PFBA	*82*		*22 - 174*	*06/26/24 15:46*	*06/30/24 01:07*	*1*
13C4 PFHpA	*83*		*40 - 165*	*06/26/24 15:46*	*06/30/24 01:07*	*1*
13C5 PFHxA	*95*		*28 - 166*	*06/26/24 15:46*	*06/30/24 01:07*	*1*
13C5 PFPeA	*80*		*33 - 196*	*06/26/24 15:46*	*06/30/24 01:07*	*1*
13C6 PFDA	*80*		*53 - 151*	*06/26/24 15:46*	*06/30/24 01:07*	*1*
13C-6:2 FTCA	*88*		*10 - 200*	*06/26/24 15:46*	*06/30/24 01:07*	*1*
13C-6:2 FTUCA	*76*		*10 - 173*	*06/26/24 15:46*	*06/30/24 01:07*	*1*
13C7 PFUnA	*87*		*41 - 163*	*06/26/24 15:46*	*06/30/24 01:07*	*1*
13C8 FOSA	*70*		*10 - 155*	*06/26/24 15:46*	*06/30/24 01:07*	*1*
13C8 PFOA	*80*		*52 - 153*	*06/26/24 15:46*	*06/30/24 01:07*	*1*
13C8 PFOS	*83*		*59 - 155*	*06/26/24 15:46*	*06/30/24 01:07*	*1*
13C-8:2 FTCA	*76*		*20 - 200*	*06/26/24 15:46*	*06/30/24 01:07*	*1*
13C-8:2 FTUCA	*70*		*18 - 175*	*06/26/24 15:46*	*06/30/24 01:07*	*1*
13C9 PFNA	*77*		*52 - 168*	*06/26/24 15:46*	*06/30/24 01:07*	*1*
d3-NMeFOSAA	*85*		*38 - 168*	*06/26/24 15:46*	*06/30/24 01:07*	*1*
d3-NMePFOSA	*47*		*10 - 130*	*06/26/24 15:46*	*06/30/24 01:07*	*1*
d5-NEtFOSAA	*80*		*34 - 181*	*06/26/24 15:46*	*06/30/24 01:07*	*1*
d5-NEtPFOSA	*48*		*10 - 130*	*06/26/24 15:46*	*06/30/24 01:07*	*1*
d7-N-MeFOSE-M	*62*		*10 - 149*	*06/26/24 15:46*	*06/30/24 01:07*	*1*
d9-N-EtFOSE-M	*59*		*10 - 151*	*06/26/24 15:46*	*06/30/24 01:07*	*1*
M2-4:2 FTS	*97*		*35 - 200*	*06/26/24 15:46*	*06/30/24 01:07*	*1*
M2-6:2 FTS	*88*		*40 - 200*	*06/26/24 15:46*	*06/30/24 01:07*	*1*
M2-8:2 FTS	*81*		*37 - 200*	*06/26/24 15:46*	*06/30/24 01:07*	*1*

Surrogate Summary

Client: Eastern Research Group, Inc.
Project/Site: SDWA Region 9 - ERG

Job ID: 410-175226-1

Method: SOP - SOP T-SSG-WI7750

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	MFOET (14-120)	MFDET (43-151)
410-175226-1	001 FBP	29 cn	73 cn
410-175226-2	001 P	33 cn	79 cn
410-175226-3	002	53 cn	95 cn
410-175226-4	003	55 cn	101 cn
410-175226-5	004-D	62 cn	111 cn
410-175226-6	004 FB	54 cn	89 cn
410-175226-7	004	47 cn	82 cn
410-175226-8	006	51 cn	88 cn
410-175226-9	Trip Blank	45 cn	76 cn
LCS 410-516779/2-A	Lab Control Sample	39	91
LCS 410-521574/2-A	Lab Control Sample	37	78
LCSD 410-516779/3-A	Lab Control Sample Dup	32	81
LCSD 410-521574/3-A	Lab Control Sample Dup	53	93
MB 410-516779/1-A	Method Blank	32	78
MB 410-521574/1-A	Method Blank	41	84

Surrogate Legend

MFOET = 2-Perfluorooctyl-[1,1-2H2]-[1,2-13C2]-ethanol(8:2)

MFDET = 2-Perfluorodecyl-[1,1-2H2]-[1,2-13C2]-ethanol(10:2)

Isotope Dilution Summary

Client: Eastern Research Group, Inc.
Project/Site: SDWA Region 9 - ERG

Job ID: 410-175226-1

Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		MFDEA	MFDUEA	PFTDA	PFDoDA	HFPODA	C3PFBS	C3PFHS	13C3PFPrA
Lab Sample ID	Client Sample ID	(11-200)	(10-166)	(10-171)	(22-165)	(13-170)	(34-200)	(48-169)	(21-157)
410-175226-1	001 FBP	68 cn	77 cn	70 cn	72 cn	75 cn	91 cn	71 cn	19 *5- cn
410-175226-2	001 P	79	81	81	78	79	91	80	53
410-175226-3	002	101	101	83	93	105	126	101	62
410-175226-4	003	120	114	90	107	127	142	121	51
410-175226-5	004-D	80 cn	85 cn	75 cn	75 cn	76 cn	94 cn	92 cn	28 cn
410-175226-6	004 FB	70 cn	81 cn	75 cn	75 cn	76 cn	90 cn	87 cn	22 cn
410-175226-7	004	95 cn	107 cn	113 cn	102 cn	130 cn	129 cn	132 cn	39 cn
410-175226-8	006	77 cn	82 cn	76 cn	76 cn	85 cn	99 cn	97 cn	37 cn
410-175226-9	Trip Blank	73	72	61	73	83	95	78	70
LCS 410-521851/2-A	Lab Control Sample	74	73	59	67	77	91	74	52
LCS 410-521869/2-A	Lab Control Sample	103	103	82	91	114	121	111	69
LCS 410-522328/2-A	Lab Control Sample	88	94	88	86	88	100	101	83
LCS 410-523604/2-A	Lab Control Sample	75	78	79	84	76	89	73	60
LCSD 410-521851/3-A	Lab Control Sample Dup	85	83	69	78	91	92	86	55
LCSD 410-522328/3-A	Lab Control Sample Dup	54	61	56	60	52	63	59	52
LCSD 410-523604/3-A	Lab Control Sample Dup	71	73	76	73	76	87	74	59
MB 410-521851/1-A	Method Blank	72	73	63	71	78	85	72	51
MB 410-521869/1-A	Method Blank	87	85	67	81	90	100	87	58
MB 410-522328/1-A	Method Blank	74	78	73	72	68	81	81	53
MB 410-523604/1-A	Method Blank	86	88	81	79	78	96	76	74

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA	C4PFHA	13C5PHA	PFPeA	C6PFDA	MFHEA	MFHUEA	13C7PUA
Lab Sample ID	Client Sample ID	(22-174)	(40-165)	(28-166)	(33-196)	(53-151)	(10-200)	(10-173)	(41-163)
410-175226-1	001 FBP	61 cn	66 cn	76 cn	80 cn	81 cn	74 cn	68 cn	76 cn
410-175226-2	001 P	88	74	71	80	87	78	72	80
410-175226-3	002	110	103	120	104	106	122	109	111
410-175226-4	003	119	127	133	119	115	136	120	113
410-175226-5	004-D	89 cn	86 cn	83 cn	88 cn	88 cn	87 cn	84 cn	88 cn
410-175226-6	004 FB	74 cn	83 cn	83 cn	88 cn	88 cn	86 cn	82 cn	88 cn
410-175226-7	004	122 cn	118 cn	116 cn	111 cn	114 cn	113 cn	123 cn	110 cn
410-175226-8	006	98 cn	94 cn	90 cn	96 cn	87 cn	95 cn	91 cn	82 cn
410-175226-9	Trip Blank	82	83	95	80	80	88	76	87
LCS 410-521851/2-A	Lab Control Sample	72	80	83	78	72	80	73	79
LCS 410-521869/2-A	Lab Control Sample	99	115	117	105	102	117	104	99
LCS 410-522328/2-A	Lab Control Sample	95	93	101	101	104	99	97	109
LCS 410-523604/2-A	Lab Control Sample	72	71	69	80	83	74	70	86
LCSD 410-521851/3-A	Lab Control Sample Dup	74	90	96	83	81	97	84	98
LCSD 410-522328/3-A	Lab Control Sample Dup	60	58	54	62	62	59	56	62
LCSD 410-523604/3-A	Lab Control Sample Dup	70	70	67	79	80	75	68	78
MB 410-521851/1-A	Method Blank	69	79	85	74	76	84	76	85
MB 410-521869/1-A	Method Blank	75	92	97	86	86	96	87	100
MB 410-522328/1-A	Method Blank	65	79	75	78	82	82	77	86
MB 410-523604/1-A	Method Blank	78	71	69	85	87	76	71	87

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFOSA	C8PFOA	C8PFOS	MFOEA	MFOUEA	C9PFNA	d3NMFOS	d3NMFSA
Lab Sample ID	Client Sample ID	(10-155)	(52-153)	(59-155)	(20-200)	(18-175)	(52-168)	(38-168)	(10-130)
410-175226-1	001 FBP	91 cn	77 cn	87 cn	77 cn	81 cn	79 cn	74 cn	56 cn
410-175226-2	001 P	88	84	93	79	82	87	83	28
410-175226-3	002	90	102	111	114	103	94	103	53

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

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

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFOSA (10-155)	C8PFOA (52-153)	C8PFOS (59-155)	MFOEA (20-200)	MFOUEA (18-175)	C9PFNA (52-168)	d3NMFOS (38-168)	d3NMFSA (10-130)
410-175226-4	003	94	120	126	121	111	114	105	47
410-175226-5	004-D	83 cn	92 cn	87 cn	85 cn	85 cn	89 cn	79 cn	42 cn
410-175226-6	004 FB	85 cn	85 cn	89 cn	81 cn	85 cn	94 cn	74 cn	46 cn
410-175226-7	004	117 cn	117 cn	125 cn	106 cn	113 cn	118 cn	114 cn	59 cn
410-175226-8	006	83 cn	101 cn	96 cn	79 cn	85 cn	99 cn	83 cn	47 cn
410-175226-9	Trip Blank	70	80	83	76	70	77	85	47
LCS 410-521851/2-A	Lab Control Sample	61	75	77	78	68	73	70	33
LCS 410-521869/2-A	Lab Control Sample	87	110	110	107	94	104	100	41
LCS 410-522328/2-A	Lab Control Sample	86	103	104	97	97	104	91	36
LCS 410-523604/2-A	Lab Control Sample	86	80	84	85	84	81	83	37
LCSD 410-521851/3-A	Lab Control Sample Dup	72	82	89	82	78	81	89	43
LCSD 410-522328/3-A	Lab Control Sample Dup	55	63	63	59	63	64	61	25
LCSD 410-523604/3-A	Lab Control Sample Dup	78	81	84	75	78	80	77	46
MB 410-521851/1-A	Method Blank	64	76	80	72	69	70	81	41
MB 410-521869/1-A	Method Blank	75	90	90	85	85	86	86	33
MB 410-522328/1-A	Method Blank	74	82	83	76	84	86	78	46
MB 410-523604/1-A	Method Blank	95	83	93	85	88	88	89	46

		Percent Isotope Dilution Recovery (Acceptance Limits)						
Lab Sample ID	Client Sample ID	d5NEFOS (34-181)	d5NPFSA (10-130)	NMFM (10-149)	NEFM (10-151)	M242FTS (35-200)	M262FTS (40-200)	M282FTS (37-200)
410-175226-1	001 FBP	71 cn	56 cn	75 cn	70 cn	111 cn	165 cn	100 cn
410-175226-2	001 P	79	27	83	76	74	149	99
410-175226-3	002	109	46	75	69	124	109	110
410-175226-4	003	111	42	78	71	150	132	118
410-175226-5	004-D	93 cn	36 cn	76 cn	71 cn	89 cn	115 cn	92 cn
410-175226-6	004 FB	88 cn	43 cn	75 cn	68 cn	83 cn	104 cn	94 cn
410-175226-7	004	114 cn	49 cn	112 cn	101 cn	130 cn	154 cn	139 cn
410-175226-8	006	90 cn	46 cn	77 cn	70 cn	93 cn	113 cn	92 cn
410-175226-9	Trip Blank	80	48	62	59	97	88	81
LCS 410-521851/2-A	Lab Control Sample	76	32	55	50	87	79	71
LCS 410-521869/2-A	Lab Control Sample	100	38	70	65	132	110	103
LCS 410-522328/2-A	Lab Control Sample	110	38	83	76	94	142	101
LCS 410-523604/2-A	Lab Control Sample	91	37	84	72	70	131	95
LCSD 410-521851/3-A	Lab Control Sample Dup	91	40	70	65	99	85	83
LCSD 410-522328/3-A	Lab Control Sample Dup	63	27	55	48	58	73	66
LCSD 410-523604/3-A	Lab Control Sample Dup	75	49	75	65	67	133	95
MB 410-521851/1-A	Method Blank	79	42	60	56	91	79	76
MB 410-521869/1-A	Method Blank	94	32	61	57	104	100	86
MB 410-522328/1-A	Method Blank	87	47	71	62	76	105	83
MB 410-523604/1-A	Method Blank	85	44	78	76	70	163	107

Surrogate Legend

MFDEA = 13C-10:2 FTCA
MFDUEA = 13C-10:2 FTUCA
PFTDA = 13C2 PFTeDA
PFDoDA = 13C2-PFDoDA
HFPODA = 13C3 HFPO-DA
C3PFBS = 13C3 PFBS
C3PFHS = 13C3 PFHxS
13C3PFPrA = 13C3-PFPrA

Isotope Dilution Summary

Client: Eastern Research Group, Inc.
Project/Site: SDWA Region 9 - ERG

Job ID: 410-175226-1

PFBA = 13C4 PFBA
C4PFHA = 13C4 PFHpA
13C5PHA = 13C5 PFHxA
PFPeA = 13C5 PFPeA
C6PFDA = 13C6 PFDA
MFHEA = 13C-6:2 FTCA
MFHUEA = 13C-6:2 FTUCA
13C7PUA = 13C7 PFUnA
PFOSA = 13C8 FOSA
C8PFOA = 13C8 PFOA
C8PFOS = 13C8 PFOS
MFOEA = 13C-8:2 FTCA
MFOUEA = 13C-8:2 FTUCA
C9PFNA = 13C9 PFNA
d3NMFOS = d3-NMeFOSAA
d3NMFSA = d3-NMePFOSA
d5NEFOS = d5-NEtFOSAA
d5NPFSA = d5-NEtPFOSA
NMFM = d7-N-MeFOSE-M
NEFM = d9-N-EtFOSE-M
M242FTS = M2-4:2 FTS
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

Method: SOP - SOP T-SSG-WI7750

Lab Sample ID: MB 410-516779/1-A
Matrix: Water
Analysis Batch: 519643

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 516779

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
10:2 FTOH-2-Perfluorodecyl ethanol	<0.300		1.00	0.300	ug/L		06/12/24 22:15	06/20/24 15:58	1
8:2 FTOH-2-Perfluorooctyl ethanol	<0.200		1.00	0.200	ug/L		06/12/24 22:15	06/20/24 15:58	1
7:2 FTOH-1-Perfluoroheptyl ethanol	<0.200		1.00	0.200	ug/L		06/12/24 22:15	06/20/24 15:58	1
6:2 FTOH-2-Perfluorohexyl ethanol	<0.200		1.00	0.200	ug/L		06/12/24 22:15	06/20/24 15:58	1
4:2 FTOH-2-Perfluorobutyl ethanol	<0.200		1.00	0.200	ug/L		06/12/24 22:15	06/20/24 15:58	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Perfluorooctyl-[1,1-2H2]-[1,2-13C2]-ethanol(8:2)	*32*		*14 - 120*	*06/12/24 22:15*	*06/20/24 15:58*	*1*
2-Perfluorodecyl-[1,1-2H2]-[1,2-13C2]-ethanol(10:2)	*78*		*43 - 151*	*06/12/24 22:15*	*06/20/24 15:58*	*1*

Lab Sample ID: LCS 410-516779/2-A
Matrix: Water
Analysis Batch: 519643

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 516779

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
10:2 FTOH-2-Perfluorodecyl ethanol	4.00	3.631		ug/L		91	50 - 120
8:2 FTOH-2-Perfluorooctyl ethanol	4.00	2.961	I	ug/L		74	34 - 120
7:2 FTOH-1-Perfluoroheptyl ethanol	4.00	1.462		ug/L		37	21 - 121
6:2 FTOH-2-Perfluorohexyl ethanol	4.00	1.784	I	ug/L		45	33 - 120
4:2 FTOH-2-Perfluorobutyl ethanol	4.00	1.062		ug/L		27	20 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Perfluorooctyl-[1,1-2H2]-[1,2-13C2]-ethanol(8:2)	*39*		*14 - 120*
2-Perfluorodecyl-[1,1-2H2]-[1,2-13C2]-ethanol(10:2)	*91*		*43 - 151*

Lab Sample ID: LCSD 410-516779/3-A
Matrix: Water
Analysis Batch: 519643

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 516779

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
10:2 FTOH-2-Perfluorodecyl ethanol	4.00	3.269	I	ug/L		82	50 - 120	10	30
8:2 FTOH-2-Perfluorooctyl ethanol	4.00	2.345	I	ug/L		59	34 - 120	23	30
7:2 FTOH-1-Perfluoroheptyl ethanol	4.00	2.113	*1	ug/L		53	21 - 121	36	30
6:2 FTOH-2-Perfluorohexyl ethanol	4.00	1.973	I	ug/L		49	33 - 120	10	30
4:2 FTOH-2-Perfluorobutyl ethanol	4.00	2.212	*1	ug/L		55	20 - 120	70	30

Method: SOP - SOP T-SSG-WI7750 (Continued)

Lab Sample ID: LCSD 410-516779/3-A
Matrix: Water
Analysis Batch: 519643

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 516779

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2-Perfluorooctyl-[1,1-2H2]-[1,2-13C2]-ethanol(8:2)	32		14 - 120
2-Perfluorodecyl-[1,1-2H2]-[1,2-13C2]-ethanol(10:2)	81		43 - 151

Lab Sample ID: MB 410-521574/1-A
Matrix: Water
Analysis Batch: 521665

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 521574

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
10:2 FTOH-2-Perfluorodecyl ethanol	<0.300		1.00	0.300	ug/L		06/26/24 08:13	06/26/24 12:02	1
8:2 FTOH-2-Perfluorooctyl ethanol	<0.200		1.00	0.200	ug/L		06/26/24 08:13	06/26/24 12:02	1
7:2 FTOH-1-Perfluoroheptyl ethanol	<0.200		1.00	0.200	ug/L		06/26/24 08:13	06/26/24 12:02	1
6:2 FTOH-2-Perfluorohexyl ethanol	<0.200		1.00	0.200	ug/L		06/26/24 08:13	06/26/24 12:02	1
4:2 FTOH-2-Perfluorobutyl ethanol	<0.200		1.00	0.200	ug/L		06/26/24 08:13	06/26/24 12:02	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Perfluorooctyl-[1,1-2H2]-[1,2-13C2]-ethanol(8:2)	41		14 - 120	06/26/24 08:13	06/26/24 12:02	1
2-Perfluorodecyl-[1,1-2H2]-[1,2-13C2]-ethanol(10:2)	84		43 - 151	06/26/24 08:13	06/26/24 12:02	1

Lab Sample ID: LCS 410-521574/2-A
Matrix: Water
Analysis Batch: 521665

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 521574

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
10:2 FTOH-2-Perfluorodecyl ethanol	4.00	3.542	I	ug/L		89	50 - 120
8:2 FTOH-2-Perfluorooctyl ethanol	4.00	3.671	I	ug/L		92	34 - 120
7:2 FTOH-1-Perfluoroheptyl ethanol	4.00	3.093		ug/L		77	21 - 121
6:2 FTOH-2-Perfluorohexyl ethanol	4.00	3.391	I	ug/L		85	33 - 120
4:2 FTOH-2-Perfluorobutyl ethanol	4.00	2.902		ug/L		73	20 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Perfluorooctyl-[1,1-2H2]-[1,2-13C2]-ethanol(8:2)	37		14 - 120
2-Perfluorodecyl-[1,1-2H2]-[1,2-13C2]-ethanol(10:2)	78		43 - 151

Lab Sample ID: LCSD 410-521574/3-A
Matrix: Water
Analysis Batch: 521665

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 521574

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
10:2 FTOH-2-Perfluorodecyl ethanol	4.00	3.962		ug/L		99	50 - 120	11	30

Method: SOP - SOP T-SSG-WI7750 (Continued)

Lab Sample ID: LCSD 410-521574/3-A
Matrix: Water
Analysis Batch: 521665

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 521574

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
8:2 FTOH-2-Perfluorooctyl ethanol			4.00	4.591	I	ug/L		115	34 - 120	22	30
7:2 FTOH-1-Perfluoroheptyl ethanol			4.00	3.659		ug/L		92	21 - 121	17	30
6:2 FTOH-2-Perfluorohexyl ethanol			4.00	4.114	I	ug/L		103	33 - 120	19	30
4:2 FTOH-2-Perfluorobutyl ethanol			4.00	2.676		ug/L		67	20 - 120	8	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Perfluorooctyl-[1,1-2H2]-[1,2-13C2]-ethanol(8:2)	*53*		*14 - 120*
2-Perfluorodecyl-[1,1-2H2]-[1,2-13C2]-ethanol(10:2)	*93*		*43 - 151*

Method: 537 IDA - EPA 537 Isotope Dilution

Lab Sample ID: MB 410-521851/1-A
Matrix: Water
Analysis Batch: 523096

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 521851

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
10:2 Fluorotelomer sulfonic acid	<0.800		2.00	0.800	ng/L		06/26/24 15:46	06/29/24 23:26	1
10:2 FTCA	<0.500		2.00	0.500	ng/L		06/26/24 15:46	06/29/24 23:26	1
10:2 FTUCA	<0.400		2.00	0.400	ng/L		06/26/24 15:46	06/29/24 23:26	1
11Cl-PF3OUdS	<0.500		2.00	0.500	ng/L		06/26/24 15:46	06/29/24 23:26	1
3:3 FTCA	<0.500		2.00	0.500	ng/L		06/26/24 15:46	06/29/24 23:26	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.500		2.00	0.500	ng/L		06/26/24 15:46	06/29/24 23:26	1
4:2 Fluorotelomer sulfonic acid	<0.500		2.00	0.500	ng/L		06/26/24 15:46	06/29/24 23:26	1
5:3 FTCA	<0.500		2.00	0.500	ng/L		06/26/24 15:46	06/29/24 23:26	1
6:2 Fluorotelomer sulfonic acid	<0.500		2.00	0.500	ng/L		06/26/24 15:46	06/29/24 23:26	1
6:2 FTCA	<0.700		2.00	0.700	ng/L		06/26/24 15:46	06/29/24 23:26	1
6:2 FTUCA	<0.400		2.00	0.400	ng/L		06/26/24 15:46	06/29/24 23:26	1
7:3 FTCA	<1.10		2.00	1.10	ng/L		06/26/24 15:46	06/29/24 23:26	1
8:2 Fluorotelomer sulfonic acid	<0.600		2.00	0.600	ng/L		06/26/24 15:46	06/29/24 23:26	1
8:2 FTCA	<0.400		2.00	0.400	ng/L		06/26/24 15:46	06/29/24 23:26	1
8:2 FTUCA	<0.400		2.00	0.400	ng/L		06/26/24 15:46	06/29/24 23:26	1
9Cl-PF3ONS	<0.500		2.00	0.500	ng/L		06/26/24 15:46	06/29/24 23:26	1
EVE Acid	<0.500		2.00	0.500	ng/L		06/26/24 15:46	06/29/24 23:26	1
HFPODA	0.7820	J	2.00	0.400	ng/L		06/26/24 15:46	06/29/24 23:26	1
Hydro-EVE Acid	<0.500		2.00	0.500	ng/L		06/26/24 15:46	06/29/24 23:26	1
Hydrolyzed PSDA	<0.400		2.00	0.400	ng/L		06/26/24 15:46	06/29/24 23:26	1
Hydro-PS Acid	<0.500		2.00	0.500	ng/L		06/26/24 15:46	06/29/24 23:26	1
MTP	<0.600		2.00	0.600	ng/L		06/26/24 15:46	06/29/24 23:26	1
NEtFOSA	<0.400		2.00	0.400	ng/L		06/26/24 15:46	06/29/24 23:26	1
NEtFOSAA	<0.500		2.00	0.500	ng/L		06/26/24 15:46	06/29/24 23:26	1
NEtFOSE	<0.400		2.00	0.400	ng/L		06/26/24 15:46	06/29/24 23:26	1
NMeFOSA	<0.700		2.00	0.700	ng/L		06/26/24 15:46	06/29/24 23:26	1
NMeFOSAA	<0.400		2.00	0.400	ng/L		06/26/24 15:46	06/29/24 23:26	1

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: MB 410-521851/1-A
Matrix: Water
Analysis Batch: 523096

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 521851

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
NMeFOSE	<0.400		2.00	0.400	ng/L		06/26/24 15:46	06/29/24 23:26	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.300		2.00	0.300	ng/L		06/26/24 15:46	06/29/24 23:26	1
NVHOS	<0.400		2.00	0.400	ng/L		06/26/24 15:46	06/29/24 23:26	1
PEPA	<0.600		2.00	0.600	ng/L		06/26/24 15:46	06/29/24 23:26	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.300		2.00	0.300	ng/L		06/26/24 15:46	06/29/24 23:26	1
Perfluoro-3,5,7,9,11-pentaoxadodecanoic acid	<0.500		2.00	0.500	ng/L		06/26/24 15:46	06/29/24 23:26	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.300		2.00	0.300	ng/L		06/26/24 15:46	06/29/24 23:26	1
Perfluoro-4-isopropoxybutanoic acid (PFIpOBA)	<0.500		2.00	0.500	ng/L		06/26/24 15:46	06/29/24 23:26	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.300		2.00	0.300	ng/L		06/26/24 15:46	06/29/24 23:26	1
Perfluorobutanesulfonic acid (PFBS)	<0.300		2.00	0.300	ng/L		06/26/24 15:46	06/29/24 23:26	1
Perfluorobutanoic acid (PFBA)	<1.00		2.00	1.00	ng/L		06/26/24 15:46	06/29/24 23:26	1
Perfluorodecanesulfonic acid (PFDS)	<0.300		2.00	0.300	ng/L		06/26/24 15:46	06/29/24 23:26	1
Perfluorodecanoic acid (PFDA)	<0.300		2.00	0.300	ng/L		06/26/24 15:46	06/29/24 23:26	1
Perfluorododecanesulfonic acid (PFDoS)	<0.300		2.00	0.300	ng/L		06/26/24 15:46	06/29/24 23:26	1
Perfluorododecanoic acid (PFDoA)	<0.400		2.00	0.400	ng/L		06/26/24 15:46	06/29/24 23:26	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.300		2.00	0.300	ng/L		06/26/24 15:46	06/29/24 23:26	1
Perfluoroheptanoic acid (PFHpA)	<0.300		2.00	0.300	ng/L		06/26/24 15:46	06/29/24 23:26	1
Perfluorohexanesulfonic acid (PFHxS)	<0.200		2.00	0.200	ng/L		06/26/24 15:46	06/29/24 23:26	1
Perfluorohexanoic acid (PFHxA)	<1.00		2.00	1.00	ng/L		06/26/24 15:46	06/29/24 23:26	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.500		2.00	0.500	ng/L		06/26/24 15:46	06/29/24 23:26	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.500		2.00	0.500	ng/L		06/26/24 15:46	06/29/24 23:26	1
Perfluorononanesulfonic acid (PFNS)	<0.300		2.00	0.300	ng/L		06/26/24 15:46	06/29/24 23:26	1
Perfluorononanoic acid (PFNA)	<0.200		2.00	0.200	ng/L		06/26/24 15:46	06/29/24 23:26	1
Perfluorooctanesulfonamide (PFOSA)	<0.300		2.00	0.300	ng/L		06/26/24 15:46	06/29/24 23:26	1
Perfluorooctanesulfonic acid (PFOS)	<0.500		2.00	0.500	ng/L		06/26/24 15:46	06/29/24 23:26	1
Perfluorooctanoic acid (PFOA)	<0.300		2.00	0.300	ng/L		06/26/24 15:46	06/29/24 23:26	1
Perfluoropentanesulfonic acid (PFPeS)	<0.300		2.00	0.300	ng/L		06/26/24 15:46	06/29/24 23:26	1
Perfluoropentanoic acid (PFPeA)	<0.300		2.00	0.300	ng/L		06/26/24 15:46	06/29/24 23:26	1
Perfluoropropanesulfonic acid	<0.400		2.00	0.400	ng/L		06/26/24 15:46	06/29/24 23:26	1
Perfluoropropionic acid (PFPrA)	<5.00		10.0	5.00	ng/L		06/26/24 15:46	06/29/24 23:26	1
Perfluorotetradecanoic acid (PFTeDA)	<0.400		2.00	0.400	ng/L		06/26/24 15:46	06/29/24 23:26	1
Perfluorotridecanoic acid (PFTrDA)	<0.400		2.00	0.400	ng/L		06/26/24 15:46	06/29/24 23:26	1
Perfluoroundecanoic acid (PFUnA)	<0.300		2.00	0.300	ng/L		06/26/24 15:46	06/29/24 23:26	1
PFECHS	<0.300		2.00	0.300	ng/L		06/26/24 15:46	06/29/24 23:26	1
PFMOAA	<0.300		2.00	0.300	ng/L		06/26/24 15:46	06/29/24 23:26	1
PFO2HxA	<0.700		2.00	0.700	ng/L		06/26/24 15:46	06/29/24 23:26	1
PFO3OA	<1.00		2.00	1.00	ng/L		06/26/24 15:46	06/29/24 23:26	1
PFO4DA	<0.800		2.00	0.800	ng/L		06/26/24 15:46	06/29/24 23:26	1
PMPA	<0.600		2.00	0.600	ng/L		06/26/24 15:46	06/29/24 23:26	1
PS Acid	<0.600		2.00	0.600	ng/L		06/26/24 15:46	06/29/24 23:26	1

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: MB 410-521851/1-A
Matrix: Water
Analysis Batch: 523096

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 521851

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
R-EVE	<0.500		2.00	0.500	ng/L		06/26/24 15:46	06/29/24 23:26	1
R-PSDA	<0.700		2.00	0.700	ng/L		06/26/24 15:46	06/29/24 23:26	1
R-PSDCA	<0.300		2.00	0.300	ng/L		06/26/24 15:46	06/29/24 23:26	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-10:2 FTCA	*72*		*11 - 200*	*06/26/24 15:46*	*06/29/24 23:26*	*1*
13C-10:2 FTUCA	*73*		*10 - 166*	*06/26/24 15:46*	*06/29/24 23:26*	*1*
13C2 PFTeDA	*63*		*10 - 171*	*06/26/24 15:46*	*06/29/24 23:26*	*1*
13C2-PFDoDA	*71*		*22 - 165*	*06/26/24 15:46*	*06/29/24 23:26*	*1*
13C3 HFPO-DA	*78*		*13 - 170*	*06/26/24 15:46*	*06/29/24 23:26*	*1*
13C3 PFBS	*85*		*34 - 200*	*06/26/24 15:46*	*06/29/24 23:26*	*1*
13C3 PFHxS	*72*		*48 - 169*	*06/26/24 15:46*	*06/29/24 23:26*	*1*
13C3-PFPrA	*51*		*21 - 157*	*06/26/24 15:46*	*06/29/24 23:26*	*1*
13C4 PFBA	*69*		*22 - 174*	*06/26/24 15:46*	*06/29/24 23:26*	*1*
13C4 PFHpA	*79*		*40 - 165*	*06/26/24 15:46*	*06/29/24 23:26*	*1*
13C5 PFHxA	*85*		*28 - 166*	*06/26/24 15:46*	*06/29/24 23:26*	*1*
13C5 PFPeA	*74*		*33 - 196*	*06/26/24 15:46*	*06/29/24 23:26*	*1*
13C6 PFDA	*76*		*53 - 151*	*06/26/24 15:46*	*06/29/24 23:26*	*1*
13C-6:2 FTCA	*84*		*10 - 200*	*06/26/24 15:46*	*06/29/24 23:26*	*1*
13C-6:2 FTUCA	*76*		*10 - 173*	*06/26/24 15:46*	*06/29/24 23:26*	*1*
13C7 PFUnA	*85*		*41 - 163*	*06/26/24 15:46*	*06/29/24 23:26*	*1*
13C8 FOSA	*64*		*10 - 155*	*06/26/24 15:46*	*06/29/24 23:26*	*1*
13C8 PFOA	*76*		*52 - 153*	*06/26/24 15:46*	*06/29/24 23:26*	*1*
13C8 PFOS	*80*		*59 - 155*	*06/26/24 15:46*	*06/29/24 23:26*	*1*
13C-8:2 FTCA	*72*		*20 - 200*	*06/26/24 15:46*	*06/29/24 23:26*	*1*
13C-8:2 FTUCA	*69*		*18 - 175*	*06/26/24 15:46*	*06/29/24 23:26*	*1*
13C9 PFNA	*70*		*52 - 168*	*06/26/24 15:46*	*06/29/24 23:26*	*1*
d3-NMeFOSAA	*81*		*38 - 168*	*06/26/24 15:46*	*06/29/24 23:26*	*1*
d3-NMePFOSA	*41*		*10 - 130*	*06/26/24 15:46*	*06/29/24 23:26*	*1*
d5-NEtFOSAA	*79*		*34 - 181*	*06/26/24 15:46*	*06/29/24 23:26*	*1*
d5-NEtPFOSA	*42*		*10 - 130*	*06/26/24 15:46*	*06/29/24 23:26*	*1*
d7-N-MeFOSE-M	*60*		*10 - 149*	*06/26/24 15:46*	*06/29/24 23:26*	*1*
d9-N-EtFOSE-M	*56*		*10 - 151*	*06/26/24 15:46*	*06/29/24 23:26*	*1*
M2-4:2 FTS	*91*		*35 - 200*	*06/26/24 15:46*	*06/29/24 23:26*	*1*
M2-6:2 FTS	*79*		*40 - 200*	*06/26/24 15:46*	*06/29/24 23:26*	*1*
M2-8:2 FTS	*76*		*37 - 200*	*06/26/24 15:46*	*06/29/24 23:26*	*1*

Lab Sample ID: LCS 410-521851/2-A
Matrix: Water
Analysis Batch: 523096

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 521851

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
10:2 Fluorotelomer sulfonic acid	24.7	26.65		ng/L		108	47 - 141
10:2 FTCA	25.6	23.29		ng/L		91	36 - 130
10:2 FTUCA	25.6	24.61		ng/L		96	54 - 165
11Cl-PF3OUdS	23.8	23.40		ng/L		98	57 - 130
3:3 FTCA	25.6	27.43		ng/L		107	52 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	24.2	23.67		ng/L		98	61 - 130

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: LCS 410-521851/2-A
Matrix: Water
Analysis Batch: 523096

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 521851

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
4:2 Fluorotelomer sulfonic acid	23.9	21.76		ng/L		91	61 - 131
5:3 FTCA	25.6	24.90		ng/L		97	51 - 132
6:2 Fluorotelomer sulfonic acid	24.3	25.02		ng/L		103	61 - 132
6:2 FTCA	25.6	23.52		ng/L		92	42 - 130
6:2 FTUCA	25.6	27.42		ng/L		107	57 - 166
7:3 FTCA	25.6	20.58		ng/L		80	10 - 150
8:2 Fluorotelomer sulfonic acid	24.5	25.31		ng/L		103	55 - 134
8:2 FTCA	25.6	22.25		ng/L		87	44 - 130
8:2 FTUCA	25.6	26.06		ng/L		102	52 - 166
9Cl-PF3ONS	23.8	25.44		ng/L		107	60 - 130
EVE Acid	25.6	14.49		ng/L		57	10 - 130
HFPODA	25.6	26.38		ng/L		103	53 - 131
Hydro-EVE Acid	25.6	26.69		ng/L		104	48 - 154
Hydrolyzed PSDA	25.6	22.48		ng/L		88	35 - 166
Hydro-PS Acid	25.6	21.64		ng/L		85	50 - 147
MTP	25.6	22.19		ng/L		87	22 - 156
NEtFOSA	25.6	28.55		ng/L		112	67 - 135
NEtFOSAA	25.6	24.49		ng/L		96	63 - 130
NEtFOSE	25.6	26.06		ng/L		102	65 - 132
NMeFOSA	25.6	29.04		ng/L		113	53 - 167
NMeFOSAA	25.6	25.70		ng/L		100	62 - 131
NMeFOSE	25.6	26.56		ng/L		104	65 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	25.6	20.93		ng/L		82	60 - 130
NVHOS	25.6	22.60		ng/L		88	56 - 144
PEPA	25.6	29.35		ng/L		115	44 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	22.8	19.48		ng/L		86	60 - 130
Perfluoro-3,5,7,9,11-pentaoxado decanoic acid	25.6	27.81		ng/L		109	52 - 146
Perfluoro-3-methoxypropanoic acid (PFMPA)	25.6	26.45		ng/L		103	62 - 133
Perfluoro-4-isopropoxybutanoic acid (PFIpOBA)	25.6	27.85		ng/L		109	56 - 161
Perfluoro-4-methoxybutanoic acid (PFMBA)	25.6	19.73		ng/L		77	57 - 133
Perfluorobutanesulfonic acid (PFBS)	22.7	23.02		ng/L		102	64 - 132
Perfluorobutanoic acid (PFBA)	25.6	24.81		ng/L		97	58 - 130
Perfluorodecanesulfonic acid (PFDS)	24.7	23.14		ng/L		94	55 - 130
Perfluorodecanoic acid (PFDA)	25.6	29.36		ng/L		115	62 - 133
Perfluorododecanesulfonic acid (PFDoS)	24.8	20.67		ng/L		83	56 - 130
Perfluorododecanoic acid (PFDoA)	25.6	28.59		ng/L		112	61 - 132
Perfluoroheptanesulfonic acid (PFHpS)	24.4	24.73		ng/L		101	59 - 130
Perfluoroheptanoic acid (PFHpA)	25.6	26.80		ng/L		105	64 - 130
Perfluorohexanesulfonic acid (PFHxS)	23.3	23.72		ng/L		102	62 - 130
Perfluorohexanoic acid (PFHxA)	25.6	24.98		ng/L		98	59 - 130

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: LCS 410-521851/2-A
Matrix: Water
Analysis Batch: 523096

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 521851

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoro-n-hexadecanoic acid (PFHxDA)	25.6	24.61		ng/L		96	50 - 130
Perfluoro-n-octadecanoic acid (PFODA)	25.6	21.40		ng/L		84	45 - 137
Perfluorononanesulfonic acid (PFNS)	24.6	24.90		ng/L		101	56 - 130
Perfluorononanoic acid (PFNA)	25.6	25.53		ng/L		100	63 - 133
Perfluorooctanesulfonamide (PFOSA)	25.6	25.99		ng/L		102	67 - 132
Perfluorooctanesulfonic acid (PFOS)	23.7	21.41		ng/L		90	62 - 130
Perfluorooctanoic acid (PFOA)	25.6	26.61		ng/L		104	58 - 132
Perfluoropentanesulfonic acid (PFPeS)	24.0	19.82		ng/L		83	64 - 132
Perfluoropentanoic acid (PFPeA)	25.6	26.71		ng/L		104	60 - 130
Perfluoropropanesulfonic acid	23.4	31.07		ng/L		132	58 - 137
Perfluoropropionic acid (PFPrA)	25.6	30.46		ng/L		119	20 - 173
Perfluorotetradecanoic acid (PFTeDA)	25.6	26.20		ng/L		102	62 - 131
Perfluorotridecanoic acid (PFTrDA)	25.6	27.37		ng/L		107	59 - 136
Perfluoroundecanoic acid (PFUnA)	25.6	27.13		ng/L		106	62 - 131
PFECHS	23.6	25.27		ng/L		107	54 - 130
PFMOAA	25.6	22.91		ng/L		90	34 - 143
PFO2HxA	25.6	29.97		ng/L		117	58 - 140
PFO3OA	25.6	31.47		ng/L		123	52 - 148
PFO4DA	25.6	27.53		ng/L		108	49 - 150
PMPA	25.6	27.87		ng/L		109	54 - 135
PS Acid	25.6	8.999		ng/L		35	10 - 130
R-EVE	25.6	25.09		ng/L		98	46 - 141
R-PSDA	25.6	20.54		ng/L		80	38 - 144
R-PSDCA	25.6	20.35		ng/L		80	53 - 148

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-10:2 FTCA	*74*		*11 - 200*
13C-10:2 FTUCA	*73*		*10 - 166*
13C2 PFTeDA	*59*		*10 - 171*
13C2-PFDoDA	*67*		*22 - 165*
13C3 HFPO-DA	*77*		*13 - 170*
13C3 PFBS	*91*		*34 - 200*
13C3 PFHxS	*74*		*48 - 169*
13C3-PFPrA	*52*		*21 - 157*
13C4 PFBA	*72*		*22 - 174*
13C4 PFHpA	*80*		*40 - 165*
13C5 PFHxA	*83*		*28 - 166*
13C5 PFPeA	*78*		*33 - 196*
13C6 PFDA	*72*		*53 - 151*
13C-6:2 FTCA	*80*		*10 - 200*
13C-6:2 FTUCA	*73*		*10 - 173*
13C7 PFUnA	*79*		*41 - 163*

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: LCS 410-521851/2-A
Matrix: Water
Analysis Batch: 523096

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 521851

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C8 FOSA	61		10 - 155
13C8 PFOA	75		52 - 153
13C8 PFOS	77		59 - 155
13C-8:2 FTCA	78		20 - 200
13C-8:2 FTUCA	68		18 - 175
13C9 PFNA	73		52 - 168
d3-NMeFOSAA	70		38 - 168
d3-NMePFOSA	33		10 - 130
d5-NEtFOSAA	76		34 - 181
d5-NEtPFOSA	32		10 - 130
d7-N-MeFOSE-M	55		10 - 149
d9-N-EtFOSE-M	50		10 - 151
M2-4:2 FTS	87		35 - 200
M2-6:2 FTS	79		40 - 200
M2-8:2 FTS	71		37 - 200

Lab Sample ID: LCSD 410-521851/3-A
Matrix: Water
Analysis Batch: 523096

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 521851

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
10:2 Fluorotelomer sulfonic acid			24.7	23.16		ng/L		94	47 - 141	14	30
10:2 FTCA			25.6	22.58		ng/L		88	36 - 130	3	30
10:2 FTUCA			25.6	24.69		ng/L		96	54 - 165	0	30
11Cl-PF3OUdS			23.8	22.31		ng/L		94	57 - 130	5	30
3:3 FTCA			25.6	24.58		ng/L		96	52 - 130	11	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)			24.2	23.43		ng/L		97	61 - 130	1	30
4:2 Fluorotelomer sulfonic acid			23.9	21.35		ng/L		89	61 - 131	2	30
5:3 FTCA			25.6	23.46		ng/L		92	51 - 132	6	30
6:2 Fluorotelomer sulfonic acid			24.3	24.55		ng/L		101	61 - 132	2	30
6:2 FTCA			25.6	21.81		ng/L		85	42 - 130	8	30
6:2 FTUCA			25.6	26.42		ng/L		103	57 - 166	4	30
7:3 FTCA			25.6	19.09		ng/L		75	10 - 150	8	30
8:2 Fluorotelomer sulfonic acid			24.5	22.97		ng/L		94	55 - 134	10	30
8:2 FTCA			25.6	23.23		ng/L		91	44 - 130	4	30
8:2 FTUCA			25.6	26.13		ng/L		102	52 - 166	0	30
9Cl-PF3ONS			23.8	23.57		ng/L		99	60 - 130	8	30
EVE Acid			25.6	14.54		ng/L		57	10 - 130	0	30
HFPODA			25.6	24.86		ng/L		97	53 - 131	6	30
Hydro-EVE Acid			25.6	27.72		ng/L		108	48 - 154	4	30
Hydrolyzed PSDA			25.6	22.56		ng/L		88	35 - 166	0	30
Hydro-PS Acid			25.6	23.26		ng/L		91	50 - 147	7	30
MTP			25.6	21.45		ng/L		84	22 - 156	3	30
NEtFOSA			25.6	29.61		ng/L		116	67 - 135	4	30
NEtFOSAA			25.6	25.07		ng/L		98	63 - 130	2	30
NEtFOSE			25.6	25.43		ng/L		99	65 - 132	2	30
NMeFOSA			25.6	29.82		ng/L		116	53 - 167	3	30
NMeFOSAA			25.6	25.63		ng/L		100	62 - 131	0	30

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: LCSD 410-521851/3-A
Matrix: Water
Analysis Batch: 523096

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 521851

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
NMeFOSE	25.6	25.68		ng/L		100	65 - 130	3	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	25.6	21.71		ng/L		85	60 - 130	4	30
NVHOS	25.6	23.49		ng/L		92	56 - 144	4	30
PEPA	25.6	29.05		ng/L		113	44 - 150	1	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	22.8	20.94		ng/L		92	60 - 130	7	30
Perfluoro-3,5,7,9,11-pentaoxadodecanoic acid	25.6	28.40		ng/L		111	52 - 146	2	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	25.6	26.76		ng/L		105	62 - 133	1	30
Perfluoro-4-isopropoxybutanoic acid (PFIpOBA)	25.6	29.37		ng/L		115	56 - 161	5	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	25.6	19.76		ng/L		77	57 - 133	0	30
Perfluorobutanesulfonic acid (PFBS)	22.7	22.04		ng/L		97	64 - 132	4	30
Perfluorobutanoic acid (PFBA)	25.6	23.52		ng/L		92	58 - 130	5	30
Perfluorodecanesulfonic acid (PFDS)	24.7	22.52		ng/L		91	55 - 130	3	30
Perfluorodecanoic acid (PFDA)	25.6	26.83		ng/L		105	62 - 133	9	30
Perfluorododecanesulfonic acid (PFDoS)	24.8	20.21		ng/L		82	56 - 130	2	30
Perfluorododecanoic acid (PFDoA)	25.6	27.67		ng/L		108	61 - 132	3	30
Perfluoroheptanesulfonic acid (PFHpS)	24.4	23.06		ng/L		95	59 - 130	7	30
Perfluoroheptanoic acid (PFHpA)	25.6	25.91		ng/L		101	64 - 130	3	30
Perfluorohexanesulfonic acid (PFHxS)	23.3	22.46		ng/L		96	62 - 130	5	30
Perfluorohexanoic acid (PFHxA)	25.6	25.18		ng/L		98	59 - 130	1	30
Perfluoro-n-hexadecanoic acid (PFHxDA)	25.6	23.72		ng/L		93	50 - 130	4	30
Perfluoro-n-octadecanoic acid (PFODA)	25.6	19.02		ng/L		74	45 - 137	12	30
Perfluorononanesulfonic acid (PFNS)	24.6	23.84		ng/L		97	56 - 130	4	30
Perfluorononanoic acid (PFNA)	25.6	24.62		ng/L		96	63 - 133	4	30
Perfluorooctanesulfonamide (PFOSA)	25.6	26.05		ng/L		102	67 - 132	0	30
Perfluorooctanesulfonic acid (PFOS)	23.7	20.77		ng/L		88	62 - 130	3	30
Perfluorooctanoic acid (PFOA)	25.6	24.37		ng/L		95	58 - 132	9	30
Perfluoropentanesulfonic acid (PFPeS)	24.0	19.85		ng/L		83	64 - 132	0	30
Perfluoropentanoic acid (PFPeA)	25.6	25.84		ng/L		101	60 - 130	3	30
Perfluoropropanesulfonic acid	23.4	31.77		ng/L		135	58 - 137	2	30
Perfluoropropionic acid (PFPrA)	25.6	31.10		ng/L		121	20 - 173	2	30
Perfluorotetradecanoic acid (PFTeDA)	25.6	25.94		ng/L		101	62 - 131	1	30
Perfluorotridecanoic acid (PFTrDA)	25.6	27.35		ng/L		107	59 - 136	0	30
Perfluoroundecanoic acid (PFUnA)	25.6	24.89		ng/L		97	62 - 131	9	30

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: LCSD 410-521851/3-A
Matrix: Water
Analysis Batch: 523096

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 521851

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
PFECHS			23.6	23.94		ng/L		101	54 - 130	5	30
PFMOAA			25.6	24.89		ng/L		97	34 - 143	8	30
PFO2HxA			25.6	30.44		ng/L		119	58 - 140	2	30
PFO3OA			25.6	30.48		ng/L		119	52 - 148	3	30
PFO4DA			25.6	27.66		ng/L		108	49 - 150	0	30
PMPA			25.6	26.83		ng/L		105	54 - 135	4	30
PS Acid			25.6	9.468		ng/L		37	10 - 130	5	30
R-EVE			25.6	25.30		ng/L		99	46 - 141	1	30
R-PSDA			25.6	21.29		ng/L		83	38 - 144	4	30
R-PSDCA			25.6	22.72		ng/L		89	53 - 148	11	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C-10:2 FTCA	*85*		*11 - 200*
13C-10:2 FTUCA	*83*		*10 - 166*
13C2 PFTeDA	*69*		*10 - 171*
13C2-PFDoDA	*78*		*22 - 165*
13C3 HFPO-DA	*91*		*13 - 170*
13C3 PFBS	*92*		*34 - 200*
13C3 PFHxS	*86*		*48 - 169*
13C3-PFPrA	*55*		*21 - 157*
13C4 PFBA	*74*		*22 - 174*
13C4 PFHpA	*90*		*40 - 165*
13C5 PFHxA	*96*		*28 - 166*
13C5 PFPeA	*83*		*33 - 196*
13C6 PFDA	*81*		*53 - 151*
13C-6:2 FTCA	*97*		*10 - 200*
13C-6:2 FTUCA	*84*		*10 - 173*
13C7 PFUnA	*98*		*41 - 163*
13C8 FOSA	*72*		*10 - 155*
13C8 PFOA	*82*		*52 - 153*
13C8 PFOS	*89*		*59 - 155*
13C-8:2 FTCA	*82*		*20 - 200*
13C-8:2 FTUCA	*78*		*18 - 175*
13C9 PFNA	*81*		*52 - 168*
d3-NMeFOSAA	*89*		*38 - 168*
d3-NMePFOSA	*43*		*10 - 130*
d5-NEtFOSAA	*91*		*34 - 181*
d5-NEtPFOSA	*40*		*10 - 130*
d7-N-MeFOSE-M	*70*		*10 - 149*
d9-N-EtFOSE-M	*65*		*10 - 151*
M2-4:2 FTS	*99*		*35 - 200*
M2-6:2 FTS	*85*		*40 - 200*
M2-8:2 FTS	*83*		*37 - 200*

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: MB 410-521869/1-A
Matrix: Water
Analysis Batch: 523096

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 521869

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
10:2 Fluorotelomer sulfonic acid	<0.800		2.00	0.800	ng/L		06/26/24 16:17	06/30/24 03:26	1
10:2 FTCA	<0.500		2.00	0.500	ng/L		06/26/24 16:17	06/30/24 03:26	1
10:2 FTUCA	<0.400		2.00	0.400	ng/L		06/26/24 16:17	06/30/24 03:26	1
11Cl-PF3OUdS	<0.500		2.00	0.500	ng/L		06/26/24 16:17	06/30/24 03:26	1
3:3 FTCA	<0.500		2.00	0.500	ng/L		06/26/24 16:17	06/30/24 03:26	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.500		2.00	0.500	ng/L		06/26/24 16:17	06/30/24 03:26	1
4:2 Fluorotelomer sulfonic acid	<0.500		2.00	0.500	ng/L		06/26/24 16:17	06/30/24 03:26	1
5:3 FTCA	<0.500		2.00	0.500	ng/L		06/26/24 16:17	06/30/24 03:26	1
6:2 Fluorotelomer sulfonic acid	<0.500		2.00	0.500	ng/L		06/26/24 16:17	06/30/24 03:26	1
6:2 FTCA	<0.700		2.00	0.700	ng/L		06/26/24 16:17	06/30/24 03:26	1
6:2 FTUCA	<0.400		2.00	0.400	ng/L		06/26/24 16:17	06/30/24 03:26	1
7:3 FTCA	<1.10		2.00	1.10	ng/L		06/26/24 16:17	06/30/24 03:26	1
8:2 Fluorotelomer sulfonic acid	<0.600		2.00	0.600	ng/L		06/26/24 16:17	06/30/24 03:26	1
8:2 FTCA	<0.400		2.00	0.400	ng/L		06/26/24 16:17	06/30/24 03:26	1
8:2 FTUCA	<0.400		2.00	0.400	ng/L		06/26/24 16:17	06/30/24 03:26	1
9Cl-PF3ONS	<0.500		2.00	0.500	ng/L		06/26/24 16:17	06/30/24 03:26	1
EVE Acid	<0.500		2.00	0.500	ng/L		06/26/24 16:17	06/30/24 03:26	1
HFPODA	0.5586	J	2.00	0.400	ng/L		06/26/24 16:17	06/30/24 03:26	1
Hydro-EVE Acid	<0.500		2.00	0.500	ng/L		06/26/24 16:17	06/30/24 03:26	1
Hydrolyzed PSDA	<0.400		2.00	0.400	ng/L		06/26/24 16:17	06/30/24 03:26	1
Hydro-PS Acid	<0.500		2.00	0.500	ng/L		06/26/24 16:17	06/30/24 03:26	1
MTP	<0.600		2.00	0.600	ng/L		06/26/24 16:17	06/30/24 03:26	1
NEtFOSA	<0.400		2.00	0.400	ng/L		06/26/24 16:17	06/30/24 03:26	1
NEtFOSAA	<0.500		2.00	0.500	ng/L		06/26/24 16:17	06/30/24 03:26	1
NEtFOSE	<0.400		2.00	0.400	ng/L		06/26/24 16:17	06/30/24 03:26	1
NMeFOSA	<0.700		2.00	0.700	ng/L		06/26/24 16:17	06/30/24 03:26	1
NMeFOSAA	<0.400		2.00	0.400	ng/L		06/26/24 16:17	06/30/24 03:26	1
NMeFOSE	<0.400		2.00	0.400	ng/L		06/26/24 16:17	06/30/24 03:26	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.300		2.00	0.300	ng/L		06/26/24 16:17	06/30/24 03:26	1
NVHOS	<0.400		2.00	0.400	ng/L		06/26/24 16:17	06/30/24 03:26	1
PEPA	<0.600		2.00	0.600	ng/L		06/26/24 16:17	06/30/24 03:26	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.300		2.00	0.300	ng/L		06/26/24 16:17	06/30/24 03:26	1
Perfluoro-3,5,7,9,11-pentaoxadodecanoic acid	<0.500		2.00	0.500	ng/L		06/26/24 16:17	06/30/24 03:26	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.300		2.00	0.300	ng/L		06/26/24 16:17	06/30/24 03:26	1
Perfluoro-4-isopropoxybutanoic acid (PFIpOBA)	<0.500		2.00	0.500	ng/L		06/26/24 16:17	06/30/24 03:26	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.300		2.00	0.300	ng/L		06/26/24 16:17	06/30/24 03:26	1
Perfluorobutanesulfonic acid (PFBS)	<0.300		2.00	0.300	ng/L		06/26/24 16:17	06/30/24 03:26	1
Perfluorobutanoic acid (PFBA)	<1.00		2.00	1.00	ng/L		06/26/24 16:17	06/30/24 03:26	1
Perfluorodecanesulfonic acid (PFDS)	<0.300		2.00	0.300	ng/L		06/26/24 16:17	06/30/24 03:26	1
Perfluorodecanoic acid (PFDA)	<0.300		2.00	0.300	ng/L		06/26/24 16:17	06/30/24 03:26	1
Perfluorododecanesulfonic acid (PFDoS)	<0.300		2.00	0.300	ng/L		06/26/24 16:17	06/30/24 03:26	1
Perfluorododecanoic acid (PFDoA)	<0.400		2.00	0.400	ng/L		06/26/24 16:17	06/30/24 03:26	1

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: MB 410-521869/1-A
Matrix: Water
Analysis Batch: 523096

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 521869

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanesulfonic acid (PFHpS)	<0.300		2.00	0.300	ng/L		06/26/24 16:17	06/30/24 03:26	1
Perfluoroheptanoic acid (PFHpA)	<0.300		2.00	0.300	ng/L		06/26/24 16:17	06/30/24 03:26	1
Perfluorohexanesulfonic acid (PFHxS)	<0.200		2.00	0.200	ng/L		06/26/24 16:17	06/30/24 03:26	1
Perfluorohexanoic acid (PFHxA)	<1.00		2.00	1.00	ng/L		06/26/24 16:17	06/30/24 03:26	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.500		2.00	0.500	ng/L		06/26/24 16:17	06/30/24 03:26	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.500		2.00	0.500	ng/L		06/26/24 16:17	06/30/24 03:26	1
Perfluorononanesulfonic acid (PFNS)	<0.300		2.00	0.300	ng/L		06/26/24 16:17	06/30/24 03:26	1
Perfluorononanoic acid (PFNA)	<0.200		2.00	0.200	ng/L		06/26/24 16:17	06/30/24 03:26	1
Perfluorooctanesulfonamide (PFOSA)	<0.300		2.00	0.300	ng/L		06/26/24 16:17	06/30/24 03:26	1
Perfluorooctanesulfonic acid (PFOS)	<0.500		2.00	0.500	ng/L		06/26/24 16:17	06/30/24 03:26	1
Perfluorooctanoic acid (PFOA)	<0.300		2.00	0.300	ng/L		06/26/24 16:17	06/30/24 03:26	1
Perfluoropentanesulfonic acid (PFPeS)	<0.300		2.00	0.300	ng/L		06/26/24 16:17	06/30/24 03:26	1
Perfluoropentanoic acid (PFPeA)	<0.300		2.00	0.300	ng/L		06/26/24 16:17	06/30/24 03:26	1
Perfluoropropanesulfonic acid	<0.400		2.00	0.400	ng/L		06/26/24 16:17	06/30/24 03:26	1
Perfluoropropionic acid (PFPrA)	<5.00		10.0	5.00	ng/L		06/26/24 16:17	06/30/24 03:26	1
Perfluorotetradecanoic acid (PFTeDA)	<0.400		2.00	0.400	ng/L		06/26/24 16:17	06/30/24 03:26	1
Perfluorotridecanoic acid (PFTrDA)	<0.400		2.00	0.400	ng/L		06/26/24 16:17	06/30/24 03:26	1
Perfluoroundecanoic acid (PFUnA)	<0.300		2.00	0.300	ng/L		06/26/24 16:17	06/30/24 03:26	1
PFECHS	<0.300		2.00	0.300	ng/L		06/26/24 16:17	06/30/24 03:26	1
PFMOAA	<0.300		2.00	0.300	ng/L		06/26/24 16:17	06/30/24 03:26	1
PFO2HxA	<0.700		2.00	0.700	ng/L		06/26/24 16:17	06/30/24 03:26	1
PFO3OA	<1.00		2.00	1.00	ng/L		06/26/24 16:17	06/30/24 03:26	1
PFO4DA	<0.800		2.00	0.800	ng/L		06/26/24 16:17	06/30/24 03:26	1
PMPA	<0.600		2.00	0.600	ng/L		06/26/24 16:17	06/30/24 03:26	1
PS Acid	<0.600		2.00	0.600	ng/L		06/26/24 16:17	06/30/24 03:26	1
R-EVE	<0.500		2.00	0.500	ng/L		06/26/24 16:17	06/30/24 03:26	1
R-PSDA	<0.700		2.00	0.700	ng/L		06/26/24 16:17	06/30/24 03:26	1
R-PSDCA	<0.300		2.00	0.300	ng/L		06/26/24 16:17	06/30/24 03:26	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-10:2 FTCA	*87*		*11 - 200*	*06/26/24 16:17*	*06/30/24 03:26*	*1*
13C-10:2 FTUCA	*85*		*10 - 166*	*06/26/24 16:17*	*06/30/24 03:26*	*1*
13C2 PFTeDA	*67*		*10 - 171*	*06/26/24 16:17*	*06/30/24 03:26*	*1*
13C2-PFDoDA	*81*		*22 - 165*	*06/26/24 16:17*	*06/30/24 03:26*	*1*
13C3 HFPO-DA	*90*		*13 - 170*	*06/26/24 16:17*	*06/30/24 03:26*	*1*
13C3 PFBS	*100*		*34 - 200*	*06/26/24 16:17*	*06/30/24 03:26*	*1*
13C3 PFHxS	*87*		*48 - 169*	*06/26/24 16:17*	*06/30/24 03:26*	*1*
13C3-PFPrA	*58*		*21 - 157*	*06/26/24 16:17*	*06/30/24 03:26*	*1*
13C4 PFBA	*75*		*22 - 174*	*06/26/24 16:17*	*06/30/24 03:26*	*1*
13C4 PFHpA	*92*		*40 - 165*	*06/26/24 16:17*	*06/30/24 03:26*	*1*
13C5 PFHxA	*97*		*28 - 166*	*06/26/24 16:17*	*06/30/24 03:26*	*1*
13C5 PFPeA	*86*		*33 - 196*	*06/26/24 16:17*	*06/30/24 03:26*	*1*
13C6 PFDA	*86*		*53 - 151*	*06/26/24 16:17*	*06/30/24 03:26*	*1*
13C-6:2 FTCA	*96*		*10 - 200*	*06/26/24 16:17*	*06/30/24 03:26*	*1*
13C-6:2 FTUCA	*87*		*10 - 173*	*06/26/24 16:17*	*06/30/24 03:26*	*1*
13C7 PFUnA	*100*		*41 - 163*	*06/26/24 16:17*	*06/30/24 03:26*	*1*

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: MB 410-521869/1-A
Matrix: Water
Analysis Batch: 523096

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 521869

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	75		10 - 155	06/26/24 16:17	06/30/24 03:26	1
13C8 PFOA	90		52 - 153	06/26/24 16:17	06/30/24 03:26	1
13C8 PFOS	90		59 - 155	06/26/24 16:17	06/30/24 03:26	1
13C-8:2 FTCA	85		20 - 200	06/26/24 16:17	06/30/24 03:26	1
13C-8:2 FTUCA	85		18 - 175	06/26/24 16:17	06/30/24 03:26	1
13C9 PFNA	86		52 - 168	06/26/24 16:17	06/30/24 03:26	1
d3-NMeFOSAA	86		38 - 168	06/26/24 16:17	06/30/24 03:26	1
d3-NMePFOSA	33		10 - 130	06/26/24 16:17	06/30/24 03:26	1
d5-NEtFOSAA	94		34 - 181	06/26/24 16:17	06/30/24 03:26	1
d5-NEtPFOSA	32		10 - 130	06/26/24 16:17	06/30/24 03:26	1
d7-N-MeFOSE-M	61		10 - 149	06/26/24 16:17	06/30/24 03:26	1
d9-N-EtFOSE-M	57		10 - 151	06/26/24 16:17	06/30/24 03:26	1
M2-4:2 FTS	104		35 - 200	06/26/24 16:17	06/30/24 03:26	1
M2-6:2 FTS	100		40 - 200	06/26/24 16:17	06/30/24 03:26	1
M2-8:2 FTS	86		37 - 200	06/26/24 16:17	06/30/24 03:26	1

Lab Sample ID: LCS 410-521869/2-A
Matrix: Water
Analysis Batch: 523096

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 521869

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
10:2 Fluorotelomer sulfonic acid	24.7	21.63		ng/L		88	47 - 141
10:2 FTCA	25.6	21.84		ng/L		85	36 - 130
10:2 FTUCA	25.6	22.55		ng/L		88	54 - 165
11Cl-PF3OUdS	23.8	22.20		ng/L		93	57 - 130
3:3 FTCA	25.6	23.76		ng/L		93	52 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	24.2	22.69		ng/L		94	61 - 130
4:2 Fluorotelomer sulfonic acid	23.9	20.16		ng/L		84	61 - 131
5:3 FTCA	25.6	22.71		ng/L		89	51 - 132
6:2 Fluorotelomer sulfonic acid	24.3	23.30		ng/L		96	61 - 132
6:2 FTCA	25.6	22.56		ng/L		88	42 - 130
6:2 FTUCA	25.6	26.51		ng/L		104	57 - 166
7:3 FTCA	25.6	20.15		ng/L		79	10 - 150
8:2 Fluorotelomer sulfonic acid	24.5	22.49		ng/L		92	55 - 134
8:2 FTCA	25.6	22.35		ng/L		87	44 - 130
8:2 FTUCA	25.6	25.73		ng/L		101	52 - 166
9Cl-PF3ONS	23.8	25.73		ng/L		108	60 - 130
EVE Acid	25.6	13.73		ng/L		54	10 - 130
HFPODA	25.6	23.63		ng/L		92	53 - 131
Hydro-EVE Acid	25.6	25.85		ng/L		101	48 - 154
Hydrolyzed PSDA	25.6	22.06		ng/L		86	35 - 166
Hydro-PS Acid	25.6	22.41		ng/L		88	50 - 147
MTP	25.6	18.14		ng/L		71	22 - 156
NEtFOSA	25.6	25.80		ng/L		101	67 - 135
NEtFOSAA	25.6	24.23		ng/L		95	63 - 130
NEtFOSE	25.6	23.72		ng/L		93	65 - 132
NMeFOSA	25.6	26.19		ng/L		102	53 - 167
NMeFOSAA	25.6	23.32		ng/L		91	62 - 131

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: LCS 410-521869/2-A
Matrix: Water
Analysis Batch: 523096

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 521869

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
NMeFOSE	25.6	24.45		ng/L		96	65 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	25.6	21.20		ng/L		83	60 - 130
NVHOS	25.6	22.60		ng/L		88	56 - 144
PEPA	25.6	26.13		ng/L		102	44 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	22.8	18.80		ng/L		83	60 - 130
Perfluoro-3,5,7,9,11-pentaoxadodecanoic acid	25.6	29.81		ng/L		116	52 - 146
Perfluoro-3-methoxypropanoic acid (PFMPA)	25.6	25.04		ng/L		98	62 - 133
Perfluoro-4-isopropoxybutanoic acid (PFIpOBA)	25.6	27.55		ng/L		108	56 - 161
Perfluoro-4-methoxybutanoic acid (PFMBA)	25.6	19.20		ng/L		75	57 - 133
Perfluorobutanesulfonic acid (PFBS)	22.7	20.51		ng/L		91	64 - 132
Perfluorobutanoic acid (PFBA)	25.6	22.20		ng/L		87	58 - 130
Perfluorodecanesulfonic acid (PFDS)	24.7	20.73		ng/L		84	55 - 130
Perfluorodecanoic acid (PFDA)	25.6	26.18		ng/L		102	62 - 133
Perfluorododecanesulfonic acid (PFDoS)	24.8	18.95		ng/L		76	56 - 130
Perfluorododecanoic acid (PFDoA)	25.6	26.01		ng/L		102	61 - 132
Perfluoroheptanesulfonic acid (PFHpS)	24.4	22.16		ng/L		91	59 - 130
Perfluoroheptanoic acid (PFHpA)	25.6	25.34		ng/L		99	64 - 130
Perfluorohexanesulfonic acid (PFHxS)	23.3	21.40		ng/L		92	62 - 130
Perfluorohexanoic acid (PFHxA)	25.6	23.87		ng/L		93	59 - 130
Perfluoro-n-hexadecanoic acid (PFHxDA)	25.6	23.30		ng/L		91	50 - 130
Perfluoro-n-octadecanoic acid (PFODA)	25.6	19.57		ng/L		76	45 - 137
Perfluorononanesulfonic acid (PFNS)	24.6	24.09		ng/L		98	56 - 130
Perfluorononanoic acid (PFNA)	25.6	24.01		ng/L		94	63 - 133
Perfluorooctanesulfonamide (PFOSA)	25.6	23.91		ng/L		93	67 - 132
Perfluorooctanesulfonic acid (PFOS)	23.7	20.65		ng/L		87	62 - 130
Perfluorooctanoic acid (PFOA)	25.6	24.05		ng/L		94	58 - 132
Perfluoropentanesulfonic acid (PFPeS)	24.0	20.37		ng/L		85	64 - 132
Perfluoropentanoic acid (PFPeA)	25.6	25.36		ng/L		99	60 - 130
Perfluoropropanesulfonic acid	23.4	29.59		ng/L		126	58 - 137
Perfluoropropionic acid (PFPrA)	25.6	26.87		ng/L		105	20 - 173
Perfluorotetradecanoic acid (PFTeDA)	25.6	24.23		ng/L		95	62 - 131
Perfluorotridecanoic acid (PFTrDA)	25.6	25.89		ng/L		101	59 - 136
Perfluoroundecanoic acid (PFUnA)	25.6	25.81		ng/L		101	62 - 131

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: LCS 410-521869/2-A
Matrix: Water
Analysis Batch: 523096

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 521869

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
PFECHS			23.6	22.47		ng/L		95	54 - 130		
PFMOAA			25.6	20.24		ng/L		79	34 - 143		
PFO2HxA			25.6	29.54		ng/L		115	58 - 140		
PFO3OA			25.6	30.04		ng/L		117	52 - 148		
PFO4DA			25.6	26.79		ng/L		105	49 - 150		
PMPA			25.6	25.30		ng/L		99	54 - 135		
PS Acid			25.6	9.093		ng/L		36	10 - 130		
R-EVE			25.6	23.53		ng/L		92	46 - 141		
R-PSDA			25.6	20.92		ng/L		82	38 - 144		
R-PSDCA			25.6	20.86		ng/L		81	53 - 148		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-10:2 FTCA	*103*		*11 - 200*
13C-10:2 FTUCA	*103*		*10 - 166*
13C2 PFTeDA	*82*		*10 - 171*
13C2-PFDoDA	*91*		*22 - 165*
13C3 HFPO-DA	*114*		*13 - 170*
13C3 PFBS	*121*		*34 - 200*
13C3 PFHxS	*111*		*48 - 169*
13C3-PFPrA	*69*		*21 - 157*
13C4 PFBA	*99*		*22 - 174*
13C4 PFHpA	*115*		*40 - 165*
13C5 PFHxA	*117*		*28 - 166*
13C5 PFPeA	*105*		*33 - 196*
13C6 PFDA	*102*		*53 - 151*
13C-6:2 FTCA	*117*		*10 - 200*
13C-6:2 FTUCA	*104*		*10 - 173*
13C7 PFUnA	*99*		*41 - 163*
13C8 FOSA	*87*		*10 - 155*
13C8 PFOA	*110*		*52 - 153*
13C8 PFOS	*110*		*59 - 155*
13C-8:2 FTCA	*107*		*20 - 200*
13C-8:2 FTUCA	*94*		*18 - 175*
13C9 PFNA	*104*		*52 - 168*
d3-NMeFOSAA	*100*		*38 - 168*
d3-NMePFOSA	*41*		*10 - 130*
d5-NEtFOSAA	*100*		*34 - 181*
d5-NEtPFOSA	*38*		*10 - 130*
d7-N-MeFOSE-M	*70*		*10 - 149*
d9-N-EtFOSE-M	*65*		*10 - 151*
M2-4:2 FTS	*132*		*35 - 200*
M2-6:2 FTS	*110*		*40 - 200*
M2-8:2 FTS	*103*		*37 - 200*

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: MB 410-522328/1-A
Matrix: Water
Analysis Batch: 524969

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 522328

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
10:2 Fluorotelomer sulfonic acid	<0.800		2.00	0.800	ng/L		06/27/24 14:30	07/05/24 20:30	1
10:2 FTCA	<0.500		2.00	0.500	ng/L		06/27/24 14:30	07/05/24 20:30	1
10:2 FTUCA	<0.400		2.00	0.400	ng/L		06/27/24 14:30	07/05/24 20:30	1
11Cl-PF3OUdS	<0.500		2.00	0.500	ng/L		06/27/24 14:30	07/05/24 20:30	1
3:3 FTCA	<0.500		2.00	0.500	ng/L		06/27/24 14:30	07/05/24 20:30	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.500		2.00	0.500	ng/L		06/27/24 14:30	07/05/24 20:30	1
4:2 Fluorotelomer sulfonic acid	<0.500		2.00	0.500	ng/L		06/27/24 14:30	07/05/24 20:30	1
5:3 FTCA	<0.500		2.00	0.500	ng/L		06/27/24 14:30	07/05/24 20:30	1
6:2 Fluorotelomer sulfonic acid	<0.500		2.00	0.500	ng/L		06/27/24 14:30	07/05/24 20:30	1
6:2 FTCA	<0.700		2.00	0.700	ng/L		06/27/24 14:30	07/05/24 20:30	1
6:2 FTUCA	<0.400		2.00	0.400	ng/L		06/27/24 14:30	07/05/24 20:30	1
7:3 FTCA	<1.10		2.00	1.10	ng/L		06/27/24 14:30	07/05/24 20:30	1
8:2 Fluorotelomer sulfonic acid	<0.600		2.00	0.600	ng/L		06/27/24 14:30	07/05/24 20:30	1
8:2 FTCA	<0.400		2.00	0.400	ng/L		06/27/24 14:30	07/05/24 20:30	1
8:2 FTUCA	<0.400		2.00	0.400	ng/L		06/27/24 14:30	07/05/24 20:30	1
9Cl-PF3ONS	<0.500		2.00	0.500	ng/L		06/27/24 14:30	07/05/24 20:30	1
EVE Acid	<0.500		2.00	0.500	ng/L		06/27/24 14:30	07/05/24 20:30	1
HFPODA	<0.400		2.00	0.400	ng/L		06/27/24 14:30	07/05/24 20:30	1
Hydro-EVE Acid	<0.500		2.00	0.500	ng/L		06/27/24 14:30	07/05/24 20:30	1
Hydrolyzed PSDA	<0.400		2.00	0.400	ng/L		06/27/24 14:30	07/05/24 20:30	1
Hydro-PS Acid	<0.500		2.00	0.500	ng/L		06/27/24 14:30	07/05/24 20:30	1
MTP	<0.600		2.00	0.600	ng/L		06/27/24 14:30	07/05/24 20:30	1
NEtFOSA	<0.400		2.00	0.400	ng/L		06/27/24 14:30	07/05/24 20:30	1
NEtFOSAA	<0.500		2.00	0.500	ng/L		06/27/24 14:30	07/05/24 20:30	1
NEtFOSE	<0.400		2.00	0.400	ng/L		06/27/24 14:30	07/05/24 20:30	1
NMeFOSA	<0.700		2.00	0.700	ng/L		06/27/24 14:30	07/05/24 20:30	1
NMeFOSAA	<0.400		2.00	0.400	ng/L		06/27/24 14:30	07/05/24 20:30	1
NMeFOSE	<0.400		2.00	0.400	ng/L		06/27/24 14:30	07/05/24 20:30	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.300		2.00	0.300	ng/L		06/27/24 14:30	07/05/24 20:30	1
NVHOS	<0.400		2.00	0.400	ng/L		06/27/24 14:30	07/05/24 20:30	1
PEPA	<0.600		2.00	0.600	ng/L		06/27/24 14:30	07/05/24 20:30	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.300		2.00	0.300	ng/L		06/27/24 14:30	07/05/24 20:30	1
Perfluoro-3,5,7,9,11-pentaoxadodecanoic acid	<0.500		2.00	0.500	ng/L		06/27/24 14:30	07/05/24 20:30	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.300		2.00	0.300	ng/L		06/27/24 14:30	07/05/24 20:30	1
Perfluoro-4-isopropoxybutanoic acid (PFIpOBA)	<0.500		2.00	0.500	ng/L		06/27/24 14:30	07/05/24 20:30	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.300		2.00	0.300	ng/L		06/27/24 14:30	07/05/24 20:30	1
Perfluorobutanesulfonic acid (PFBS)	<0.300		2.00	0.300	ng/L		06/27/24 14:30	07/05/24 20:30	1
Perfluorobutanoic acid (PFBA)	<1.00		2.00	1.00	ng/L		06/27/24 14:30	07/05/24 20:30	1
Perfluorodecanesulfonic acid (PFDS)	<0.300		2.00	0.300	ng/L		06/27/24 14:30	07/05/24 20:30	1
Perfluorodecanoic acid (PFDA)	<0.300		2.00	0.300	ng/L		06/27/24 14:30	07/05/24 20:30	1
Perfluorododecanesulfonic acid (PFDoS)	<0.300		2.00	0.300	ng/L		06/27/24 14:30	07/05/24 20:30	1
Perfluorododecanoic acid (PFDoA)	<0.400		2.00	0.400	ng/L		06/27/24 14:30	07/05/24 20:30	1

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: MB 410-522328/1-A
Matrix: Water
Analysis Batch: 524969

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 522328

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanesulfonic acid (PFHpS)	<0.300		2.00	0.300	ng/L		06/27/24 14:30	07/05/24 20:30	1
Perfluoroheptanoic acid (PFHpA)	<0.300		2.00	0.300	ng/L		06/27/24 14:30	07/05/24 20:30	1
Perfluorohexanesulfonic acid (PFHxS)	<0.200		2.00	0.200	ng/L		06/27/24 14:30	07/05/24 20:30	1
Perfluorohexanoic acid (PFHxA)	<1.00		2.00	1.00	ng/L		06/27/24 14:30	07/05/24 20:30	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.500		2.00	0.500	ng/L		06/27/24 14:30	07/05/24 20:30	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.500		2.00	0.500	ng/L		06/27/24 14:30	07/05/24 20:30	1
Perfluorononanesulfonic acid (PFNS)	<0.300		2.00	0.300	ng/L		06/27/24 14:30	07/05/24 20:30	1
Perfluorononanoic acid (PFNA)	<0.200		2.00	0.200	ng/L		06/27/24 14:30	07/05/24 20:30	1
Perfluorooctanesulfonamide (PFOSA)	<0.300		2.00	0.300	ng/L		06/27/24 14:30	07/05/24 20:30	1
Perfluorooctanesulfonic acid (PFOS)	<0.500		2.00	0.500	ng/L		06/27/24 14:30	07/05/24 20:30	1
Perfluorooctanoic acid (PFOA)	<0.300		2.00	0.300	ng/L		06/27/24 14:30	07/05/24 20:30	1
Perfluoropentanesulfonic acid (PFPeS)	<0.300		2.00	0.300	ng/L		06/27/24 14:30	07/05/24 20:30	1
Perfluoropentanoic acid (PFPeA)	<0.300		2.00	0.300	ng/L		06/27/24 14:30	07/05/24 20:30	1
Perfluoropropanesulfonic acid	<0.400		2.00	0.400	ng/L		06/27/24 14:30	07/05/24 20:30	1
Perfluoropropionic acid (PFPrA)	<5.00		10.0	5.00	ng/L		06/27/24 14:30	07/05/24 20:30	1
Perfluorotetradecanoic acid (PFTeDA)	<0.400		2.00	0.400	ng/L		06/27/24 14:30	07/05/24 20:30	1
Perfluorotridecanoic acid (PFTrDA)	<0.400		2.00	0.400	ng/L		06/27/24 14:30	07/05/24 20:30	1
Perfluoroundecanoic acid (PFUnA)	<0.300		2.00	0.300	ng/L		06/27/24 14:30	07/05/24 20:30	1
PFECHS	<0.300		2.00	0.300	ng/L		06/27/24 14:30	07/05/24 20:30	1
PFMOAA	<0.300		2.00	0.300	ng/L		06/27/24 14:30	07/05/24 20:30	1
PFO2HxA	<0.700		2.00	0.700	ng/L		06/27/24 14:30	07/05/24 20:30	1
PFO3OA	<1.00		2.00	1.00	ng/L		06/27/24 14:30	07/05/24 20:30	1
PFO4DA	<0.800		2.00	0.800	ng/L		06/27/24 14:30	07/05/24 20:30	1
PMPA	<0.600		2.00	0.600	ng/L		06/27/24 14:30	07/05/24 20:30	1
PS Acid	<0.600		2.00	0.600	ng/L		06/27/24 14:30	07/05/24 20:30	1
R-EVE	<0.500		2.00	0.500	ng/L		06/27/24 14:30	07/05/24 20:30	1
R-PSDA	<0.700		2.00	0.700	ng/L		06/27/24 14:30	07/05/24 20:30	1
R-PSDCA	<0.300		2.00	0.300	ng/L		06/27/24 14:30	07/05/24 20:30	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-10:2 FTCA	*74*		*11 - 200*	*06/27/24 14:30*	*07/05/24 20:30*	*1*
13C-10:2 FTUCA	*78*		*10 - 166*	*06/27/24 14:30*	*07/05/24 20:30*	*1*
13C2 PFTeDA	*73*		*10 - 171*	*06/27/24 14:30*	*07/05/24 20:30*	*1*
13C2-PFDoDA	*72*		*22 - 165*	*06/27/24 14:30*	*07/05/24 20:30*	*1*
13C3 HFPO-DA	*68*		*13 - 170*	*06/27/24 14:30*	*07/05/24 20:30*	*1*
13C3 PFBS	*81*		*34 - 200*	*06/27/24 14:30*	*07/05/24 20:30*	*1*
13C3 PFHxS	*81*		*48 - 169*	*06/27/24 14:30*	*07/05/24 20:30*	*1*
13C3-PFPrA	*53*		*21 - 157*	*06/27/24 14:30*	*07/05/24 20:30*	*1*
13C4 PFBA	*65*		*22 - 174*	*06/27/24 14:30*	*07/05/24 20:30*	*1*
13C4 PFHpA	*79*		*40 - 165*	*06/27/24 14:30*	*07/05/24 20:30*	*1*
13C5 PFHxA	*75*		*28 - 166*	*06/27/24 14:30*	*07/05/24 20:30*	*1*
13C5 PFPeA	*78*		*33 - 196*	*06/27/24 14:30*	*07/05/24 20:30*	*1*
13C6 PFDA	*82*		*53 - 151*	*06/27/24 14:30*	*07/05/24 20:30*	*1*
13C-6:2 FTCA	*82*		*10 - 200*	*06/27/24 14:30*	*07/05/24 20:30*	*1*
13C-6:2 FTUCA	*77*		*10 - 173*	*06/27/24 14:30*	*07/05/24 20:30*	*1*
13C7 PFUnA	*86*		*41 - 163*	*06/27/24 14:30*	*07/05/24 20:30*	*1*

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: MB 410-522328/1-A
Matrix: Water
Analysis Batch: 524969

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 522328

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	74		10 - 155	06/27/24 14:30	07/05/24 20:30	1
13C8 PFOA	82		52 - 153	06/27/24 14:30	07/05/24 20:30	1
13C8 PFOS	83		59 - 155	06/27/24 14:30	07/05/24 20:30	1
13C-8:2 FTCA	76		20 - 200	06/27/24 14:30	07/05/24 20:30	1
13C-8:2 FTUCA	84		18 - 175	06/27/24 14:30	07/05/24 20:30	1
13C9 PFNA	86		52 - 168	06/27/24 14:30	07/05/24 20:30	1
d3-NMeFOSAA	78		38 - 168	06/27/24 14:30	07/05/24 20:30	1
d3-NMePFOSA	46		10 - 130	06/27/24 14:30	07/05/24 20:30	1
d5-NEtFOSAA	87		34 - 181	06/27/24 14:30	07/05/24 20:30	1
d5-NEtPFOSA	47		10 - 130	06/27/24 14:30	07/05/24 20:30	1
d7-N-MeFOSE-M	71		10 - 149	06/27/24 14:30	07/05/24 20:30	1
d9-N-EtFOSE-M	62		10 - 151	06/27/24 14:30	07/05/24 20:30	1
M2-4:2 FTS	76		35 - 200	06/27/24 14:30	07/05/24 20:30	1
M2-6:2 FTS	105		40 - 200	06/27/24 14:30	07/05/24 20:30	1
M2-8:2 FTS	83		37 - 200	06/27/24 14:30	07/05/24 20:30	1

Lab Sample ID: LCS 410-522328/2-A
Matrix: Water
Analysis Batch: 524969

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 522328

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
10:2 Fluorotelomer sulfonic acid	24.7	23.24		ng/L		94	47 - 141
10:2 FTCA	25.6	21.45		ng/L		84	36 - 130
10:2 FTUCA	25.6	22.94		ng/L		90	54 - 165
11Cl-PF3OUdS	23.8	20.58		ng/L		86	57 - 130
3:3 FTCA	25.6	21.50		ng/L		84	52 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	24.2	24.16		ng/L		100	61 - 130
4:2 Fluorotelomer sulfonic acid	23.9	23.39		ng/L		98	61 - 131
5:3 FTCA	25.6	24.90		ng/L		97	51 - 132
6:2 Fluorotelomer sulfonic acid	24.3	22.26		ng/L		92	61 - 132
6:2 FTCA	25.6	20.95		ng/L		82	42 - 130
6:2 FTUCA	25.6	25.00		ng/L		98	57 - 166
7:3 FTCA	25.6	21.11		ng/L		82	10 - 150
8:2 Fluorotelomer sulfonic acid	24.5	21.87		ng/L		89	55 - 134
8:2 FTCA	25.6	20.00		ng/L		78	44 - 130
8:2 FTUCA	25.6	23.87		ng/L		93	52 - 166
9Cl-PF3ONS	23.8	20.20		ng/L		85	60 - 130
EVE Acid	25.6	10.97		ng/L		43	10 - 130
HFPODA	25.6	24.88		ng/L		97	53 - 131
Hydro-EVE Acid	25.6	28.29		ng/L		111	48 - 154
Hydrolyzed PSDA	25.6	24.24		ng/L		95	35 - 166
Hydro-PS Acid	25.6	26.73		ng/L		104	50 - 147
MTP	25.6	21.14		ng/L		83	22 - 156
NEtFOSA	25.6	29.62		ng/L		116	67 - 135
NEtFOSAA	25.6	20.57		ng/L		80	63 - 130
NEtFOSE	25.6	23.31		ng/L		91	65 - 132
NMeFOSA	25.6	34.43		ng/L		134	53 - 167
NMeFOSAA	25.6	23.75		ng/L		93	62 - 131

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: LCS 410-522328/2-A
Matrix: Water
Analysis Batch: 524969

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 522328

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
NMeFOSE	25.6	23.20		ng/L		91	65 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	25.6	23.98		ng/L		94	60 - 130
NVHOS	25.6	24.84		ng/L		97	56 - 144
PEPA	25.6	25.30		ng/L		99	44 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	22.8	20.24		ng/L		89	60 - 130
Perfluoro-3,5,7,9,11-pentaoxado decanoic acid	25.6	27.11		ng/L		106	52 - 146
Perfluoro-3-methoxypropanoic acid (PFMPA)	25.6	23.83		ng/L		93	62 - 133
Perfluoro-4-isopropoxybutanoic acid (PFIpOBA)	25.6	28.11		ng/L		110	56 - 161
Perfluoro-4-methoxybutanoic acid (PFMBA)	25.6	21.18		ng/L		83	57 - 133
Perfluorobutanesulfonic acid (PFBS)	22.7	21.06		ng/L		93	64 - 132
Perfluorobutanoic acid (PFBA)	25.6	22.76		ng/L		89	58 - 130
Perfluorodecanesulfonic acid (PFDS)	24.7	18.67		ng/L		76	55 - 130
Perfluorodecanoic acid (PFDA)	25.6	23.83		ng/L		93	62 - 133
Perfluorododecanesulfonic acid (PFDoS)	24.8	20.13		ng/L		81	56 - 130
Perfluorododecanoic acid (PFDoA)	25.6	24.90		ng/L		97	61 - 132
Perfluoroheptanesulfonic acid (PFHpS)	24.4	22.86		ng/L		94	59 - 130
Perfluoroheptanoic acid (PFHpA)	25.6	25.56		ng/L		100	64 - 130
Perfluorohexanesulfonic acid (PFHxS)	23.3	21.21		ng/L		91	62 - 130
Perfluorohexanoic acid (PFHxA)	25.6	22.68		ng/L		89	59 - 130
Perfluoro-n-hexadecanoic acid (PFHxDA)	25.6	22.24		ng/L		87	50 - 130
Perfluoro-n-octadecanoic acid (PFODA)	25.6	18.44		ng/L		72	45 - 137
Perfluorononanesulfonic acid (PFNS)	24.6	21.65		ng/L		88	56 - 130
Perfluorononanoic acid (PFNA)	25.6	22.83		ng/L		89	63 - 133
Perfluorooctanesulfonamide (PFOSA)	25.6	24.86		ng/L		97	67 - 132
Perfluorooctanesulfonic acid (PFOS)	23.7	20.07		ng/L		85	62 - 130
Perfluorooctanoic acid (PFOA)	25.6	24.23		ng/L		95	58 - 132
Perfluoropentanesulfonic acid (PFPeS)	24.0	21.06		ng/L		88	64 - 132
Perfluoropentanoic acid (PFPeA)	25.6	24.04		ng/L		94	60 - 130
Perfluoropropanesulfonic acid	23.4	30.07		ng/L		128	58 - 137
Perfluoropropionic acid (PFPrA)	25.6	25.84		ng/L		101	20 - 173
Perfluorotetradecanoic acid (PFTeDA)	25.6	23.40		ng/L		91	62 - 131
Perfluorotridecanoic acid (PFTrDA)	25.6	26.03		ng/L		102	59 - 136
Perfluoroundecanoic acid (PFUnA)	25.6	19.80		ng/L		77	62 - 131

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: LCS 410-522328/2-A
Matrix: Water
Analysis Batch: 524969

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 522328

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
PFECHS			23.6	21.59		ng/L		91	54 - 130		
PFMOAA			25.6	23.02		ng/L		90	34 - 143		
PFO2HxA			25.6	25.58		ng/L		100	58 - 140		
PFO3OA			25.6	25.36		ng/L		99	52 - 148		
PFO4DA			25.6	25.03		ng/L		98	49 - 150		
PMPA			25.6	24.81		ng/L		97	54 - 135		
PS Acid			25.6	8.356		ng/L		33	10 - 130		
R-EVE			25.6	24.29		ng/L		95	46 - 141		
R-PSDA			25.6	23.20		ng/L		91	38 - 144		
R-PSDCA			25.6	24.81		ng/L		97	53 - 148		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-10:2 FTCA	*88*		*11 - 200*
13C-10:2 FTUCA	*94*		*10 - 166*
13C2 PFTeDA	*88*		*10 - 171*
13C2-PFDoDA	*86*		*22 - 165*
13C3 HFPO-DA	*88*		*13 - 170*
13C3 PFBS	*100*		*34 - 200*
13C3 PFHxS	*101*		*48 - 169*
13C3-PFPrA	*83*		*21 - 157*
13C4 PFBA	*95*		*22 - 174*
13C4 PFHpA	*93*		*40 - 165*
13C5 PFHxA	*101*		*28 - 166*
13C5 PFPeA	*101*		*33 - 196*
13C6 PFDA	*104*		*53 - 151*
13C-6:2 FTCA	*99*		*10 - 200*
13C-6:2 FTUCA	*97*		*10 - 173*
13C7 PFUnA	*109*		*41 - 163*
13C8 FOSA	*86*		*10 - 155*
13C8 PFOA	*103*		*52 - 153*
13C8 PFOS	*104*		*59 - 155*
13C-8:2 FTCA	*97*		*20 - 200*
13C-8:2 FTUCA	*97*		*18 - 175*
13C9 PFNA	*104*		*52 - 168*
d3-NMeFOSAA	*91*		*38 - 168*
d3-NMePFOSA	*36*		*10 - 130*
d5-NEtFOSAA	*110*		*34 - 181*
d5-NEtPFOSA	*38*		*10 - 130*
d7-N-MeFOSE-M	*83*		*10 - 149*
d9-N-EtFOSE-M	*76*		*10 - 151*
M2-4:2 FTS	*94*		*35 - 200*
M2-6:2 FTS	*142*		*40 - 200*
M2-8:2 FTS	*101*		*37 - 200*

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: LCSD 410-522328/3-A
Matrix: Water
Analysis Batch: 524969

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 522328

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
10:2 Fluorotelomer sulfonic acid	24.7	20.95		ng/L		85	47 - 141	10	30
10:2 FTCA	25.6	20.84		ng/L		81	36 - 130	3	30
10:2 FTUCA	25.6	21.45		ng/L		84	54 - 165	7	30
11Cl-PF3OUdS	23.8	19.75		ng/L		83	57 - 130	4	30
3:3 FTCA	25.6	23.19		ng/L		91	52 - 130	8	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	24.2	23.16		ng/L		96	61 - 130	4	30
4:2 Fluorotelomer sulfonic acid	23.9	21.95		ng/L		92	61 - 131	6	30
5:3 FTCA	25.6	24.26		ng/L		95	51 - 132	3	30
6:2 Fluorotelomer sulfonic acid	24.3	24.81		ng/L		102	61 - 132	11	30
6:2 FTCA	25.6	22.10		ng/L		86	42 - 130	5	30
6:2 FTUCA	25.6	24.94		ng/L		97	57 - 166	0	30
7:3 FTCA	25.6	22.78		ng/L		89	10 - 150	8	30
8:2 Fluorotelomer sulfonic acid	24.5	22.03		ng/L		90	55 - 134	1	30
8:2 FTCA	25.6	22.01		ng/L		86	44 - 130	10	30
8:2 FTUCA	25.6	23.34		ng/L		91	52 - 166	2	30
9Cl-PF3ONS	23.8	20.22		ng/L		85	60 - 130	0	30
EVE Acid	25.6	10.74		ng/L		42	10 - 130	2	30
HFPODA	25.6	25.19		ng/L		98	53 - 131	1	30
Hydro-EVE Acid	25.6	27.90		ng/L		109	48 - 154	1	30
Hydrolyzed PSDA	25.6	22.58		ng/L		88	35 - 166	7	30
Hydro-PS Acid	25.6	25.71		ng/L		100	50 - 147	4	30
MTP	25.6	20.71		ng/L		81	22 - 156	2	30
NEtFOSA	25.6	29.80		ng/L		116	67 - 135	1	30
NEtFOSAA	25.6	22.28		ng/L		87	63 - 130	8	30
NEtFOSE	25.6	24.70		ng/L		96	65 - 132	6	30
NMeFOSA	25.6	34.61		ng/L		135	53 - 167	1	30
NMeFOSAA	25.6	22.49		ng/L		88	62 - 131	5	30
NMeFOSE	25.6	22.12		ng/L		86	65 - 130	5	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	25.6	23.14		ng/L		90	60 - 130	4	30
NVHOS	25.6	23.76		ng/L		93	56 - 144	4	30
PEPA	25.6	24.98		ng/L		98	44 - 150	1	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	22.8	20.20		ng/L		89	60 - 130	0	30
Perfluoro-3,5,7,9,11-pentaoxadodecanoic acid	25.6	27.14		ng/L		106	52 - 146	0	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	25.6	24.41		ng/L		95	62 - 133	2	30
Perfluoro-4-isopropoxybutanoic acid (PFIpOBA)	25.6	27.42		ng/L		107	56 - 161	3	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	25.6	20.50		ng/L		80	57 - 133	3	30
Perfluorobutanesulfonic acid (PFBS)	22.7	20.46		ng/L		90	64 - 132	3	30
Perfluorobutanoic acid (PFBA)	25.6	23.14		ng/L		90	58 - 130	2	30
Perfluorodecanesulfonic acid (PFDS)	24.7	19.55		ng/L		79	55 - 130	5	30
Perfluorodecanoic acid (PFDA)	25.6	25.66		ng/L		100	62 - 133	7	30
Perfluorododecanesulfonic acid (PFDoS)	24.8	21.01		ng/L		85	56 - 130	4	30

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: LCSD 410-522328/3-A
Matrix: Water
Analysis Batch: 524969

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 522328

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorododecanoic acid (PFDoA)			25.6	23.47		ng/L		92	61 - 132	6	30
Perfluoroheptanesulfonic acid (PFHpS)			24.4	23.57		ng/L		97	59 - 130	3	30
Perfluoroheptanoic acid (PFHpA)			25.6	24.17		ng/L		94	64 - 130	6	30
Perfluorohexanesulfonic acid (PFHxS)			23.3	21.19		ng/L		91	62 - 130	0	30
Perfluorohexanoic acid (PFHxA)			25.6	25.60		ng/L		100	59 - 130	12	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			25.6	22.06		ng/L		86	50 - 130	1	30
Perfluoro-n-octadecanoic acid (PFODA)			25.6	19.23		ng/L		75	45 - 137	4	30
Perfluorononanesulfonic acid (PFNS)			24.6	21.42		ng/L		87	56 - 130	1	30
Perfluorononanoic acid (PFNA)			25.6	23.09		ng/L		90	63 - 133	1	30
Perfluorooctanesulfonamide (PFOSA)			25.6	24.63		ng/L		96	67 - 132	1	30
Perfluorooctanesulfonic acid (PFOS)			23.7	20.00		ng/L		84	62 - 130	0	30
Perfluorooctanoic acid (PFOA)			25.6	24.02		ng/L		94	58 - 132	1	30
Perfluoropentanesulfonic acid (PFPeS)			24.0	20.01		ng/L		83	64 - 132	5	30
Perfluoropentanoic acid (PFPeA)			25.6	24.00		ng/L		94	60 - 130	0	30
Perfluoropropanesulfonic acid			23.4	29.39		ng/L		125	58 - 137	2	30
Perfluoropropionic acid (PFPrA)			25.6	26.80		ng/L		105	20 - 173	4	30
Perfluorotetradecanoic acid (PFTeDA)			25.6	23.72		ng/L		93	62 - 131	1	30
Perfluorotridecanoic acid (PFTrDA)			25.6	23.28		ng/L		91	59 - 136	11	30
Perfluoroundecanoic acid (PFUnA)			25.6	23.30		ng/L		91	62 - 131	16	30
PFECHS			23.6	22.50		ng/L		95	54 - 130	4	30
PFMOAA			25.6	24.58		ng/L		96	34 - 143	7	30
PFO2HxA			25.6	25.70		ng/L		100	58 - 140	0	30
PFO3OA			25.6	25.22		ng/L		98	52 - 148	1	30
PFO4DA			25.6	25.20		ng/L		98	49 - 150	1	30
PMPA			25.6	25.43		ng/L		99	54 - 135	2	30
PS Acid			25.6	7.830		ng/L		31	10 - 130	7	30
R-EVE			25.6	24.20		ng/L		95	46 - 141	0	30
R-PSDA			25.6	21.83		ng/L		85	38 - 144	6	30
R-PSDCA			25.6	24.14		ng/L		94	53 - 148	3	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C-10:2 FTCA	*54*		*11 - 200*
13C-10:2 FTUCA	*61*		*10 - 166*
13C2 PFTeDA	*56*		*10 - 171*
13C2-PFDoDA	*60*		*22 - 165*
13C3 HFPO-DA	*52*		*13 - 170*
13C3 PFBS	*63*		*34 - 200*
13C3 PFHxS	*59*		*48 - 169*
13C3-PFPrA	*52*		*21 - 157*
13C4 PFBA	*60*		*22 - 174*

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: LCSD 410-522328/3-A
Matrix: Water
Analysis Batch: 524969

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 522328

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C4 PFHpA	58		40 - 165
13C5 PFHxA	54		28 - 166
13C5 PFPeA	62		33 - 196
13C6 PFDA	62		53 - 151
13C-6:2 FTCA	59		10 - 200
13C-6:2 FTUCA	56		10 - 173
13C7 PFUnA	62		41 - 163
13C8 FOSA	55		10 - 155
13C8 PFOA	63		52 - 153
13C8 PFOS	63		59 - 155
13C-8:2 FTCA	59		20 - 200
13C-8:2 FTUCA	63		18 - 175
13C9 PFNA	64		52 - 168
d3-NMeFOSAA	61		38 - 168
d3-NMePFOSA	25		10 - 130
d5-NEtFOSAA	63		34 - 181
d5-NEtPFOSA	27		10 - 130
d7-N-MeFOSE-M	55		10 - 149
d9-N-EtFOSE-M	48		10 - 151
M2-4:2 FTS	58		35 - 200
M2-6:2 FTS	73		40 - 200
M2-8:2 FTS	66		37 - 200

Lab Sample ID: MB 410-523604/1-A
Matrix: Water
Analysis Batch: 526021

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 523604

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
10:2 Fluorotelomer sulfonic acid	<0.800		2.00	0.800	ng/L		07/01/24 16:44	07/09/24 23:31	1
10:2 FTCA	<0.500		2.00	0.500	ng/L		07/01/24 16:44	07/09/24 23:31	1
10:2 FTUCA	<0.400		2.00	0.400	ng/L		07/01/24 16:44	07/09/24 23:31	1
11Cl-PF3OUdS	<0.500		2.00	0.500	ng/L		07/01/24 16:44	07/09/24 23:31	1
3:3 FTCA	<0.500		2.00	0.500	ng/L		07/01/24 16:44	07/09/24 23:31	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.500		2.00	0.500	ng/L		07/01/24 16:44	07/09/24 23:31	1
4:2 Fluorotelomer sulfonic acid	<0.500		2.00	0.500	ng/L		07/01/24 16:44	07/09/24 23:31	1
5:3 FTCA	<0.500		2.00	0.500	ng/L		07/01/24 16:44	07/09/24 23:31	1
6:2 Fluorotelomer sulfonic acid	<0.500		2.00	0.500	ng/L		07/01/24 16:44	07/09/24 23:31	1
6:2 FTCA	<0.700		2.00	0.700	ng/L		07/01/24 16:44	07/09/24 23:31	1
6:2 FTUCA	<0.400		2.00	0.400	ng/L		07/01/24 16:44	07/09/24 23:31	1
7:3 FTCA	<1.10		2.00	1.10	ng/L		07/01/24 16:44	07/09/24 23:31	1
8:2 Fluorotelomer sulfonic acid	<0.600		2.00	0.600	ng/L		07/01/24 16:44	07/09/24 23:31	1
8:2 FTCA	<0.400		2.00	0.400	ng/L		07/01/24 16:44	07/09/24 23:31	1
8:2 FTUCA	<0.400		2.00	0.400	ng/L		07/01/24 16:44	07/09/24 23:31	1
9Cl-PF3ONS	<0.500		2.00	0.500	ng/L		07/01/24 16:44	07/09/24 23:31	1
EVE Acid	<0.500		2.00	0.500	ng/L		07/01/24 16:44	07/09/24 23:31	1
HFPODA	<0.400		2.00	0.400	ng/L		07/01/24 16:44	07/09/24 23:31	1
Hydro-EVE Acid	<0.500		2.00	0.500	ng/L		07/01/24 16:44	07/09/24 23:31	1
Hydrolyzed PSDA	<0.400		2.00	0.400	ng/L		07/01/24 16:44	07/09/24 23:31	1

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: MB 410-523604/1-A
Matrix: Water
Analysis Batch: 526021

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 523604

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hydro-PS Acid	<0.500		2.00	0.500	ng/L		07/01/24 16:44	07/09/24 23:31	1
MTP	<0.600		2.00	0.600	ng/L		07/01/24 16:44	07/09/24 23:31	1
NEtFOSA	<0.400		2.00	0.400	ng/L		07/01/24 16:44	07/09/24 23:31	1
NEtFOSAA	<0.500		2.00	0.500	ng/L		07/01/24 16:44	07/09/24 23:31	1
NEtFOSE	<0.400		2.00	0.400	ng/L		07/01/24 16:44	07/09/24 23:31	1
NMeFOSA	<0.700		2.00	0.700	ng/L		07/01/24 16:44	07/09/24 23:31	1
NMeFOSAA	<0.400		2.00	0.400	ng/L		07/01/24 16:44	07/09/24 23:31	1
NMeFOSE	<0.400		2.00	0.400	ng/L		07/01/24 16:44	07/09/24 23:31	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.300		2.00	0.300	ng/L		07/01/24 16:44	07/09/24 23:31	1
NVHOS	<0.400		2.00	0.400	ng/L		07/01/24 16:44	07/09/24 23:31	1
PEPA	<0.600		2.00	0.600	ng/L		07/01/24 16:44	07/09/24 23:31	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.300		2.00	0.300	ng/L		07/01/24 16:44	07/09/24 23:31	1
Perfluoro-3,5,7,9,11-pentaoxadodecanoic acid	<0.500		2.00	0.500	ng/L		07/01/24 16:44	07/09/24 23:31	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.300		2.00	0.300	ng/L		07/01/24 16:44	07/09/24 23:31	1
Perfluoro-4-isopropoxybutanoic acid (PFIpOBA)	<0.500		2.00	0.500	ng/L		07/01/24 16:44	07/09/24 23:31	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.300		2.00	0.300	ng/L		07/01/24 16:44	07/09/24 23:31	1
Perfluorobutanesulfonic acid (PFBS)	<0.300		2.00	0.300	ng/L		07/01/24 16:44	07/09/24 23:31	1
Perfluorobutanoic acid (PFBA)	<1.00		2.00	1.00	ng/L		07/01/24 16:44	07/09/24 23:31	1
Perfluorodecanesulfonic acid (PFDS)	<0.300		2.00	0.300	ng/L		07/01/24 16:44	07/09/24 23:31	1
Perfluorodecanoic acid (PFDA)	<0.300		2.00	0.300	ng/L		07/01/24 16:44	07/09/24 23:31	1
Perfluorododecanesulfonic acid (PFDoS)	<0.300		2.00	0.300	ng/L		07/01/24 16:44	07/09/24 23:31	1
Perfluorododecanoic acid (PFDoA)	<0.400		2.00	0.400	ng/L		07/01/24 16:44	07/09/24 23:31	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.300		2.00	0.300	ng/L		07/01/24 16:44	07/09/24 23:31	1
Perfluoroheptanoic acid (PFHpA)	<0.300		2.00	0.300	ng/L		07/01/24 16:44	07/09/24 23:31	1
Perfluorohexanesulfonic acid (PFHxS)	<0.200		2.00	0.200	ng/L		07/01/24 16:44	07/09/24 23:31	1
Perfluorohexanoic acid (PFHxA)	<1.00		2.00	1.00	ng/L		07/01/24 16:44	07/09/24 23:31	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.500		2.00	0.500	ng/L		07/01/24 16:44	07/09/24 23:31	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.500		2.00	0.500	ng/L		07/01/24 16:44	07/09/24 23:31	1
Perfluorononanesulfonic acid (PFNS)	<0.300		2.00	0.300	ng/L		07/01/24 16:44	07/09/24 23:31	1
Perfluorononanoic acid (PFNA)	<0.200		2.00	0.200	ng/L		07/01/24 16:44	07/09/24 23:31	1
Perfluorooctanesulfonamide (PFOSA)	<0.300		2.00	0.300	ng/L		07/01/24 16:44	07/09/24 23:31	1
Perfluorooctanesulfonic acid (PFOS)	<0.500		2.00	0.500	ng/L		07/01/24 16:44	07/09/24 23:31	1
Perfluorooctanoic acid (PFOA)	<0.300		2.00	0.300	ng/L		07/01/24 16:44	07/09/24 23:31	1
Perfluoropentanesulfonic acid (PFPeS)	<0.300		2.00	0.300	ng/L		07/01/24 16:44	07/09/24 23:31	1
Perfluoropentanoic acid (PFPeA)	<0.300		2.00	0.300	ng/L		07/01/24 16:44	07/09/24 23:31	1
Perfluoropropanesulfonic acid	<0.400		2.00	0.400	ng/L		07/01/24 16:44	07/09/24 23:31	1
Perfluoropropionic acid (PFPrA)	<5.00		10.0	5.00	ng/L		07/01/24 16:44	07/09/24 23:31	1
Perfluorotetradecanoic acid (PFTeDA)	<0.400		2.00	0.400	ng/L		07/01/24 16:44	07/09/24 23:31	1
Perfluorotridecanoic acid (PFTrDA)	<0.400		2.00	0.400	ng/L		07/01/24 16:44	07/09/24 23:31	1
Perfluoroundecanoic acid (PFUnA)	<0.300		2.00	0.300	ng/L		07/01/24 16:44	07/09/24 23:31	1

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: MB 410-523604/1-A
Matrix: Water
Analysis Batch: 526021

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 523604

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PFECHS	<0.300		2.00	0.300	ng/L		07/01/24 16:44	07/09/24 23:31	1
PFMOAA	<0.300		2.00	0.300	ng/L		07/01/24 16:44	07/09/24 23:31	1
PFO2HxA	<0.700		2.00	0.700	ng/L		07/01/24 16:44	07/09/24 23:31	1
PFO3OA	<1.00		2.00	1.00	ng/L		07/01/24 16:44	07/09/24 23:31	1
PFO4DA	<0.800		2.00	0.800	ng/L		07/01/24 16:44	07/09/24 23:31	1
PMPA	<0.600		2.00	0.600	ng/L		07/01/24 16:44	07/09/24 23:31	1
PS Acid	<0.600		2.00	0.600	ng/L		07/01/24 16:44	07/09/24 23:31	1
R-EVE	<0.500		2.00	0.500	ng/L		07/01/24 16:44	07/09/24 23:31	1
R-PSDA	<0.700		2.00	0.700	ng/L		07/01/24 16:44	07/09/24 23:31	1
R-PSDCA	<0.300		2.00	0.300	ng/L		07/01/24 16:44	07/09/24 23:31	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-10:2 FTCA	*86*		*11 - 200*	*07/01/24 16:44*	*07/09/24 23:31*	*1*
13C-10:2 FTUCA	*88*		*10 - 166*	*07/01/24 16:44*	*07/09/24 23:31*	*1*
13C2 PFTeDA	*81*		*10 - 171*	*07/01/24 16:44*	*07/09/24 23:31*	*1*
13C2-PFDoDA	*79*		*22 - 165*	*07/01/24 16:44*	*07/09/24 23:31*	*1*
13C3 HFPO-DA	*78*		*13 - 170*	*07/01/24 16:44*	*07/09/24 23:31*	*1*
13C3 PFBS	*96*		*34 - 200*	*07/01/24 16:44*	*07/09/24 23:31*	*1*
13C3 PFHxS	*76*		*48 - 169*	*07/01/24 16:44*	*07/09/24 23:31*	*1*
13C3-PFPrA	*74*		*21 - 157*	*07/01/24 16:44*	*07/09/24 23:31*	*1*
13C4 PFBA	*78*		*22 - 174*	*07/01/24 16:44*	*07/09/24 23:31*	*1*
13C4 PFHpA	*71*		*40 - 165*	*07/01/24 16:44*	*07/09/24 23:31*	*1*
13C5 PFHxA	*69*		*28 - 166*	*07/01/24 16:44*	*07/09/24 23:31*	*1*
13C5 PFPeA	*85*		*33 - 196*	*07/01/24 16:44*	*07/09/24 23:31*	*1*
13C6 PFDA	*87*		*53 - 151*	*07/01/24 16:44*	*07/09/24 23:31*	*1*
13C-6:2 FTCA	*76*		*10 - 200*	*07/01/24 16:44*	*07/09/24 23:31*	*1*
13C-6:2 FTUCA	*71*		*10 - 173*	*07/01/24 16:44*	*07/09/24 23:31*	*1*
13C7 PFUnA	*87*		*41 - 163*	*07/01/24 16:44*	*07/09/24 23:31*	*1*
13C8 FOSA	*95*		*10 - 155*	*07/01/24 16:44*	*07/09/24 23:31*	*1*
13C8 PFOA	*83*		*52 - 153*	*07/01/24 16:44*	*07/09/24 23:31*	*1*
13C8 PFOS	*93*		*59 - 155*	*07/01/24 16:44*	*07/09/24 23:31*	*1*
13C-8:2 FTCA	*85*		*20 - 200*	*07/01/24 16:44*	*07/09/24 23:31*	*1*
13C-8:2 FTUCA	*88*		*18 - 175*	*07/01/24 16:44*	*07/09/24 23:31*	*1*
13C9 PFNA	*88*		*52 - 168*	*07/01/24 16:44*	*07/09/24 23:31*	*1*
d3-NMeFOSAA	*89*		*38 - 168*	*07/01/24 16:44*	*07/09/24 23:31*	*1*
d3-NMePFOSA	*46*		*10 - 130*	*07/01/24 16:44*	*07/09/24 23:31*	*1*
d5-NEtFOSAA	*85*		*34 - 181*	*07/01/24 16:44*	*07/09/24 23:31*	*1*
d5-NEtPFOSA	*44*		*10 - 130*	*07/01/24 16:44*	*07/09/24 23:31*	*1*
d7-N-MeFOSE-M	*78*		*10 - 149*	*07/01/24 16:44*	*07/09/24 23:31*	*1*
d9-N-EtFOSE-M	*76*		*10 - 151*	*07/01/24 16:44*	*07/09/24 23:31*	*1*
M2-4:2 FTS	*70*		*35 - 200*	*07/01/24 16:44*	*07/09/24 23:31*	*1*
M2-6:2 FTS	*163*		*40 - 200*	*07/01/24 16:44*	*07/09/24 23:31*	*1*
M2-8:2 FTS	*107*		*37 - 200*	*07/01/24 16:44*	*07/09/24 23:31*	*1*

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: LCS 410-523604/2-A
Matrix: Water
Analysis Batch: 526021

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 523604

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
10:2 Fluorotelomer sulfonic acid	24.7	20.24		ng/L		82	47 - 141
10:2 FTCA	25.6	22.73		ng/L		89	36 - 130
10:2 FTUCA	25.6	22.58		ng/L		88	54 - 165
11Cl-PF3OUdS	23.8	19.90		ng/L		84	57 - 130
3:3 FTCA	25.6	23.68		ng/L		93	52 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	24.2	22.33		ng/L		92	61 - 130
4:2 Fluorotelomer sulfonic acid	23.9	22.00		ng/L		92	61 - 131
5:3 FTCA	25.6	24.33		ng/L		95	51 - 132
6:2 Fluorotelomer sulfonic acid	24.3	24.46		ng/L		101	61 - 132
6:2 FTCA	25.6	23.12		ng/L		90	42 - 130
6:2 FTUCA	25.6	25.18		ng/L		98	57 - 166
7:3 FTCA	25.6	20.81		ng/L		81	10 - 150
8:2 Fluorotelomer sulfonic acid	24.5	24.44		ng/L		100	55 - 134
8:2 FTCA	25.6	21.26		ng/L		83	44 - 130
8:2 FTUCA	25.6	23.44		ng/L		92	52 - 166
9Cl-PF3ONS	23.8	21.16		ng/L		89	60 - 130
EVE Acid	25.6	16.49		ng/L		64	10 - 130
HFPODA	25.6	22.07		ng/L		86	53 - 131
Hydro-EVE Acid	25.6	29.52		ng/L		115	48 - 154
Hydrolyzed PSDA	25.6	18.58		ng/L		73	35 - 166
Hydro-PS Acid	25.6	24.20		ng/L		95	50 - 147
MTP	25.6	19.12		ng/L		75	22 - 156
NEtFOSA	25.6	28.52		ng/L		111	67 - 135
NEtFOSAA	25.6	21.59		ng/L		84	63 - 130
NEtFOSE	25.6	26.45		ng/L		103	65 - 132
NMeFOSA	25.6	34.20		ng/L		134	53 - 167
NMeFOSAA	25.6	23.54		ng/L		92	62 - 131
NMeFOSE	25.6	23.90		ng/L		93	65 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	25.6	22.04		ng/L		86	60 - 130
NVHOS	25.6	24.98		ng/L		98	56 - 144
PEPA	25.6	31.02		ng/L		121	44 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	22.8	19.79		ng/L		87	60 - 130
Perfluoro-3,5,7,9,11-pentaoxadodecanoic acid	25.6	32.00		ng/L		125	52 - 146
Perfluoro-3-methoxypropanoic acid (PFMPA)	25.6	24.50		ng/L		96	62 - 133
Perfluoro-4-isopropoxybutanoic acid (PFIpOBA)	25.6	29.94		ng/L		117	56 - 161
Perfluoro-4-methoxybutanoic acid (PFMBA)	25.6	19.20		ng/L		75	57 - 133
Perfluorobutanesulfonic acid (PFBS)	22.7	21.85		ng/L		96	64 - 132
Perfluorobutanoic acid (PFBA)	25.6	24.55		ng/L		96	58 - 130
Perfluorodecanesulfonic acid (PFDS)	24.7	20.40		ng/L		83	55 - 130
Perfluorodecanoic acid (PFDA)	25.6	25.80		ng/L		101	62 - 133
Perfluorododecanesulfonic acid (PFDoS)	24.8	20.29		ng/L		82	56 - 130

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: LCS 410-523604/2-A
Matrix: Water
Analysis Batch: 526021

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 523604

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorododecanoic acid (PFDoA)	25.6	23.88		ng/L		93	61 - 132
Perfluoroheptanesulfonic acid (PFHpS)	24.4	26.29		ng/L		108	59 - 130
Perfluoroheptanoic acid (PFHpA)	25.6	25.02		ng/L		98	64 - 130
Perfluorohexanesulfonic acid (PFHxS)	23.3	21.73		ng/L		93	62 - 130
Perfluorohexanoic acid (PFHxA)	25.6	23.89		ng/L		93	59 - 130
Perfluoro-n-hexadecanoic acid (PFHxDA)	25.6	22.27		ng/L		87	50 - 130
Perfluoro-n-octadecanoic acid (PFODA)	25.6	14.76		ng/L		58	45 - 137
Perfluorononanesulfonic acid (PFNS)	24.6	21.14		ng/L		86	56 - 130
Perfluorononanoic acid (PFNA)	25.6	23.32		ng/L		91	63 - 133
Perfluorooctanesulfonamide (PFOSA)	25.6	26.69		ng/L		104	67 - 132
Perfluorooctanesulfonic acid (PFOS)	23.7	21.29		ng/L		90	62 - 130
Perfluorooctanoic acid (PFOA)	25.6	26.56		ng/L		104	58 - 132
Perfluoropentanesulfonic acid (PFPeS)	24.0	21.57		ng/L		90	64 - 132
Perfluoropentanoic acid (PFPeA)	25.6	25.97		ng/L		101	60 - 130
Perfluoropropanesulfonic acid	23.4	30.18		ng/L		129	58 - 137
Perfluoropropionic acid (PFPrA)	25.6	28.20		ng/L		110	20 - 173
Perfluorotetradecanoic acid (PFTeDA)	25.6	24.68		ng/L		96	62 - 131
Perfluorotridecanoic acid (PFTrDA)	25.6	22.28		ng/L		87	59 - 136
Perfluoroundecanoic acid (PFUnA)	25.6	26.10		ng/L		102	62 - 131
PFECHS	23.6	21.22		ng/L		90	54 - 130
PFMOAA	25.6	22.45		ng/L		88	34 - 143
PFO2HxA	25.6	29.19		ng/L		114	58 - 140
PFO3OA	25.6	29.56		ng/L		115	52 - 148
PFO4DA	25.6	30.87		ng/L		121	49 - 150
PMPA	25.6	26.12		ng/L		102	54 - 135
PS Acid	25.6	12.17		ng/L		48	10 - 130
R-EVE	25.6	23.38		ng/L		91	46 - 141
R-PSDA	25.6	22.14		ng/L		87	38 - 144
R-PSDCA	25.6	23.72		ng/L		93	53 - 148

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-10:2 FTCA	*75*		*11 - 200*
13C-10:2 FTUCA	*78*		*10 - 166*
13C2 PFTeDA	*79*		*10 - 171*
13C2-PFDoDA	*84*		*22 - 165*
13C3 HFPO-DA	*76*		*13 - 170*
13C3 PFBS	*89*		*34 - 200*
13C3 PFHxS	*73*		*48 - 169*
13C3-PFPrA	*60*		*21 - 157*
13C4 PFBA	*72*		*22 - 174*

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: LCS 410-523604/2-A
Matrix: Water
Analysis Batch: 526021

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 523604

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C4 PFHpA	71		40 - 165
13C5 PFHxA	69		28 - 166
13C5 PFPeA	80		33 - 196
13C6 PFDA	83		53 - 151
13C-6:2 FTCA	74		10 - 200
13C-6:2 FTUCA	70		10 - 173
13C7 PFUnA	86		41 - 163
13C8 FOSA	86		10 - 155
13C8 PFOA	80		52 - 153
13C8 PFOS	84		59 - 155
13C-8:2 FTCA	85		20 - 200
13C-8:2 FTUCA	84		18 - 175
13C9 PFNA	81		52 - 168
d3-NMeFOSAA	83		38 - 168
d3-NMePFOSA	37		10 - 130
d5-NEtFOSAA	91		34 - 181
d5-NEtPFOSA	37		10 - 130
d7-N-MeFOSE-M	84		10 - 149
d9-N-EtFOSE-M	72		10 - 151
M2-4:2 FTS	70		35 - 200
M2-6:2 FTS	131		40 - 200
M2-8:2 FTS	95		37 - 200

Lab Sample ID: LCSD 410-523604/3-A
Matrix: Water
Analysis Batch: 526021

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 523604

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
10:2 Fluorotelomer sulfonic acid			24.7	21.45		ng/L		87	47 - 141	6	30
10:2 FTCA			25.6	23.98		ng/L		94	36 - 130	5	30
10:2 FTUCA			25.6	23.33		ng/L		91	54 - 165	3	30
11Cl-PF3OUdS			23.8	20.10		ng/L		84	57 - 130	1	30
3:3 FTCA			25.6	23.72		ng/L		93	52 - 130	0	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)			24.2	24.08		ng/L		100	61 - 130	8	30
4:2 Fluorotelomer sulfonic acid			23.9	22.52		ng/L		94	61 - 131	2	30
5:3 FTCA			25.6	25.41		ng/L		99	51 - 132	4	30
6:2 Fluorotelomer sulfonic acid			24.3	23.89		ng/L		98	61 - 132	2	30
6:2 FTCA			25.6	23.59		ng/L		92	42 - 130	2	30
6:2 FTUCA			25.6	26.14		ng/L		102	57 - 166	4	30
7:3 FTCA			25.6	20.79		ng/L		81	10 - 150	0	30
8:2 Fluorotelomer sulfonic acid			24.5	24.52		ng/L		100	55 - 134	0	30
8:2 FTCA			25.6	23.22		ng/L		91	44 - 130	9	30
8:2 FTUCA			25.6	25.02		ng/L		98	52 - 166	7	30
9Cl-PF3ONS			23.8	22.11		ng/L		93	60 - 130	4	30
EVE Acid			25.6	16.80		ng/L		66	10 - 130	2	30
HFPODA			25.6	22.49		ng/L		88	53 - 131	2	30
Hydro-EVE Acid			25.6	31.60		ng/L		123	48 - 154	7	30
Hydrolyzed PSDA			25.6	18.16		ng/L		71	35 - 166	2	30

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: LCSD 410-523604/3-A
Matrix: Water
Analysis Batch: 526021

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 523604

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hydro-PS Acid	25.6	25.95		ng/L		101	50 - 147	7	30
MTP	25.6	19.76		ng/L		77	22 - 156	3	30
NEtFOSA	25.6	29.86		ng/L		117	67 - 135	5	30
NEtFOSAA	25.6	25.52		ng/L		100	63 - 130	17	30
NEtFOSE	25.6	27.59		ng/L		108	65 - 132	4	30
NMeFOSA	25.6	32.39		ng/L		127	53 - 167	5	30
NMeFOSAA	25.6	25.93		ng/L		101	62 - 131	10	30
NMeFOSE	25.6	26.30		ng/L		103	65 - 130	10	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	25.6	22.34		ng/L		87	60 - 130	1	30
NVHOS	25.6	24.91		ng/L		97	56 - 144	0	30
PEPA	25.6	31.33		ng/L		122	44 - 150	1	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	22.8	20.30		ng/L		89	60 - 130	3	30
Perfluoro-3,5,7,9,11-pentaoxadodecanoic acid	25.6	34.48		ng/L		135	52 - 146	7	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	25.6	25.74		ng/L		101	62 - 133	5	30
Perfluoro-4-isopropoxybutanoic acid (PFIpOBA)	25.6	31.36		ng/L		123	56 - 161	5	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	25.6	19.93		ng/L		78	57 - 133	4	30
Perfluorobutanesulfonic acid (PFBS)	22.7	22.55		ng/L		100	64 - 132	3	30
Perfluorobutanoic acid (PFBA)	25.6	24.74		ng/L		97	58 - 130	1	30
Perfluorodecanesulfonic acid (PFDS)	24.7	20.21		ng/L		82	55 - 130	1	30
Perfluorodecanoic acid (PFDA)	25.6	27.22		ng/L		106	62 - 133	5	30
Perfluorododecanesulfonic acid (PFDoS)	24.8	20.38		ng/L		82	56 - 130	0	30
Perfluorododecanoic acid (PFDoA)	25.6	26.17		ng/L		102	61 - 132	9	30
Perfluoroheptanesulfonic acid (PFHpS)	24.4	26.22		ng/L		108	59 - 130	0	30
Perfluoroheptanoic acid (PFHpA)	25.6	25.47		ng/L		100	64 - 130	2	30
Perfluorohexanesulfonic acid (PFHxS)	23.3	22.79		ng/L		98	62 - 130	5	30
Perfluorohexanoic acid (PFHxA)	25.6	24.53		ng/L		96	59 - 130	3	30
Perfluoro-n-hexadecanoic acid (PFHxDA)	25.6	22.05		ng/L		86	50 - 130	1	30
Perfluoro-n-octadecanoic acid (PFODA)	25.6	16.31		ng/L		64	45 - 137	10	30
Perfluorononanesulfonic acid (PFNS)	24.6	22.61		ng/L		92	56 - 130	7	30
Perfluorononanoic acid (PFNA)	25.6	24.40		ng/L		95	63 - 133	5	30
Perfluorooctanesulfonamide (PFOSA)	25.6	27.59		ng/L		108	67 - 132	3	30
Perfluorooctanesulfonic acid (PFOS)	23.7	22.00		ng/L		93	62 - 130	3	30
Perfluorooctanoic acid (PFOA)	25.6	26.08		ng/L		102	58 - 132	2	30
Perfluoropentanesulfonic acid (PFPeS)	24.0	21.08		ng/L		88	64 - 132	2	30
Perfluoropentanoic acid (PFPeA)	25.6	26.72		ng/L		104	60 - 130	3	30

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: LCSD 410-523604/3-A
Matrix: Water
Analysis Batch: 526021

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 523604

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluoropropanesulfonic acid			23.4	30.62		ng/L		131	58 - 137	1	30
Perfluoropropionic acid (PFPrA)			25.6	27.87		ng/L		109	20 - 173	1	30
Perfluorotetradecanoic acid (PFTeDA)			25.6	25.29		ng/L		99	62 - 131	2	30
Perfluorotridecanoic acid (PFTrDA)			25.6	25.53		ng/L		100	59 - 136	14	30
Perfluoroundecanoic acid (PFUnA)			25.6	25.97		ng/L		101	62 - 131	1	30
PFECHS			23.6	21.55		ng/L		91	54 - 130	2	30
PFMOAA			25.6	22.48		ng/L		88	34 - 143	0	30
PFO2HxA			25.6	29.98		ng/L		117	58 - 140	3	30
PFO3OA			25.6	30.42		ng/L		119	52 - 148	3	30
PFO4DA			25.6	31.95		ng/L		125	49 - 150	3	30
PMPA			25.6	26.45		ng/L		103	54 - 135	1	30
PS Acid			25.6	12.04		ng/L		47	10 - 130	1	30
R-EVE			25.6	23.49		ng/L		92	46 - 141	0	30
R-PSDA			25.6	21.70		ng/L		85	38 - 144	2	30
R-PSDCA			25.6	24.79		ng/L		97	53 - 148	4	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C-10:2 FTCA	*71*		*11 - 200*
13C-10:2 FTUCA	*73*		*10 - 166*
13C2 PFTeDA	*76*		*10 - 171*
13C2-PFDoDA	*73*		*22 - 165*
13C3 HFPO-DA	*76*		*13 - 170*
13C3 PFBS	*87*		*34 - 200*
13C3 PFHxS	*74*		*48 - 169*
13C3-PFPrA	*59*		*21 - 157*
13C4 PFBA	*70*		*22 - 174*
13C4 PFHpA	*70*		*40 - 165*
13C5 PFHxA	*67*		*28 - 166*
13C5 PFPeA	*79*		*33 - 196*
13C6 PFDA	*80*		*53 - 151*
13C-6:2 FTCA	*75*		*10 - 200*
13C-6:2 FTUCA	*68*		*10 - 173*
13C7 PFUnA	*78*		*41 - 163*
13C8 FOSA	*78*		*10 - 155*
13C8 PFOA	*81*		*52 - 153*
13C8 PFOS	*84*		*59 - 155*
13C-8:2 FTCA	*75*		*20 - 200*
13C-8:2 FTUCA	*78*		*18 - 175*
13C9 PFNA	*80*		*52 - 168*
d3-NMeFOSAA	*77*		*38 - 168*
d3-NMePFOSA	*46*		*10 - 130*
d5-NEtFOSAA	*75*		*34 - 181*
d5-NEtPFOSA	*49*		*10 - 130*
d7-N-MeFOSE-M	*75*		*10 - 149*
d9-N-EtFOSE-M	*65*		*10 - 151*
M2-4:2 FTS	*67*		*35 - 200*

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: LCSD 410-523604/3-A
Matrix: Water
Analysis Batch: 526021

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 523604

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
M2-6:2 FTS	133		40 - 200
M2-8:2 FTS	95		37 - 200

GC/MS Semi VOA

Prep Batch: 516779

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-175226-1	001 FBP	Total/NA	Water	SOP	
410-175226-3	002	Total/NA	Water	SOP	
410-175226-4	003	Total/NA	Water	SOP	
410-175226-5	004-D	Total/NA	Water	SOP	
410-175226-6	004 FB	Total/NA	Water	SOP	
410-175226-7	004	Total/NA	Water	SOP	
410-175226-8	006	Total/NA	Water	SOP	
410-175226-9	Trip Blank	Total/NA	Water	SOP	
MB 410-516779/1-A	Method Blank	Total/NA	Water	SOP	
LCS 410-516779/2-A	Lab Control Sample	Total/NA	Water	SOP	
LCSD 410-516779/3-A	Lab Control Sample Dup	Total/NA	Water	SOP	

Analysis Batch: 519643

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-175226-1	001 FBP	Total/NA	Water	SOP	516779
410-175226-3	002	Total/NA	Water	SOP	516779
410-175226-4	003	Total/NA	Water	SOP	516779
410-175226-5	004-D	Total/NA	Water	SOP	516779
MB 410-516779/1-A	Method Blank	Total/NA	Water	SOP	516779
LCS 410-516779/2-A	Lab Control Sample	Total/NA	Water	SOP	516779
LCSD 410-516779/3-A	Lab Control Sample Dup	Total/NA	Water	SOP	516779

Analysis Batch: 520647

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-175226-6	004 FB	Total/NA	Water	SOP	516779
410-175226-7	004	Total/NA	Water	SOP	516779
410-175226-8	006	Total/NA	Water	SOP	516779
410-175226-9	Trip Blank	Total/NA	Water	SOP	516779

Prep Batch: 521574

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-175226-2	001 P	Total/NA	Water	SOP	
MB 410-521574/1-A	Method Blank	Total/NA	Water	SOP	
LCS 410-521574/2-A	Lab Control Sample	Total/NA	Water	SOP	
LCSD 410-521574/3-A	Lab Control Sample Dup	Total/NA	Water	SOP	

Analysis Batch: 521665

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-175226-2	001 P	Total/NA	Water	SOP	521574
MB 410-521574/1-A	Method Blank	Total/NA	Water	SOP	521574
LCS 410-521574/2-A	Lab Control Sample	Total/NA	Water	SOP	521574
LCSD 410-521574/3-A	Lab Control Sample Dup	Total/NA	Water	SOP	521574

LCMS

Prep Batch: 521851

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-175226-9	Trip Blank	Total/NA	Water	SPE	
MB 410-521851/1-A	Method Blank	Total/NA	Water	SPE	
LCS 410-521851/2-A	Lab Control Sample	Total/NA	Water	SPE	
LCSD 410-521851/3-A	Lab Control Sample Dup	Total/NA	Water	SPE	

LCMS

Prep Batch: 521869

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-175226-3	002	Total/NA	Water	SPE	
410-175226-4	003	Total/NA	Water	SPE	
MB 410-521869/1-A	Method Blank	Total/NA	Water	SPE	
LCS 410-521869/2-A	Lab Control Sample	Total/NA	Water	SPE	

Prep Batch: 522328

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-175226-5	004-D	Total/NA	Water	SPE	
410-175226-6	004 FB	Total/NA	Water	SPE	
410-175226-7	004	Total/NA	Water	SPE	
410-175226-8	006	Total/NA	Water	SPE	
MB 410-522328/1-A	Method Blank	Total/NA	Water	SPE	
LCS 410-522328/2-A	Lab Control Sample	Total/NA	Water	SPE	
LCSD 410-522328/3-A	Lab Control Sample Dup	Total/NA	Water	SPE	

Analysis Batch: 523096

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-175226-3	002	Total/NA	Water	537 IDA	521869
410-175226-4	003	Total/NA	Water	537 IDA	521869
410-175226-9	Trip Blank	Total/NA	Water	537 IDA	521851
MB 410-521851/1-A	Method Blank	Total/NA	Water	537 IDA	521851
MB 410-521869/1-A	Method Blank	Total/NA	Water	537 IDA	521869
LCS 410-521851/2-A	Lab Control Sample	Total/NA	Water	537 IDA	521851
LCS 410-521869/2-A	Lab Control Sample	Total/NA	Water	537 IDA	521869
LCSD 410-521851/3-A	Lab Control Sample Dup	Total/NA	Water	537 IDA	521851

Prep Batch: 523604

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-175226-1	001 FBP	Total/NA	Water	SPE	
410-175226-2	001 P	Total/NA	Water	SPE	
MB 410-523604/1-A	Method Blank	Total/NA	Water	SPE	
LCS 410-523604/2-A	Lab Control Sample	Total/NA	Water	SPE	
LCSD 410-523604/3-A	Lab Control Sample Dup	Total/NA	Water	SPE	

Analysis Batch: 524969

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-175226-5	004-D	Total/NA	Water	537 IDA	522328
410-175226-6	004 FB	Total/NA	Water	537 IDA	522328
410-175226-8	006	Total/NA	Water	537 IDA	522328
MB 410-522328/1-A	Method Blank	Total/NA	Water	537 IDA	522328
LCS 410-522328/2-A	Lab Control Sample	Total/NA	Water	537 IDA	522328
LCSD 410-522328/3-A	Lab Control Sample Dup	Total/NA	Water	537 IDA	522328

Analysis Batch: 526021

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-175226-1	001 FBP	Total/NA	Water	537 IDA	523604
410-175226-2	001 P	Total/NA	Water	537 IDA	523604
410-175226-7	004	Total/NA	Water	537 IDA	522328
MB 410-523604/1-A	Method Blank	Total/NA	Water	537 IDA	523604
LCS 410-523604/2-A	Lab Control Sample	Total/NA	Water	537 IDA	523604
LCSD 410-523604/3-A	Lab Control Sample Dup	Total/NA	Water	537 IDA	523604

QC Association Summary

Client: Eastern Research Group, Inc.
Project/Site: SDWA Region 9 - ERG

Job ID: 410-175226-1

LCMS

Prep Batch: 526206

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-175226-3 - RE	002	Total/NA	Water	SPE	
410-175226-4 - RE	003	Total/NA	Water	SPE	
410-175226-9 - RE	Trip Blank	Total/NA	Water	SPE	
MB 410-526206/1-A	Method Blank	Total/NA	Water	SPE	
LCS 410-526206/2-A	Lab Control Sample	Total/NA	Water	SPE	

Analysis Batch: 527927

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-175226-3 - RE	002	Total/NA	Water	537 IDA	526206
410-175226-4 - RE	003	Total/NA	Water	537 IDA	526206
410-175226-9 - RE	Trip Blank	Total/NA	Water	537 IDA	526206
MB 410-526206/1-A	Method Blank	Total/NA	Water	537 IDA	526206
LCS 410-526206/2-A	Lab Control Sample	Total/NA	Water	537 IDA	526206

Client Sample ID: 001 FBP

Lab Sample ID: 410-175226-1

Date Collected: 06/05/24 09:15

Matrix: Water

Date Received: 06/08/24 09:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	SOP			516779	SJ7Z	ELLE	06/12/24 22:15
Total/NA	Analysis	SOP		1	519643	UAD3	ELLE	06/20/24 18:17
Total/NA	Prep	SPE			523604	V3FW	ELLE	07/01/24 16:44
Total/NA	Analysis	537 IDA		1	526021	V4RH	ELLE	07/10/24 02:14

Client Sample ID: 001 P

Lab Sample ID: 410-175226-2

Date Collected: 06/05/24 09:17

Matrix: Water

Date Received: 06/08/24 09:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	SOP			521574	UJSZ	ELLE	06/26/24 08:13
Total/NA	Analysis	SOP		1	521665	UAD3	ELLE	06/26/24 12:43
Total/NA	Prep	SPE			523604	V3FW	ELLE	07/01/24 16:44
Total/NA	Analysis	537 IDA		1	526021	V4RH	ELLE	07/10/24 02:28

Client Sample ID: 002

Lab Sample ID: 410-175226-3

Date Collected: 06/03/24 15:38

Matrix: Water

Date Received: 06/08/24 09:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	SOP			516779	SJ7Z	ELLE	06/13/24 08:24
Total/NA	Analysis	SOP		1	519643	UAD3	ELLE	06/20/24 19:12
Total/NA	Prep	SPE			521869	V3FW	ELLE	06/26/24 16:17
Total/NA	Analysis	537 IDA		1	523096	R7RE	ELLE	06/30/24 05:19
Total/NA	Prep	SPE	RE		526206	V3FW	ELLE	07/09/24 15:58
Total/NA	Analysis	537 IDA	RE	1	527927	R7RE	ELLE	07/14/24 06:17

Client Sample ID: 003

Lab Sample ID: 410-175226-4

Date Collected: 06/03/24 16:38

Matrix: Water

Date Received: 06/08/24 09:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	SOP			516779	SJ7Z	ELLE	06/13/24 08:24
Total/NA	Analysis	SOP		1	519643	UAD3	ELLE	06/20/24 19:26
Total/NA	Prep	SPE			521869	V3FW	ELLE	06/26/24 16:17
Total/NA	Analysis	537 IDA		1	523096	R7RE	ELLE	06/30/24 05:32
Total/NA	Prep	SPE	RE		526206	V3FW	ELLE	07/09/24 15:58
Total/NA	Analysis	537 IDA	RE	1	527927	R7RE	ELLE	07/14/24 06:30

Client Sample ID: 004-D

Lab Sample ID: 410-175226-5

Date Collected: 06/04/24 09:46

Matrix: Water

Date Received: 06/08/24 09:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	SOP			516779	SJ7Z	ELLE	06/13/24 08:24
Total/NA	Analysis	SOP		1	519643	UAD3	ELLE	06/20/24 19:40

Client Sample ID: 004-D

Lab Sample ID: 410-175226-5

Date Collected: 06/04/24 09:46

Matrix: Water

Date Received: 06/08/24 09:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	SPE			522328	V3FW	ELLE	06/27/24 14:30
Total/NA	Analysis	537 IDA		1	524969	FDE4	ELLE	07/05/24 23:54

Client Sample ID: 004 FB

Lab Sample ID: 410-175226-6

Date Collected: 06/04/24 09:46

Matrix: Water

Date Received: 06/08/24 09:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	SOP			516779	SJ7Z	ELLE	06/13/24 08:24
Total/NA	Analysis	SOP		1	520647	UAD3	ELLE	06/24/24 15:00
Total/NA	Prep	SPE			522328	V3FW	ELLE	06/27/24 14:30
Total/NA	Analysis	537 IDA		1	524969	FDE4	ELLE	07/06/24 00:07

Client Sample ID: 004

Lab Sample ID: 410-175226-7

Date Collected: 06/04/24 09:54

Matrix: Water

Date Received: 06/08/24 09:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	SOP			516779	SJ7Z	ELLE	06/13/24 08:24
Total/NA	Analysis	SOP		1	520647	UAD3	ELLE	06/24/24 15:13
Total/NA	Prep	SPE			522328	V3FW	ELLE	06/27/24 14:30
Total/NA	Analysis	537 IDA		1	526021	V4RH	ELLE	07/09/24 17:24

Client Sample ID: 006

Lab Sample ID: 410-175226-8

Date Collected: 06/04/24 14:50

Matrix: Water

Date Received: 06/08/24 09:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	SOP			516779	SJ7Z	ELLE	06/13/24 08:24
Total/NA	Analysis	SOP		1	520647	UAD3	ELLE	06/24/24 15:27
Total/NA	Prep	SPE			522328	V3FW	ELLE	06/27/24 14:30
Total/NA	Analysis	537 IDA		1	524969	FDE4	ELLE	07/06/24 00:21

Client Sample ID: Trip Blank

Lab Sample ID: 410-175226-9

Date Collected: 05/30/24 00:00

Matrix: Water

Date Received: 06/08/24 09:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	SOP			516779	SJ7Z	ELLE	06/13/24 08:24
Total/NA	Analysis	SOP		1	520647	UAD3	ELLE	06/24/24 15:41
Total/NA	Prep	SPE			521851	V3FW	ELLE	06/26/24 15:46
Total/NA	Analysis	537 IDA		1	523096	R7RE	ELLE	06/30/24 01:07
Total/NA	Prep	SPE	RE		526206	V3FW	ELLE	07/09/24 15:58
Total/NA	Analysis	537 IDA	RE	1	527927	R7RE	ELLE	07/14/24 06:42

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Eastern Research Group, Inc.
Project/Site: SDWA Region 9 - ERG

Job ID: 410-175226-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

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

Authority	Program	Identification Number	Expiration Date
Hawaii	State	N/A	01-31-25

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
537 IDA	SPE	Water	10:2 Fluorotelomer sulfonic acid
537 IDA	SPE	Water	10:2 FTCA
537 IDA	SPE	Water	10:2 FTUCA
537 IDA	SPE	Water	11Cl-PF3OUdS
537 IDA	SPE	Water	3:3 FTCA
537 IDA	SPE	Water	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)
537 IDA	SPE	Water	4:2 Fluorotelomer sulfonic acid
537 IDA	SPE	Water	5:3 FTCA
537 IDA	SPE	Water	6:2 Fluorotelomer sulfonic acid
537 IDA	SPE	Water	6:2 FTCA
537 IDA	SPE	Water	6:2 FTUCA
537 IDA	SPE	Water	7:3 FTCA
537 IDA	SPE	Water	8:2 Fluorotelomer sulfonic acid
537 IDA	SPE	Water	8:2 FTCA
537 IDA	SPE	Water	8:2 FTUCA
537 IDA	SPE	Water	9Cl-PF3ONS
537 IDA	SPE	Water	EVE Acid
537 IDA	SPE	Water	HFPODA
537 IDA	SPE	Water	Hydro-EVE Acid
537 IDA	SPE	Water	Hydrolyzed PSDA
537 IDA	SPE	Water	Hydro-PS Acid
537 IDA	SPE	Water	MTP
537 IDA	SPE	Water	NEtFOSA
537 IDA	SPE	Water	NEtFOSAA
537 IDA	SPE	Water	NEtFOSE
537 IDA	SPE	Water	NMeFOSA
537 IDA	SPE	Water	NMeFOSAA
537 IDA	SPE	Water	NMeFOSE
537 IDA	SPE	Water	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)
537 IDA	SPE	Water	NVHOS
537 IDA	SPE	Water	PEPA
537 IDA	SPE	Water	Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)
537 IDA	SPE	Water	Perfluoro-3,5,7,9,11-pentaoxadodecanoic acid
537 IDA	SPE	Water	Perfluoro-3-methoxypropanoic acid (PFMPA)
537 IDA	SPE	Water	Perfluoro-4-isopropoxybutanoic acid (PFIpOBA)
537 IDA	SPE	Water	Perfluoro-4-methoxybutanoic acid (PFMBA)
537 IDA	SPE	Water	Perfluorobutanesulfonic acid (PFBS)
537 IDA	SPE	Water	Perfluorobutanoic acid (PFBA)
537 IDA	SPE	Water	Perfluorodecanesulfonic acid (PFDS)
537 IDA	SPE	Water	Perfluorodecanoic acid (PFDA)

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC (Continued)

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

Authority	Program	Identification Number	Expiration Date

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
537 IDA	SPE	Water	Perfluorododecanesulfonic acid (PFDoS)
537 IDA	SPE	Water	Perfluorododecanoic acid (PFDoA)
537 IDA	SPE	Water	Perfluoroheptanesulfonic acid (PFHpS)
537 IDA	SPE	Water	Perfluoroheptanoic acid (PFHpA)
537 IDA	SPE	Water	Perfluorohexanesulfonic acid (PFHxS)
537 IDA	SPE	Water	Perfluorohexanoic acid (PFHxA)
537 IDA	SPE	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
537 IDA	SPE	Water	Perfluoro-n-octadecanoic acid (PFODA)
537 IDA	SPE	Water	Perfluorononanesulfonic acid (PFNS)
537 IDA	SPE	Water	Perfluorononanoic acid (PFNA)
537 IDA	SPE	Water	Perfluorooctanesulfonamide (PFOSA)
537 IDA	SPE	Water	Perfluorooctanesulfonic acid (PFOS)
537 IDA	SPE	Water	Perfluorooctanoic acid (PFOA)
537 IDA	SPE	Water	Perfluoropentanesulfonic acid (PFPeS)
537 IDA	SPE	Water	Perfluoropentanoic acid (PFPeA)
537 IDA	SPE	Water	Perfluoropropanesulfonic acid
537 IDA	SPE	Water	Perfluoropropionic acid (PFPrA)
537 IDA	SPE	Water	Perfluorotetradecanoic acid (PFTeDA)
537 IDA	SPE	Water	Perfluorotridecanoic acid (PFTrDA)
537 IDA	SPE	Water	Perfluoroundecanoic acid (PFUnA)
537 IDA	SPE	Water	PFECHS
537 IDA	SPE	Water	PFMOAA
537 IDA	SPE	Water	PFO2HxA
537 IDA	SPE	Water	PFO3OA
537 IDA	SPE	Water	PFO4DA
537 IDA	SPE	Water	PMPA
537 IDA	SPE	Water	PS Acid
537 IDA	SPE	Water	R-EVE
537 IDA	SPE	Water	R-PSDA
537 IDA	SPE	Water	R-PSDCA
SOP	SOP	Water	10:2 FTOH-2-Perfluorodecyl ethanol
SOP	SOP	Water	4:2 FTOH-2-Perfluorobutyl ethanol
SOP	SOP	Water	6:2 FTOH-2-Perfluorohexyl ethanol
SOP	SOP	Water	7:2 FTOH-1-Perfluoroheptyl ethanol
SOP	SOP	Water	8:2 FTOH-2-Perfluorooctyl ethanol

Method Summary

Client: Eastern Research Group, Inc.
Project/Site: SDWA Region 9 - ERG

Job ID: 410-175226-1

Method	Method Description	Protocol	Laboratory
SOP	SOP T-SSG-WI7750	ELLE - Lancaster	ELLE
537 IDA	EPA 537 Isotope Dilution	EPA	ELLE
SOP	SOP T-SSG-WI7750	ELLE - Lancaster	ELLE
SPE	PFAS by SPE	Lab SOP	ELLE

Protocol References:

ELLE - Lancaster = Eurofins Lancaster, Facility Standard Operating Procedure.

EPA = US Environmental Protection Agency

Lab SOP = Laboratory Standard Operating Procedure

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Eastern Research Group, Inc.
Project/Site: SDWA Region 9 - ERG

Job ID: 410-175226-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-175226-1	001 FBP	Water	06/05/24 09:15	06/08/24 09:35
410-175226-2	001 P	Water	06/05/24 09:17	06/08/24 09:35
410-175226-3	002	Water	06/03/24 15:38	06/08/24 09:35
410-175226-4	003	Water	06/03/24 16:38	06/08/24 09:35
410-175226-5	004-D	Water	06/04/24 09:46	06/08/24 09:35
410-175226-6	004 FB	Water	06/04/24 09:46	06/08/24 09:35
410-175226-7	004	Water	06/04/24 09:54	06/08/24 09:35
410-175226-8	006	Water	06/04/24 14:50	06/08/24 09:35
410-175226-9	Trip Blank	Water	05/30/24 00:00	06/08/24 09:35

410-175226 Chain of Custody

PFAS Drinking Water
EPA

CHAIN OF CUSTODY RECORD

TURNAROUND TIME				DELIVERABLES		PAGE: 1 OF 1
Standard ☐	48 hours ☐			EDD ☐		Condition upon receipt
Same Day ☐	72 hours ☐			EDF ☐		Sealed Yes ☐ No ☐
24 hours ☐	96 hours ☐			Level 3 ☐		Intact Yes ☐ No ☐
Other				Level 4 ☐		Chilled _____ deg C

Project No.:	SDWA Region 9 - ERG
Project Name:	
Report To:	Michelle Spiezo
Company:	ERG
Street:	14555 Avion Pkwy
City/State/Zip:	Chantilly, VA
Phone& Fax:	217-418-3573
e-mail:	mike.mcfadden@erg.com

LAB USE ONLY	SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	ANALYSIS REQUEST: PFAS 20 537	PFAS FTOH
	001 FB	6/5/24	0915	HDPE			X	X
	001 P	6/5/24	0917	HDPE			X	X
	002	6/5/24	1538	HDPE			X	X
	003	6/3/24	1632	HDPE			X	X
	004 D	6/4/24	0946	HDPE			X	X
	004 FB	6/4/24	0946	HDPE			X	X
	004	6/4/24	0954	HDPE			X	X
	006	6/4/24	1450	HDPE			X	X
	Trip Blanks	6/5/24	-	HDPE			X	X

AUTHORIZATION TO PERFORM WORK: Mike Beck	COMPANY: ERG	DATE/TIME: 6/6/24	1200	COMMENTS
SAMPLED BY: Mike Beck	COMPANY: ERG	DATE/TIME: 6/6/24	1200	
RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME	
RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME	
RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME: 6/6/24	0935

METHOD OF TRANSPORT (circle one): Walk-In FedEx UPS Courier ATL! Other

R: 2.3 C: 2.2

7/16/2024

Login Sample Receipt Checklist

Client: Eastern Research Group, Inc.

Job Number: 410-175226-1

Login Number: 175226

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: Santiago, Nathaniel

Question	Answer	Comment
The cooler's custody seal is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature acceptable,where thermal pres is required(</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV:Container Temp acceptable,where thermal pres is required (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	False	Refer to Job Narrative for details.
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
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	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	True	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	

ATTACHMENT 2: SVOC LABORATORY REPORT

The laboratory reports may reference sample ID numbers that are not referenced within this inspection report; any additional sample locations are unrelated to this inspection and their location is intentionally not provided.

Case Narrative

Project and Report Details		Invoice Details	
Client:	[redacted]	**Invoice To:**	[redacted]
Report To:	[redacted]	**Invoice Attn:**	[redacted]
Project #:	[redacted]	**Project PO#:**	[redacted]
Received:	6/05/2024 - 11:00		
Report Due:	6/19/2024		

Sample Receipt Conditions

Cooler: Cooler #1
Temperature on Receipt °C: 0.8

Containers Intact
COC/Labels Agree
Received On Wet Ice
Packing Material - Bubble Wrap
Sample(s) were received in temperature range.
Initial receipt at BSK-FAL

Detailed Narrative

Chain of Custody Notes

Date: 6/11/2024
Initials: [redacted]
Note: Samples are for ICF Project R24L03 as per [redacted]. Reporting only Benzo(a)pyrene on the EPA 525.3 list. Reporting only 1-methylnapthalene, 2-methylnapthalene, and napthalene on the EPA 8270 list as per instruction from [redacted].

Data Qualifiers

The following qualifiers have been applied to one or more analytical results:

None applied

Report Distribution

Recipient(s)	Report Format	CC:
[redacted]	FINAL.RPT	

Certificate of Analysis

Sample ID: AHF0626-01
Sampled By: [redacted]
Sample Description: 005

Sample Date - Time: 06/04/2024 - 11:37
Matrix: Drinking Water
Sample Type: Grab

BSK Associates Laboratory Fresno

Organics

Analyte	Method	Result	MDL	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Semi-Volatile Organics by GC-MS										
Benzo(a)pyrene	EPA 525.3	ND	[redacted]	0.020	ug/L	1	AHF0484	06/09/24	06/10/24	
Surrogate: 1,3-Dimethyl-2-nitrobenzene	EPA 525.3	96 %		*Acceptable range:*		*70-130 %*				
Surrogate: Benzo(a)pyrene-d12	EPA 525.3	81 %		*Acceptable range:*		*70-130 %*				
Surrogate: Triphenyl Phosphate	EPA 525.3	118 %		*Acceptable range:*		*70-130 %*				

Certificate of Analysis

Sample ID: AHF0626-02
Sampled By: [redacted]
Sample Description: 005

Sample Date - Time: 06/04/2024 - 11:35
Matrix: Drinking Water
Sample Type: Grab

BSK Associates Laboratory Fresno

Organics

Analyte	Method	Result	MDL	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Semi-Volatile Organics (PAHs, 8100 List) by GC-MS										
1-Methylnaphthalene	EPA 8270E	ND	[redacted]	0.010	ug/L	1	AHF0497	06/10/24	06/12/24	
2-Methylnaphthalene	EPA 8270E	ND	[redacted]	0.010	ug/L	1	AHF0497	06/10/24	06/12/24	
Naphthalene	EPA 8270E	ND	[redacted]	0.010	ug/L	1	AHF0497	06/10/24	06/12/24	
Surrogate: 2-Fluorobiphenyl	EPA 8270E	94 %		*Acceptable range: 40-127 %*						
Surrogate: Nitrobenzene-d5	EPA 8270E	97 %		*Acceptable range: 49-133 %*						
Surrogate: p-Terphenyl-d14	EPA 8270E	101 %		*Acceptable range: 39-135 %*						

Case Narrative

Project and Report Details		Invoice Details	
Client:	[redacted]	**Invoice To:**	[redacted]
Report To:	[redacted]	**Invoice Attn:**	[redacted]
Project #:	[redacted]	**Project PO#:**	[redacted]
Received:	6/05/2024 - 11:00		
Report Due:	6/19/2024		

Sample Receipt Conditions

Cooler: Cooler #1
Temperature on Receipt °C: 3.0

Containers Intact
COC/Labels Agree
Received On Wet Ice
Packing Material - Bubble Wrap
Sample(s) were received in temperature range.
Initial receipt at BSK-FAL

Detailed Narrative

Chain of Custody Notes

Date: 6/11/2024
Initials: [redacted]
Note: Samples are for ICF Project R24L03 as per [redacted]. Reporting only Benzo(a)pyrene on the EPA 525.3 list. Reporting only 1-methylnapthalene, 2-methylnapthalene, and napthalene on the EPA 8270 list as per instruction from [redacted].

Data Qualifiers

The following qualifiers have been applied to one or more analytical results:

J Estimated value

Report Distribution

Recipient(s)	Report Format	CC:
[redacted]	FINAL.RPT	

Certificate of Analysis

Sample ID: AHF0647-02
Sampled By: [redacted]
Sample Description: 004D

Sample Date - Time: 06/04/2024 - 10:19
Matrix: Drinking Water
Sample Type: Grab

BSK Associates Laboratory Fresno

Organics

Analyte	Method	Result	MDL	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Semi-Volatile Organics (PAHs, 8100 List) by GC-MS										
1-Methylnaphthalene	EPA 8270E	ND	[redacted]	0.010	ug/L	1	AHF0497	06/10/24	06/12/24	
2-Methylnaphthalene	EPA 8270E	ND	[redacted]	0.010	ug/L	1	AHF0497	06/10/24	06/12/24	
Naphthalene	EPA 8270E	**0.0084**	[redacted]	0.010	ug/L	1	AHF0497	06/10/24	06/12/24	J
Surrogate: 2-Fluorobiphenyl	EPA 8270E	90 %		*Acceptable range: 40-127 %*						
Surrogate: Nitrobenzene-d5	EPA 8270E	93 %		*Acceptable range: 49-133 %*						
Surrogate: p-Terphenyl-d14	EPA 8270E	96 %		*Acceptable range: 39-135 %*						

Certificate of Analysis

Sample ID: AHF0647-03
Sampled By: [redacted]
Sample Description: 004

Sample Date - Time: 06/04/2024 - 10:07
Matrix: Drinking Water
Sample Type: Grab

BSK Associates Laboratory Fresno

Organics

Analyte	Method	Result	MDL	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Semi-Volatile Organics (PAHs, 8100 List) by GC-MS										
1-Methylnaphthalene	EPA 8270E	ND	[redacted]	0.010	ug/L	1	AHF0497	06/10/24	06/12/24	
2-Methylnaphthalene	EPA 8270E	ND	[redacted]	0.010	ug/L	1	AHF0497	06/10/24	06/12/24	
Naphthalene	EPA 8270E	**0.0070**	[redacted]	0.010	ug/L	1	AHF0497	06/10/24	06/12/24	J
Surrogate: 2-Fluorobiphenyl	EPA 8270E	92 %		*Acceptable range: 40-127 %*						
Surrogate: Nitrobenzene-d5	EPA 8270E	93 %		*Acceptable range: 49-133 %*						
Surrogate: p-Terphenyl-d14	EPA 8270E	100 %		*Acceptable range: 39-135 %*						

Certificate of Analysis

Sample ID: AHF0647-04
Sampled By: [redacted]
Sample Description: 004D

Sample Date - Time: 06/04/2024 - 10:19
Matrix: Drinking Water
Sample Type: Grab

BSK Associates Laboratory Fresno

Organics

Analyte	Method	Result	MDL	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Semi-Volatile Organics by GC-MS										
Benzo(a)pyrene	EPA 525.3	ND	[redacted]	0.020	ug/L	1	AHF0983	06/15/24	06/19/24	
Surrogate: 1,3-Dimethyl-2-nitrobenzene	EPA 525.3	87 %		*Acceptable range: 70-130 %*						
Surrogate: Benzo(a)pyrene-d12	EPA 525.3	103 %		*Acceptable range: 70-130 %*						
Surrogate: Triphenyl Phosphate	EPA 525.3	120 %		*Acceptable range: 70-130 %*						

Case Narrative

Project and Report Details		Invoice Details	
Client:	[redacted]	**Invoice To:**	[redacted]
Report To:	[redacted]	**Invoice Attn:**	[redacted]
Project #:	[redacted]	**Project PO#:**	[redacted]
Received:	6/07/2024 - 11:03		
Report Due:	6/21/2024		

Sample Receipt Conditions

Cooler: Cooler #1
Temperature on Receipt °C: 5.7

Containers Intact
COC/Labels Agree
Received On Wet Ice
Packing Material - Bubble Wrap
Sample(s) were received in temperature range.
Initial receipt at BSK-FAL

Detailed Narrative

Chain of Custody Notes

Date: 6/11/2024
Initials: [redacted]
Note: Samples are for ICF Project R24L03 as per [redacted]. Reporting only Benzo(a)pyrene on the EPA 525.3 list. Reporting only 1-methylnapthalene, 2-methylnapthalene, and napthalene on the EPA 8270 list as per instruction from [redacted].

Data Qualifiers

The following qualifiers have been applied to one or more analytical results:

J Estimated value

Report Distribution

Recipient(s)	Report Format	CC:
[redacted]	FINAL.RPT	

Certificate of Analysis

Sample ID: AHF0929-01
Sampled By: [redacted]
Sample Description: 006

Sample Date - Time: 06/04/2024 - 15:04
Matrix: Drinking Water
Sample Type: Grab

BSK Associates Laboratory Fresno

Organics

Analyte	Method	Result	MDL	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Semi-Volatile Organics (PAHs, 8100 List) by GC-MS										
1-Methylnaphthalene	EPA 8270E	ND	[redacted]	0.010	ug/L	1	AHF0497	06/10/24	06/12/24	
2-Methylnaphthalene	EPA 8270E	**0.0040**	[redacted]	0.010	ug/L	1	AHF0497	06/10/24	06/12/24	J
Naphthalene	EPA 8270E	**0.0099**	[redacted]	0.010	ug/L	1	AHF0497	06/10/24	06/12/24	J
Surrogate: 2-Fluorobiphenyl	EPA 8270E	90 %		*Acceptable range: 40-127 %*						
Surrogate: Nitrobenzene-d5	EPA 8270E	89 %		*Acceptable range: 49-133 %*						
Surrogate: p-Terphenyl-d14	EPA 8270E	101 %		*Acceptable range: 39-135 %*						

Certificate of Analysis

Sample ID: AHF0929-02
Sampled By: [redacted]
Sample Description: 002

Sample Date - Time: 06/03/2024 - 15:41
Matrix: Drinking Water
Sample Type: Grab

BSK Associates Laboratory Fresno

Organics

Analyte	Method	Result	MDL	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Semi-Volatile Organics by GC-MS										
Benzo(a)pyrene	EPA 525.3	ND	[redacted]	0.020	ug/L	1	AHF0484	06/09/24	06/10/24	
Surrogate: 1,3-Dimethyl-2-nitrobenzene	EPA 525.3	93 %		*Acceptable range: 70-130 %*						
Surrogate: Benzo(a)pyrene-d12	EPA 525.3	102 %		*Acceptable range: 70-130 %*						
Surrogate: Triphenyl Phosphate	EPA 525.3	116 %		*Acceptable range: 70-130 %*						

Certificate of Analysis

Sample ID: AHF0929-03
Sampled By: [redacted]
Sample Description: 003

Sample Date - Time: 06/03/2024 - 16:34
Matrix: Drinking Water
Sample Type: Grab

BSK Associates Laboratory Fresno

Organics

Analyte	Method	Result	MDL	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Semi-Volatile Organics by GC-MS										
Benzo(a)pyrene	EPA 525.3	ND	[redacted]	0.020	ug/L	1	AHF0484	06/09/24	06/10/24	
Surrogate: 1,3-Dimethyl-2-nitrobenzene	EPA 525.3	101 %		*Acceptable range:*		*70-130 %*				
Surrogate: Benzo(a)pyrene-d12	EPA 525.3	84 %		*Acceptable range:*		*70-130 %*				
Surrogate: Triphenyl Phosphate	EPA 525.3	118 %		*Acceptable range:*		*70-130 %*				

Certificate of Analysis

Sample ID: AHF0929-04
Sampled By: [redacted]
Sample Description: 002

Sample Date - Time: 06/03/2024 - 15:41
Matrix: Drinking Water
Sample Type: Grab

BSK Associates Laboratory Fresno

Organics

Analyte	Method	Result	MDL	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Semi-Volatile Organics (PAHs, 8100 List) by GC-MS										
1-Methylnaphthalene	EPA 8270E	ND	[redacted]	0.010	ug/L	1	AHF0497	06/10/24	06/12/24	
2-Methylnaphthalene	EPA 8270E	ND	[redacted]	0.010	ug/L	1	AHF0497	06/10/24	06/12/24	
Naphthalene	EPA 8270E	ND	[redacted]	0.010	ug/L	1	AHF0497	06/10/24	06/12/24	
Surrogate: 2-Fluorobiphenyl	EPA 8270E	93 %		*Acceptable range: 40-127 %*						
Surrogate: Nitrobenzene-d5	EPA 8270E	95 %		*Acceptable range: 49-133 %*						
Surrogate: p-Terphenyl-d14	EPA 8270E	98 %		*Acceptable range: 39-135 %*						

Certificate of Analysis

Sample ID: AHF0929-05
Sampled By: [redacted]
Sample Description: 003

Sample Date - Time: 06/03/2024 - 16:34
Matrix: Drinking Water
Sample Type: Grab

BSK Associates Laboratory Fresno

Organics

Analyte	Method	Result	MDL	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Semi-Volatile Organics (PAHs, 8100 List) by GC-MS										
1-Methylnaphthalene	EPA 8270E	ND	[redacted]	0.010	ug/L	1	AHF0497	06/10/24	06/12/24	
2-Methylnaphthalene	EPA 8270E	ND	[redacted]	0.010	ug/L	1	AHF0497	06/10/24	06/12/24	
Naphthalene	EPA 8270E	ND	[redacted]	0.010	ug/L	1	AHF0497	06/10/24	06/12/24	
Surrogate: 2-Fluorobiphenyl	EPA 8270E	92 %		*Acceptable range: 40-127 %*						
Surrogate: Nitrobenzene-d5	EPA 8270E	91 %		*Acceptable range: 49-133 %*						
Surrogate: p-Terphenyl-d14	EPA 8270E	101 %		*Acceptable range: 39-135 %*						

Case Narrative

Project and Report Details		Invoice Details	
Client:	[redacted]	**Invoice To:**	[redacted]
Report To:	[redacted]	**Invoice Attn:**	[redacted]
Project #:	[redacted]	**Project PO#:**	[redacted]
Received:	6/11/2024 - 10:26		
Report Due:	6/25/2024		

Sample Receipt Conditions

Cooler: Cooler #1
Temperature on Receipt °C: 3.8

Containers Intact
COC/Labels Agree
Received On Wet Ice
Packing Material - Bubble Wrap
Sample(s) were received in temperature range.
Initial receipt at BSK-FAL

Detailed Narrative

Chain of Custody Notes

Date: 6/11/2024
Initials: [redacted]
Note: Samples are for ICF Project R24L03 as per [redacted]. Reporting only Benzo(a)pyrene on the EPA 525.3 list. Reporting only 1-methylnapthalene, 2-methylnapthalene, and napthalene on the EPA 8270 list as per instruction from [redacted].

Chain of Custody Notes

Date: 6/13/2024
Initials: [redacted]
Note: AHF1168-02 EPA 525 is cancelled because it is a duplicate of the sample on BSK ID: AHF0647-04.

Data Qualifiers

The following qualifiers have been applied to one or more analytical results:

B2.0	Analyte present in the method blank above the method detection limit (MDL). Laboratory does not determine batch acceptance on detections below the reporting limit (RL)
B2.1	Analyte detected in associated method blank below the reporting limit. No material impact on reported result as sample is ND for this parameter.
J	Estimated value

Report Distribution

Recipient(s)	Report Format	CC:
[redacted]	FINAL.RPT	

Certificate of Analysis

Sample ID: AHF1168-01
Sampled By: [redacted]
Sample Description: 006

Sample Date - Time: 06/04/2024 - 15:04
Matrix: Drinking Water
Sample Type: Grab

BSK Associates Laboratory Fresno

Organics

Analyte	Method	Result	MDL	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Semi-Volatile Organics by GC-MS										
Benzo(a)pyrene	EPA 525.3	ND	[redacted]	0.020	ug/L	1	AHF0983	06/15/24	06/19/24	
Surrogate: 1,3-Dimethyl-2-nitrobenzene	EPA 525.3	96 %		*Acceptable range:*		*70-130 %*				
Surrogate: Benzo(a)pyrene-d12	EPA 525.3	107 %		*Acceptable range:*		*70-130 %*				
Surrogate: Triphenyl Phosphate	EPA 525.3	119 %		*Acceptable range:*		*70-130 %*				

Certificate of Analysis

Sample ID: AHF1168-03
Sampled By: [redacted]
Sample Description: 004

Sample Date - Time: 06/04/2024 - 10:17
Matrix: Drinking Water
Sample Type: Grab

BSK Associates Laboratory Fresno

Organics

Analyte	Method	Result	MDL	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Semi-Volatile Organics by GC-MS										
Benzo(a)pyrene	EPA 525.3	ND	[redacted]	0.020	ug/L	1	AHF0983	06/15/24	06/19/24	
Surrogate: 1,3-Dimethyl-2-nitrobenzene	EPA 525.3	90 %		*Acceptable range: 70-130 %*						
Surrogate: Benzo(a)pyrene-d12	EPA 525.3	106 %		*Acceptable range: 70-130 %*						
Surrogate: Triphenyl Phosphate	EPA 525.3	118 %		*Acceptable range: 70-130 %*						

Certificate of Analysis

Sample ID: AHF1168-04
Sampled By: [redacted]
Sample Description: 012

Sample Date - Time: 06/06/2024 - 13:32
Matrix: Drinking Water
Sample Type: Grab

BSK Associates Laboratory Fresno

Organics

Analyte	Method	Result	MDL	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Semi-Volatile Organics (PAHs, 8100 List) by GC-MS										
1-Methylnaphthalene	EPA 8270E	ND	[redacted]	0.010	ug/L	1	AHF0796	06/13/24	06/20/24	
2-Methylnaphthalene	EPA 8270E	ND	[redacted]	0.010	ug/L	1	AHF0796	06/13/24	06/20/24	B2.1
Naphthalene	EPA 8270E	ND	[redacted]	0.010	ug/L	1	AHF0796	06/13/24	06/20/24	
Surrogate: 2-Fluorobiphenyl	EPA 8270E	92 %		*Acceptable range: 40-127 %*						
Surrogate: Nitrobenzene-d5	EPA 8270E	91 %		*Acceptable range: 49-133 %*						
Surrogate: p-Terphenyl-d14	EPA 8270E	99 %		*Acceptable range: 39-135 %*						

Certificate of Analysis

Sample ID: AHF1168-05
Sampled By: [redacted]
Sample Description: 012

Sample Date - Time: 06/06/2024 - 13:30
Matrix: Drinking Water
Sample Type: Grab

BSK Associates Laboratory Fresno

Organics

Analyte	Method	Result	MDL	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Semi-Volatile Organics by GC-MS										
Benzo(a)pyrene	EPA 525.3	ND	[redacted]	0.020	ug/L	1	AHF0983	06/15/24	06/19/24	
Surrogate: 1,3-Dimethyl-2-nitrobenzene	EPA 525.3	92 %		*Acceptable range:*		*70-130 %*				
Surrogate: Benzo(a)pyrene-d12	EPA 525.3	107 %		*Acceptable range:*		*70-130 %*				
Surrogate: Triphenyl Phosphate	EPA 525.3	123 %		*Acceptable range:*		*70-130 %*				

Case Narrative

Project and Report Details		Invoice Details	
Client:	[redacted]	**Invoice To:**	[redacted]
Report To:	[redacted]	**Invoice Attn:**	[redacted]
Project #:	[redacted]	**Project PO#:**	[redacted]
Received:	6/07/2024 - 11:26		
Report Due:	6/21/2024		

Sample Receipt Conditions

Cooler: Cooler #1
Temperature on Receipt °C: 4.4

Containers Intact
COC/Labels Agree
Received On Wet Ice
Packing Material - Bubble Wrap
Sample(s) were received in temperature range.
Initial receipt at BSK-FAL

Detailed Narrative

Chain of Custody Notes

Date: 6/11/2024
Initials: [redacted]
Note: Samples are for ICF Project R24L03 as per [redacted]. Reporting only Benzo(a)pyrene on the EPA 525.3 list. Reporting only 1-methylnapthalene, 2-methylnapthalene, and napthalene on the EPA 8270 list as per instruction from [redacted].

Data Qualifiers

The following qualifiers have been applied to one or more analytical results:

J Estimated value

Report Distribution

Recipient(s)	Report Format	CC:
[redacted]	FINAL.RPT	

Certificate of Analysis

Sample ID: AHF0936-02
Sampled By: [redacted]
Sample Description: 011

Sample Date - Time: 06/05/2024 - 14:24
Matrix: Drinking Water
Sample Type: Grab

BSK Associates Laboratory Fresno

Organics

Analyte	Method	Result	MDL	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Semi-Volatile Organics by GC-MS										
Benzo(a)pyrene	EPA 525.3	ND	[redacted]	0.020	ug/L	1	AHF0983	06/15/24	06/19/24	
Surrogate: 1,3-Dimethyl-2-nitrobenzene	EPA 525.3	94 %		*Acceptable range: 70-130 %*						
Surrogate: Benzo(a)pyrene-d12	EPA 525.3	107 %		*Acceptable range: 70-130 %*						
Surrogate: Triphenyl Phosphate	EPA 525.3	119 %		*Acceptable range: 70-130 %*						

Certificate of Analysis

Sample ID: AHF0936-03
Sampled By: [redacted]
Sample Description: 011

Sample Date - Time: 06/05/2024 - 14:25
Matrix: Drinking Water
Sample Type: Grab

BSK Associates Laboratory Fresno

Organics

Analyte	Method	Result	MDL	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Semi-Volatile Organics (PAHs, 8100 List) by GC-MS										
1-Methylnaphthalene	EPA 8270E	ND	[redacted]	0.010	ug/L	1	AHF0497	06/10/24	06/13/24	
2-Methylnaphthalene	EPA 8270E	ND	[redacted]	0.010	ug/L	1	AHF0497	06/10/24	06/13/24	
Naphthalene	EPA 8270E	ND	[redacted]	0.010	ug/L	1	AHF0497	06/10/24	06/13/24	
Surrogate: 2-Fluorobiphenyl	EPA 8270E	91 %		*Acceptable range: 40-127 %*						
Surrogate: Nitrobenzene-d5	EPA 8270E	91 %		*Acceptable range: 49-133 %*						
Surrogate: p-Terphenyl-d14	EPA 8270E	97 %		*Acceptable range: 39-135 %*						

Certificate of Analysis

Sample ID: AHF0936-04
Sampled By: [redacted]
Sample Description: 010

Sample Date - Time: 06/05/2024 - 12:55
Matrix: Drinking Water
Sample Type: Grab

BSK Associates Laboratory Fresno

Organics

Analyte	Method	Result	MDL	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Semi-Volatile Organics by GC-MS										
Benzo(a)pyrene	EPA 525.3	ND	[redacted]	0.020	ug/L	1	AHF0983	06/15/24	06/19/24	
Surrogate: 1,3-Dimethyl-2-nitrobenzene	EPA 525.3	84 %		*Acceptable range:*		*70-130 %*				
Surrogate: Benzo(a)pyrene-d12	EPA 525.3	106 %		*Acceptable range:*		*70-130 %*				
Surrogate: Triphenyl Phosphate	EPA 525.3	114 %		*Acceptable range:*		*70-130 %*				

Certificate of Analysis

Sample ID: AHF0936-05
Sampled By: [redacted]
Sample Description: 010

Sample Date - Time: 06/05/2024 - 12:53
Matrix: Drinking Water
Sample Type: Grab

BSK Associates Laboratory Fresno

Organics

Analyte	Method	Result	MDL	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Semi-Volatile Organics (PAHs, 8100 List) by GC-MS										
1-Methylnaphthalene	EPA 8270E	ND	[redacted]	0.010	ug/L	1	AHF0497	06/10/24	06/13/24	
2-Methylnaphthalene	EPA 8270E	ND	[redacted]	0.010	ug/L	1	AHF0497	06/10/24	06/13/24	
Naphthalene	EPA 8270E	ND	[redacted]	0.010	ug/L	1	AHF0497	06/10/24	06/13/24	
Surrogate: 2-Fluorobiphenyl	EPA 8270E	91 %		*Acceptable range: 40-127 %*						
Surrogate: Nitrobenzene-d5	EPA 8270E	93 %		*Acceptable range: 49-133 %*						
Surrogate: p-Terphenyl-d14	EPA 8270E	101 %		*Acceptable range: 39-135 %*						

Case Narrative

Project and Report Details		Invoice Details	
Client:	[redacted]	**Invoice To:**	[redacted]
Report To:	[redacted]	**Invoice Attn:**	[redacted]
Project #:	[redacted]	**Project PO#:**	[redacted]
Received:	6/11/2024 - 11:00		
Report Due:	6/25/2024		

Sample Receipt Conditions

Cooler: Cooler #1
Temperature on Receipt °C: 5.8

Containers Intact
COC/Labels Agree
Received On Wet Ice
Packing Material - Bubble Wrap
Sample(s) were received in temperature range.
Initial receipt at BSK-FAL

Detailed Narrative

Chain of Custody Notes

Date: 6/11/2024
Initials: [redacted]
Note: Samples are for ICF Project R24L03 as per [redacted]. Reporting only Benzo(a)pyrene on the EPA 525.3 list. Reporting only 1-methylnapthalene, 2-methylnapthalene, and napthalene on the EPA 8270 list as per instruction from [redacted].

Data Qualifiers

The following qualifiers have been applied to one or more analytical results:

B2.0	Analyte present in the method blank above the method detection limit (MDL). Laboratory does not determine batch acceptance on detections below the reporting limit (RL).
B2 1	Analyte detected in associated method blank below the reporting limit. No material impact on reported result as sample is ND for this parameter.
J	Estimated value

Report Distribution

Recipient(s)	Report Format	CC:
[redacted]	FINAL.RPT	

Certificate of Analysis

Sample ID: AHF1180-01
Sampled By: [redacted]
Sample Description: 013

Sample Date - Time: 06/06/2024 - 14:17
Matrix: Drinking Water
Sample Type: Grab

BSK Associates Laboratory Fresno

Organics

Analyte	Method	Result	MDL	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Semi-Volatile Organics (PAHs, 8100 List) by GC-MS										
1-Methylnaphthalene	EPA 8270E	ND	[redacted]	0.010	ug/L	1	AHF0796	06/13/24	06/20/24	
2-Methylnaphthalene	EPA 8270E	ND	[redacted]	0.010	ug/L	1	AHF0796	06/13/24	06/20/24	B2.1
Naphthalene	EPA 8270E	ND	[redacted]	0.010	ug/L	1	AHF0796	06/13/24	06/20/24	
Surrogate: 2-Fluorobiphenyl	EPA 8270E	89 %		*Acceptable range: 40-127 %*						
Surrogate: Nitrobenzene-d5	EPA 8270E	91 %		*Acceptable range: 49-133 %*						
Surrogate: p-Terphenyl-d14	EPA 8270E	98 %		*Acceptable range: 39-135 %*						

Certificate of Analysis

Sample ID: AHF1180-02
Sampled By: [redacted]
Sample Description: 013

Sample Date - Time: 06/06/2024 - 14:15
Matrix: Drinking Water
Sample Type: Grab

BSK Associates Laboratory Fresno

Organics

Analyte	Method	Result	MDL	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Semi-Volatile Organics by GC-MS										
Benzo(a)pyrene	EPA 525.3	ND	[redacted]	0.020	ug/L	1	AHF0983	06/15/24	06/19/24	
Surrogate: 1,3-Dimethyl-2-nitrobenzene	EPA 525.3	85 %		*Acceptable range:*		*70-130 %*				
Surrogate: Benzo(a)pyrene-d12	EPA 525.3	112 %		*Acceptable range:*		*70-130 %*				
Surrogate: Triphenyl Phosphate	EPA 525.3	121 %		*Acceptable range:*		*70-130 %*				

Certificate of Analysis

Definitions

mg/L:	Milligrams/Liter (ppm)	MDL:	Method Detection Limit	MDA95:	Min. Detected Activity
mg/Kg:	Milligrams/Kilogram (ppm)	RL:	Reporting Limit: DL x Dilution	MPN:	Most Probable Number
µg/L:	Micrograms/Liter (ppb)	ND:	None Detected below MRL/MDL	CFU:	Colony Forming Unit
µg/Kg:	Micrograms/Kilogram (ppb)	pCi/L:	PicoCuries per Liter	Absent:	Less than 1 CFU/100mLs
%:	Percent	RL Mult:	RL Multiplier	Present:	1 or more CFU/100mLs
NR:	Non-Reportable	MCL:	Maximum Contaminant Limit	U:	The analyte was not detected at or above the reported sample quantitation limit.

Please see the individual Subcontract Lab's report for applicable certifications.

The following parameters are not available for certification through CA ELAP:

Odor Diisopropyl ether (DIPE) by EPA 524.2

The following parameters are calculated values and are outside the scope of our NELAP accreditation:

Total Nitrogen Aggressive Index Trivalent Chromium

BSK is not accredited under the NELAP program for the following additional parameters: **NA**

ATTACHMENT 3: VOC, METALS, TPH, AND EDB LABORATORY REPORT

The laboratory reports may reference sample ID numbers that are not referenced within this inspection report; any additional sample locations are unrelated to this inspection and their location is intentionally not provided.

United States Environmental Protection Agency

Region 9 Laboratory

[redacted]

Project Manager: [redacted]	[redacted]	**SDG:** [redacted]
Project Number: R24L06	**75 Hawthorne St**	**Reported:** 08/14/24 09:06
Project: R24L06	**San Francisco CA, 94105**	

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Collected	Date Received
[redacted]				
002	2406015-02	Water	06/03/24 15:38	06/07/24 12:50
TB-02	2406015-04	Water	06/03/24 12:55	06/07/24 12:50

[redacted]

Project Manager: [redacted]	[redacted]	**SDG:** [redacted]
Project Number: R24L06	**75 Hawthorne St**	**Reported:** 08/14/24 09:06
Project: R24L06	**San Francisco CA, 94105**	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed	Method

[redacted]

Lab ID: 2406015-02 — **Water - Sampled: 06/03/24 15:38**

Sample ID: 002

Total Metals by EPA 200 Series Methods

Mercury	ND	U	0.030	ug/L	B24F029	06/17/24	06/17/24	245.1
Beryllium	ND	U	0.50	"	B24F061	06/17/24	06/17/24	200.8
Copper	36		2	"	"	"	"	200.8
Lead	ND	U	1	"	"	"	"	200.8

Sample ID: 002

Volatile Organic Compounds by EPA Method 524.2

[redacted]

Project Manager: [redacted]	[redacted]	**SDG:** [redacted]
Project Number: R24L06	**75 Hawthorne St**	**Reported:** 08/14/24 09:06
Project: R24L06	**San Francisco CA, 94105**	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed	Method
Lab ID: 2406015 02									**Water - Sampled: 06/03/24 15:38**
Sample ID: 002									**Volatile Organic Compounds by EPA Method 524.2**
Chloroform		ND	U	0.50	ug/L	B24F031	06/11/24	06/11/24	524.2
Benzene		ND	U	0.50	"	"	"	"	524.2
Bromodichloromethane		ND	U	0.50	"	"	"	"	524.2
Toluene		ND	U	0.50	"	"	"	"	524.2
Chlorodibromomethane		ND	U	0.50	"	"	"	"	524.2
Ethylbenzene		ND	U	0.50	"	"	"	"	524.2
m&p-Xylene		ND	U	1	"	"	"	"	524.2
o-Xylene		ND	U	0.50	"	"	"	"	524.2
Bromoform		ND	U	0.50	"	"	"	"	524.2
1,3,5-Trimethylbenzene		ND	U	0.50	"	"	"	"	524.2
1,2,4-Trimethylbenzene		ND	U	0.50	"	"	"	"	524.2
Surrogate: 1,2-Dichloroethane-d4			96 %	*70-130%*		"	"	"	
Surrogate: Toluene-d8			102 %	*70-130%*		"	"	"	
Surrogate: 4-Bromofluorobenzene			101 %	*70-130%*		"	"	"	
Surrogate: 1,2-Dichlorobenzene-d4			100 %	*70-130%*		"	"	"	
1,2-Dibromoethane (EDB)		ND	U	5	ng/L	B24F047	06/13/24	06/13/24	524.2
Surrogate: 4-Bromofluorobenzene			88 %	*70-130%*		"	"	"	
Sample ID: 002									**Purgeable Petroleum Hydrocarbons**
TPH - Gasoline Range Organics		ND	U	50	ug/L	B24F041	06/12/24	06/12/24	8015C
Surrogate: a,a,a-Trifluorotoluene			109 %	*70-130%*		"	"	"	
Sample ID: 002									**Extractable Petroleum Hydrocarbons**
TPH - Diesel Range Organics		68	C1, F13, J	150	"	B24F027	06/10/24	07/10/24	8015C
TPH - Oil Range Organics		ND	U	300	"	"	"	"	8015C
Surrogate: Hexacosane			108 %	*70-130%*		"	"	"	
Lab ID: 2406015-04									**Water - Sampled: 06/03/24 12:55**
Sample ID: TB-02									**Purgeable Petroleum Hydrocarbons**
TPH - Gasoline Range Organics		ND	U	50	ug/L	B24F049	06/13/24	06/13/24	8015C
Surrogate: a,a,a-Trifluorotoluene			111 %	*70-130%*		"	"	"	

United States Environmental Protection Agency

Region 9 Laboratory

[redacted]

Project Manager: [redacted]	[redacted]	**SDG:** [redacted]
Project Number: R24L06	**75 Hawthorne St**	**Reported:** 08/14/24 09:06
Project: R24L06	**San Francisco CA, 94105**	

Qualifiers and Comments

J	The reported result for this analyte should be considered an estimated value.
F13	Fuel or Product Type: mixed or unknown
C1	The reported concentration for this analyte is below the quantitation limit.
U	Not Detected
NR	Not Reported
RE1, RE2, etc:	Result is from a sample re-analysis.

Project Manager: [redacted]	[redacted]	**SDG:** [redacted]
Project Number: R24L06	**75 Hawthorne St**	**Reported:** 08/14/24 09:56
Project: R24L06	**San Francisco CA, 94105**	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed	Method
Lab ID: 2406017 01									**Water - Sampled: 06/03/24 16:31**
Sample ID: 003									**Total Metals by EPA 200 Series Methods**
Mercury		ND	U	0.030	ug/L	B24F030	06/17/24	06/17/24	245.1
Beryllium		ND	U	0.50	"	B24F061	06/17/24	06/17/24	200.8
Copper		12		2	"	"	"	"	200.8
Lead		ND	U	1	"	"	"	"	200.8
Sample ID: 003									**Volatile Organic Compounds by EPA Method 524.2**
Chloroform		ND	U	0.50	"	B24F031	06/11/24	06/11/24	524.2
Benzene		ND	U	0.50	"	"	"	"	524.2
Bromodichloromethane		ND	U	0.50	"	"	"	"	524.2
Toluene		ND	U	0.50	"	"	"	"	524.2
Chlorodibromomethane		ND	U	0.50	"	"	"	"	524.2
Ethylbenzene		ND	U	0.50	"	"	"	"	524.2
m&p-Xylene		ND	U	1	"	"	"	"	524.2
o-Xylene		ND	U	0.50	"	"	"	"	524.2
Bromoform		ND	U	0.50	"	"	"	"	524.2
1,3,5-Trimethylbenzene		ND	U	0.50	"	"	"	"	524.2
1,2,4-Trimethylbenzene		ND	U	0.50	"	"	"	"	524.2
Surrogate: 1,2-Dichloroethane-d4			99 %	*70-130%*		"	"	"	
Surrogate: Toluene-d8			104 %	*70-130%*		"	"	"	
Surrogate: 4-Bromofluorobenzene			99 %	*70-130%*		"	"	"	
Surrogate: 1,2-Dichlorobenzene-d4			101 %	*70-130%*		"	"	"	
1,2-Dibromoethane (EDB)		ND	U	5	ng/L	B24F047	06/13/24	06/13/24	524.2
Surrogate: 4-Bromofluorobenzene			87 %	*70-130%*		"	"	"	
Sample ID: 003									**Purgeable Petroleum Hydrocarbons**
TPH - Gasoline Range Organics		ND	U	50	ug/L	B24F041	06/12/24	06/12/24	8015C
Surrogate: a,a,a-Trifluorotoluene			109 %	*70-130%*		"	"	"	
Sample ID: 003									**Extractable Petroleum Hydrocarbons**
TPH - Diesel Range Organics		51	C1, F13, J	150	"	B24F027	06/10/24	07/10/24	8015C
TPH - Oil Range Organics		ND	U	300	"	"	"	"	8015C
Surrogate: Hexacosane			106 %	*70-130%*		"	"	"	
Lab ID: 2406017-02									**Water - Sampled: 06/04/24 10:14**
Sample ID: 004									**Total Metals by EPA 200 Series Methods**
Mercury		ND	U	0.030	ug/L	B24F030	06/17/24	06/17/24	245.1
Beryllium		ND	U	0.50	"	B24F061	06/17/24	06/17/24	200.8
Copper		97		2	"	"	"	"	200.8
Lead		ND	U	1	"	"	"	"	200.8
Sample ID: 004									**Volatile Organic Compounds by EPA Method 524.2**

[redacted]

Project Manager: [redacted]	[redacted]	**SDG:** [redacted]
Project Number: R24L06	**75 Hawthorne St**	**Reported:** 08/14/24 09:56
Project: R24L06	**San Francisco CA, 94105**	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed	Method
Lab ID: 2406017 02									**Water - Sampled: 06/04/24 10:14**
Sample ID: 004									**Volatile Organic Compounds by EPA Method 524.2**
Chloroform		ND	U	0.50	ug/L	B24F031	06/11/24	06/11/24	524.2
Benzene		ND	U	0.50	"	"	"	"	524.2
Bromodichloromethane		ND	U	0.50	"	"	"	"	524.2
Toluene		ND	U	0.50	"	"	"	"	524.2
Chlorodibromomethane		ND	U	0.50	"	"	"	"	524.2
Ethylbenzene		ND	U	0.50	"	"	"	"	524.2
m&p-Xylene		ND	U	1	"	"	"	"	524.2
o-Xylene		ND	U	0.50	"	"	"	"	524.2
Bromoform		ND	U	0.50	"	"	"	"	524.2
1,3,5-Trimethylbenzene		ND	U	0.50	"	"	"	"	524.2
1,2,4-Trimethylbenzene		ND	U	0.50	"	"	"	"	524.2
Surrogate: 1,2-Dichloroethane-d4			101 %	*70-130%*		"	"	"	
Surrogate: Toluene-d8			103 %	*70-130%*		"	"	"	
Surrogate: 4-Bromofluorobenzene			99 %	*70-130%*		"	"	"	
Surrogate: 1,2-Dichlorobenzene-d4			100 %	*70-130%*		"	"	"	
1,2-Dibromoethane (EDB)		ND	U	5	ng/L	B24F047	06/13/24	06/13/24	524.2
Surrogate: 4-Bromofluorobenzene			89 %	*70-130%*		"	"	"	
Sample ID: 004									**Purgeable Petroleum Hydrocarbons**
TPH - Gasoline Range Organics		ND	U	50	ug/L	B24F041	06/12/24	06/12/24	8015C
Surrogate: a,a,a-Trifluorotoluene			107 %	*70-130%*		"	"	"	
Sample ID: 004									**Extractable Petroleum Hydrocarbons**
TPH - Diesel Range Organics		68	C1, F13, J	150	"	B24F027	06/10/24	07/10/24	8015C
TPH - Oil Range Organics		ND	U	300	"	"	"	"	8015C
Surrogate: Hexacosane			109 %	*70-130%*		"	"	"	
Lab ID: 2406017-03									**Water - Sampled: 06/03/24 16:33**
Sample ID: TB-03									**Volatile Organic Compounds by EPA Method 524.2**
Chloroform		ND	U	0.50	ug/L	B24F048	06/13/24	06/13/24	524.2
Benzene		ND	U	0.50	"	"	"	"	524.2
Bromodichloromethane		ND	U	0.50	"	"	"	"	524.2
Toluene		ND	U	0.50	"	"	"	"	524.2
Chlorodibromomethane		ND	U	0.50	"	"	"	"	524.2
Ethylbenzene		ND	U	0.50	"	"	"	"	524.2
m&p-Xylene		ND	U	1	"	"	"	"	524.2
o-Xylene		ND	U	0.50	"	"	"	"	524.2
Bromoform		ND	U	0.50	"	"	"	"	524.2

Project Manager: [redacted]	[redacted]	**SDG:** [redacted]
Project Number: R24L06	**75 Hawthorne St**	**Reported:** 08/14/24 09:56
Project: R24L06	**San Francisco CA, 94105**	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed	Method
Lab ID: 2406017 03									**Water - Sampled: 06/03/24 16:33**
Sample ID: TB-03									**Volatile Organic Compounds by EPA Method 524.2**
1,3,5-Trimethylbenzene		ND	U	0.50	ug/L	B24F048	06/13/24	06/13/24	524.2
1,2,4-Trimethylbenzene		ND	U	0.50	"	"	"	"	524.2
Surrogate: 1,2-Dichloroethane-d4			100 %	*70-130%*		"	"	"	
Surrogate: Toluene-d8			100 %	*70-130%*		"	"	"	
Surrogate: 4-Bromofluorobenzene			98 %	*70-130%*		"	"	"	
Surrogate: 1,2-Dichlorobenzene-d4			100 %	*70-130%*		"	"	"	
Lab ID: 2406017-04									**Water - Sampled: 06/03/24 10:14**
Sample ID: TB-04									**Volatile Organic Compounds by EPA Method 524.2**
Chloroform		ND	U	0.50	ug/L	B24F048	06/13/24	06/13/24	524.2
Benzene		ND	U	0.50	"	"	"	"	524.2
Bromodichloromethane		ND	U	0.50	"	"	"	"	524.2
Toluene		ND	U	0.50	"	"	"	"	524.2
Chlorodibromomethane		ND	U	0.50	"	"	"	"	524.2
Ethylbenzene		ND	U	0.50	"	"	"	"	524.2
m&p-Xylene		ND	U	1	"	"	"	"	524.2
o-Xylene		ND	U	0.50	"	"	"	"	524.2
Bromoform		ND	U	0.50	"	"	"	"	524.2
1,3,5-Trimethylbenzene		ND	U	0.50	"	"	"	"	524.2
1,2,4-Trimethylbenzene		ND	U	0.50	"	"	"	"	524.2
Surrogate: 1,2-Dichloroethane-d4			98 %	*70-130%*		"	"	"	
Surrogate: Toluene-d8			101 %	*70-130%*		"	"	"	
Surrogate: 4-Bromofluorobenzene			101 %	*70-130%*		"	"	"	
Surrogate: 1,2-Dichlorobenzene-d4			101 %	*70-130%*		"	"	"	

[redacted]

Project Manager: [redacted]	[redacted]	**SDG:** [redacted]
Project Number: R24L06	**75 Hawthorne St**	**Reported:** 08/14/24 09:56
Project: R24L06	**San Francisco CA, 94105**	

Qualifiers and Comments

J	The reported result for this analyte should be considered an estimated value.
F13	Fuel or Product Type: mixed or unknown
C1	The reported concentration for this analyte is below the quantitation limit.
U	Not Detected
NR	Not Reported
RE1, RE2, etc:	Result is from a sample re-analysis.

United States Environmental Protection Agency

Region 9 Laboratory

[redacted]

Project Manager: [redacted]	**COR_Enforcement**	**SDG:** [redacted]
Project Number: R24L06	**75 Hawthorne St**	**Reported:** 09/05/24 10:30
Project: R24L06	**San Francisco CA, 94105**	

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Collected	Date Received
004D	2406019-01	Water	06/04/24 10:33	06/10/24 16:30
005	2406019-02	Water	06/04/24 11:40	06/10/24 16:30
008	2406019-03	Water	06/05/24 10:17	06/10/24 16:30

[redacted]

Project Manager: [redacted]	**COR_Enforcement**	**SDG:** [redacted]
Project Number: R24L06	**75 Hawthorne St**	**Reported:** 09/05/24 10:30
Project: R24L06	**San Francisco CA, 94105**	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed	Method
Lab ID: 2406019 01									**Water - Sampled: 06/04/24 10:33**
Sample ID: 004D									**Total Metals by EPA 200 Series Methods**
Mercury		ND	U	0.030	ug/L	B24F030	06/17/24	06/17/24	245.1
Beryllium		ND	U	0.50	"	B24F061	06/17/24	06/17/24	200.8
Copper		120		2	"	"	"	"	200.8
Lead		0.19		1	"	"	"	"	200.8
Sample ID: 004D									**Volatile Organic Compounds by EPA Method 524.2**
Chloroform		ND	U	0.50	"	B24F031	06/11/24	06/11/24	524.2
Benzene		ND	U	0.50	"	"	"	"	524.2
Bromodichloromethane		ND	U	0.50	"	"	"	"	524.2
Toluene		ND	U	0.50	"	"	"	"	524.2
Chlorodibromomethane		ND	U	0.50	"	"	"	"	524.2
Ethylbenzene		ND	U	0.50	"	"	"	"	524.2
m&p-Xylene		ND	U	1	"	"	"	"	524.2
o-Xylene		ND	U	0.50	"	"	"	"	524.2
Bromoform		ND	U	0.50	"	"	"	"	524.2
1,3,5-Trimethylbenzene		ND	U	0.50	"	"	"	"	524.2
1,2,4-Trimethylbenzene		ND	U	0.50	"	"	"	"	524.2
Surrogate: 1,2-Dichloroethane-d4			101 %	*70-130%*		"	"	"	
Surrogate: Toluene-d8			101 %	*70-130%*		"	"	"	
Surrogate: 4-Bromofluorobenzene			99 %	*70-130%*		"	"	"	
Surrogate: 1,2-Dichlorobenzene-d4			99 %	*70-130%*		"	"	"	
1,2-Dibromoethane (EDB)		ND	U	5	ng/L	B24F047	06/13/24	06/13/24	524.2
Surrogate: 4-Bromofluorobenzene			82 %	*70-130%*		"	"	"	
Sample ID: 004D									**Purgeable Petroleum Hydrocarbons**
TPH - Gasoline Range Organics		ND	U	50	ug/L	B24F041	06/12/24	06/12/24	8015C
Surrogate: a,a,a-Trifluorotoluene			108 %	*70-130%*		"	"	"	
Sample ID: 004D									**Extractable Petroleum Hydrocarbons**
TPH - Diesel Range Organics		ND	U	150	"	B24F027	06/11/24	07/10/24	8015C
TPH - Oil Range Organics		ND	U	300	"	"	"	"	8015C
Surrogate: Hexacosane			116 %	*70-130%*		"	"	"	
Lab ID: 2406019-02									**Water - Sampled: 06/04/24 11:40**
Sample ID: 005									**Volatile Organic Compounds by EPA Method 524.2**
Chloroform		ND	U	0.50	ug/L	B24F031	06/11/24	06/11/24	524.2
Benzene		ND	U	0.50	"	"	"	"	524.2
Bromodichloromethane		ND	U	0.50	"	"	"	"	524.2
Toluene		ND	U	0.50	"	"	"	"	524.2
Chlorodibromomethane		ND	U	0.50	"	"	"	"	524.2

[redacted]

Project Manager: [redacted]	**COR_Enforcement**	**SDG:** [redacted]
Project Number: R24L06	**75 Hawthorne St**	**Reported:** 09/05/24 10:30
Project: R24L06	**San Francisco CA, 94105**	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed	Method
Lab ID: 2406019 02									**Water - Sampled: 06/04/24 11:40**
Sample ID: 005									**Volatile Organic Compounds by EPA Method 524.2**
Ethylbenzene		ND	U	0.50	ug/L	B24F031	06/11/24	06/11/24	524.2
m&p-Xylene		ND	U	1	"	"	"	"	524.2
o-Xylene		ND	U	0.50	"	"	"	"	524.2
Bromoform		ND	U	0.50	"	"	"	"	524.2
1,3,5-Trimethylbenzene		ND	U	0.50	"	"	"	"	524.2
1,2,4-Trimethylbenzene		ND	U	0.50	"	"	"	"	524.2
Surrogate: 1,2-Dichloroethane-d4			99 %	*70-130%*		"	"	"	
Surrogate: Toluene-d8			101 %	*70-130%*		"	"	"	
Surrogate: 4-Bromofluorobenzene			98 %	*70-130%*		"	"	"	
Surrogate: 1,2-Dichlorobenzene-d4			99 %	*70-130%*		"	"	"	
1,2-Dibromoethane (EDB)		ND	U	5	ng/L	B24F047	06/13/24	06/13/24	524.2
Surrogate: 4-Bromofluorobenzene			82 %	*70-130%*		"	"	"	
Sample ID: 005									**Purgeable Petroleum Hydrocarbons**
TPH - Gasoline Range Organics		ND	U	50	ug/L	B24F041	06/12/24	06/12/24	8015C
Surrogate: a,a,a-Trifluorotoluene			109 %	*70-130%*		"	"	"	
Sample ID: 005									**Extractable Petroleum Hydrocarbons**
TPH - Diesel Range Organics		50	C1, F1, J	140	"	B24F027	06/11/24	07/10/24	8015C
TPH - Oil Range Organics		ND	U	280	"	"	"	"	8015C
Surrogate: Hexacosane			128 %	*70-130%*		"	"	"	
Lab ID: 2406019-03									**Water - Sampled: 06/05/24 10:17**
Sample ID: 008									**Total Metals by EPA 200 Series Methods**
Mercury		ND	U	0.030	ug/L	B24F030	06/17/24	06/17/24	245.1
Beryllium		ND	U	0.50	"	B24F061	06/17/24	06/17/24	200.8
Copper		35		2	"	"	"	"	200.8
Lead		0.28		1	"	"	"	"	200.8
Sample ID: 008									**Volatile Organic Compounds by EPA Method 524.2**
Chloroform		ND	U	0.50	"	B24F031	06/11/24	06/11/24	524.2
Benzene		ND	U	0.50	"	"	"	"	524.2
Bromodichloromethane		ND	U	0.50	"	"	"	"	524.2
Toluene		ND	U	0.50	"	"	"	"	524.2
Chlorodibromomethane		ND	U	0.50	"	"	"	"	524.2
Ethylbenzene		ND	U	0.50	"	"	"	"	524.2
m&p-Xylene		ND	U	1	"	"	"	"	524.2
o-Xylene		ND	U	0.50	"	"	"	"	524.2
Bromoform		ND	U	0.50	"	"	"	"	524.2
1,3,5-Trimethylbenzene		ND	U	0.50	"	"	"	"	524.2

[redacted]

Project Manager: [redacted]	**COR_Enforcement**	**SDG:** [redacted]
Project Number: R24L06	**75 Hawthorne St**	**Reported:** 09/05/24 10:30
Project: R24L06	**San Francisco CA, 94105**	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed	Method
Lab ID: 2406019 03									**Water - Sampled: 06/05/24 10:17**
Sample ID: 008									**Volatile Organic Compounds by EPA Method 524.2**
1,2,4-Trimethylbenzene		ND	U	0.50	ug/L	B24F031	06/11/24	06/11/24	524.2
Surrogate: 1,2-Dichloroethane-d4			100 %	*70-130%*		"	"	"	
Surrogate: Toluene-d8			101 %	*70-130%*		"	"	"	
Surrogate: 4-Bromofluorobenzene			99 %	*70-130%*		"	"	"	
Surrogate: 1,2-Dichlorobenzene-d4			99 %	*70-130%*		"	"	"	
1,2-Dibromoethane (EDB)		ND	U	5	ng/L	B24F047	06/13/24	06/13/24	524.2
Surrogate: 4-Bromofluorobenzene			84 %	*70-130%*		"	"	"	
Sample ID: 008									**Purgeable Petroleum Hydrocarbons**
TPH - Gasoline Range Organics		ND	U	50	ug/L	B24F041	06/12/24	06/12/24	8015C
Surrogate: a,a,a-Trifluorotoluene			110 %	*70-130%*		"	"	"	
Sample ID: 008									**Extractable Petroleum Hydrocarbons**
TPH - Diesel Range Organics		ND	U	150	"	B24F027	06/11/24	07/10/24	8015C
TPH - Oil Range Organics		ND	U	300	"	"	"	"	8015C
Surrogate: Hexacosane			125 %	*70-130%*		"	"	"	

[redacted]

Project Manager: [redacted]	**COR_Enforcement**	**SDG:** [redacted]
Project Number: R24L06	**75 Hawthorne St**	**Reported:** 09/05/24 10:30
Project: R24L06	**San Francisco CA, 94105**	

Qualifiers and Comments

J	The reported result for this analyte should be considered an estimated value.
F1	Type: Not a fuel or hydrocarbon mixture
C1	The reported concentration for this analyte is below the quantitation limit.
U	Not Detected
NR	Not Reported
RE1, RE2, etc:	Result is from a sample re-analysis.

United States Environmental Protection Agency

Region 9 Laboratory

[redacted]

Project Manager: [redacted]	[redacted]	**SDG:** [redacted]
Project Number: R24L06	**75 Hawthorne St**	**Reported:** 08/14/24 10:22
Project: R24L06	**San Francisco CA, 94105**	

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Collected	Date Received
006	2406018-01	Water	06/04/24 15:08	06/07/24 15:24
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
TB-05	2406018-03	Water	06/03/24 15:08	06/07/24 15:24
TB 06	2406018 04	Water	06/03/24 08 20	06/07/24 15 24

[redacted]

Project Manager: [redacted]	[redacted]	**SDG:** [redacted]
Project Number: R24L06	**75 Hawthorne St**	**Reported:** 08/14/24 10:22
Project: R24L06	**San Francisco CA, 94105**	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed	Method
Lab ID: 2406018 01									**Water - Sampled: 06/04/24 15:08**
Sample ID: 006									**Total Metals by EPA 200 Series Methods**
Mercury		ND	U	0.030	ug/L	B24F030	06/17/24	06/17/24	245.1
Beryllium		ND	U	0.50	"	B24F061	06/17/24	06/17/24	200.8
Copper		ND	U	2	"	"	"	"	200.8
Lead		ND	U	1	"	"	"	"	200.8
Sample ID: 006									**Volatile Organic Compounds by EPA Method 524.2**
Chloroform		ND	U	0.50	"	B24F031	06/11/24	06/11/24	524.2
Benzene		ND	U	0.50	"	"	"	"	524.2
Bromodichloromethane		ND	U	0.50	"	"	"	"	524.2
Toluene		ND	U	0.50	"	"	"	"	524.2
Chlorodibromomethane		ND	U	0.50	"	"	"	"	524.2
Ethylbenzene		ND	U	0.50	"	"	"	"	524.2
m&p-Xylene		ND	U	1	"	"	"	"	524.2
o-Xylene		ND	U	0.50	"	"	"	"	524.2
Bromoform		ND	U	0.50	"	"	"	"	524.2
1,3,5-Trimethylbenzene		ND	U	0.50	"	"	"	"	524.2
1,2,4-Trimethylbenzene		ND	U	0.50	"	"	"	"	524.2
Surrogate: 1,2-Dichloroethane-d4			101 %	*70-130%*		"	"	"	
Surrogate: Toluene-d8			102 %	*70-130%*		"	"	"	
Surrogate: 4-Bromofluorobenzene			99 %	*70-130%*		"	"	"	
Surrogate: 1,2-Dichlorobenzene-d4			99 %	*70-130%*		"	"	"	
1,2-Dibromoethane (EDB)		ND	U	5	ng/L	B24F047	06/13/24	06/13/24	524.2
Surrogate: 4-Bromofluorobenzene			88 %	*70-130%*		"	"	"	
Sample ID: 006									**Purgeable Petroleum Hydrocarbons**
TPH - Gasoline Range Organics		ND	U	50	ug/L	B24F041	06/12/24	06/12/24	8015C
Surrogate: a,a,a-Trifluorotoluene			111 %	*70-130%*		"	"	"	
Sample ID: 006									**Extractable Petroleum Hydrocarbons**
TPH - Diesel Range Organics		ND	U	150	"	B24F027	06/10/24	07/10/24	8015C
TPH - Oil Range Organics		ND	U	300	"	"	"	"	8015C
Surrogate: Hexacosane			105 %	*70-130%*		"	"	"	

[redacted]

[redacted]

Project Manager: [redacted]	[redacted]	**SDG:** [redacted]
Project Number: R24L06	**75 Hawthorne St**	**Reported:** 08/14/24 10:22
Project: R24L06	**San Francisco CA, 94105**	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed	Method
[redacted]									
Lab ID: 2406018-03									**Water - Sampled: 06/03/24 15:08**
Sample ID: TB-05									**Volatile Organic Compounds by EPA Method 524.2**
1,2-Dibromoethane (EDB)		ND	U	5	ng/L	B24F047	06/13/24	06/13/24	524.2
Surrogate: 4-Bromofluorobenzene			90 %	*70-130%*		"	"	"	
Lab ID: 2406018-04									**Water - Sampled: 06/03/24 08:20**
Sample ID: TB-06									**Volatile Organic Compounds by EPA Method 524.2**
1,2 Dibromoethane (EDB)		ND	U	5	ng/L	B24F047	06/13/24	06/13/24	524 2
Surrogate: 4-Bromofluorobenzene			82 %	*70-130%*		"	"	"	

United States Environmental Protection Agency

Region 9 Laboratory

[redacted]

Project Manager: [redacted]	[redacted]	**SDG:** [redacted]
Project Number: R24L06	**75 Hawthorne St**	**Reported:** 08/14/24 10:22
Project: R24L06	**San Francisco CA, 94105**	

Qualifiers and Comments

J	The reported result for this analyte should be considered an estimated value.
C1	The reported concentration for this analyte is below the quantitation limit.
U	Not Detected
NR	Not Reported
RE1, RE2, etc:	Result is from a sample re-analysis.

United States Environmental Protection Agency

Region 9 Laboratory

[redacted]

Project Manager: [redacted]	[redacted]	**SDG:** [redacted]
Project Number: R24L06	**75 Hawthorne St**	**Reported:** 08/14/24 08:09
Project: R24L06	**San Francisco CA, 94105**	

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Collected	Date Received
[redacted]				
012	2406034-02	Water	06/06/24 13:34	06/13/24 12:10
013	2406034-03	Water	06/06/24 14:22	06/13/24 12:10
TB-1	2406034-04	Water	06/03/24 14:22	06/13/24 12:10
TB-2	2406034-05	Water	06/03/24 14:22	06/13/24 12:10
TB-3	2406034-06	Water	06/03/24 14:22	06/13/24 12:10

[redacted]

Project Manager: [redacted]	[redacted]	**SDG:** [redacted]
Project Number: R24L06	**75 Hawthorne St**	**Reported:** 08/14/24 08:09
Project: R24L06	**San Francisco CA, 94105**	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed	Method
[redacted]									
Lab ID: 2406034-02								**Water - Sampled: 06/06/24 13:34**	
Sample ID: 012								**Total Metals by EPA 200 Series Methods**	
Mercury		ND	U	0.030	ug/L	B24F030	06/17/24	06/17/24	245.1
Beryllium		ND	U	0.50	"	B24F061	06/17/24	06/17/24	200.8
Copper		39		2	"	"	"	"	200.8
Lead		ND	U	1	"	"	"	"	200.8
Sample ID: 012								**Volatile Organic Compounds by EPA Method 524.2**	

[redacted]

Project Manager: [redacted]	[redacted]	**SDG:** [redacted]
Project Number: R24L06	**75 Hawthorne St**	**Reported:** 08/14/24 08:09
Project: R24L06	**San Francisco CA, 94105**	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed	Method
Lab ID: 2406034 02									**Water - Sampled: 06/06/24 13:34**
Sample ID: 012									**Volatile Organic Compounds by EPA Method 524.2**
Chloroform		ND	U	0.50	ug/L	B24F048	06/13/24	06/13/24	524.2
Benzene		ND	U	0.50	"	"	"	"	524.2
Bromodichloromethane		ND	U	0.50	"	"	"	"	524.2
Toluene		ND	U	0.50	"	"	"	"	524.2
Chlorodibromomethane		ND	U	0.50	"	"	"	"	524.2
Ethylbenzene		ND	U	0.50	"	"	"	"	524.2
m&p-Xylene		ND	U	1	"	"	"	"	524.2
o-Xylene		ND	U	0.50	"	"	"	"	524.2
Bromoform		ND	U	0.50	"	"	"	"	524.2
1,3,5-Trimethylbenzene		ND	U	0.50	"	"	"	"	524.2
1,2,4-Trimethylbenzene		ND	U	0.50	"	"	"	"	524.2
Surrogate: 1,2-Dichloroethane-d4			99 %	*70-130%*		"	"	"	
Surrogate: Toluene-d8			101 %	*70-130%*		"	"	"	
Surrogate: 4-Bromofluorobenzene			98 %	*70-130%*		"	"	"	
Surrogate: 1,2-Dichlorobenzene-d4			97 %	*70-130%*		"	"	"	
1,2-Dibromoethane (EDB)		ND	U	5	ng/L	B24F047	06/13/24	06/13/24	524.2
Surrogate: 4-Bromofluorobenzene			75 %	*70-130%*		"	"	"	
Sample ID: 012									**Purgeable Petroleum Hydrocarbons**
TPH - Gasoline Range Organics		ND	U	50	ug/L	B24F049	06/13/24	06/13/24	8015C
Surrogate: a,a,a-Trifluorotoluene			109 %	*70-130%*		"	"	"	
Sample ID: 012									**Extractable Petroleum Hydrocarbons**
TPH - Diesel Range Organics		ND	A3, J, U	150	"	B24F065	06/17/24	07/10/24	8015C
TPH - Oil Range Organics		ND	A3, J, U	300	"	"	"	"	8015C
Surrogate: Hexacosane			117 %	*70-130%*		"	"	"	
Lab ID: 2406034-03									**Water - Sampled: 06/06/24 14:22**
Sample ID: 013									**Total Metals by EPA 200 Series Methods**
Mercury		ND	U	0.030	ug/L	B24F030	06/17/24	06/17/24	245.1
Beryllium		ND	U	0.50	"	B24F061	06/17/24	06/17/24	200.8
Copper		26		2	"	"	"	"	200.8
Lead		ND	U	1	"	"	"	"	200.8
Sample ID: 013									**Volatile Organic Compounds by EPA Method 524.2**
Chloroform		ND	U	0.50	"	B24F048	06/13/24	06/13/24	524.2
Benzene		ND	U	0.50	"	"	"	"	524.2
Bromodichloromethane		ND	U	0.50	"	"	"	"	524.2
Toluene		ND	U	0.50	"	"	"	"	524.2

[redacted]

Project Manager: [redacted]	[redacted]	**SDG:** [redacted]
Project Number: R24L06	**75 Hawthorne St**	**Reported:** 08/14/24 08:09
Project: R24L06	**San Francisco CA, 94105**	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed	Method
Lab ID: 2406034 03									**Water - Sampled: 06/06/24 14:22**
Sample ID: 013									**Volatile Organic Compounds by EPA Method 524.2**
Chlorodibromomethane		ND	U	0.50	ug/L	B24F048	06/13/24	06/13/24	524.2
Ethylbenzene		ND	U	0.50	"	"	"	"	524.2
m&p-Xylene		ND	U	1	"	"	"	"	524.2
o-Xylene		ND	U	0.50	"	"	"	"	524.2
Bromoform		ND	U	0.50	"	"	"	"	524.2
1,3,5-Trimethylbenzene		ND	U	0.50	"	"	"	"	524.2
1,2,4-Trimethylbenzene		ND	U	0.50	"	"	"	"	524.2
Surrogate: 1,2-Dichloroethane-d4			100 %	*70-130%*		"	"	"	
Surrogate: Toluene-d8			100 %	*70-130%*		"	"	"	
Surrogate: 4-Bromofluorobenzene			99 %	*70-130%*		"	"	"	
Surrogate: 1,2-Dichlorobenzene-d4			99 %	*70-130%*		"	"	"	
1,2-Dibromoethane (EDB)		ND	U	5	ng/L	B24F047	06/13/24	06/13/24	524.2
Surrogate: 4-Bromofluorobenzene			86 %	*70-130%*		"	"	"	
Sample ID: 013									**Purgeable Petroleum Hydrocarbons**
TPH - Gasoline Range Organics		ND	U	50	ug/L	B24F049	06/13/24	06/13/24	8015C
Surrogate: a,a,a-Trifluorotoluene			110 %	*70-130%*		"	"	"	
Sample ID: 013									**Extractable Petroleum Hydrocarbons**
TPH - Diesel Range Organics		ND	A3, J, U	150	"	B24F065	06/17/24	07/10/24	8015C
TPH - Oil Range Organics		ND	A3, C4, J, U	300	"	"	"	"	8015C
Surrogate: Hexacosane			104 %	*70-130%*		"	"	"	
Lab ID: 2406034-04									**Water - Sampled: 06/03/24 14:22**
Sample ID: TB-1									**Volatile Organic Compounds by EPA Method 524.2**
1,2-Dibromoethane (EDB)		ND	U	5	ng/L	B24F047	06/13/24	06/13/24	524.2
Surrogate: 4-Bromofluorobenzene			76 %	*70-130%*		"	"	"	
Lab ID: 2406034-05									**Water - Sampled: 06/03/24 14:22**
Sample ID: TB-2									**Volatile Organic Compounds by EPA Method 524.2**
Chloroform		ND	U	0 50	ug/L	B24F048	06/13/24	06/13/24	524 2
Benzene		ND	U	0 50	"	"	"	"	524 2
Bromodichloromethane		ND	U	0 50	"	"	"	"	524 2
Toluene		ND	U	0 50	"	"	"	"	524 2
Chlorodibromomethane		ND	U	0 50	"	"	"	"	524 2
Ethylbenzene		ND	U	0 50	"	"	"	"	524 2
m&p Xylene		ND	U	1	"	"	"	"	524 2
o Xylene		ND	U	0 50	"	"	"	"	524 2
Bromoform		ND	U	0 50	"	"	"	"	524 2

[redacted]

Project Manager: [redacted]	[redacted]	**SDG:** [redacted]
Project Number: R24L06	**75 Hawthorne St**	**Reported:** 08/14/24 08:09
Project: R24L06	**San Francisco CA, 94105**	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed	Method
Lab ID: 2406034 05									**Water - Sampled: 06/03/24 14:22**
Sample ID: TB-2									**Volatile Organic Compounds by EPA Method 524.2**
1,3,5-Trimethylbenzene		ND	U	0.50	ug/L	B24F048	06/13/24	06/13/24	524.2
1,2,4-Trimethylbenzene		ND	U	0.50	"	"	"	"	524.2
Surrogate: 1,2-Dichloroethane-d4			101 %	*70-130%*		"	"	"	
Surrogate: Toluene-d8			100 %	*70-130%*		"	"	"	
Surrogate: 4-Bromofluorobenzene			100 %	*70-130%*		"	"	"	
Surrogate: 1,2-Dichlorobenzene-d4			100 %	*70-130%*		"	"	"	
Lab ID: 2406034-06									**Water - Sampled: 06/03/24 14:22**
Sample ID: TB-3									**Purgeable Petroleum Hydrocarbons**
TPH - Gasoline Range Organics		ND	U	50	ug/L	B24F049	06/13/24	06/13/24	8015C
Surrogate: a,a,a-Trifluorotoluene			110 %	*70-130%*		"	"	"	

United States Environmental Protection Agency

Region 9 Laboratory

[redacted]

Project Manager: [redacted]	[redacted]	**SDG:** [redacted]
Project Number: R24L06	**75 Hawthorne St**	**Reported:** 08/14/24 08:09
Project: R24L06	**San Francisco CA, 94105**	

Qualifiers and Comments

J	The reported result for this analyte should be considered an estimated value.
F12	Single component, unidentified
C4	The calibration verification check did not meet % difference criteria for this analyte.
A3	The sample was prepped/analyzed past the recommended holding time.
U	Not Detected
NR	Not Reported
RE1, RE2, etc:	Result is from a sample re-analysis.

United States Environmental Protection Agency

Region 9 Laboratory

[redacted]

Project Manager: [redacted]	[redacted]	**SDG:** [redacted]
Project Number: R24L06	**75 Hawthorne St**	**Reported:** 08/14/24 09:19
Project: R24L06	**San Francisco CA, 94105**	

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Collected	Date Received
010	2406016-01	Water	06/05/24 12:59	06/07/24 13:03
011	2406016-02	Water	06/05/24 14:28	06/07/24 13:03
TB-7	2406016-03	Water	06/05/24 12:59	06/07/24 13:03
TB-8	2406016-04	Water	06/05/24 12:59	06/07/24 13:03

[redacted]

Project Manager: [redacted]	[redacted]	**SDG:** [redacted]
Project Number: R24L06	**75 Hawthorne St**	**Reported:** 08/14/24 09:19
Project: R24L06	**San Francisco CA, 94105**	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed	Method
Lab ID: 2406016 01									**Water - Sampled: 06/05/24 12:59**
Sample ID: 010									**Total Metals by EPA 200 Series Methods**
Mercury		ND	U	0.030	ug/L	B24F030	06/17/24	06/17/24	245.1
Beryllium		ND	U	0.50	"	B24F061	06/17/24	06/17/24	200.8
Copper		22		2	"	"	"	"	200.8
Lead		ND	U	1	"	"	"	"	200.8
Sample ID: 010									**Volatile Organic Compounds by EPA Method 524.2**
Chloroform		ND	U	0.50	"	B24F031	06/11/24	06/11/24	524.2
Benzene		ND	U	0.50	"	"	"	"	524.2
Bromodichloromethane		ND	U	0.50	"	"	"	"	524.2
Toluene		ND	U	0.50	"	"	"	"	524.2
Chlorodibromomethane		ND	U	0.50	"	"	"	"	524.2
Ethylbenzene		ND	U	0.50	"	"	"	"	524.2
m&p-Xylene		ND	U	1	"	"	"	"	524.2
o-Xylene		ND	U	0.50	"	"	"	"	524.2
Bromoform		ND	U	0.50	"	"	"	"	524.2
1,3,5-Trimethylbenzene		ND	U	0.50	"	"	"	"	524.2
1,2,4-Trimethylbenzene		ND	U	0.50	"	"	"	"	524.2
Surrogate: 1,2-Dichloroethane-d4			100 %	*70-130%*		"	"	"	
Surrogate: Toluene-d8			100 %	*70-130%*		"	"	"	
Surrogate: 4-Bromofluorobenzene			101 %	*70-130%*		"	"	"	
Surrogate: 1,2-Dichlorobenzene-d4			99 %	*70-130%*		"	"	"	
1,2-Dibromoethane (EDB)		ND	U	5	ng/L	B24F047	06/13/24	06/13/24	524.2
Surrogate: 4-Bromofluorobenzene			91 %	*70-130%*		"	"	"	
Sample ID: 010									**Purgeable Petroleum Hydrocarbons**
TPH - Gasoline Range Organics		ND	U	50	ug/L	B24F041	06/12/24	06/12/24	8015C
Surrogate: a,a,a-Trifluorotoluene			106 %	*70-130%*		"	"	"	
Sample ID: 010									**Extractable Petroleum Hydrocarbons**
TPH - Diesel Range Organics		53	C1, F1, J	150	"	B24F027	06/10/24	07/10/24	8015C
TPH - Oil Range Organics		ND	U	300	"	"	"	"	8015C
Surrogate: Hexacosane			110 %	*70-130%*		"	"	"	
Lab ID: 2406016-02									**Water - Sampled: 06/05/24 14:28**
Sample ID: 011									**Total Metals by EPA 200 Series Methods**
Mercury		ND	U	0.030	ug/L	B24F030	06/17/24	06/17/24	245.1
Beryllium		ND	U	0.50	"	B24F061	06/17/24	06/17/24	200.8
Copper		130		2	"	"	"	"	200.8
Lead		ND	U	1	"	"	"	"	200.8
Sample ID: 011									**Volatile Organic Compounds by EPA Method 524.2**

[redacted]

Project Manager: [redacted]	[redacted]	**SDG:** [redacted]
Project Number: R24L06	**75 Hawthorne St**	**Reported:** 08/14/24 09:19
Project: R24L06	**San Francisco CA, 94105**	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed	Method
Lab ID: 2406016 02									**Water - Sampled: 06/05/24 14:28**
Sample ID: 011									**Volatile Organic Compounds by EPA Method 524.2**
Chloroform		ND	U	0.50	ug/L	B24F031	06/11/24	06/11/24	524.2
Benzene		ND	U	0.50	"	"	"	"	524.2
Bromodichloromethane		ND	U	0.50	"	"	"	"	524.2
Toluene		ND	U	0.50	"	"	"	"	524.2
Chlorodibromomethane		ND	U	0.50	"	"	"	"	524.2
Ethylbenzene		ND	U	0.50	"	"	"	"	524.2
m&p-Xylene		ND	U	1	"	"	"	"	524.2
o-Xylene		ND	U	0.50	"	"	"	"	524.2
Bromoform		ND	U	0.50	"	"	"	"	524.2
1,3,5-Trimethylbenzene		ND	U	0.50	"	"	"	"	524.2
1,2,4-Trimethylbenzene		ND	U	0.50	"	"	"	"	524.2
Surrogate: 1,2-Dichloroethane-d4			99 %	*70-130%*		"	"	"	
Surrogate: Toluene-d8			101 %	*70-130%*		"	"	"	
Surrogate: 4-Bromofluorobenzene			99 %	*70-130%*		"	"	"	
Surrogate: 1,2-Dichlorobenzene-d4			100 %	*70-130%*		"	"	"	
1,2-Dibromoethane (EDB)		ND	U	5	ng/L	B24F047	06/13/24	06/13/24	524.2
Surrogate: 4-Bromofluorobenzene			89 %	*70-130%*		"	"	"	
Sample ID: 011									**Purgeable Petroleum Hydrocarbons**
TPH - Gasoline Range Organics		ND	U	50	ug/L	B24F041	06/12/24	06/12/24	8015C
Surrogate: a,a,a-Trifluorotoluene			107 %	*70-130%*		"	"	"	
Sample ID: 011									**Extractable Petroleum Hydrocarbons**
TPH - Diesel Range Organics		ND	U	150	"	B24F027	06/10/24	07/10/24	8015C
TPH - Oil Range Organics		ND	U	300	"	"	"	"	8015C
Surrogate: Hexacosane			112 %	*70-130%*		"	"	"	
Lab ID: 2406016-03									**Water - Sampled: 06/05/24 12:59**
Sample ID: TB-7									**Purgeable Petroleum Hydrocarbons**
TPH - Gasoline Range Organics		ND	U	50	ug/L	B24F049	06/13/24	06/13/24	8015C
Surrogate: a,a,a-Trifluorotoluene			111 %	*70-130%*		"	"	"	
Lab ID: 2406016-04									**Water - Sampled: 06/05/24 12:59**
Sample ID: TB-8									**Purgeable Petroleum Hydrocarbons**
TPH Gasoline Range Organics		ND	U	50	ug/L	B24F049	06/13/24	06/13/24	8015C
Surrogate: a,a,a-Trifluorotoluene			109 %	*70-130%*		"	"	"	

United States Environmental Protection Agency

Region 9 Laboratory

[redacted]

Project Manager: [redacted]	[redacted]	**SDG:** [redacted]
Project Number: R24L06	**75 Hawthorne St**	**Reported:** 08/14/24 09:19
Project: R24L06	**San Francisco CA, 94105**	

Qualifiers and Comments

J	The reported result for this analyte should be considered an estimated value.
F1	Type: Not a fuel or hydrocarbon mixture
C1	The reported concentration for this analyte is below the quantitation limit.
U	Not Detected
NR	Not Reported
RE1, RE2, etc:	Result is from a sample re-analysis.