December 2023 – January 2024 Groundwater Data Analysis Report

TAYLOR WAY AND ALEXANDER AVENUE FILL AREA SITE TACOMA, WASHINGTON

Cleanup Site ID: 4692

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Prepared by:

DALTON, OLMSTED, & FUGLEVAND 1001 SW Klickitat Way, Suite 200B Seattle, WA 98134

Prepared for:

GENERAL METALS OF TACOMA GLENN SPRINGS HOLDINGS BURLINGTON ENVIRONMENTAL





Table of Contents

1.0	Intro	oduction1
	1.1	TWAAFA Site Description1
2.0	Met	hodology
	2.1	Groundwater Quality Sample Collection and Analysis - Metals2
	2.2	Groundwater Quality Sample Collection and Analysis - PFAS2
	2.3	Investigation-Derived Waste
3.0	Resi	ults
	3.1	Quality Assurance/Quality Control (QA/QC) Discussion
	3.2	Groundwater Chemistry Analytical Results - Metals
	3.3	Groundwater Chemistry Analytical Results - PFAS
4.0		clusions
5.0		oming Schedule5
6.0		erences5
TABLE	S	
Table 1	l	Groundwater Monitoring Schedule
Table 2	2	Groundwater Quality Parameters
Table 3	3	Groundwater Analytical Results – Total and Dissolved Metals
Table 4	1	Groundwater Analytical Results – PFAS
FIGUR	ES	
Figure	1	Regional Location Map
Figure		Site Location Map
Figure		PFAS Sampling Locations
Figure		Arsenic Concentrations Shallow Groundwater
Figure		Arsenic Concentrations Deep Groundwater
Figure		Copper Concentrations Shallow Groundwater
Figure		Copper Concentrations Deep Groundwater
Figure		Manganese Concentrations Shallow Groundwater
Figure		Manganese Concentrations Deep Groundwater
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APPENDICES

Appendix A Groundwater Sampling Field Sheets

Appendix B Analytical Laboratory Reports and Data Validation Review Reports



1.0 Introduction

Dalton, Olmsted, and Fuglevand, Inc. (DOF) prepared this Groundwater Data Analysis Report for the Taylor Way and Alexander Avenue Fill Area (TWAAFA) Site (Figure 1) on behalf of Glenn Springs Holdings, Inc. (Occidental Chemical Corporation), General Metals of Tacoma (GMT), and Burlington Environmental (Burlington). These parties are among those identified in Agreed Order (AO) Number 14260 (issued December 4, 2020) by the Washington State Department of Ecology (Ecology) as potentially liable parties at the TWAAFA Site (each a "PLP", collectively, the "PLPs" or "AO parties"). The Port of Tacoma (Port) is also a PLP to the TWAAFA Site, identified by Ecology in Enforcement Order (EO) Number DE 19410 (issued December 4, 2020).

This Report was prepared to summarize the data collected and activities performed by AO and EO PLPs with respect to the TWAAFA Site groundwater monitoring program during December 2023 and January 2024, in accordance with the Revised Groundwater Monitoring Plan (GWMP) (DOF, 2022a) and PFAS Sampling and Analysis Plan and Quality Assurance Project Plan (SAP/QAPP) (DOF, 2023). On September 6, 2023, the AO and EO Parties received a letter from Ecology that included comments on the Fourth Quarter 2022 Groundwater Data Analysis Report requesting additional groundwater sampling for dissolved metals and PFAS.

The AO parties responded to Ecology via letter dated October 23, 2023, and Ecology responded to the AO and EO parties via letter dated December 4, 2023, providing conditional agreement for additional metals sampling. In addition, the AO Parties submitted a PFAS specific SAP/QAPP to support the request for PFAS sampling. The draft SAP/QAPP was submitted by the AO Parties on November 4, 2023 to Ecology. Ecology emailed comments to the AO and EO Parties on November 21, 2023. A revised SAP/QAPP was submitted by the AO Parties on December 18, 2023 and approved by Ecology via email on December 22, 2023.

1.1 TWAAFA Site Description

As shown in Figure 2, the TWAAFA Site is composed of multiple parcels under ownership by different parties – the Port, Burlington, and Pierce County (owner of the former CleanCare parcels). During the groundwater monitoring events, wells located on Port parcels were monitored by the Port's consultant, Maul, Foster, and Alongi (MFA), and all other wells were monitored by DOF. MFA and DOF coordinated the metals monitoring event simultaneously and utilized the same laboratories.

2.0 Methodology

DOF and MFA completed the following work related to groundwater monitoring in accordance with the GWMP:

- Collected groundwater samples from the groundwater monitoring network wells within the TWAAFA Site for analysis of total and dissolved metals and PFAS;
- Submitted groundwater samples to independent laboratories for analysis; and
- Reviewed laboratory analytical reports for data quality validation.



2.1 Groundwater Quality Sample Collection and Analysis - Metals

Groundwater samples were collected from all scheduled monitoring wells (Table 1) between December 11 to 19, 2023. Samples were collected in accordance with the GWMP and the letters described in Section 1.

Prior to sampling, groundwater purging was conducted at each well. During groundwater purging, water quality parameters were recorded, and once stabilization criteria were met, a groundwater sample was collected. Field forms documenting data collected during monitoring well sampling are included in Appendix A. Groundwater parameters measured as part of sampling via field meter are summarized in Table 2.

Groundwater samples were analyzed for the following constituents as shown on Table 1:

• Total and dissolved metals including aluminum, arsenic, chromium, copper, iron, lead, mercury, nickel, zinc, and manganese.

Groundwater samples collected by DOF and MFA were submitted to Friedman and Bruya, Inc. (FBI) for chemical analysis. Laboratory analytical reports produced by FBI for the groundwater samples collected by DOF were submitted to data validation reviewers, QA/QC Solutions, LLC. MFA conducted an in-house independent review of the laboratory analytical reports on groundwater samples collected for the Port. Data validation reports are included along with the laboratory data reports in Appendix B.

2.2 Groundwater Quality Sample Collection and Analysis - PFAS

Groundwater samples were collected from all scheduled monitoring wells (Table 1) on December 12, 2023 or January 11, 2024. Samples were collected in accordance with the PFAS SAP/QAPP described in Section 1.

Eight monitoring wells were sampled for PFAS analysis, located within the source area and distal wells across the TWAAFA Site. The table below details the monitoring well location and rationale for sampling. Sample locations are shown on Figure 3.

Location	Reasoning
CCW-2A	Source area well in shallow aquifer (upper zone)
CCW-2B	Source area well in shallow aquifer (lower zone)
CCW-2C	Source area well in intermediate aquifer (upper zone)
CCW-3A	Source area well in shallow aquifer (upper zone)
CCW-3B	Source area well in shallow aquifer (lower zone)
CTMW-17	Source area well in shallow aquifer
SB-2A	Shallow aquifer distal well
TWA-3	Shallow aquifer distal well

Field event preparation and execution followed Appendix B of the PFAS SAP/QAPP. Prior to sampling, groundwater purging was conducted at each well. During groundwater purging, water quality parameters were recorded, and once stabilization criteria were met, a groundwater sample was collected. Field forms documenting data collected during monitoring well sampling are included in Appendix A.



Groundwater samples collected by DOF and MFA were submitted to Eurofins Sacramento (Eurofins) for chemical analysis. Laboratory analytical reports produced by Eurofins for the groundwater samples collected by DOF were submitted to data validation reviewers, QA/QC Solutions, LLC. MFA conducted an in-house independent review of the laboratory analytical reports on groundwater samples collected for the Port. Data validations reports are included along with the laboratory data reports in Appendix B.

2.3 Investigation-Derived Waste

The primary waste stream generated during the monitoring event was purged groundwater, which was containerized as it was generated. Groundwater was containerized in separate 55-gallon drums based on the parcel ownership and characterized. The Port manages purged groundwater generated from wells on Port-owned parcels whereas Clean Earth manages purged groundwater generated from wells on Burlington-owned parcels. DOF coordinates disposal of purged groundwater with Pierce County and Ecology for purged groundwater generated from wells on the former CleanCare parcels.

3.0 Results

This section presents the results of data collected during the groundwater monitoring events.

3.1 Quality Assurance/Quality Control (QA/QC) Discussion

Analytical data quality review was conducted on all groundwater samples collected during this monitoring event as specified in the QAPPs (DOF, 2020 and 2023). The data validation reports were completed by QA/QC solutions for DOF-collected samples on Burlington and former CleanCare parcels and by MFA for MFA-collected samples on Port parcels. Analytical reports and associated data validation reports are included in Appendix B.

Hold times, initial and continuing calibrations, method blanks, surrogate recoveries, laboratory duplicate results, field duplicate results, matrix spike/matrix spike duplicate results, and reporting limits were reviewed to assess compliance with applicable methods and project requirements. Qualified data were deemed to be of acceptable quality for their intended use, with the appropriate final data qualifiers assigned, except for results that were rejected due to insufficient surrogate recovery. Final data qualifiers represent qualifiers originating from the laboratory and accepted by the reviewer, as well as data qualifiers assigned by the reviewer during validation.

Overall, the data reported are of good quality and no results were rejected.

3.2 Groundwater Chemistry Analytical Results - Metals

Validated analytical results of groundwater samples collected for metals during the monitoring event are included in Table 3.

Screening levels used in this report for comparison of dissolved metals results were those identified in the 2020 Data Gaps Work Plan (DGWP) (DOF, 2020). These screening levels were based on levels developed in the 2005 Burlington RI Report and also applied in the Port's 2006 1514 Taylor Way RI. These screening levels were site-specific screening levels developed under Ecology's Model Toxics Control Act (MTCA) in consideration of the conceptual model identifying non-potable groundwater and industrial/commercial use. After Ecology's review of the Draft DGWP, Ecology requested that several screening levels be revised to default table values available in Ecology's Cleanup Levels and Risk



Calculation (CLARC) tables. Ecology's requested changes to the screening levels were implemented in the Final 2020 DGWP. In addition, Ecology's lowest current MTCA Method A or B Groundwater Screening Levels are included in Table 3 as a reference for analytes that did not have a screening level included in the DGWP.

Analytical results from the groundwater monitoring event are summarized below and select frequently detected constituents are shown on Figures 4 through 9.

- Metals detected above their respective DGWP screening levels included arsenic, chromium, copper, lead, manganese, mercury, nickel, and zinc. Concentrations of three of the most widely detected metals (arsenic, copper, and manganese) are illustrated on Figures 4 through 9.
- Where detected, dissolved arsenic concentrations ranged from not detected to 1,200 μg/L (CCW-5B). Of the 51 wells sampled, 12 sample locations recorded concentrations that exceeded the screening level of 8 μg/L for arsenic. Arsenic concentrations were highest on the former CleanCare parcels in samples collected in the shallow aquifer. Total arsenic concentrations were similar in concentration, ranging from not detected to 1,470 μg/L (CCW-5B).
- Chromium was selectively tested at four locations. Dissolved chromium concentrations ranged from 9.01 (CTMW-17) to 21 µg/L (TWA-6D).
- Where sampled, dissolved copper concentrations ranged from not detected to 163 μg/L (CTMW-5). Of the 48 wells sampled, results from ten sample locations exceeded the DGWP screening level of 2.4 μg/L for dissolved copper. Copper concentrations were highest in the shallow aquifer and were detected primarily on the former CleanCare parcels. Total copper concentrations were similar in concentration, ranging from not detected to 382 μg/L (CTMW-17).
- Dissolved iron concentrations ranged from 156 μg/L (CTMW-14) to 44,800 μg/L (PZ-8). The highest levels were detected primarily in the former Clean Care and Parcel A parcel (south of Clean Care). Total iron concentrations were similar. Ferrous iron was also analyzed at most locations, ranging from not detected to 41,700 ug/L (PZ-7).
- Lead was selectively tested at seven locations. Dissolved lead concentrations ranged from not detected to 68.7 μ g/L (CCW-5B).
- Dissolved manganese was detected throughout the TWAAFA Site at concentrations ranging from not detected (CTMW-8 and CTMW-11R) to 3,090 μg/L (PZ-9). Of the 51 wells sampled, most sample results (both dissolved and total) exceeded the DGWP screening level of 100 μg/L for manganese. Manganese was detected in shallow and deep aquifer wells with concentrations highest in the central (both north and south central) area of the TWAAFA Site.
- Mercury was tested at one location (CTMW-17). The dissolved mercury result was not detected (below 0.02 μ g/L), while the total concentration was 0.13 μ g/L.
- Nickel was selectively tested at six locations. Dissolved nickel concentrations ranged from not detected to 148 µg/L (CCW-3A). Total nickel concentrations were similar and slightly higher.
- Zinc was selectively tested at six locations (plus one duplicate). Dissolved zinc concentrations ranged from not detected to 556 μg/L (CTMW-5). Total zinc concentrations were similar and slightly higher.



3.3 Groundwater Chemistry Analytical Results - PFAS

Groundwater samples were analyzed for the standard list of 40 PFAS constituents under EPA draft Method 1633. Analytical results of detected PFAS during the monitoring event are included in Table 4. The highest concentrations were detected at CTMW-17 in the center of the site near the property boundary between Burlington and the former Clean Care parcels. However, no results were above the MTCA Method C Groundwater or Marine Surface Water Protection Based Concentrations listed in the 2023 Ecology Guidance for Investigation and Remediating PFAS Contamination in Washington State.

4.0 Conclusions

The required groundwater monitoring events at the TWAAFA Site were completed successfully following the objectives set forth in the DGWP (DOF, 2020), subsequent correspondence with Ecology, and procedures outlined in the GWMP and PFAS SAP/QAPP. The data set provides useful information for inclusion in the RI/FS.

5.0 Upcoming Schedule

As of the date of this report, all required groundwater monitoring events have been completed and no additional groundwater monitoring events are scheduled at this time. DOF anticipates discussion of the data gaps work conducted to date under the AO with Ecology during spring 2024 with respect to data gaps fulfillment in preparation for the RI/FS.

6.0 References

DOF, 2020. Final Data Gaps Work Plan, TWAAFA Site, Tacoma, Washington. July.

DOF, 2022a. Revised Groundwater Monitoring Plan, TWAAFA Site, Tacoma, Washington. April.

DOF, 2023. PFAS Sampling and Analysis Plan and Quality Assurance Project Plan, Taylor Way and Alexander Avenue Fill Area Site, Tacoma, Washington. December.



Tables

TABLE 1
GROUNDWATER MONITORING SCHEDULE
December 2023 - January 2024 Groundwater Data Analysis Report
TWAAFA Site Tacoma, Washington

		Analyses - Metals ²										
Well ID	PFAS	Arsenic	Copper	Manganese	Lead	Mercury	Chromium	Nickel	Zinc	Aluminum	Iron ³	
CCW-1A		Х	X	X	-			-	-	X	Χ	
CCW-1B		X	X	X	-			1	-	X	Χ	
CCW-1C		Х	X	X			-			X	Χ	
CCW-2A	X	X	X	X		-	-			X	Χ	
CCW-2B	Х	Х	X	X						X	Χ	
CCW-2C	X	Х	X	X			-			X	Χ	
CCW-3A	Х	Х	Х	Х	Х			Χ	Х	X	Χ	
CCW-3B	Х	Х	Х	Х						Х	Χ	
CCW-3C		Х	X	X	-			-	-	X	Х	
CCW-4C		Х	Х	Х						Х	Х	
CCW-5B		Х	Х	Х	Х					Х	Х	
CCW-5C		Х	Х	Х						Х	Х	
CCW-6B		X	X	X	Х				Х	X	X	
CCW-6C		X	X	X			Х			X	X	
CCW-7B		X	X	X						X	X	
CCW-7B		X	X	X						X	X	
CCW-8B		X	X	X						X	X	
		X	X	X						X	X	
MW-1 (Potter) ¹ MW-4	-	X	X	X		-				X	X	
		X	X									
SB-1A				X				-		X	X	
SB-2A	Х	X	X	X						X	Х	
SB-3A		X	X	Х				-		Х	X	
CTMW-1												
CTMW-5		X	X	X				X	X	X	X	
CTMW-7		X	X	X						X	Х	
CTMW-8		X	X	X						X	Х	
CTMW-9		X	X	X						X	X	
CTMW-10 ¹												
CTMW-11R2		X	X	X						X	Χ	
CTMW-12		X	X	X						X	Χ	
CTMW-14		X	X	X						X	X	
CTMW-15		X	Χ	X		-				X	Χ	
CTMW-17	X	X	X	X		X	X			X	X	
CTMW-17D		X	X	X						X	X	
CTMW-18		X	X	X				-		X	X	
CTMW-20		X	X	X						X	X	
CTMW-23R2		X	X	X				-		X	X	
CTMW-24		X	X	X				-		X	X	
CTMW-24D		X	X	X			 V	-		X	X	
CTMW-25D		Х	X	X			X	-		X	X	
PZ-5		 V		 V	 V			 V	 V		 V	
PZ-7		X		X	X			X	X	X	X	
PZ-8		X	-	X	X			X	X	X	X	
PZ-9		X		X	X			X	X	X	X	
TWA-1		X	X	X	-			-	-	X	X	
TWA-2		X	X	X						X	X	
TWA-3	X	X	X	Х				X		X	Х	
TWA-4D		X	X	X						X	X	
TWA-5D		X	X	X						X	Χ	
TWA-6D		X	X	X			X		-	X	Χ	
TWA-7D		X	Χ	X	-			-	-	X	Χ	
TWA-8D		X	X	X				-		Х	Χ	
TWA-9D		X	X	X	-			-		X	Χ	
TWA-10D		Х	X	X				-		X	Χ	

Notes

1. Wells that historically had LNAPL.
2. Total (unfiltered) and Dissolved (field filtered) Metals
3. Ferrous and Ferric Iron concentrations reported
Shading indicates wells on the Port of Tacoma property and monitored by the Port's consultant Abbreviations:
-- = not sampled.



TABLE 2 DECEMBER 2023 GROUNDWATER FIELD PARAMETERS

December 2023 - January 2024 Groundwater Data Analysis Report
TWAAFA Site
Tacoma, Washington

Location	рН	Dissolved Oxygen	E Cond	ORP	Temp	Eh Corrected	Eh Corrected	Turbidity
Units	•	mg/L	μS/cm	mV	deg C	mV	V	NTU
CCW-1A	6.83	0.29	1252	51.7	11.6	266.0	0.266	2.7
CCW-1B	6.94	0.18	970	61.8	13.8	274.5	0.274	4.4
CCW-1C	7.03	0.44	2080	45.1	14.7	257.1	0.257	3.9
CCW-2A	6.53	0.12	1034	81.9	11.6	296.2	0.296	2.8
CCW-2B	7.08	0.09	1928	95.4	13.8	308.1	0.308	0.6
CCW-2C	6.94	0.31	1707	91.6	13.9	304.2	0.304	3.0
CCW-3A	6.76	0.36	1376	137.4	12.2	351.2	0.351	11.5
CCW-3B	6.84	0.38	1257	110.5	14.3	322.8	0.323	3.2
CCW-3C	6.74	0.19	1436	136.7	14.1	349.1	0.349	1.7
CCW-4C	6.91	0.1	2116	33.1	14.9	245.0	0.245	2.1
CCW-5B	6.4	0.1	1253	73.7	13.4	286.7	0.287	4.6
CCW-5C	6.54	0.17	1738	79.2	14.6	291.3	0.291	4.4
CCW-6B	6.29	0	1135	77.7	12.7	291.2	0.291	4.3
CCW-6C	6.57	0	4121	95.2	13.9	307.8	0.308	3.8
CCW-7B	6.27	0.14	1038	60.1	12.9	273.4	0.273	4.2
CCW-7C	6.8	0.36	2040	77.8	13.8	290.5	0.290	4.7
CCW-8B	6.82	0.13	1117	69	14.1	281.4	0.281	3.7
CTMW-5	6.32	0.05	254.1	90.6	10.8	305.5	0.305	5.8
CTMW-7	6.82	0.18	2226	135	15.5	346.4	0.346	2.9
CTMW-8	12.74	0.19	6273	-354.9	14.6	-142.8	-0.143	6.4
CTMW-9	6.97	0.11	3397	19.5	15.6	230.8	0.231	10.9
CTMW-11R2	12.86	0.15	7908	-112.3	12.3	101.5	0.101	3.7
CTMW-12	6.91	0.26	1956	31.3	15.3	242.9	0.243	3.5
CTMW-14	8.33	2.11	284.4	25.1	12.3	238.9	0.239	11.0
CTMW-15	6.94	0.15	660.4	-97.3	12	116.7	0.117	1.8
CTMW-17	6.79	0	1161	44.3	11.6	258.6	0.259	22.9
CTMW-17D	6.87	0	1825	48.1	14.4	260.3	0.260	4.5
CTMW-18	6.61	0.31	935	80.8	15.3	292.4	0.292	16.3
CTMW-20	6.86	0.34	1584	-118.9	11.7	95.3	0.095	3.4
CTMW-23R2	7.17	0.1	733	81.8	13.3	294.8	0.295	8.0
CTMW-24	6.27	0.18	264.4	153.3	11.5	367.7	0.368	1.4
CTMW-24D	6.85	0.19	2637	140.6	13.8	353.3	0.353	1.9
CTMW-25D	7.13	0.08	2809	-131.6	13.6	81.2	0.081	3.0
MW-1	6.34	0.3	226.4	-60.6	10.2	154.7	0.155	26.7



TABLE 2 DECEMBER 2023 GROUNDWATER FIELD PARAMETERS

December 2023 - January 2024 Groundwater Data Analysis Report TWAAFA Site Tacoma, Washington

Location	рН	Dissolved Oxygen	E Cond	ORP	Temp	Eh Corrected	Eh Corrected	Turbidity
Units	-	mg/L	μS/cm	mV	deg C	mV	V	NTU
MW-4	7.19	0	2709	18.6	12.6	232.2	0.232	4.7
PZ-7	6.25	0.06	1765	151.4	15.5	362.8	0.363	2.6
PZ-8	6.23	0.4	461.4	132.3	11.6	346.6	0.347	49.0
PZ-9	6.53	0.2	1485	13	14.8	224.9	0.225	12.3
SB-1A	7.4	0.47	454.5	-87.6	11.7	126.6	0.127	4.1
SB-1B	6.94	0.22	587	-35.3	12.3	178.5	0.178	3.8
SB-3A	7.5	0.07	653.7	-141.3	12.6	72.3	0.072	4.0
TWA-1	6.82	3.54	846	70.2	10.3	285.4	0.285	6.6
TWA-2	7.13	0.5	1112	91.4	11	306.1	0.306	3.3
TWA-3	6.7	0.31	2074	138.9	10.8	353.8	0.354	1.6
TWA-4D	7.79	0.04	8151	-115.6	13.8	97.1	0.097	4.4
TWA-5D	7.49	0.1	3739	-144.3	12.9	69.0	0.069	0.7
TWA-6D	6.88	0.22	3893	-70.9	11.7	143.3	0.143	1.2
TWA-7D	7.84	0.05	4092	-93.1	15.6	118.2	0.118	1.1
TWA-8D	7.79	0.72	10753	141.4	13.5	354.3	0.354	0.0
TWA-9D	8.05	0.07	8977	-60.6	13.8	152.1	0.152	0.0
TWA-10D	8.21	0.08	7782	-222.1	12.5	-8.5	-0.008	3.5

Notes:

- 1) Equipment YSI Pro Plus- ORP electrodes use platinum Ag/AgCl reference of 3.5 M KCL (confirmed with manufacturer)
- 2) Temperature Correction Formula Eh (mv) = -0.7357 * (Temp degrees C) + 222.82
- 3) Redox Potential (Eh) = (Potential correction factor, in millivolts [mV]) + (field ORP measurement [mV])
- 4) U.S. Environmental Protection Agency (EPA), 2023, *Operating Procedure: Field Measurement of Oxidation-Reduction Potential*, LSASDPROC-113-R4, Laboratory Services & Applied Science Division, Athens, Georgia, Effective Date April 22.

Abbreviations:

E Cond = electrical conductivity
ORP = oxidation-reduction potential
Temp = Temperature
Eh = Redox potential
mg/L = milligrams per liter

μS/cm = microsiemens per centimeter deg C = degrees Celius mV = millivolts V = volts NTU = nephelometric turbidity unit



TABLE 3 DECEMBER 2023 METALS CONCENTRATIONS IN GROUNDWATER

December 2023 - January 2024 Groundwater Data Analysis Report TWAAFA Site

Tacoma, Washington

Location	Date	Fraction	Aluminum	Arsenic	Chromium	Copper	Iron	Ferrous Iron	Lead	Manganese	Mercury	Nickel	Zinc
Units			μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L
DGWP Screening Le	vel			8*	11	2.4			8.1	100	0.025	10	81
CCW-1A	12/18/2023	Dissolved	10 U	6.26		2.65	528			371			
CCW-1B	12/18/2023	Dissolved	10 U	1 U		2 U	1850			574			
CCW-1C	12/18/2023	Dissolved	10 U	2.39		2 U	4350			299			
CCW-2A	12/14/2023	Dissolved	35.3	2.09		0.669	12100			836			
CCW-2B	12/14/2023	Dissolved	10 U	1150		0.6 U	4180			200			
CCW-2C	12/14/2023	Dissolved	10 U	2.95		0.576	7420			145			
CCW-3A	12/14/2023	Dissolved	10 U	67.9		0.913	15000		1 U	81.6		148	433
CCW-3B	12/14/2023	Dissolved	10 U	3.08		0.48 U	4990			959			
CCW-3C	12/14/2023	Dissolved	10 U	1.56		0.484	8180			868			
CCW-4C	12/18/2023	Dissolved	10 U	1.7		2 U	9480			463			
CCW-5B	12/19/2023	Dissolved	154	1200		2.4 U	15200		11	989			
CCW-5C	12/19/2023	Dissolved	11.7	2 U		2.4 U	15300			878			
CCW-6B	12/19/2023	Dissolved	992	6.29		3.53	22300		17.6	892			167
CCW-6B DUP	12/19/2023	Dissolved	998	5.36		3.67	19300		17.5	866			137
CCW-6C	12/19/2023	Dissolved	64.8	5.98	19.8	2.4 U	15100			220			
CCW-7B	12/19/2023	Dissolved	1020	2.06		2.4 U	18200			802			
CCW-7B DUP	12/19/2023	Dissolved	1020	2.08		2.4 U	19300			799			
CCW-7C	12/19/2023	Dissolved	10 U	2.13		2.4 U	6340			217			
CCW-8B	12/18/2023	Dissolved	10 U	2.07		2 U	30300			563			
CTMW-11R2	12/15/2023	Dissolved	394	5 U		2.4 U	4260			5 U			
CTMW-12	12/15/2023	Dissolved	10 U	5 U		2 U	9720			1180			
CTMW-14	12/13/2023	Dissolved	21.4	3.78		5.62	156			3.53			
CTMW-15	12/13/2023	Dissolved	10 U	1.82		2.4 U	8230			246			
CTMW-17	12/15/2023	Dissolved	44.8	194	9.01	65.6	571			316	0.02 U		
CTMW-17D	12/15/2023	Dissolved	10 U	5 U		2 U	9280			337			
CTMW-18	12/13/2023	Dissolved	29.1	5.08		8.11	1190			1540			
CTMW-20	12/13/2023	Dissolved	10 U	6		2.4 U	19100			1280			
CTMW-23R2	12/15/2023	Dissolved	22.8	3.59		0.607	660			493			
CTMW-24	12/11/2023	Dissolved	23.1	1 U		1 U	999			94.2			
CTMW-24D	12/11/2023	Dissolved	13	5 U		1 U	7370			211			
CTMW-25D	12/13/2023	Dissolved	59.2 J+	5.71	12.6 J+	2.4 U	7560			263			
CTMW-5	12/13/2023	Dissolved	392	49.5		163	1130			71.9		19	556
CTMW-7	12/13/2023	Dissolved	10 U	5 U		2.12	16700			558			
CTMW-8	12/12/2023	Dissolved	212	5 U		1 U	4270			1 U			
CTMW-9	12/12/2023	Dissolved	10 U	8.65		1 U	4460			373			
MW-1	12/13/2023	Dissolved	16.6 U	3.88		2.4 U	6960			69.4			
MW-4	12/18/2023	Dissolved	10 U	1.42		2 U	4590			282			
PZ-7	12/11/2023	Dissolved	46.7	5 U			207		1 U	10.8		3.43	26.6



TABLE 3 DECEMBER 2023 METALS CONCENTRATIONS IN GROUNDWATER

December 2023 - January 2024 Groundwater Data Analysis Report TWAAFA Site

Tacoma, Washington

Location	Date	Fraction	Aluminum	Arsenic	Chromium	Copper	Iron	Ferrous Iron	Lead	Manganese	Mercury	Nickel	Zinc
Units			μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L
DGWP Screening Le	rvel			8*	11	2.4			8.1	100	0.025	10	81
PZ-8	12/11/2023	Dissolved	51.1	5 U			44800		1 U	1280		11.7	25 U
PZ-9	12/12/2023	Dissolved	19.3	8.57			34600		1 U	3090		5 U	25 U
SB-1A	12/12/2023	Dissolved	10 U	2.13		2.4 U	2220			141			
SB-2A	12/12/2023	Dissolved	11.1 U	2.61		2.4 U	1770			510			
SB-3A	12/13/2023	Dissolved	10 U	1.89		2.4 U	2600			118			
TWA-1	12/12/2023	Dissolved	10 U	1 U		3.57 J+	568			3.57 J+			
TWA-2	12/12/2023	Dissolved	10 U	28.6		10.2 J+	413			347			
TWA-3	12/12/2023	Dissolved	10 U	2.26		4.21 J+	691			465		10.1	
TWA-3 DUP	12/12/2023	Dissolved	10 U	2.26		3.76 J+	681			452		9.66	
TWA-4D	12/12/2023	Dissolved	10 U	10.3		1.18	4040			106			
TWA-5D	12/13/2023	Dissolved	11.4 U	5.26		2.4 U	1780			181			
TWA-6D	12/13/2023	Dissolved	49.9 J+	6.68	21	2.4 U	2950			753			
TWA-7D	12/12/2023	Dissolved	10 U	7.82		1 U	1510			118			
TWA-8D	12/13/2023	Dissolved	10 U	15.9		3.57	2250			389			
TWA-9D	12/14/2023	Dissolved	10 U	15.6		1.1	461			49.2			
TWA-10D	12/12/2023	Dissolved	14.3 U	10.2		2.4 U	1030			42.2			
CCW-1A	12/18/2023	Total	10 U	7.45		6.05	522	182 J		339			
CCW-1B	12/18/2023	Total	34.2	1 U		2 U	2000	668		567			
CCW-1C	12/18/2023	Total	21	2.64		2 U	4270	1320		290			
CCW-2A	12/14/2023	Total	41.7	4.88		7.59	14000	10700		883			
CCW-2B	12/14/2023	Total	10 U	1140		0.73	4430	747		211			
CCW-2C	12/14/2023	Total	11.5	2.8		2.4 U	7620	1980		156			
CCW-3A	12/14/2023	Total	49	94.3		4.78	19500	9080	33.4	87.5		175	583
CCW-3B	12/14/2023	Total	12.6	3.1		2.4 U	4490	2420		965			
CCW-3C	12/14/2023	Total	34.8	1.5		2.4 U	8750	3240		978			
CCW-4C	12/18/2023	Total	10 U	1.8		2 U	10900	2010		530			
CCW-5B	12/19/2023	Total	170	1470		11.6	12200	10300 J	68.7	927			
CCW-5C	12/19/2023	Total	28	4.47		2.4 U	12600	8020 J		957			
CCW-6B	12/19/2023	Total	952	7.72		14.5	18700	19700 J	65.1	793			236
CCW-6B DUP	12/19/2023	Total	986	7.73		15.2	19300	20200 J	65.6	838			243
CCW-6C	12/19/2023	Total	85.3	6.06	20.6	2.4 U	16500	10500 J		221			
CCW-7B	12/19/2023	Total	1030	2.55		3.74	16300	20300 J		753			
CCW-7B DUP	12/19/2023	Total	1070	2.41		3.62	15500	16000 J		755			
CCW-7C	12/19/2023	Total	25.9	1.86		2.4 U	5300	1160 J		197			
CCW-8B	12/18/2023	Total	13.1	2.65		2 U	31200	13800 J		561			
CTMW-11R2	12/15/2023	Total	397	5 U		1.67	3520	150 U		2 U			
CTMW-12	12/15/2023	Total	20.7	2.51		0.502	8270	1410 J		844			
CTMW-14	12/13/2023	Total	55.2	5 U		4.73	220	150 U		5 U			



TABLE 3

DECEMBER 2023 METALS CONCENTRATIONS IN GROUNDWATER

December 2023 - January 2024 Groundwater Data Analysis Report
TWAAFA Site
Tacoma, Washington

Location	Date	Fraction	Aluminum	Arsenic	Chromium	Copper	Iron	Ferrous Iron	Lead	Manganese	Mercury	Nickel	Zinc
Units			μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L
DGWP Screening Le	evel			8*	11	2.4			8.1	100	0.025	10	81
CTMW-15	12/13/2023	Total	10 U	1.79		2.4 U	7710			272			
CTMW-17	12/15/2023	Total	169	230	36.3	382	768	372 J		300	0.13		
CTMW-17D	12/15/2023	Total	27.4	2.29		2.25	9160	886 J		318			
CTMW-18	12/13/2023	Total	189	6.04		20	1320	1000		1430			
CTMW-20	12/13/2023	Total	10 U	5.86		2.4 U	17700			1130			
CTMW-23R2	12/15/2023	Total	77.2	3.45		1.92	780	272		542			
CTMW-24	12/11/2023	Total	40.2	1 U		1 U	919	1190 J		79.8			
CTMW-24D	12/11/2023	Total	13.6	5 U		1 U	7370	877 J		211			
CTMW-25D	12/13/2023	Total	88 J+	6.33	15.9 J+	2.74 U	8210			299			
CTMW-5	12/13/2023	Total	425	55.7		200	1200	454		70.7		17.8	568
CTMW-7	12/13/2023	Total	10 U	5 U		1 U	16100	13500		552			
CTMW-8	12/12/2023	Total	218	5 U		1.14	4300	150 U		2.45			
CTMW-9	12/12/2023	Total	25.9	8.91		1.1	8430	889		398			
MW-1	12/13/2023	Total	71.1 J+	4.22		6.59 J+	6840			70.1			
MW-4	12/18/2023	Total	12.5	2.28		6.81	5240	904		294			
PZ-7	12/11/2023	Total	49.9	5.02			1660	41700	11.1	37.2		4.08	35.3
PZ-8	12/11/2023	Total	401	5.19			47400	266	1 U	1250		10.1	75.7
PZ-9	12/12/2023	Total	27.6	9.82			38700	35100 J	1 U	2970		5 U	25 U
SB-1A	12/12/2023	Total	10 U	2.41		2.57 U	2720			147			
SB-2A	12/12/2023	Total	49.9 J+	2.47		2.4 U	2060			528			
SB-3A	12/13/2023	Total	10 U	1.8		2.4 U	2940			121			
TWA-1	12/12/2023	Total	14.8 J+	1.37		3.88 J+	1850			11.2 J+			
TWA-2	12/12/2023	Total	34.1 J+	26.3		10.4 J+	530			338			
TWA-3	12/12/2023	Total	10 U	2.72		4.5 J+	786			445		10.7	
TWA-3 DUP	12/12/2023	Total	10 U	3.04		4.66 J+	832			467		10.2	
TWA-4D	12/12/2023	Total	10.2	9.85		1.03	4080	831 J		105			
TWA-5D	12/13/2023	Total	19.7 J+	5.16		2.4 U	2010			182			
TWA-6D	12/13/2023	Total	75.6 J+	7.26	24.4	2.97 U	3030			749			
TWA-7D	12/12/2023	Total	10 U	7.86		0.75	1590	381 J		113			
TWA-8D	12/13/2023	Total	10 U	14.9		2 U	1980	408		348			
TWA-9D	12/14/2023	Total	10 U	11.7		2.4 U	806	399		63.1			
TWA-10D	12/12/2023	Total	46.4 J+	9.03		4.11 J+	1240			45.7			

Notes:

Bold = Detection

DGWP screening level exceedance

* = Background level utilized per communication with Ecology



TABLE 3

DECEMBER 2023 METALS CONCENTRATIONS IN GROUNDWATER

December 2023 - January 2024 Groundwater Data Analysis Report
TWAAFA Site
Tacoma, Washington

Location	Date	Fraction	Aluminum	Arsenic	Chromium	Copper	Iron	Ferrous Iron	Lead	Manganese	Mercury	Nickel	Zinc
Units	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L		
DGWP Screening Level			-	8*	11	2.4			8.1	100	0.025	10	81

Abbreviations:

DGWP = Data Gaps Work Plan

-- = not available

mg/L = milligrams per liter

μg/L = micrograms per liter

DUP = field duplicate

U = the value was not detected above the laboratory provided limit.

J = the value was estimated.



TABLE 4 JANUARY 2024 PFAS GROUNDWATER RESULTS

TWAAFA Site Tacoma, Washington

			All units	s provided in na	nograms per lite	er (ng/L)			All units	s provided in na	nograms per lite	er (ng/L)			Marine Surface
	CCW-2A	CCW-2B	CCW-2C	CCW-3A	CCW-3A DUP	CCW-3B	CTMW-17	Field Blank	TWA-3	TWA-3 DUP	SB-2A	Field Blank	MTCA Method B ¹	MTCA Method C ¹	Water Protection Based Concentrations ²
Analyte	1/11/2024	1/11/2024	1/11/2024	1/11/2024	1/11/2024	1/11/2024	1/11/2024	1/11/2024	12/12/2023	12/12/2023	12/12/2023	12/12/2023			Concentrations
Perfluorobutanoic acid (PFBA)	13	35	7.2 U	31	35	70	1500	8.4 U	20	19	23	8 U	8,000	18,000	
Perfluoroundecanoic acid (PFUnA)	1.9 U	1.8 U	1.8 U	1.9 U	1.8 U	1.8 U	11	2.1 U	2 U	2.1 U	2 U	2 U			
6:2 FTS	7.7 U	7.2 U	7.2 U	7.5 U	7.3 U	7.3 U	86	8.4 U	8.2 U	8.2 U	8.1 U	8 U			
Perfluoropentanoic acid (PFPeA)	7.1	3.6 U	3.6 U	40 U	40 U	44	40 U	4.2 U	43	43	4.1 U	4 U			
Perfluorohexanoic acid (PFHxA)	6.6	4	5.2	20 U	1.8 U	32	39	2.1 U	32	29	2 U	2 U	8,000	18,000	
Perfluoroheptanoic acid (PFHpA)	3.6	2.5	2.1	10	9.1	15	20	2.1 U	10	9.7	2 U	2 U			
Perfluorooctanoic acid (PFOA)	6.4	17	12	96	93	61	54	2.1 U	25	25	4.1	2 U	48	110	119,000
Perfluorononanoic acid (PFNA)	1.9 U	1.8 U	1.8 U	1.9 U	1.8 U	4.1	44	2.1 U	2.1	2.6	2 U	2 U	40	88	10,400
Perfluorobutanesulfonic acid (PFBS)	1.9	1.8 U	1.8 U	3.5	2.9	6.5	2100	2.1 U	75	81	2 U	2 U	4,800	11,000	127,000,000
Perfluorohexanesulfonic acid (PFHxS)	5.3	7	5.7	9.4	9.5	23	38	2.1 U	6.3	6.3	2 U	2 U	160	340	
Perfluorooctanesulfonic acid (PFOS)	12	27	1.8 U	19	22	20	110	2.1 U	16	18	2 U	2 U	48	110	1,100
Perfluorooctanesulfonamide (FOSA)	1.9 U	1.8	1.8 U	1.9 U	1.8 U	1.8 U	20 U	2.1 U	2 U	2.1 U	2 U	2 U			
NEtFOSAA	1.9 U	2.2	1.8 U	10	9.6	2.4	1.9 U	2.1 U	2 U	2.1 U	2 U	2 U			
Perfluoropentanesulfonic acid (PFPeS)	1.9 U	1.8 U	1.8 U	1.9 U	15 J	4.2	20 U	2.1 U	2 U	2.1 U	2 U	2 U			

Notes:

- 1. Source of values- Table 3, Ecology Guidance for Investigating and Remediating PFAS Contamination in Washington State. (Publication No. 22-09-058. June 2023) and CLARC database (accessed October 2023).
- 2. Source of values- Table B-1, Ecology Guidance for Investigating and Remediating PFAS Contamination in Washington State. (Publication No. 22-09-058. June 2023).

Abbreviations:

-- = not available

U = the value was not detected above the laboratory limit provided.

J = the value was estimated.

MTCA = Model Toxics Control Act

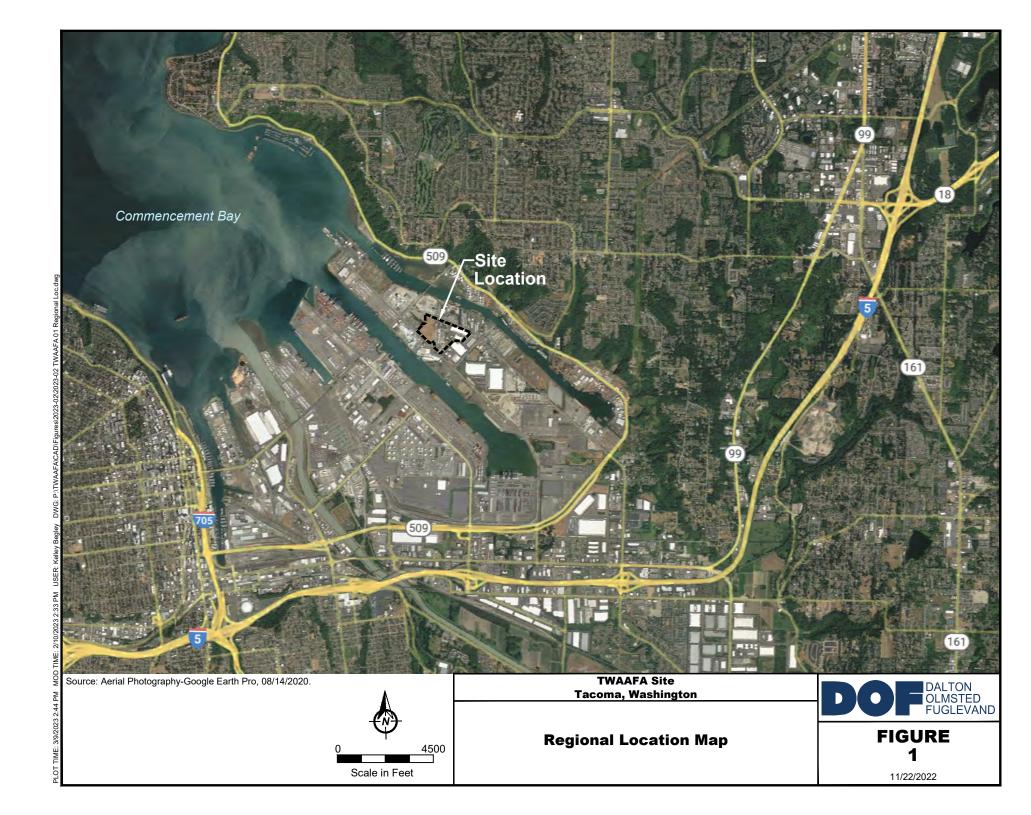
DUP = field duplicate

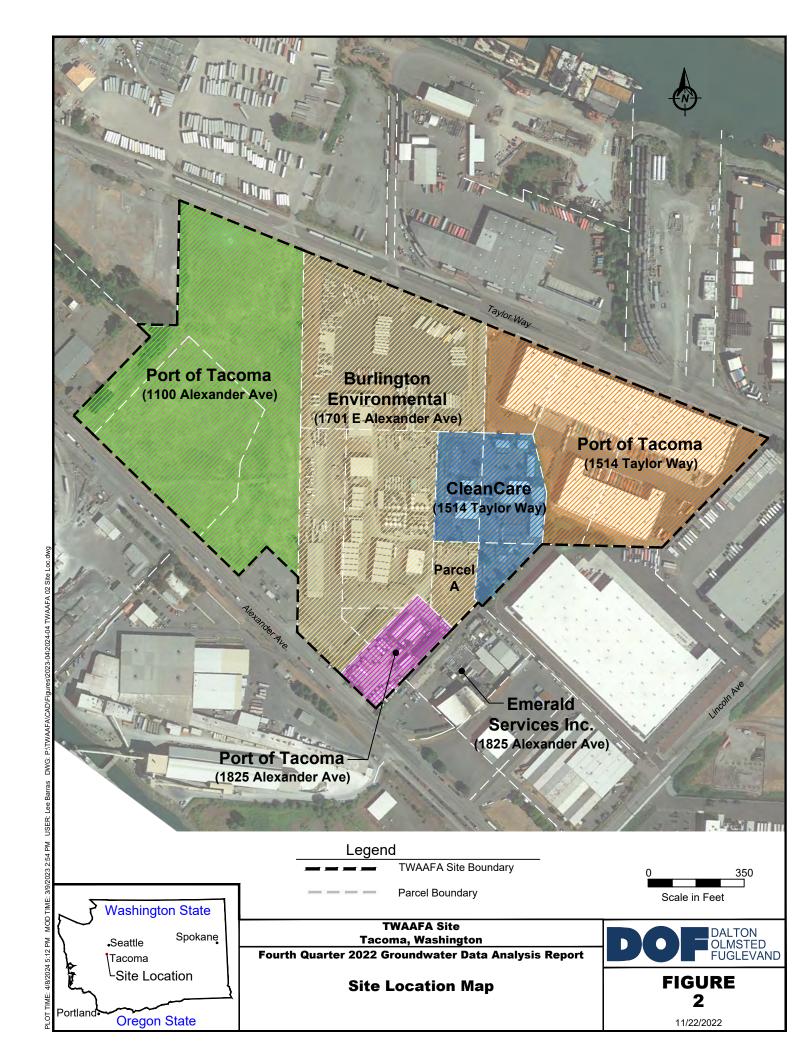
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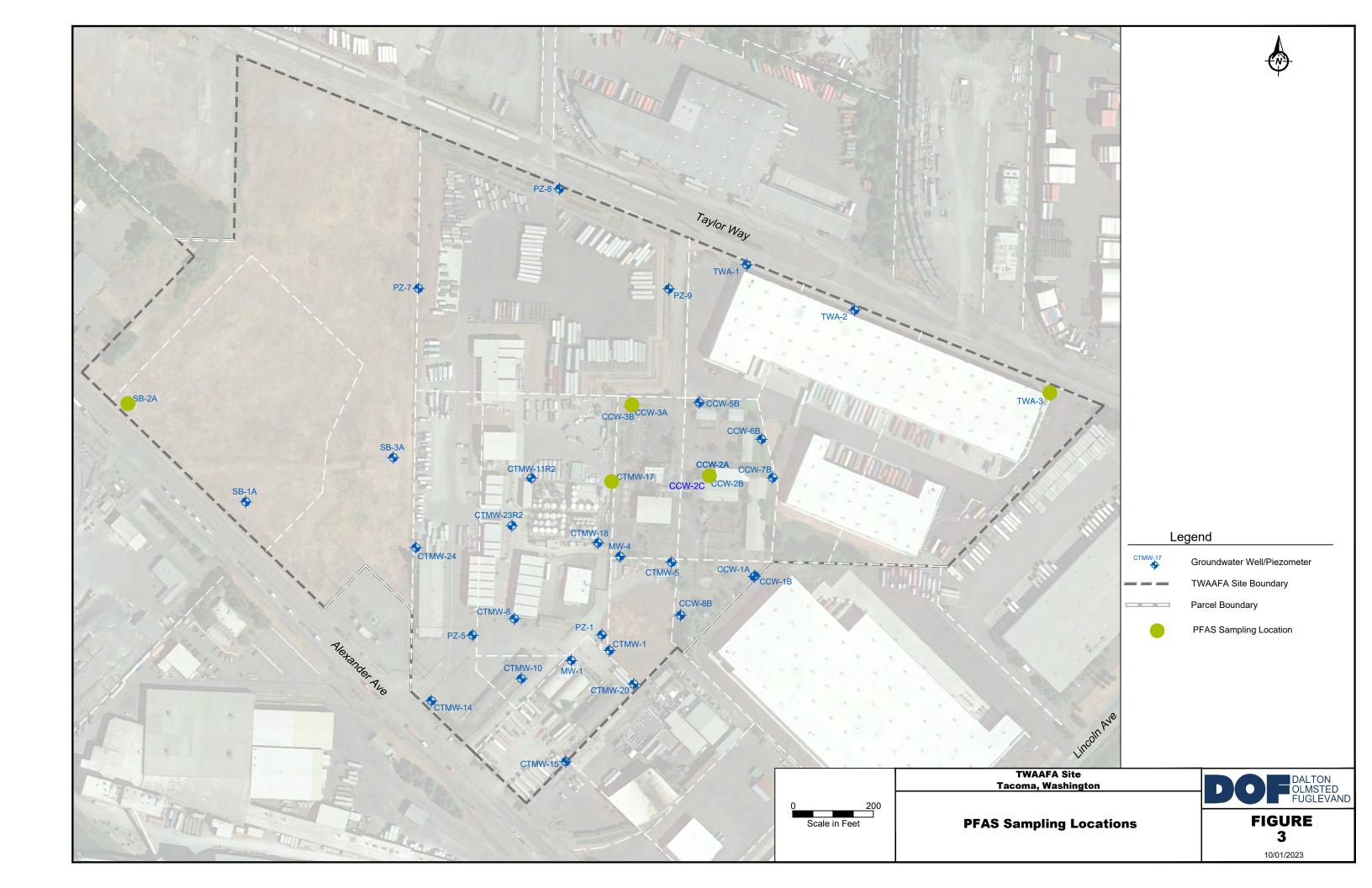


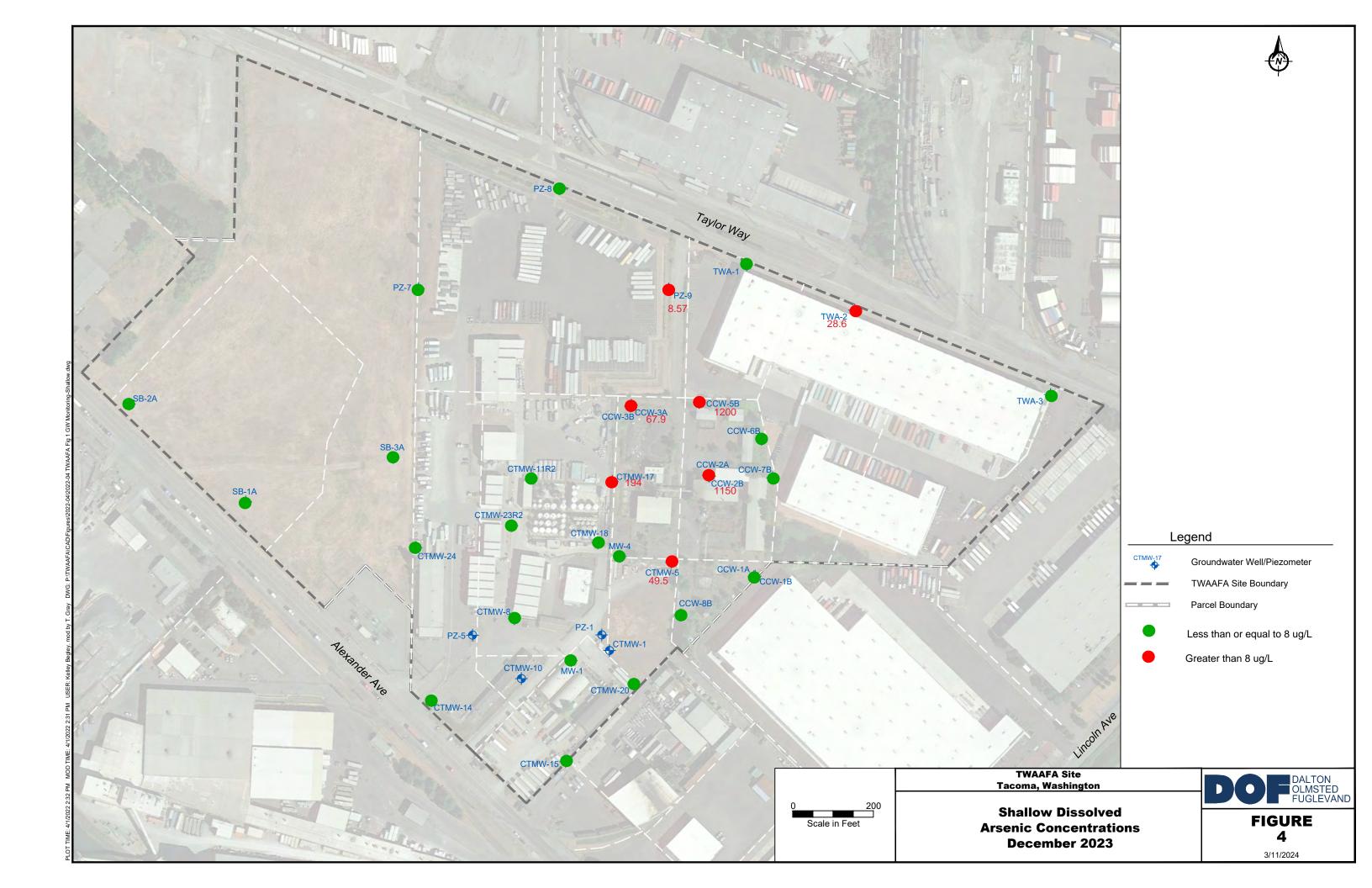


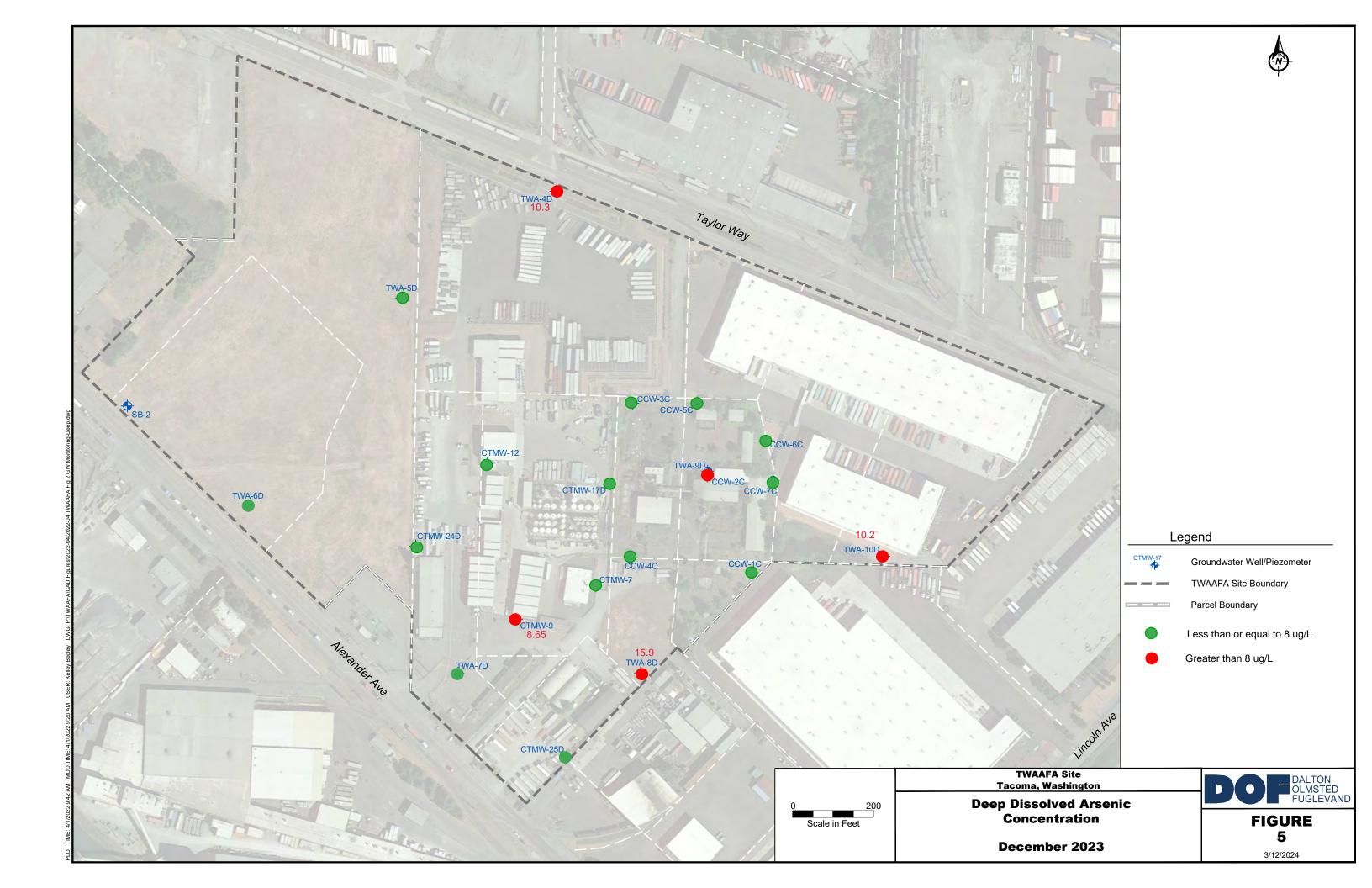
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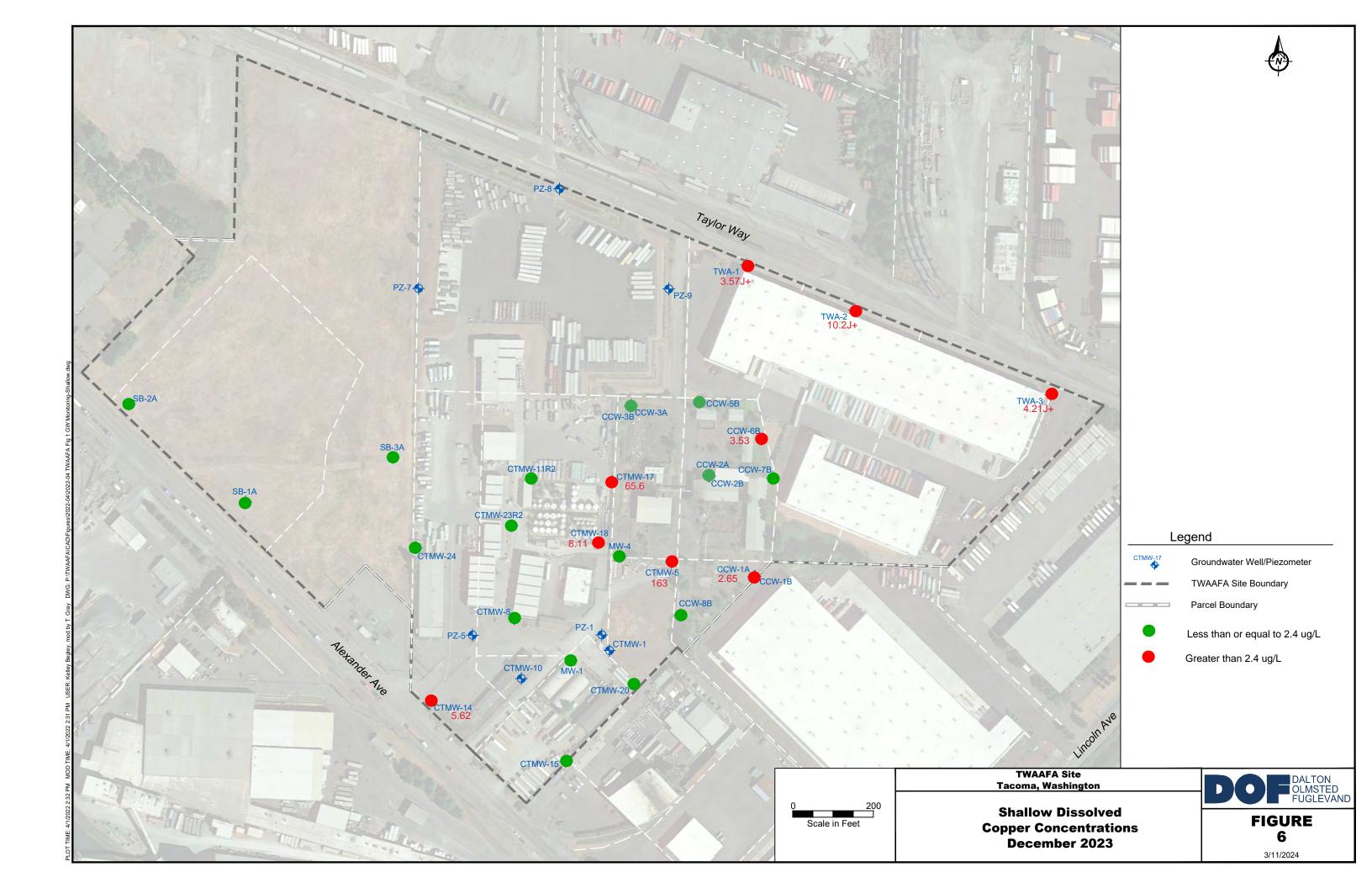


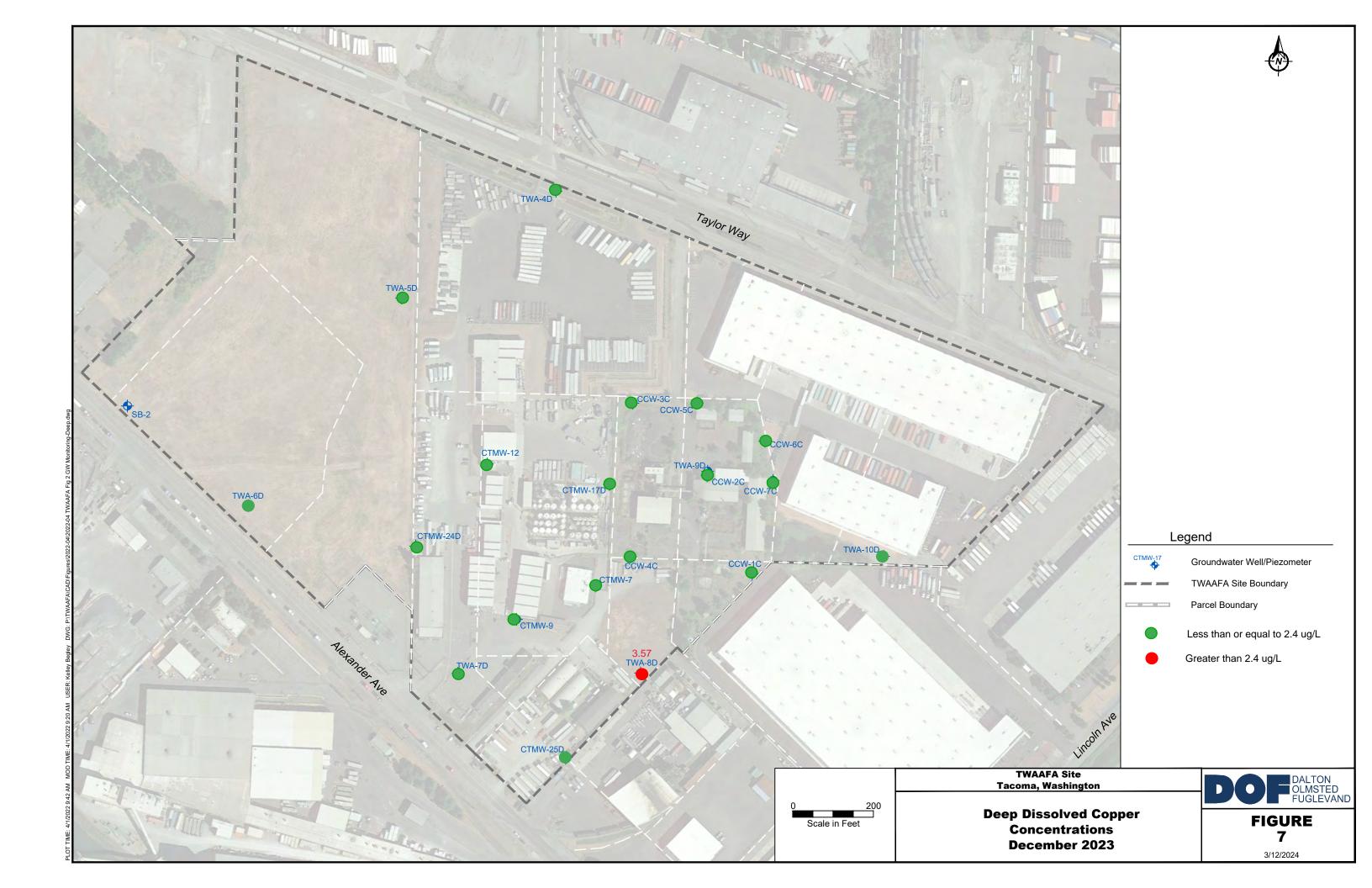


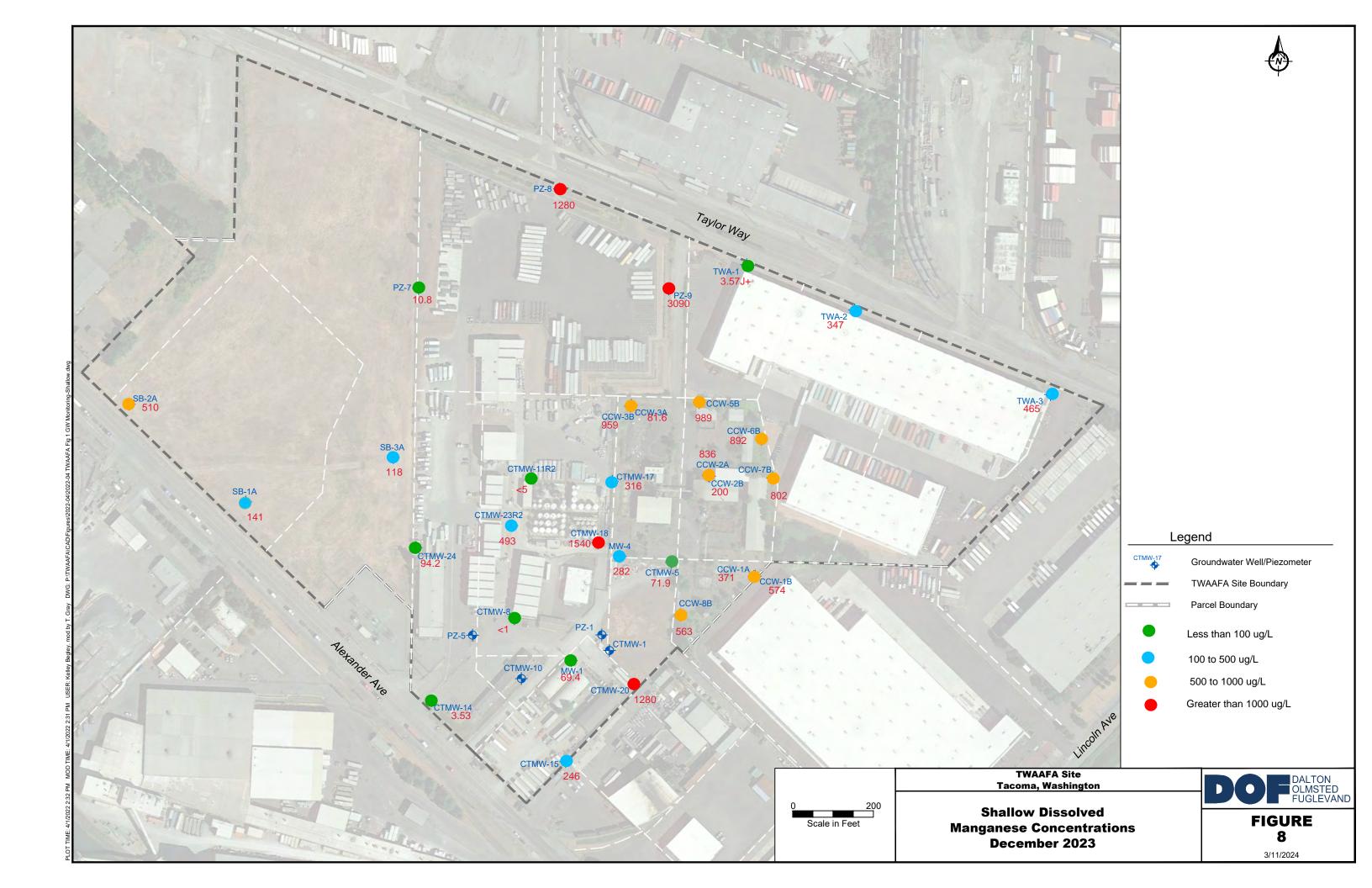


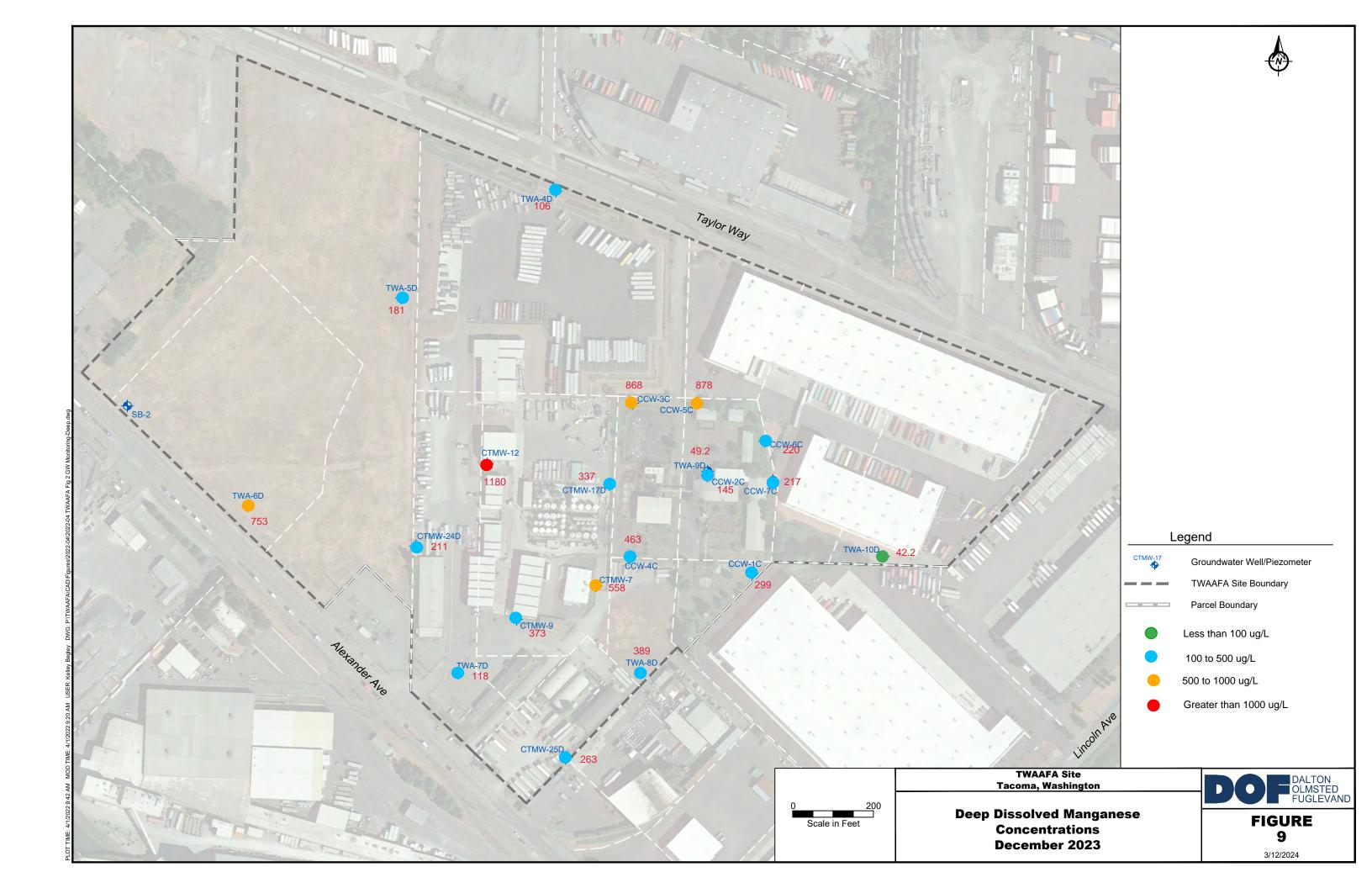














Appendix A

Groundwater Sampling Field Sheets

_	OF P	LMSTED UGLEVAND	Wonttoring	Well Samplin	g Field Sheet	Well No. Field Blank#1-1223 Facility/Project: TWAAFA						
Date: 1	2/15/23		Sampling Pers	onnel:		Initial Headspace (ppm)						
	g Method:			S/MW		Intial-Water Level before purge (ft. BTOC)						
	ent Used:			(total well depth - water	r level)	End-Water Level post purge/sample with pump on (ft. BTOC):						
VL-	PID -					Pump Intake Depth (ft.BTOC):						
VQ - 'urb -	Pump	•	Well Volume ≖			CZ SWY W YMY						
	Purge start time:		Initial Flow Rate:		Flow cell disconnected	d prior to sampling :						
	Purge stop time:		Final Flow Rate:									
				Water Qualit	ty Measuremen	ts	Q					
Time	Water level	Purge Rate	рН	Conductivity	Temperature	Dissoved Oxygen	Redox Potential	Turbidity				
(military)	ft	(mL/min)	pH Units	uS/cm	°C	mg/L	mV _	(NTU)				
	< 0.33 ft from 2nd reading	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><!--= 0.3 mg/L</td--><td>< 10 mV</td><td>{3 readings} < 5 NTU < 10% if >5 NTU</td></td>	< 3%	= 0.3 mg/L</td <td>< 10 mV</td> <td>{3 readings} < 5 NTU < 10% if >5 NTU</td>	< 10 mV	{3 readings} < 5 NTU < 10% if >5 NTU				
						Project: T	NAAFA 4Q23					
						Samplers:						
				-			: Field Blank#1-122					
						Date: 12/1	5/23 Time: 1015					
						Analysis: Preservati	ve:					
								-				
otes:	*Per EPA (2022) OP	P direct measurem	ent data recorded is	"ORP referenced to		electrode". Electrode	calibrated in	solution.				
otes.				CTHW-23	22 (m		@ CE Tacoma					
٤ :		int fumes		a peak, as								
7	Battles and Ar	alveger	(collected in or	der helowl	7	10000						
(1)	1 x	mL HDPE w/	HNO ₃ 6020 Total M	letals AAOO	.@.@.@.@.@.	and 1631E (Hg)	<u> </u>					
(1)	O x-	ML HDPE W/	HNO ₃ 6020 Dissolv	ed Metals (Al, As, C	r, Cu, Fe, Mn, Ni, Pl	o, Zn) and 1631E (Hg)	Field F	iltered (0.45µm)				
(1)	Y	250ml HO	PE for Ferro	stron	_ 175							

U	OF	ALTON LMSTED JGLEVAND	Monitoring	Well Sampling	g Field Sheet	Well No. Filld Blank#2-1223 Facility/Project: TWAAFA						
Date:	12/18/2	3	Sampling Pers	onnel:		Initial Headspace (ppm)						
	g Method:	3		144		Intial-Water Level before purge (ft. BTOC)						
auinme	ent Used:			(total well depth - wate	r level)	End-Water Level post purge/sample with pump on (ft. BTOC):						
VL -	PID -		77 411 79141110 39127	(total from depth from	1010/	The state of the s						
VQ - 'urb -	Pump		Well Volume ≈			Pump Intake Depth (ft.BTOC):						
	Purge start time:		Initial Flow Rate:	1 - 1	Flour cell disconnectes	Indicate constitution [7]						
	Purge stop time:		Final Flow Rate:		Flow cell disconnected	d prior to sampling :	ш					
			C	Water Qualit	ty Measuremen	ts		1				
Time	Water level	Purge Rate	рН	Conductivity	Temperature	Dissoved Oxygen	Redox Potential	Turbidity				
(military)	ft	(mL/min)	pH Units	uS/cm	°C	mg/L	mV	(NTU)				
	< 0.33 ft from 2nd reading	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><!--= 0.3 mg/L</td--><td>< 10 mV</td><td>{3 readings} < 5 NTU o < 10% if >5 NTU</td></td>	< 3%	= 0.3 mg/L</td <td>< 10 mV</td> <td>{3 readings} < 5 NTU o < 10% if >5 NTU</td>	< 10 mV	{3 readings} < 5 NTU o < 10% if >5 NTU				
						Project: TWA Samplers: ES Sample ID: Date: 12/18/ Analysis: Preservative	Field Blank#2-1223 23 Time: 1310					
Notes:	- Take - Spill Bottles and A	en Q M ed PYCS. nalyses:	Collected in co	Metals (A) (A) (C), (C	₩ ®®	electrode". Electrod		solution.				
(i)			Re for Ferr		ci, cu, re, ivili, Ni,	Pb, Zn) and 1631E (F	rielo	Filtered (0.45µm)				

		ALTON LMSTED UGLEVAND	22/1/4/2015/4/3	Well Sampling	g Field Sheet	Well No. CCW 18 CCW-1A Facility/Project: TWAAFA				
ate: /2	2/18/23		Sampling Personnel: ES/MW Well volume = 0.17 * (total well depth - water level)			Initial Headspace (ppm) Intial-Water Level befor	U. Ppin			
ampling	Method:/on	flow peri				The second second second second	(1)	12		
quipment Used: VL - 1/0 # 7068 PID - RKI - 6000 VQ - YS) Proqueto Pump - Masterflik urb - 1/0, turb					THE RESERVE AND ADDRESS OF THE PARTY OF	urge/sample with pump on (ft.	BTOC): 4, 19			
		Well Volume = ,11	5.35 - 4.1 Vilo - 4.	2)= 0.2	Pump Intake Depth (ft.E	off bottom	10+ pulling			
- 1	Purge start time:	102 6	Initial Flow Rate:	400			-1	Bonon		
	Purge stop time:	1101	Final Flow Rate:		Flow cell disconnected	d prior to sampling:	\square			
		1101		200 Water Qualit	ty Measuremen	ts				
Time	Water level	Purge Rate	рН	SPC Conductivity	Temperature	Dissoved	Redox Potential	Turbidity		
	CALCAS NOV	10 W 6 15 W 6 1.		Conductivity	Temperature	Oxygen	*	Tarbianty		
(military)	ft	(mL/min)	pH Units	uS/cm	°C	mg/L	mV	(NTU)		
	< 0.33 ft from 2nd reading	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><!--= 0.3 mg/L</td--><td>< 10 mV</td><td>{3 readings} < 5 NTU (< 10% if >5 NTU</td></td>	< 3%	= 0.3 mg/L</td <td>< 10 mV</td> <td>{3 readings} < 5 NTU (< 10% if >5 NTU</td>	< 10 mV	{3 readings} < 5 NTU (< 10% if >5 NTU		
०५०	4,21	400	6.83	1129	11.5	0.27	60.1	4.37		
043	4.29	300	6.75	1196	11.6	0.19	59.6	4.62		
010	4.29	300	6.75	1214	11.5	0.16	58.2	4.68		
649	4.18	200	6.75	1230	11.6	0.40	51.1	3.17		
052	4.18	200	6.75	1252	11.6	0.29	51.7	2.66		
055	Collect	"CCW-	1/c flow c	ell			WY = Y	A Maria		
			,			Onder Control	t: TWAAFA 4Q23			
						Samplers: ES/MW Sample ID: CCW-1A-1223				
						Date:	12/18/23 Time: 1	055		
							Analysis:			
						Preservative: —				
lotes:	*Per EPA (2023), O	RP direct measuren	nent data recorded is	"ORP referenced to		electrode". Electrod	le calibrated in	solution.		
otes.				ab for almi	~					
	- Sampl		gal							
	Bottles and A		(collected in o	rder below)	CAYADE ET					
(1)	1 x	500 mL HDPF w/	HNO. 6020 Total I	Matale AD A Cr	D, @, @, Ni, Pb, Z	n) and 1631E (Hg)	1 4 6 6 1 1			
(1)	1 ×	500 mL HDPE W/	HNO ₃ 6020 Dissol	ved Metals (A),(A),	Cr, O.O. O., Ni,	Pb, Zn) and 1631E (F	lg) Y Field	Filtered (0.45µm)		
(1)	1 ×	250ml HD1	PE for Ferra	es Iron						
		Y - Y		S. /1						

DOF DALTON OLMSTED FUGLEVAND			Monitoring Well Sampling Field Sheet Sampling Personnel:			Well No. CCW - 1B Facility/Project: TWAAFA Initial Headspace (ppm) D. (e			
			일이 계면 가게 되었다.			Intial-Water Level before		, '	
ampling	يده/ Method	How peri	ES/MW	total well depth - water			2		
quipment Used:		Well volume = 0.17 * (total well depth - water	(level)		ge/sample with pump on (ft,	8100): 4,04		
Q-451	Pio quetro Pump	Mosterflex	Well Volume =	0-372')×	gal	Pump Intake Depth (ft.87	5 of bottom		
	Purge start time:	1112	Initial Flow Rate:	300	Flow cell disconnected	Index to compliant	d		
	Purge stop time:	1147	Final Flow Rate:	400	Flow cell disconnected	prior to sampling.			
					y Measurement	ts			
					Javar Grysal (C)	-	1		
Time	Water level	Purge Rate	рН	SPC	Temperature	Dissoved Oxygen	Redox Potential *	Turbidity	
(military)	ft	(ml/min)	pH Units	uS/cm	°C	mg/L	mV	(NTU)	
	< 0.33 ft from 2nd reading	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><!--= 0.3 mg/L</td--><td>< 10 mV</td><td>{3 readings} < 5 NTU < 10% if >5 NTU</td></td>	< 3%	= 0.3 mg/L</td <td>< 10 mV</td> <td>{3 readings} < 5 NTU < 10% if >5 NTU</td>	< 10 mV	{3 readings} < 5 NTU < 10% if >5 NTU	
113	3,97	300	6.81	582	12.7	0.31	66.2	26.1	
116	3.99	300	6.86	829	13.1	81.0	69.7	19.4	
119	3.99	300	6.90	883	13.3	0.16	69.8	17.9	
122	3,99	700	6.91	917	13.5	0,18	69.60	13.9	
125	3,96	300	6.92	936	13.5	0.25	68.0	11.7	
128	4.02	400	6.93	946	13.7	0.18	66.1	8.31	
131	4.04	400	6.94	958	13.7	0,17	65.1	4.50	
134	4.04	400	6.94	963	13.8	0.15	63.4	4.44	
137	4.04	400	6.94	970	13.8	0.15	61.8	4.37	
	All paym	5 Stalle	de flow	cell					
140	Collect	-ccw-	1B-1223	" w/ E	KTRA VOL	for MS/M	SD:		
							L		
							TWAAFA 4Q23		
						The second secon	S: ES/MW		
							D: CCW-1B-1223 /18/23 Time: 114		
						Date: 12			
			l'			Analysis: Preserva		0	

					-				
					-		1		
		1					United States	The same of the sa	
lotes:		-	ment data recorded is	s "ORP referenced to		electrode". Electrod	le calibrated in	solution.	
	- MS/MS	VO1 + 2.5	ed here!						
	Bottles and		(collected in c	order helow)	77.1				
(2)			/ HNO ₃ 6020 Total		CO FO M. Ni. Ph	Zn) and 1631F (Ha)			
(3)						Pb, Zn) and 1631E (i	lg) 🔽 Field	d Filtered (0.45µm)	
(3)			PE for Ferror		S. C. G. C. J. M.,		J. LEI HER	е. со (о.нэµm)	
3,				J 1. J. V				-	

	OF 8	ALTON LMSTED UGLEVAND	Monitoring Sampling Pers	Well Sampling	g Field Sheet	Well No. CCW - I C Facility/Project: TWAAFA Initial Headspace (ppm)			
Samplin	a Mother 1	C	Jampling Pers			Intial-Water Level befor	0.0 ppm	1	
Equipme	g Method: اهم ent Used:	flow per.	Well volume = 0.17 *	ES MW (total well depth - wate	r Inval)		urge/sample with pump on (ft	TG'	
WL-920.	VQ - YSi pro quato pump - Hosterflex		Well Volume = 0.17	(total well depth - wate	r level)			100, 9.61	
NQ-YSi Turb-Ges	pro quato pump	- Mouterflex EXS	Well Volume =	23' -9.56	2.3	Pump Intake Depth (ft. E	f bottom		
		1152	Initial Flow Rate:	400		a manage de la versa	ব		
	Purge stop time:	1211	Final Flow Rate:	400	Flow cell disconnecte	d prior to sampling :	lacksquare		
		10.11		THE LANGE OF STRAIN	ty Measuremen	ts			
Time	Water level	Purge Rate	рН	Conductivity	Temperature	Dissoved Oxygen	Redox Potential	Turbidity	
(military)	ft	(mL/min)	pH Units	uS/cm	°C	mg/L	mV	(NTU)	
	< 0.33 ft from 2nd reading	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><!--= 0.3 mg/L</td--><td>< 10 mV</td><td>(3 readings) < 5 NTU or < 10% if >5 NTU</td></td>	< 3%	= 0.3 mg/L</td <td>< 10 mV</td> <td>(3 readings) < 5 NTU or < 10% if >5 NTU</td>	< 10 mV	(3 readings) < 5 NTU or < 10% if >5 NTU	
1153	9.61	430	6.91	7222	14.6	0.15	77.2	10.2	
1156	9.61	400	7.03	2160	14.7	0.43	63.8	8.71	
1159	9.61	400	7.03	2/00	14.7	0.62	55.0	4,15	
1202	9.61	400	7.03	2084	19.7	0.53	49.7	3.21	
1205	9.61	400	7.03	2080	14.7	0:44	45.1	3.91	
	All pari	ns stab	4 d/c flow	o cell					
	1200					Proje	Project: TWAAFA 4Q23 Samplers: ES/MW		
						Sam			
						Sam	Sample ID: CCW-1C-1223 Date: 12/18/23 Time: 1210 Analysis:		
							rvative:		
						.,,,,,	orvauve.		
						1 ==		(11 11 11 11 11 11 11 11 11 11 11 11 11	
						A grant of the contract of			
Notes:	*Per EPA (2023), 0		nent data recorded is	"ORP referenced to		electrode". Electrod	e calibrated in	solution.	
st	UTWEET THE	articles	feeth of the						
9	Bottles and A		_(collected in o		300 W 31 -	-1 4 4 5 3 4 5 11 - 1			
(1)	1 ×	250 mt HDPE W/	HNO. 6020 Dis-	Metals (A) A, Cr, (Cr. Ch. (Ch. Ch. H.)	n) and 1631E (Hg) Pb, Zn) and 1631E (H	a) [7]	Filtered (0.45µm)	
(1)			F for Ferral		cr, Edite, Mil, I	ro, Ziij and 16312 (H	s) 🔽 Field	ritered (0.45μm)	
100	X	POOM LINE	- les Leiver	3 17 04					

_	OF P		FE 1/13/11	Well Sampling	g Field Sheet	Well No. CCW - QA Facility/Project: TWAAFA			
Pate:	2/14/23	200000	Sampling Pers	onnel:		Initial Headspace (ppm)	UDAL -	let dissapate	
amplin	g Method: 1	o flow per.	ES	/MW		Intial-Water Level befor	e purge (ft. BTOC) 2.1	3	
- daibille	quipment Used: 12-9CO #7068 PID DVI 6000		Well volume = 0.17 *	(total well depth - water	r level)	End-Water Level post po	urge/sample with pump on (ft.	BTOC): 2.17	
VC - 700	Dra Gratia	14 6 800	Well Volume =			Pump Intake Depth (ft.E			
urb - ge	tulo Pump	E/S	weii voiume =	1=07-21	2 120.6	~1	off bottom		
ju.	Purge start time:	1210	Initial Flow Rate:	150	Ober Many or Short or				
	Purge stop time:		Final Flow Rate:	150	Flow cell disconnected	prior to sampling :			
_		1249		100 CO					
				Water Quain	ty Measuremen	ts			
Time	Water level	Purge Rate	рН	SPC	Temperature	Dissoved Oxygen	Redox Potential	Turbidity	
(military)	ft	(mL/min)	pH Units	uS/cm	°C	mg/L	mV	(NTU)	
	< 0.33 ft from 2nd reading	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><!--= 0.3 mg/L</td--><td>< 10 mV</td><td>{3 readings} < 5 NTU < 10% if >5 NTU</td></td>	< 3%	= 0.3 mg/L</td <td>< 10 mV</td> <td>{3 readings} < 5 NTU < 10% if >5 NTU</td>	< 10 mV	{3 readings} < 5 NTU < 10% if >5 NTU	
212	2.17	150	6.64	1244	11.3	0.14	90.4	4.94	
215	5.0	150	10.54	1213	11.3	0.07	94.1	4.06	
218	207	150	6.54	1215	11.4	0.09	94.6	3.69	
221	2.17	150	4.54	1187	11.4	0.13	93.1	2.70	
224	2.17	150	6.54	1141	11.5	0.17	91.1	3.80	
227	2.17	150	6.54	1128	11.5	0.14	89.7	2.51	
230	2.17	150	6.54	1093	11.5	0.13	87.4	1.97	
233	2.17	150	6.54	1063	11.6	0.13	82.3	1.76	
عادي	2.17	150	6.53	1048	11.6	0.12	83.9	3.51	
237	2.17	150	6,53	1034	11.6	0.12	81.9	2.84	
	All par	ms stabl		cell					
245	Collect	-ccw-	2A-1223	"					
						Project: TWA	AFA 4Q23		
						Samplers: ES			
1							CCW-2A-1223	<u> </u>	
						Date: 12/14/2	23 Time: 1245		
						Analysis:			
				-	-	Preservative:		-	
			-						
		0.707		WATER VENTORIAL AV		S. // S. I. C.	21 - 12 - 12		
lotes:				s "ORP referenced to		electrode", Electro	de calibrated in	solution.	
	- Gw has		My tubing (d	wk)					
	- sample		(collected in a	redor holess					
9	Bottles and A				70 CD 11 71 71	(a) and a coas (to)			
(1)				Metals (A), (S) Cr, (ua) 🗹 🖽	Eiltored (O. 45)	
(1)			DPE For Fer		CI, CUI CO, NUI, NI,	Pb, Zn) and 1631E (Hg) U Field	l Filtered (0.45μm)	
11	, X	L30 M	MIE TON TEN	vous Ivon					

ate: \	DOF DALTON OLMSTED FUGLEVAND			Monitoring Well Sampling Field Sheet			Well No. CCW-2B Facility/Project: TWAAFA			
ampling	2/14/23		Sampling Pers			Initial Headspace (ppm)	V.0 PF-			
ampling Method: low flow peri		flow peri	ES/M	W			re purge (ft. BTOC) 2.8			
quipmer	nt Used:	NACE AND SEC	Well volume = 0.17 *	(total well depth - water	r level)	End-Water Level post po	urge/sample with pump on (f)	BTOC): 3.02		
12-900 #	17068 PID-	PIKI-WOOD Masterturk	Well Volume =	1 92 1 1 7 1	. 17	Pump Intake Depth (ft.8	втос):			
urb-gw	turb	E15	17(1	150	5)= gol	~ /	off bottom			
1.1	Purge start time:		Initial Flow Rate:	150	Flow cell disconnected	f prior to sampling :	M			
	Purge stop time:	1413	Final Flow Rate:	150	77 - 17 - 17					
				Water Qualit	ty Measurement	ts				
Time	Water level	Purge Rate	рН	SPC	Temperature	Dissoved Oxygen	Redox Potential	Turbidity		
(military)	ft	(mt/min)	pH Units	uS/cm	°C	mg/L	mV	(NTU)		
	< 0.33 ft from 2nd reading	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><!--= 0.3 mg/L</td--><td>< 10 mV</td><td>{3 readings} < 5 NTU o < 10% if >5 NTU</td></td>	< 3%	= 0.3 mg/L</td <td>< 10 mV</td> <td>{3 readings} < 5 NTU o < 10% if >5 NTU</td>	< 10 mV	{3 readings} < 5 NTU o < 10% if >5 NTU		
1338	2.87	150	6.68	1953	13.60	0.20	114.9	1.23		
3411	3.02	150	6.86	1933	13.8	0.14	108.4	0.19		
344	3.08	150	60.99	1934	13.8	0.11	103.2	0.78		
13417	3,13	150	7.04	1931	13.8	0.10	99.9	1.50		
350	3.16	150	7.08	1928	13.8	0.09	95,4	0.60		
1		is Stable	dic flow			717 1				
						—— Samplers	D: CCW-28-1223 14/23 Time: 1355 **MS/M<1	* ====================================		
_	*Per EPA (2023), OI - Sample		nent data recorded is	s "ORP referenced to		electrode", Electrod	e calibrated in	solution.		
<u> </u>	- MS/MS Bottles and A	O (sulec'inalyses:	collected in c	rder below)			out Gorgot filter	1		
127 -	3 x	500 mL HDPF w/	HNO, 6020 Discol	Metals (A), (As, Cr, C)	Ni, Pb, Zr	n) and 1631E (Hg) Pb, Zn) and 1631E (H	/	ALACAS, VALOR		
K -		250 ml HC	OPE for Ferra	us Iron	Cr, Cy, Cy, IVII), NI, P	rb, Zn) and 1631E (H	lg)	Filtered (0.45µm)		

	OF R	LMSTED JGLEVAND	Monitoring Sampling Pers	Well Sampling	g Field Sheet	Well No. CCW - 2C Facility/Project: TWAAFA Initial Headspace (ppm)			
anette	2/14/23					Intial-Water Level before	DIZPP-	43	
ampling	Method: /o	oflaw per.	ES/M	(total well depth - water	r lavel)		W . 10	PTOC): A = a	
- aaibiiie	THE LICENT		Well volume = 0.17	(total well depth - water	r level)		rge/sample with pump on (ft.	8.73	
VQ - VO F	C- YO # 7008 PID. DX1-6000		Well Volume =		2.6	Pump Intake Depth (ft.8	1001 0 102 at 0		
urb - que	drut.	E13	.17(1	4' - 868) = gol	~2.5	off bottom		
	Purge start time:	1116	Initial Flow Rate:	400	Flow cell disconnected	DAG TO A SHART TO SEE A STATE OF THE SECOND	1		
	Purge stop time:	1142	Final Flow Rate:	400		, , , , , , , , , , , , , , , , , , , ,			
				Water Qualit	ty Measuremen	ts			
Time	Water level	Purge Rate	рН	SPC	Temperature	Dissoved Oxygen	Redox Potential	Turbidity	
(military)	ft	(mL/min)	pH Units	uS/cm	°C	mg/L	mV	(NTU)	
	< 0.33 ft from							{3 readings} < 5 NTU	
	2nd reading	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><!--= 0.3 mg/L</td--><td>< 10 mV</td><td>< 10% if >5 NTU</td></td>	< 3%	= 0.3 mg/L</td <td>< 10 mV</td> <td>< 10% if >5 NTU</td>	< 10 mV	< 10% if >5 NTU	
1117	8.73	400	6.89	1749	13.8	0.33	137.0	6.07	
1120	8.72	400	6.92	1723	13.8	0.15	123.7	1.82	
123	8.73	400	6,93	1707	13,9	0.16	114.8	2.36	
1126	8.73	4/00	6.93	1718	13.9	0.22	108.9	2.81	
1129	8,73	400	6,94	1702	14.2	0.40	92.5	3.13	
132	8,73	4/00	6.94	1720	14.0	0.36	93.4	1.25	
1135	3.73	4/00	6.94	1707	13.9	0.31	91.6	2.99	
16.10			4, de Ho						
1140	Collect	- cen	-2c-12	73.					
_			+		1		+		
							1		
	11 11 11 11								
							and the state of t		
				la garage		- ngayla			
							: TWAAFA 4Q23 ers: ES/MW		
							e ID: CCW-2C-122	3	
							12/14/23 Time: 11		
						Analys		-	
						The Part of the Pa	vative:		
							7		
Notes:				is "ORP referenced to		electrode". Electro	de calibrated in	solution.	
		yol + 2	is gol						
		ed off	9						
7	Bottles and		_(collected in		13.12.65				
111	x	500 mL HOPE W	/ HNO ₃ 6020 Total	Metals (A), (Cr.	(O), (De, 1402, Ni, Pb,	Zn) and 1631E (Hg) Pb, Zn) and 1631E (
(1)			/ UNIO CORO DI	M. M. slestels A. Level	C. CO ES MA NI	Dh 7n) and 1631E/	Hal Field	Filtered (0.45µm)	
(1)		250 ml HDPEW	ADPE For fer	ived ivietais (A), (S),	C1, 69, 04, 1811, 141,	FB, 211) and 1031E (167	riiterea (0.45µm)	

(2) 3 = Total Bottles

	OF P			g Well Sampling	g Field Sheet	Well No. CCW - 3A Facility/Project: TWAAFA Initial Headspace (ppm)			
Date: 1	2/14/23		Sampling Per	1201		1100 51005 7505	Bilo PPM		
Sampling	g Method: المر	s flow per.	ES/HV			Intial-Water Level befor		11, (38,000	
equipme	ent Used:	711-6000	Well volume = 0.17	total well depth - wate	r level)	End-Water Level post p	urge/sample with pump on (ft	. BTOC): 3,38	
WQ-VSI	Pro Questro Pump	Masterfler	Well Volume =		175	Pump Intake Depth (ft.)			
Turb - 720	turb.	E15	171	7.6'-3.3	4)= gal	~	1" off bottom		
	Purge start time:	0948	Initial Flow Rate:	300	Flow cell disconnected	prior to sampling	N		
	Purge stop time:	1011	Final Flow Rate:	150					
					ty Measurement	ts			
Time	Water level	Purge Rate	рН	Conductivity	Temperature	Dissoved	Redox Potential	Turbidity	
(military)	ft	(mL/min)	pH Units	uS/cm	°C	Oxygen mg/L		(NITH)	
(mical f)	< 0.33 ft from				- 700	Laboration of the	mV	(NTU) {3 readings} < 5 NTU or	
	2nd reading	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><!--= 0.3 mg/L</td--><td>< 10 mV</td><td>< 10% if >5 NTU</td></td>	< 3%	= 0.3 mg/L</td <td>< 10 mV</td> <td>< 10% if >5 NTU</td>	< 10 mV	< 10% if >5 NTU	
0750	3.36	120	6.81	1334	12.5	0.23	119.1	13.4	
5280	3.32	150	4.76	1357	11.8	D.23	131.2	/1.38	
0956	3,30	150	6.76	1365	11.9	0.43	134.2	11.9	
0959	3.31	150	6.76	1377	11.8	0.42	136.5	10.7	
002	3.31 All pam	150	6.76	1376	12.2	0:36	137.4	11.5	
						Samplers: E	TWAAFA 4Q23 #s: ES/MW		
						Date: 12/14/ Analysis: Preservative	23 Time: 1005		
	*Per EPA (2023), O			s "ORP referenced to		electrode". Electrod	e calibrated in	solution.	
(1) (1) (1)	1 x.	500 mL HDPE w/ 500 mL HDPE w/	(collected in c HNO ₃ 6020 Total I HNO ₃ 6020 Dissol	Metals (A), (S) Cr, (C) ved Metals (A), (A), (C)	, , , , , , , , , , , , , , , , , , ,) and 1631E (Hg) ၍ ကြ) and 1631E (H	g) 🗹 Field F	Filtered (0.45µm)	

	OF:	LMSTED UGLEVAND		Well Samplin	g Field Sheet	Well No. CC Facility/Project:	TMAAEA	
Date: 1	2/14/23		Sampling Pers	sonnel:		Initial Headspace (ppm)	~28.5 ppm	12-11-11-11-11-11-11-11-11-11-11-11-11-1
Samplin	g Method: /s	w Howper.	ESIMO	٥		Intial-water Level before	e purge (ft. BTOC)	3° (sticked)
Equipme	ent Used.		Well volume = 0.17 *	(total well depth - wate	r level)	End-Water Level post pu	rge/sample with pump on (ft.	BTOC): 4.17
WQ-45	47068 PID-	Martin	Well Volume =		. 7	Pump Intake Depth (ft.B	TOC):	
Turb - 34	o. teurb	EIS	17/10	1.8-3:73'	12 900	~1	off bottom	
	Purge start time:	1022	Initial Flow Rate:	25003	Flow cell disconnected	d prior to sampling	Tel Colonia	
	Purge stop time:	1044	Final Flow Rate:	350		prior to sumpling .		
					y Measuremen	ts		
Time	Water level	Purge Rate	рН	SPC Conductivity	Temperature	Dissoved Oxygen	Redox Potential	Turbidity
(military)	ft	(mL/min)	pH Units	uS/cm	°C	mg/L	mV	(NTU)
	< 0.33 ft from 2nd reading	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><!--= 0.3 mg/L</td--><td>< 10 mV</td><td>{3 readings} < 5 NTU < < 10% if >5 NTU</td></td>	< 3%	= 0.3 mg/L</td <td>< 10 mV</td> <td>{3 readings} < 5 NTU < < 10% if >5 NTU</td>	< 10 mV	{3 readings} < 5 NTU < < 10% if >5 NTU
1024	4.08	350	6.93	1207	13.9	0.51	123.6	7.65
1027	41.13	350	6.86	1221	14.1	0.57	119.0	7.15
1030	4/13	350	6.85	1238	14.1	0.53	114.7	4.91
1033	4.16	350	6.84	1250	14.2	0.44	112.5	4.19
1036	4.16	350	6.84	1257	14.3	0.38	110.5	3.23
1040	Court	S Stables	die flow	cell	TIY H THE	L WAY -		
				- Planto				
						Project: TW/ Samplers: E Sample ID:	S/MW CCW-3B-1223	
						Date: 12/14 Analysis: Preservativ		
	*Per EPA (2023), Of	RP direct measuren	nent data recorded is	"ORP referenced to		electrode". Electrode	calibrated in	solution.
Notes:	- Poin has	s eday						
Notes:			Saal					
	- Sample			A STATE OF THE PARTY OF THE PAR				
7	— Sawqu Bottles and A	nalyses:	(collected in o		000	Augustus de la compansión		
7 (1)	- Sangu Bottles and A	nalyses: 500 mL HDPE w/	(collected in o	Metals (A) (A) Cr. E),(G), (M), Ni, Pb, Zi	n) and 1631E (Hg)	. 🗖	
7	- Savigu Bottles and A X X	nalyses: 500 mL HDPE w/ 1分か mL HDPE w/	(collected in o	Metals (A),(G) Cr, (C) wed Metals (A),(B s, (),(@, (Ø), Ni, Pb, Zi cr, (Ø),(&, (ŵ), Ni, F	n) and 1631E (Hg) Pb, Zn) and 1631E (H	g) 🗹 Field I	Filtered (0.45µm)

	OF	LMSTED JGLEVAND	VINCTURE AND	Well Sampling	g Field Sheet	Facility/Project:		
Date: \	2/14/23		Sampling Pers			Initial Headspace (ppm)	C. I proc	
	g Method: امن	flow Mer.	FSIN	W		Intial-Water Level before	e purge (ft. BTOC) 12 .3	13 (stroky
equipme	ent Used:			(total well depth - wate	r level)		urge/sample with pump on (ft.	
Nr - Jro#	Pro quido Pump	K1-6000	LICENSON T			Pump Intake Depth (ft.	STOC):	12.02
WQ - 35 Turb - 920	turp.	E15	Well Volume = ⇒17 (23'	-12.31) 2	1.8gol	~12 off	botton	
(F_1)	Purge start time:	0909	Initial Flow Rate:	400	Flow cell disconnected	d prior to sampling :	N	
	Purge stop time:	0933	Final Flow Rate:	300				
				Water Qualit	ty Measuremen	ts		
Time	Water level	Purge Rate	рН	SPC Conductivity	Temperature	Dissoved Oxygen	Redox Potential	Turbidity
(military)	ft	(mL/min)	pH Units	uS/cm	°C	mg/L	mV	(NTU)
	< 0.33 ft from 2nd reading	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><!--= 0.3 mg/L</td--><td>< 10 mV</td><td>{3 readings} < 5 NTU c < 10% if >5 NTU</td></td>	< 3%	= 0.3 mg/L</td <td>< 10 mV</td> <td>{3 readings} < 5 NTU c < 10% if >5 NTU</td>	< 10 mV	{3 readings} < 5 NTU c < 10% if >5 NTU
0910	12.32	400	7.22	1336	14.0	2.89	181.3	5.05
0913	12.31	300	6.80	1341	14.0	2.91	167.2	4.48
0916	12.32	300	6.77	1361	14.1	2.95	160.6	4,10
0919	12.32	300	6:76	1387	14.0	2.55	152.4	41,411
0922	12.32	300	6.75	1408	141.1	0.20	145.3	3.83
0925	12.32	300	6.75	1424	14.1	0.19	140.6	1.31
0928	12,32	300	6.74	1436	14.1	0.19	136.7	1.73
	All Pa	ums sta	ple, d/c	flow cell				
0930	Collec	+ "cch	-3c-12	23"				
						1		
							AAFA 4Q23	
						Samplers: E		
							CCW-3C-1223	
						Date: 12/14	23 Time: 0930	
						Analysis: Preservative		
			-			- rieseivauve	•	
Notes:	*Doc EDA (2022) O	DD disagt	and date of the second	lone (10 10 10 10 10 10 10 10 10 10 10 10 10 1		- WAN / 1.2
77,5702.4	Sample 1		nent data recorded is	ORP referenced to		electrode". Electrod	e calibrated in	solution.
			gal					
	Bottles and A		se <u>Cliaved</u> (collected in o	rder below)				
7 (1)				Metals 🚱, 🔇, Cr, 🥃	1 60 60 MI DL -	(n) and 15315 (t)-1		
(1)	- 1 ×	500 mL HDPF w/	HNO ₃ 6020 Total I	vietais (A), (G), (Cr, (C	Cr (2) (2) (1), PD, Z	n) and 1631E (Hg) Pb, Zn) and 1631E (H	(a) [7]	enanta (S. 15
(1)	1 2	150-4 400	Flor Ferrons	ved Metals (By, K),	راه راها المالية المحال المحال المحال	ru, znj and 1631E (F	rield	Filtered (0.45µm)
		IN 1101	- WE VERLA	1 V CI A				

(3) 3 = Total Bottles

	OF \$	ALP, DATE STORES	Monitoring Sampling Pers	well Sampling	g Field Sheet	Well No. Constitution Facility/Project: Initial Headspace (ppm)		
			ES/			Intial-Water Level before	O. Oppio	ø,
	g Method: ای			(total well depth - wate	r level)	bearing and an arrangement of the second	rge/sample with pump on (ft	BTOC): 10 70
WL-9cot	Pro Greater Pump	2K1-6000	M. Adenig Chief	Consider the state of the control of	10000	Pump Intake Depth (ft.B		10.20
NO-AS	pro quatro Pump	-Mastertlex	Well Volume =		2.3	An investigation of the state o	off bottom	
Turb-ge	O twb. Purge start time:	610	171	24' - 1011	B) ~ gre	~ 2.5	OH 200	
		1328	Initial Flow Rate:	350	Flow cell disconnected	d prior to sampling :	7	
	Purge stop time:	1349	Final Flow Rate:	400	A Section of	17 97 97 100		
				Water Qualit	ty Measuremen	ts		
Time	Water level	Purge Rate	рН	Conductivity	Temperature	Dissoved Oxygen	Redox Potential	Turbidity
(military)	ft	(mL/min)	pH Units	uS/cm	°C	mg/L	mV	(NTU)
	< 0.33 ft from	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><!--= 0.3 mg/L</td--><td>< 10 mV</td><td>(3 readings) < 5 NTU or</td></td>	< 3%	= 0.3 mg/L</td <td>< 10 mV</td> <td>(3 readings) < 5 NTU or</td>	< 10 mV	(3 readings) < 5 NTU or
1330	2nd reading	350	7,20	2159	14.71	10.41	28.2	7,53
333	10.20	400	10.98	2139	14.8	0.07	36.9	4.74
1334	10.20	400	6. 43	2122	14.9	0.20	34.0	3. 25
1339	10.20	400	6.92	2116	14.8	0.14	35.1	3.93
1342	10.20	400	6.91	2116	111.9	0.10	33.1	2,93 20
		ms Stabl	1 3/1 0	in cell		0.,0		12.12
1345	Collect	"ccw-	4c-122	3"				21100
			2.1					
							THANKA ACC	
	,						: TWAAFA 4Q23 ers: ES/MW	
							e ID: CCW-4C-122	3
							12/18/23 Time: 1	
						Analys		
							rvative:	
			1				COLOR DE LA COLOR	
Notes:				s "ORP referenced to		electrode". Electrode	e calibrated in	solution.
	-S'Ample	1st + 175	sque					
T	2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		/0					
	Bottles and A		(collected in c	order below)	S 60			
	Y	DO ML HDPE W/	HNO ₃ 6020 Total	Metals @ Cr, C	y, 🔞 🧑, Ni, Pb, Z	n) and 1631E (Hg)		
(1)	^_	500 1100-	LINIO COOR), Ni, Pb, Zn) and 1631E (Hg)		
(1) (1)	X	500 mL HDPE w/	HNO, 6020 Dissol PE for Fervo.	ved Metals((Al)(A), (Cr, (3), (5), (1)n, Ni, F	Pb, Zn) and 1631E (H	g) <u>V</u> Field	Filtered (0.45µm)

ate: /2	OF	JGLEVAND	wionitoring	Well Sampling	, rieid sneet	Well No. CC Facility/Project:	TWAAFA		
ampling N	/19/23		Sampling Pers	onnel:		Initial Headspace (ppm) O.O ppm			
	Method:	Howperd	ES/			Intial-Water Level before purge (ft, BTOC)			
quipment	t Used:		Well volume = 0.17 *	(total well depth - water	level)	End-Water Level post purge/sample with pump on (ft. BTOC): 2.68			
ges #7	oquation pump	2161-6000	Well Volume =		-100	Fump Intake Depth (ft B	TOC):	2100	
urb-920 .+		E/5	ורו.	10'-2.66)	- 1.25	~2'	off bottom		
F1.0 7	Purge start time:	1250	Initial Flow Rate:	400	the register of the second state and	TO LET COMPLEX FOR T			
	Purge stop time:	1222	Final Flow Rate:	400	Flow cell disconnected	f prior to sampling :	\square		
		1)1		The state of the s	y Measuremen	ts			
		20 CA 2077		SPC		Dissoved	Redox Potential		
Celuid	Water level	Purge Rate	рН	Conductivity	Temperature	Oxygen	*	Turbidity	
military)	ft	(mL/min)	pH Units	uS/cm	°C	mg/L	mV	(NTU)	
	< 0.33 ft from 2nd reading	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><!--= 0.3 mg/L</td--><td>< 10 mV</td><td>{3 readings} < 5 NTU < 10% if >5 NTU</td></td>	< 3%	= 0.3 mg/L</td <td>< 10 mV</td> <td>{3 readings} < 5 NTU < 10% if >5 NTU</td>	< 10 mV	{3 readings} < 5 NTU < 10% if >5 NTU	
	2,68	400	4.40	1420	13.7	0.*	88.5	21,2	
	2.08	400	6:41	1390	13:60	0.35	88.7	17.6	
	2.68	400	6,42	137008	13.5	0.14	84.9	16.5	
	2,68	400	6.40	1447 1312		0.10	83.0	6.42	
	2:08	400	6,42	1335	13.5	0.09	80.1	5,60	
	2,68	400	6142	1293	13.4	0.10	77.6	4,12	
	7,68	400	6,41	1269	13.4	0,10	75.6	3:32	
	2.08	400	6.40	1253	13.4	0,10	73.7	4.63	
315	All parm		de flas	cell			-		
512	Collect	· ccw ·	58-12	5.7					
							V		
- 1									
							A STANKE WATER		
						Proj	ect: TWAAFA 4Q23		
						Sam	nplers: ES/MW nple ID: CCW-58-1	223 —	
							e: 12/19/23 Tim	e: 1315 ——	
						(LL	e: 12 19125	-	
			-				eservative:	-	
						1.10			
		Vic. minus	ment data recorded is	ASSESSMENT OF THE RES		electrode". Electrod		solution.	

	OF &	ALTON LMSTED JGLEVAND	CAR AND	Well Sampling	g Field Sheet	Well No. Facility/Project:		
	12/19/23		Sampling Pers			Initial Headspace (ppm)	O.Oppm	
ampling	g Method: low	colt c	ES			Intial-Water Level before		3'
quipme	ent Used:	(Well volume = 0.17 *	(total well depth - water	r level)	End-Water Level post pu	rge/sample with pump on (ft	BTOC): 8,68'
VO -VSI	PID - (24.0000	Well Volume =			Pump Intake Depth (ft.B	TOC):	
urb - ge	o trap	E/S	-17	(24' -8.63)	2.50	~7.	off bottom	
9.	Purge start time:	1329	Initial Flow Rate:	- 8102)	- gar			
	Purge stop time:	1356	Final Flow Rate:	350	Flow cell disconnected	prior to sampling :	\Box	
		1330		The state of the s	350			
				water Quain	y Measurement	is		
Time	Water level	Purge Rate	рН	SPC	Temperature	Dissoved Oxygen	Redox Potential *	Turbidity
(military)	ft	(mL/min)	pH Units	uS/cm	°C	mg/L	mV	(NTU)
	< 0.33 ft from 2nd reading	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><!--= 0.3 mg/L</td--><td>< 10 mV</td><td>{3 readings} < 5 NTU</td></td>	< 3%	= 0.3 mg/L</td <td>< 10 mV</td> <td>{3 readings} < 5 NTU</td>	< 10 mV	{3 readings} < 5 NTU
332	80.8	350	6.48	1709	14.5	0.11	92.8	<10% if >5 NTU
335	8,68	350	6.52	1709	14.6	0.09	89.4	19.1
1338	8.68	350	6.53	1723	14.6	0.13	8607	9.24
341	8.68	350	10.53	1725	14.6	0.17	84.8	8.65
1344	82.8	350	6.54	1734	14.6	0.16	82.7	3.73
1347	8:68	350	6.54	1724	14.6	0.14	81.0	3.50
1350	8.68	350	10.54	1738	14.6	0.17	79.2	4:39
355	Collect	" CCW -			Tara Land	1		
AIL	parms s	stable,	a/c flow	cer 2				
	1		19-1-1-1					
			1					
-			+					
_			-		-			
_			+					
-		-	-				_	
			1	7			t: TWAAFA 4Q23	
			1-2-2-			7 20 20 20 20 20 20 20 20 20 20 20 20 20	lers: ES/MW	
						2000 100	le ID: CCW-5C-122	
								: 1355 ———
						Analys	sis: rvative:	1112
				1		Fiese	vauve.	
			11					
Notes:				is "ORP referenced to		electrode". Electrod	e calibrated in	solution.
	- Sampu	Vol + 2.5	s gal				1111	
٤		nahanaa	(nallasts 1)	ender betein				
	Bottles and A		_ (collected in a		0 (C) 111 51 -	401,411,611		
(1)	X	MI HOPE W	/ HNO ₃ 6020 Total	Metals (A) (A), Cr, (Cr. COLCED TO D. NI.	n) and 1631E (Hg) Pb, Zn) and 1631E (H	n 17	Filtered (0.45
(1)			PE for Ferri		Ci, Wi, Ni,	D, 211) and 1631E (H	g) Field	Filtered (0.45µm)
(1)		Proposition 112	TEVVI	W 110K				

Sampling Personnel: Sampling Method: low flow flow Equipment Used: WL-960 H TOLO PID-RICI- 4000 WQ-751 Pro quarto Pump - Maskuflux Turb-960 tavlo. Purge start time: 0954 Purge stop time: 1037 Sampling Personnel: Well volume = 0.17 * (total well depth - water level) Well volume = 1.1 Initial Flow Rate: 350 Flow cell disco	Initial Headspace (ppm) O.Oppm Intial-Water Level before purge (ft. BTOC) /, 98' End-Water Level post purge/sample with pump on (ft. BTOC): 1,98 Pump Intake Depth (ft.BTOC): ~ 2' off both
Equipment Used: WL-9(0, H-7008 PID-RU) - 1000 WQ-951 Pro quite Pump - Haskuffur Furb-960, turb. Purge start time: 0954 Well volume = 0.17 (total well depth - water level) Well volume = 1.1 Well volume = 0.17 (total well depth - water level) Well volume = 0.17 (total well depth - water level) Well volume = 0.17 (total well depth - water level)	End-Water Level post purge/sample with pump on (ft. BTOC): 1.98 Pump Intake Depth (ft.BTOC):
VL-9(0, #7000 PID-RICI- 4000 VQ-951 Pro quarto Pump - Maskuffur Well Volume = 1.1 Furb-9(0, turb). E/S .17(9,5'-1.98') = quarto Purge start time: 0954 Initial Flow Rate: 350 Flow cell disco	Pump Intake Depth (ft.BTOC):
Purb - 9(0, tavb. E/S .17(9.5' -1.79') = 900 Purge start time: 0954 Initial Flow Rate: 350 Flow cell disco	The than
Purge start time: 0954 Initial Flow Rate: 350 Flow cell disco	
, ow tell disco	onnected prior to sampling :
1032	The state of the s
Water Quality Measure	ements
Time Water level Purge Rate pH Conductivity Tempera	Dissoved Redox Potential Turbidity
(military) ft (mL/min) pH Units uS/cm °C	mg/L mV (NTU)
< 0.33 ft from 2nd reading < 500 mL < 0.1 unit = 3% < 3%</td <td><!--= 0.3 mg/L < 10 mV {3 readings} < 5 NTU < 10% if -->5 NTU</td>	= 0.3 mg/L < 10 mV {3 readings} < 5 NTU < 10% if 5 NTU
1956 1.98 350 7.68 814 12.6	2.28 29.8 63.2
0959 1.98 400 6.78 879 04	12.7 58.3 27.6
002 1.98 400 6.55 924 12.7	
005 1.98 400 6.42 973 12.7	0 70.4 16.4
008 1.98 400 6.37 1015 12.6	0 71.4 11.5
011 198 400 6.33 1050 12.7	
014 1,98 400 6.31 1076 12.7	0 74.8 4.19
017 1.98 400 6.30 1103 12.6	
020 1.78 400 6.29 1120 12.6	0 77.3 4.43
All parms stable, exc flow cell	0 11.1 9.21
025 Couect "cow- 68-1223"	Project: TWAAFA 4Q23
030 Calect "ccw-9-6B-1223"	Samplers: ES/MW
	Sample ID: CCW-68-1223 Date: 12/19/23 Time: 1025
	Date. 12 to 2
	Analysis: Preservative:
	Project: TWAAFA 4Q23
	Samplers: ES/MW
	Sample ID: CCW-9-68-1223 —
	Date: 12/19/23 Time: 1030 —— Analysis: FIELD ——
	Analysis: FIELD -
	Preservative: DuPE —

D		ALTON DLMSTED UGLEVAND	A MAYOUR	Well Samplin	g Field Sheet	Facility/Project:			
Date:	2/19/23		Sampling Pers	onnel:		Initial Headspace (ppm)	U. U ppm		
Samplin	g Method: 10.	s flow per.	ESIMU)		Intial-Water Level before purge (ft. BTOC) 8.27			
Equipme	ent Used:		Well volume = 0.17 *	(total well depth - wate	r level)	End-Water Level post pu	urge/sample with pump on (ft.	BTOC): 8, 59 1	
WQ - YSI (Turb - ge	#7068 PID-1	-Mashathat E15	Well Volume =	3'-8.27)	2.5 = gal	Pump Intake Depth (ft.BTOC): - 2" off bottom			
	Purge start time:	1039	Initial Flow Rate:	400	Flow cell disconnecte	d prior to compling :	ব		
	Purge stop time:	1107	Final Flow Rate:	400	Thow cell disconnecte	o prior to sampling .			
				Water Quali	ty Measuremen	ts			
Time	Water level	Purge Rate	рН	SPC Conductivity	Temperature	Dissoved Oxygen	Redox Potential	Turbidity	
(military)	ft	(mL/min)	pH Units	uS/cm	°C	mg/L	mV	(NTU)	
	< 0.33 ft from 2nd reading	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><!--= 0.3 mg/L</td--><td>< 10 mV</td><td>{3 readings} < 5 NTU or < 10% if >5 NTU</td></td>	< 3%	= 0.3 mg/L</td <td>< 10 mV</td> <td>{3 readings} < 5 NTU or < 10% if >5 NTU</td>	< 10 mV	{3 readings} < 5 NTU or < 10% if >5 NTU	
1041	8.59	400	6.43	4369	13.8	0*	126.2	15.6	
1044	8.59	400	6.51	4258	13.8	0	117.2	12.9	
1047	8.59	400	6.53	4207	13.9	D	111.8	10.9	
1050	8.59	400	6.55	4/185	13.9	0	108.3	10.55	
1053	8.59	0000	6.56	4146	14.1	0	95.4	6.80	
1056	8,59	400	6.56	4151	13.9	0	95.9	4.50	
1059	8.59	400	10.57	4/14/	13.9	0	95.9	4.42	
1102	8.59	400	(0.57	4121	13.9	0	95.2	3.83	
	All pari	ns Stak	se, 1/2 fl	ow cell				Transition in	
1105			60-12			(
					1				
-						P			
							379		
			(=			Pro	ject: TWAAFA 4Q23	· -	
							mplers: ES/MW		
							mple ID: CCW-6C-1		
						Da	te: 12/19/23 Tim	e: 1105	
L E.							alysis:		
						Pre	eservative:		
							1		
Notes:	*Per EPA (2023), O		ment data recorded is	"ORP referenced to		electrode". Electrod	e calibrated in	solution.	
	- Swing vo	corded as	Day, A	A 1.0	E - 1002 1	103	16 1 6 4		
<u>*</u> -	Bottles and A	nalyses:	(collected in c	rder below)	16 1053, 6	er rudings Se	Hudown for Im.	n	
V				Metals (A)A), (C), (C)	0 50 M AII DL 7	Re-dox	1		
(1)	+ -	120 HOPE W	HNO. 6020 Disc-1	vietais (exe), ex (3 (C) (B) (N), PB, 2	n) and 1631E (Hg) Pb, Zn) and 1631E (H	+	Cilbared (O. Ar)	
(1)	1 ×	1604 1100	For Furous	ved ivietais (A)(A),	O'CHACK, MI, NI,	ru, 2n) and 1631E (F	ig) Field	Filtered (0.45µm)	
(0)	X	DAMA HIM	C ADI LANION?	MON					

(2) 3 = Total Bottles

D	OF	ALTON LMSTED UGLEVAND	Monitoring	Well Sampling	g Field Sheet	Well No. CCW-78 Facility/Project: TWAAFA			
ate:	21.050	87.504-01.00	Sampling Pers	onnel:		Initial Headspace (ppm			
	2/19/23	•				Intial-Water Level befo	0.9	0'	
ampini	g Method: /من	flas peri	ES/MW	(total well depth - wate	r level\	100 11110 0710 127	111	2'	
/L-Stot	#7068 PID	21/1-1/100	Tres volume = 0.17	(total well depth - wate	rievely		ourge/sample with pump on (fi	1.92	
10-42 I	pro quetropump	- Masterflux	Well Volume =	,	12	Pump Intake Depth (ft.BTOC):			
urb-ger	turb.	E/S	-17	400) a got	~2'	off bottom		
	Purge start time:	1152	Initial Flow Rate:	400	Flow cell disconnected	d prior to sampling :	V		
	Purge stop time:	1226	Final Flow Rate:	400	1000				
		X		Water Quali	ty Measuremen	ts			
Time	Water level	Purge Rate	рН	ゴPC Conductivity	Temperature	Dissoved Oxygen	Redox Potential	Turbidity	
(military)	ft	(mL/min)	pH Units	uS/cm	°C	mg/L	mV	(NTU)	
	< 0.33 ft from 2nd reading	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><!--= 0.3 mg/L</td--><td>< 10 mV</td><td>{3 readings} < 5 NTU o < 10% if >5 NTU</td></td>	< 3%	= 0.3 mg/L</td <td>< 10 mV</td> <td>{3 readings} < 5 NTU o < 10% if >5 NTU</td>	< 10 mV	{3 readings} < 5 NTU o < 10% if >5 NTU	
154	1.92	400	6.85	842	12.9	0.19	34.6	5.37	
157	1.92	400	6.411	894	12.9	0.14	53.4	4.03	
100	1.92	400	6.34	907	12.9	0.13	57.0	4.00	
203	1.42	4/00	6.31	925	12.8	0.14	58.7	4.42	
200	1,92	400	6.29	952	12.8	0.15	59.6	4.73	
209	1.92	400	6.28	969	12.8	0.16	59.8	4.73	
212	1.92	400	6.28	1007	12.8	0.17	6011	3.77	
215	1.92	1/00	6.27	1017	12.9	0.16	60.0	3,74	
218	1.92	400	6.27	1038	12.9	0.14	60.1	4.23	
	All parm		7						
220	Court			23 *			- Project: TWAAFA		
225	Collect	CW-	1-10-10	as	-		_ Samplers: ES/MW		
							_ Sample ID: CCW- Date: 12/19/23	Time: 1220	
							_ Analysis:	THIRD: 1223	
							Preservative:	_	
							Designate Tassa a Fall		
			j.				Project: TWAAFA 4 Samplers: ES/MW	Q23 —	
							Sample ID: CCW-9	-7B-1223	
							Date: 12/19/23		
	1 - 1						Analysis: FIEL	PE -	
			1	1.7			Preservative:	,rc	
		171-7							
lotes:	*Per EPA (2023), O	RP direct measure	ment data recorded i	s "ORP referenced to		electrode". Electro	de calibrated in	solution.	
	- Sample v	1 + 2.5	gal			A PARTY			
+	all the 17 T		2510						
7	Bottles and A		_(collected in c			The White			
(2)				Metals (A), (G) Cr, (_1		
(1L)					Cr, 🐧 📵 🔞 Ni,	Pb, Zn) and 1631E	Hg) 🔽 Field	filtered (0.45µm)	
(2)	1 x	250 ml HO	PE for Ferro	us Iron		Y 1 07	The state of the	Y 1 1 1 1 1 1 1 1 1	
12.27		LOUVANIA						2, 1	
44.0									
18		Total Bottles CW-9-71 DUPE!							

D		ALTON LMSTED JGLEVAND	Monitoring	g Well Sampling	g Field Sheet	Facility/Project:	CW - 7C TWAAFA			
Date:	2/19/23		Sampling Pers	sonnel:		Initial Headspace (ppm)	O.O.ppm e purge (ft. BTOC) 8.3	7		
Sampling	Method: /a.	flow orri	ESIA	w		Intial-Water Level before	e purge (ft. BTOC)	1'		
Aaibille	iii Usea:		Well volume = 0.17	total well depth - water	r level)	End-Water Level post pu	rge/sample with pump on (ft.	BTOC): 8,33 '		
NL-910	# 7068 PID-	SK1-6000	to Colorina			Pump Intake Depth (ft.B		0.33		
urb - ca-	Pump Pump	E/S	Well Volume =							
Turb-geo	Purge start time:		Initial Flow Rate	450	In gal	~ 2 5	penom			
	Purge stop time:	1128	Final Flow Rate:		Flow cell disconnected	prior to sampling :				
	75201.160000	1150	That How hate,	400						
1				Water Qualit	ty Measurement	ts				
Time	Water level	Purge Rate	рН	SPL	Temperature	Dissoved Oxygen	Redox Potential	Turbidity		
(military)	ft	(mL/min)	pH Units	uS/cm	°C	mg/L	mV	(NTU)		
110	< 0.33 ft from 2nd reading	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><!--= 0.3 mg/L</td--><td>< 10 mV</td><td>{3 readings} < 5 NTU < 10% if >5 NTU</td></td>	< 3%	= 0.3 mg/L</td <td>< 10 mV</td> <td>{3 readings} < 5 NTU < 10% if >5 NTU</td>	< 10 mV	{3 readings} < 5 NTU < 10% if >5 NTU		
1131	8.33	400	6.84	2013	13.8	0.35	74.2	4.38		
1134	8.33	400	6.78	2115	13.8	0.27	78.2	3.74		
1137	8.33	400	6.78	2100	13.8	0.28	78.7	3,94		
1140	8.33	400	6.79	2067	13.8	0:31	78.4	2.66		
1143	8.33	400	6.80	2040	13.8	0.36	77.8	4.66		
1145	All parm		d/c flow	all						
1142	Collect	"ccw-	1C-1223							
7										
					J					
						Project: TV	VAAFA 4Q23			
						Samplers:				
							CCW-7C-1223			
						Date: 12/19				
						Analysis:				
						Preservativ	ve:			
							1			
			Language and Committee and Com							
Notes:	*Per EPA (2023), O - Sample Vo			is "ORP referenced to		electrode". Electrod	e calibrated in	solution.		
	Sample V	4 1112	gal							
	Bottles and A	nalyses:	(collected in	order helow)						
P (1)				Metals (A) (A) Cr, (DED ON NI Ph 7	n) and 1631E (Ua)				
(1)	- 1 x	500-mL HDPE W	/ HNO ₃ 6020 Disea	lved Metals (A) (A)	Cr. Co.Fa. Ma Ni	n, and 1631E (Hg) Pb, Zn) and 1631E (H	(g) D Field	Filtered (0.45µm)		
(1)	1 X	250 ml	HOPE FOR	erous Iron	, , , , , , , , , , , , , , , , , , , ,	-/ and 1031E (F	isi LM rield	merca (o.45µm)		
		3	The Late of	010003 1101						

	OF 3	UGLEVAND	Monitoring Sampling Per	g Well Samplin	g Field Sheet	Facility/Project			
		4				Intial-Water Level befor	O.O ppm		
	g Method:		Well volume = 0.17	(total well depth - water	r level)	End-Water Level post n	urge/sample with nump on (ft	BTOCh: 1	
WL JCO.	Programs Pump	ZKI-6000 Masterflex FIS	Well Volume =		12	Pump Intake Depth (ft.BTOC): 2.38'			
The part of the pa	Purge start time:	1938	Initial Flow Rate	400	gae	transcon, marin	_		
	Purge stop time:		Final Flow Rate:	400	Flow cell disconnected	d prior to sampling :			
		1011			ty Measuremen	ts			
				111/02/11/11					
Time	Water level	Purge Rate	рН	SPC	Temperature	Dissoved Oxygen	Redox Potential *	Turbidity	
(military)	ft	(mL/min)	pH Units	uS/cm	°C	mg/L	mV	(NTU)	
	< 0.33 ft from 2nd reading	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><!--= 0.3 mg/L</td--><td>< 10 mV</td><td>(3 readings) < 5 NTU < < 10% if >5 NTU</td></td>	< 3%	= 0.3 mg/L</td <td>< 10 mV</td> <td>(3 readings) < 5 NTU < < 10% if >5 NTU</td>	< 10 mV	(3 readings) < 5 NTU < < 10% if >5 NTU	
0941	3.38	400	6.84	881	14.1	0.08	93.1	10.5	
0144	3.38	400	6.77	926	14.2	0.07	89,7	6.04	
0947	3,38	400	6.78	967	14.2	0.06	84.7	3.11	
0950	3.38	4/00	6.78	1005	14.1	0.07	81.2	3.92	
0953	3.38	400	[0.80	1039	14.1	0.07	77.8	4.31	
0956	3.38	400	6.81	1064	14.0	0.15	75.5	4.31	
0959	3.38	400	6.81	1090	14.1	0.26	72.8	4.14	
1002	3.38	400	6.82	1103	14.0	0.10	71.0	3.14	
005	3,38	400	6.82	TITI	14.1	0:13	69.0	3.68	
7.00.	All oa	vms stal	u de	flow cell				LYWY TO	
1010	count	- "CCW	- 88 - 12						
			1						
							5 to 9 to 11 to 2	_	
							ect: TWAAFA 4Q23	_	
							plers: ES/MW ple ID: CCW-88-12	723	
				/			: 12/18/23 Time:		
							lysis:		
							servative:		
_							1	-	
Notes:	*Per EPA (2023). O	RP direct measurem	ent data recorded is	s "ORP referenced to		electrode". Electrode	calibrated in	solution.	
	Saupe V		gal					***************************************	
	Over 100	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1						
	Bottles and A	nalyses:	(collected in c	order below)	GAT SELECT				
(1)	1 ×	500 mL HDPE w/	HNO ₃ 6020 Total I	Metals Øl, Øs, Cr, Ø	, D, On, Ni, Pb, Zr	n) and 1631E (Hg)	A 150 P. L.		
(1)	· x	500 mL HDPE w/	HNO, 6020 Dissol	ved Metals (A), (as, o	r, & @ @, M, Ni, P	b, Zn) and 1631E (H	g) Field F	Filtered (0.45µm)	
10)			E for Ferron					And the second second	
100									

7.7.	OF R	7.07.40.40.42.4	Monitoring Sampling Pers	Well Sampling	g Field Sheet	Well No. C Facility/Project Initial Headspace (ppm)	77		
	2/13/23					Intial-Water Level before	2.7 ppm	1' Osticka	
mpling	Method: Bla	dder Pump	ES		1		3.1		
uipme	ent Used:	KI-6000	Well volume = 0.17 *	(total well depth - wate	r level)	End-Water Level post purge/sample with pump on (ft. BTOC): 3.13			
Q-421 F	Pro Quetro Pump	NCU Mirard - #3020 DED HP-10 (whole	Well Volume =	9.51-3.11	>= Igal	fixed due	to bladder 1.D	post proc.	
	Purge start time:	1003	Initial Flow Rate:	BP 2003	Flow cell disconnected	d prior to sampling	पि		
	Purge stop time:	105-1	Final Flow Rate:			a prior to sampling .	L		
		103-1	12-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	350 ₽ Water Quali	ty Measuremen	ts			
Time	Water level	Purge Rate	рН	Conductivity	Temperature	Dissoved Oxygen	Redox Potential	Turbidity	
military)	ft	(mL/min)	pH Units	uS/cm	°C	mg/L	mV	, (NTU)	
	< 0.33 ft from 2nd reading	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><!--= 0.3 mg/L</td--><td>< 10 mV</td><td>{3 readings} < 5 NTU of < 10% if >5 NTU</td></td>	< 3%	= 0.3 mg/L</td <td>< 10 mV</td> <td>{3 readings} < 5 NTU of < 10% if >5 NTU</td>	< 10 mV	{3 readings} < 5 NTU of < 10% if >5 NTU	
006	3.15	30850	9,29	224.1	11.2	0:24	-41.7	11.1	
009	3.13	250	8.47	167,2	11.2	0.11	-14.2	9.56	
0/2	3.13	250	7.53	170.3	11.1	0.09	22.5	10.20	
015	3.13	250	7.09	172.2	11.0	0.07	45.6	8.45	
018	3.13	250	6,77	234.0	10.9	0.06	62.7	6.49	
021	3,13	250	6.60	244.9	10.9	0.05	74.9	16.59 PS	
024	3.13	250	6.47	251.3	11.0	0.05	82.4	5.55	
027	3.13	250	6.39	259.1	10.8	0.05	86.7	5.52	
030	3.13	250	6.36	241.6	10.9	0.05	88.8	5.80	
633	3,13	250	6:32	254.1	10.9	0.02	90.6	5.83	
	All pav	ns Stab	e, de	flow cul	1		1 1 4 1 7 7		
040	collect	CTULL	4-5-12	13"					
			7.71						
						That is	100.00		
			4				TWAAFA 4Q23 rs: ES/MW		
					11	The second secon	ID: CTMW-5-1223		
							2/13/23 Time: 104	0 —	
1						Analysi			
						Presen			
	100							-	
				1		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		A Value of the second	
otes:				s "ORP referenced to		electrode". Electro	de calibrated in	solution.	
		vol + 2.2	gal	Man I I I		much filter			
		pump throl	(collected in	Act C 40 br	esh GW thro	ing tires			
2 (1)	Bottles and A	Analyses:	_ (collected in C	Matale (M. Co. 4	7 6 60 0 pt 6	A) and 16315 (Ug)			
(1)	X	- 250 - 250 - 150 - 150 - 150 - 150 - 150 - 150 - 150 - 150 - 150	HNO 6020 Disco-	wetais (A), (As, Cr, (3, 6, 60, 0, Pb, 6	g) and 1631E (Hg) Pb, () and 1631E (Hg) D Field	Filtered (0.45µm)	
(1)		250 ml HD			C1, C1, C3, W/, W/,	ro, Cur and 1031C (161 LM Field	, increa (o.45µm)	

Det		ALTON LMSTED UGLEVAND	2000	Well Samplin	g Field Sheet	Facility/Project:			
Date:	12/13/23	3	Sampling Pers	sonnel:		Initial Headspace (ppm)	0.1		
samplin	g Method: Lo.	as flow eur.	ES/M	1W		Intial-Water Level befor	re purge (ft. BTOC) 11.7	3? (stick	
quipme	ent Used:			(total well depth - wate	r level)	End-Water Level post po	urge/sample with pump on (ft	E. BTOC):11.37 6	
NO YOU	#7068 PID.	PKI-GOOD	46404			Pump Intake Depth (ft.B			
Turb - S	Pro Quetro Pump	- Masterfur EIS	Well Volume =	18.5'-11.29	122.1	~1'0	4 botton		
-	Purge start time:		Initial Flow Rate:	The state of the s		Analogica witte	-		
	Purge stop time:	1145	Final Flow Rate:	350	Flow cell disconnecte	d prior to sampling :			
-		1206	- Yallur 5 3	350	Monsuraman	•-			
SE SE V			T		ty Measuremen	LS .	I was a second and a second a second and a second a second and a second a second and a second and a second a second a second a second and a second and a second a second a second a second a second and		
Time	Water level	Purge Rate	рН	Conductivity	Temperature	Dissoved Oxygen	Redox Potential *	Turbidity	
(military)	ft	(mL/min)	pH Units	uS/cm	°C	mg/L	mV	(NTU)	
	< 0.33 ft from 2nd reading	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><!--= 0.3 mg/L</td--><td>< 10 mV</td><td>{3 readings} < 5 NTU o < 10% if >5 NTU</td></td>	< 3%	= 0.3 mg/L</td <td>< 10 mV</td> <td>{3 readings} < 5 NTU o < 10% if >5 NTU</td>	< 10 mV	{3 readings} < 5 NTU o < 10% if >5 NTU	
1147	11.33	350	6:77	2379	15.7	0.41	160.0	11.8	
1150	11.37	350	6.83	2391	15.6	0.32	152.2	3.02	
1153	11.37	350	(0.81	2288	15.5	0.22	145.0	4.40	
1156	11.37	350	6.81	2237	15.60	0.19	140.1	4.68	
1159	11,37	350	6.82	1226	15.5	0.18	135.0	2.85	
1200	Edu	it "CT	MW-7-1	753"					
						Sample	: TWAAFA 4Q23		
						Analysi	s:		
							s:		
Notes:	*Per EPA (2023), OR Sampu Vi		ent data recorded is	"ORP referenced to		Analysi	s: vative:	solution.	

D		ALTON LMSTED UGLEVAND	Monitoring	g Well Sampling	g Field Sheet	Well No. CTI Facility/Project:				
Date:	12/12/23		Sampling Pers	sonnel:		Initial Headspace (ppm)	D. Dppm			
Samplin	g Method: /a	Han Devi	ES/H	ar		Intial-Water Level before	purge (ft. BTOC) 5:4	1 Brow (Star ay		
Equipme	ent Head.			(total well depth - wate	r level)	End-Water Level post pur	ge/sample with pump on (ft.	BTOC): 7. 43 BG		
WL-720 \$	17008 PIDE	CK1-6000				Pump Intake Depth (ft.BTOC):				
WQ - YSi Turb - عرد	Pro Quetto Pump	E13	Well Volume =	11,5'-5,41'	> = Igal	~1'off1	ootlone			
	Purge start time:	1442	Initial Flow Rate:	250	Flow cell disconnected	d prior to sampling :	pling:			
	Purge stop time:	1532	Final Flow Rate:	150						
				Water Qualit	ty Measuremen	ts				
Time	Water level	Purge Rate	рН	SPC Conductivity	Temperature	Dissoved Oxygen	Redox Potential *	Turbidity		
(military)	ft	(mL/min)	pH Units	uS/cm	°C	mg/L	mV	(NTU)		
	< 0.33 ft from 2nd reading	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><!--= 0.3 mg/L</td--><td>< 10 mV</td><td>{3 readings} < 5 NTU o < 10% if >5 NTU</td></td>	< 3%	= 0.3 mg/L</td <td>< 10 mV</td> <td>{3 readings} < 5 NTU o < 10% if >5 NTU</td>	< 10 mV	{3 readings} < 5 NTU o < 10% if >5 NTU		
1445	5,95'	250	12.30	5965	14.9	0.11	-265.8	110		
1-1-18	6.28	250	12.60	10229	14,9	0.06	-311.6	28.5		
1451	10.55	200	12.65	6270	14.8	0.13	-325.5	23.5		
1424	6.65	150	12.67	6287	14.8	0113	-335,6	24.1		
1457	6.74	150	12.68	10327	14.7	0.16	-341.60	22.3		
1500	18,01	150	12.71	6350	14.7	0.15	-345.60	15.8		
1503	6.91	150	12.71	6378	14.5	0.16	-348,3	12,0		
1506	6,97	150	12.72	6364	14.6	0,17	-350.4	9,45		
1509	7,07	150	12,73	6350	11.6	0.16	-352.0	8,22		
1512	7.18	150	12,73	6319	1010	0,16	-353.1	7.02		
1515	7,23	150	12,73	6304	14.60	0,16	-353.8	5.14		
1518	7,38	150	12,74	6273	14.60	0.19	-354.9	6.35		
1521	-	Stable, 1		272,	> liellyd (ruged + tets	disset. 4d fitte	ved) metals		
1525	Collect	" CTMW	-8-122	5				Collected.		
						Project: TW	/AAFA 4Q23			
						Samplers: E	ES/MW			
							CTMW-8-1223			
						Date: 12/12	/23 Time: 1525	-		
						— Analysis:		-		
						Preservative	e:	C.		
								-		
Notes:	*Per EPA (2023), OI	RP direct measurem	ent data recorded is	"ORP referenced to		electrode". Electrode	ralibrated in	2.10.100		
4-7-71		Vol + C		3.5.5.1664 10		ciccioue . Liectrode (Campi ateu III	solution.		
	Bottles and A	nalyses:	(collected in o	rder below)						
(1)	1 x	500 mL HDPE w/	HNO₃ 6020 Total I	Metals (A), (B), Cr, (C)), (Fa), NO, Ni. Pb. 71	n) and 1631E (Hg)				
(1)	x	500 mL HDPE w/	HNO ₃ 6020 Dissol	ved Metals (A), (A),	Cr, (0), (9, (M), Ni. F	b, Zn) and 1631E (Hg)	Field F	iltered (0.45µm)		
(1)	1 X	250ml HOY	E for ferrous	Ivon				εα (σ.+5μπ)		
C.,			7 9							

	OF P	ALTON DLMSTED UGLEVAND	Monitoring	Well Sampling	g Field Sheet	Well No. C	TMW-9	
Date: 1	2/12/23		Sampling Pers	sonnel:		Initial Headspace (ppm		
Sampling	Method: 1	SHAN ALL	ES/			Intial-Water Level befo		84 (Sticke
-daibwe	ent Used.	TOTAL 201	Well volume = 0.17	(total well depth - water	r level)	End-Water Level post p	ourge/sample with pump on (ft	01
WL-980	י בים פיצירא	BK1-1000				Pump Intake Depth (ft.	BTOC):	10.03
Turb-Oli	Pro Courte Pump	- Maskyflex	Well Volume =	20 1 40 04 5	1000		off bottom	
1400	Purge start time:	(15)	Initial Flow Rate:	30.1 - 10.84	1 - Su Egal		0 20.000	
1400	Purge stop time:	1958 905	Final Flow Rate:	350	Flow cell disconnected	d prior to sampling :		
	, ange stop time.	1434	Final Flow Rate:	<i>3</i> 50			The state of the s	
				Water Qualit	ty Measuremen	ts		
Time	Water level	Purge Rate	рН	Conductivity	Temperature	Dissoved Oxygen	Redox Potential	Turbidity
(military)	ft	(mL/min)	pH Units	uS/cm	°C	mg/L	mV	(NTU)
	< 0.33 ft from 2nd reading	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><!--= 0.3 mg/L</td--><td>(3 readings) < 5 NT</td></td>	< 3%	= 0.3 mg/L</td <td>(3 readings) < 5 NT</td>	(3 readings) < 5 NT	
1407	10.83	350	737	3540	15.2	7.10	-10:7	<10% if >5 NTU
1-40	10.83	350	7.06	3361	15.6	5.01	7.8	6.77
1413	10.83	350	7.02	3379	15.5	2.28	14.2	7.84
1-116	0.83	350	6.99	3393	15.5	0.17	17.5	18:1
1-117	10.83	350	6.98	3402	15.5	0.11	19.3	71.3
1172	10.83	350	6,97	3397	15,6	0.11	19.5	10.7
14125	10.83	350	6,97	3397	15.6			
M30		metres st	able, d/c f	low cell	75.0	0,11	19.5	10.9
H30	All para	metres st	able, dief	low cell	15.0	Pro Sai Sai Da An	oject: TWAAFA 4Q23 mplers: ES/MW mple ID: CTMW-9-1 te: 12/12/23 Time: alysis:	
	All para	METTES ST "CTMW-	able, d/c f	loù cell	15.0	Pro Sai Sai Da An	oject: TWAAFA 4Q23 mplers: ES/MW mple ID: CTMW-9-1 te: 12/12/23 Time:	1223
Notes:	All para	MCTUS ST CTMW-	able, d/c f	ORP referenced to	15.0	Pro Sai Sai Da An	oject: TWAAFA 4Q23 mplers: ES/MW mple ID: CTMW-9-1 te: 12/12/23 Time: alysis: eservative:	1223

	OF P	ALTON LMSTED UGLEVAND	Monitoring Sampling Pers	Well Samplin	g Field Sheet	Well No. CT Facility/Project: Initial Headspace (ppm)	MW-11R2 TWAAFA		
	2/15/23	/				Intial-Water Level befor			
	g Method: low	> flow peri		S/MW (total well depth - water	r level)	Total Control of the	ン・ さ urge/sample with pump on (ft		
Equipme	ent Used:	2x1-6000	vven voidine = 0.17	(total well depth - water	Pump Intake Depth (ft.BTOC):				
WQ-ysi 1 Turb-geo	Pump Pump	- Masterflex E/S	Well Volume =	L13'-5.81	1.2				
	Purge start time:	1035	Initial Flow Rate:		Flow cell disconnected	d prior to sampling :	T		
	Purge stop time:	1110	Final Flow Rate:	100					
				Water Qualit	ty Measuremen	ts			
Time	Water level	Purge Rate	рН	≶ℓ Conductivity	Temperature	Dissoved Oxygen	Turbidity		
(military)	ft	(mL/min)	pH Units	uS/cm	°C	mg/L	mV	(NTU)	
	< 0.33 ft from 2nd reading	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><!--= 0.3 mg/L</td--><td>{3 readings} < 5 NTU o < 10% if >5 NTU</td></td>	< 3%	= 0.3 mg/L</td <td>{3 readings} < 5 NTU o < 10% if >5 NTU</td>	{3 readings} < 5 NTU o < 10% if >5 NTU		
1038	6.03	100	12.27	7590	13.5	2.25	-83.0	5.98	
1041	6.09	100	12 26	7745	12.8	0.50	-90.3	3.84	
1044	6.13	100	12 36	7896	12.8	0.19	-104.9	3.17	
1047	i. 09	100	1284	7980	12.2	0.18	-107.9	4.10	
1050	4.00	100	1285	7952	12.2	0.14	-110.8	3.04	
1053	6.08	100	1286	7908	123	6.15	-112.3	3.73	
1056	All Pa	rms sta		flow cell	1 5 1 2 1 3 7		1		
1059	1100 CX	lect =	CTHW-1	122-122	B"				
1102	17.4	Trans 11							
							-		
					-				
_						Project Ta			
	-					Samplers: E	AAFA 4Q23	-	
-			-			Sample ID:	CTMW-11R2-1223		
						Date: 12/15/	23 Time: 1100		
	-					Analysis:	Time. 1100		
						Preservative			
							Y		
Notes:	*Per FPA (2023) OI	RP direct measurem	ent data recorded is	"ORP referenced to		electrode". Electrode	calibrated in	solution.	
100000000000000000000000000000000000000	- Sample								
	Bottles and A	nalvses:	(collected in o	rder below)	10.00	110000			
(1)				Metals (3), (5), Cr, (5)). (G, (M), Ni, Pb, Zr	n) and 1631E (Hg)			
(1)						b, Zn) and 1631E (Hg	Field (Filtered (0.45µm)	
			for ferrous					N. V. C. C. Strategick	
(1)		23010	A. 151100	, ,,,,,,					

	OF	ALTON LMSTED JGLEVAND	Marian	Well Sampling	g Field Sheet	Well No. CTI Facility/Project: Initial Headspace (ppm)	TWAAFA		
Pate: 12	115123		Sampling Pers			Intial-Water Level before	0.0	7-1	
ampling	Method: اصد	flow sevi	ESIMU				13:		
quipme	ent Used:	24 1-000	Well volume = 0.17 *	(total well depth - wate	r level)		rge/sample with pump on (ft.	15.20	
NC-JOH NQ-YSIP	ent Used: 7068 PID-1 10 quality Pump	- Musterfux E15	Well Volume =	37' - 15.n	3.7)= gal	Pump Intake Depth (ft.8" ~10" off (~27	bottom Bottom		
415-900	Purge start time:	1140	Initial Flow Rate:	300	Flow cell disconnected	nrior to sampling :	ব		
_	Purge stop time:	1207	Final Flow Rate:	400	Flow cell disconnected		-		
_		1201	E 0 5 40 1 14 30		y Measuremen	ts			
Time	Water level	Purge Rate	рН	Conductivity	A STANDARD CONTRACTOR OF THE STANDARD CONTRACTOR	Turbidity			
(military)	ft	(mL/min)	pH Units	uS/cm	°C	mg/L	mV	(NTU)	
(mincul y)	< 0.33 ft from 2nd reading	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><!--= 0.3 mg/L</td--><td>< 10 mV</td><td>{3 readings} < 5 NT < 10% if >5 NTU</td></td>	< 3%	= 0.3 mg/L</td <td>< 10 mV</td> <td>{3 readings} < 5 NT < 10% if >5 NTU</td>	< 10 mV	{3 readings} < 5 NT < 10% if >5 NTU	
1143	15.24	300	7.79	1697	14.6	0.33	-24.5	2.89	
1146	15.24	400	8.54	1780	15.2	0.34	-28.2	2.49	
1-19	15:24	400	7.43	1823	15.3	0.29	-10.2	226	
152	15.24	COP	7.13	1870	15.3	0.24	8.6	4.30	
1155	15.24	400	7.00	1914	15.2	0.27	23.2	3.76	
158	15.24	400	6.93	1944	15.3	0.26	29,7	3.03	
201	15,24	400	6.91	1956	15.3	0.26	31.3	3.49	
205	Collect	rms stab	N-12-1	flow cell					
						Project: TWAAFA 4Q23 Samplers: ES/MW Sample ID: CTMW-12-1223 Date: 12/15/23 Time: 1205 Analysis:			
						Pres	servative:	achitica	
Notes:		vd + 7	collected in c	s "ORP referenced to		electrode". Electrode	e calibrated in	solution.	
(1)	1 X	500 mL HDPE W/	HNO, 6020 Total	Metals (8), (8), Cr, (), ⊙ , ऒ , Ni, Pb, Z Cr, ⊙ , ⓒ , ऒ , Ni, I	n) and 1631E (Hg) Pb, Zn) and 1631E (H	g) 🗹 Field	Filtered (0.45µm)	

Date:	12/13/23	ALTON LMSTED JGLEVAND	Sampling Pers	Well Sampling	S ricia dilect	Well No. C Facility/Project Initial Headspace (ppm			
ampling	يرها: Method	(/ · · · ·	ES/I			Intial-Water Level before		2' (Stick	
- Adibilib	DT Head.			(total well depth - wate	r level)	Property and annual and the second	urge/sample with pump on (ft	6	
NL-geo.	Pro Quedeo PID Pump	111-6000	25 25 15 100 2 100 2	190000000000000000000000000000000000000	Pump Intake Depth (ft.BTOC):				
NQ-YSI	Pump	Masterler	Well Volume =		1.3				
Turb Tio	Purge start time:	EIS	17/1	1.17'-3.4	2)= ga	~ 1' of	bottom		
_	The Art of	1344	T 107 No. 1	300	Flow cell disconnected	d prior to sampling :			
	Purge stop time:	1420	Final Flow Rate:	175	100				
				Water Qualit	ty Measuremen	ts			
Time	Water level	Purge Rate	рН	Conductivity	Temperature	Dissoved Oxygen	Redox Potential	Turbidity	
(military)	ft	(mL/min)	pH Units	uS/cm	°C	mg/L	mV	(NTU)	
	< 0.33 ft from	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><!--= 0.3 mg/L</td--><td>< 10 mV</td><td>{3 readings} < 5 NTU o</td></td>	< 3%	= 0.3 mg/L</td <td>< 10 mV</td> <td>{3 readings} < 5 NTU o</td>	< 10 mV	{3 readings} < 5 NTU o	
1346	2nd reading				190			< 10% if >5 NTU	
349	3.84	700	7,94	316.2	13.4	2.93	37.3	199	
1352	4.06	175	7,74	314.6	13.2	2,77	32.9	143	
355	4.15	175	8.03	253.1	15.8	2.48	34.2	63.7	
1358	4.19	175	8,02	260.7	12.6	2.72	28.2	18.1	
401	41.22	175	8.26	276.6	12.5	2.15	26.3	10.3	
404	41.23	175	8.29	282.4	12.4	2.14	74.6	11.6	
1407	4,27	175	8.31	285.0	12.3	2.10	25.5	10.73	
1410	41,29	175	9.33	284.4	12.3	2.11	25.1	10.96	
	All par	ms stab		ow cell					
415	Collec	" CTM	w-14-12	234					
100									
						Project: T	WAAFA 4Q23		
						Samplers		-	
							D: CTMW-14-1223		
						Date: 12/	13/23 Time: 1415		
						Analysis:	N. i.e.		
						Preserval	uve:		
l-tos:	*Per EPA (2023), O	RP direct measuren	nent data recorded is	"ORP referenced to	•	electrode". Electrod	le calibrated in	solution.	
Notes:	Sample Vol		gul	7 - 7 - 1 - 1					
7-	A working to		05, call AL	c & he conf	irmed readin	gs are expe	cted.		
A 11	Bottles and A	nalyses:	(collected in o	rder below)					
V ₍₁₎	×	500 mL HDPE w/	HNO ₃ 6020 Total N	Metals (A) (B, Cr, (0, 60, 100, Ni, Pb, Zi	n) and 1631E (Hg)	_		
(1)	l x	500 mL HDPE w/	HNO ₃ 6020 Dissolv	ved Metals (A), (A),	Cr, 👁 📵 🖝, Ni, F	b, Zn) and 1631E (F	lg) 🔽 Field	Filtered (0.45µm)	
1-1	1 4	250 ml H	OPE for ferror	stron					

	OF			Well Sampling	g Field Sheet	Facility/Project:				
ate: \	2/15/23	3	Sampling Pers	ionnel:		Initial Headspace (ppm)	Headspace (ppm) 5.			
ampling	Method: 1-	inscalta	1 6	S/MW		Intial-Water Level before		6' (stickup)		
daibille	iii Used:			(total well depth - water	r level)	End-Water Level post purge/sample with pump on (ft. BTOC): 7.05				
VL - year	KLATOLOB PID . P	(11-6000	lians to see a		Pump Intake Depth (ft.BTOC):					
urb - ge	requalion pump	EIS	Well Volume =	111-1	1.5	~2.5	of bottom			
- h	Purge start time:		Initial Flow Rate:	(13.3 - 6	10)2 got	0.0				
	Purge stop time:	1510	Final Flow Rate:	250	Flow cell disconnected	d prior to sampling :				
	and and	1349	Fillal Flow Rate.	LSU			24			
				Water Qualit	y Measuremen	ts				
Time	Water level	Purge Rate	рН	SPC	Temperature	Oxygen	Redox Potential *	Turbidity		
(military)	ft	(mL/min)	pH Units	uS/cm	°C	mg/L	mV	(NTU)		
	< 0.33 ft from 2nd reading	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><!--= 0.3 mg/L</td--><td>< 10 mV</td><td>{3 readings} < 5 NTU (< 10% if >5 NTU</td></td>	< 3%	= 0.3 mg/L</td <td>< 10 mV</td> <td>{3 readings} < 5 NTU (< 10% if >5 NTU</td>	< 10 mV	{3 readings} < 5 NTU (< 10% if >5 NTU		
1315	7.03	250	7.39	940	12.5	-0.07 4	26.5	31.1		
1318	7.03	250	88.0	972	12.2	-0.01 x	37.3	22.8		
1321	7.03	250	6.75	1016	12.2	0	41.2	22.4		
324	7.03	250	6.73	1053	12.0	0	42.7	20.8		
327	7.03	250	6.72	1078	11.9	0	44.3	22.2		
1330	7.03	250	10.73	1100	11.9	0	43.3	22.8		
1333	7.05	250	6.74	1124	11.8	0	44.1	23.5		
1336	7.05	250	6,79	1144	11.7	0	44.3	22.1		
1331	7.05	250		1161	11.6	0	44.3	229:22		
			ble, de f							
1345	Collec	+ " CTM	M-11-	1223"						
_										
_										
							Inthospita .			
							VAAFA 4Q23			
						Samplers:				
					1		: CTMW-17-1223			
						Date: 12/1	5/23 Time: 134	•		
						Analysis: Preservati	ve.			
						Flescivau	V G.			
								C-4-		
Notes:	*Per EPA (2023), O	RP direct measuren	nent data recorded is	s "ORP referenced to		electrode". Electrode	calibrated in	solution.		
				O (1321 for	word) per A	C(remote)				
		12 th		Solve Esterió		V - 14 1 - 1 - 1				
N. The	Bottles and A		_(collected in c		S COM OF T	n) and 16215 (C)				
(1)				Metals (A) (A) (A)		n) and 1631E (Hg) Pb, Zn) and 1631E (Hg	Field	Filtered (0.45µm)		
(1)					J. Cy. (e) IVII), NI, I	-D, 211) and 1631E (18	LVI rield	mered (0.45µm)		
· (1)	1 X	DOWN HAVE	for Ferra	2 NOV						

Date: \	2/15/2	ALTON LMSTED JGLEVAND	100,100,000	Well Samplin	g Field Sheet	Facility/Project		
	24 (3/ 1		Sampling Pers	ES/HW		Initial Headspace (ppm)	0.0	
Equipme	Method: low	flow peri	Wall and a second	The second secon		Intial-Water Level befor	10.	
WL-YOU	# 7068 PID	RW-6000	Well volume = 0,17 *	(total well depth - wate	r level)		urge/sample with pump on (ft	. BTOC): 13,24 '
wa - Ysi _{Turb -} ge	pro quatropump o.turb	-Masterflex E15	Well Volume =	0.75'-13.2	4' 1- 34	Pump Intake Depth (ft. I	off bottom	
	Purge start time:	1400	Initial Flow Rate:	300	0	ATTICK AND	_	
	Purge stop time:	1428	Final Flow Rate:	300	Flow cell disconnected	d prior to sampling :	leftigg	
		110.0			ty Measuremen	ts		
Time	Water level	Purge Rate	рН	SPC	Temperature	Dissoved Oxygen	Redox Potential	Turbidity
(military)	ft	(mL/min)	pH Units	uS/cm	°C	mg/L	mV	(NTU)
	< 0.33 ft from 2nd reading	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><!--= 0.3 mg/L</td--><td>< 10 mV</td><td>(3 readings) < 5 NTU o</td></td>	< 3%	= 0.3 mg/L</td <td>< 10 mV</td> <td>(3 readings) < 5 NTU o</td>	< 10 mV	(3 readings) < 5 NTU o
1401	13,27	300	6.83	1804	14.3	0 *	F1 0	<10% if >5 NTU
1404	13.27	300	6.85	1823	14.5	0.42	56.8	10.5
TOP1	13.27	300	10.566	1822	14.5	0.28	52.6	6:39
1-110	13.27	300	10.47	1840	14,5	0.22	51.5	5.96
1413	13,27	300	6.87	1817	14.4	0	50.4	4.71
1416	13.27	300	6.87	1819	14.4	0	49.3	4.86
1419	13.27	300	10.87	1825	12,4	0	48.1	4.53
	All par	ms stab	1	lau				1.33
1425	Conect	" CTMV	1-00-1	273"				
					14 =			
						Project: TW	/AAFA 4Q23	
						- Samplers: I		
	-					Sample ID:	CTMW-17D-1223	
						Date: 12/15 Analysis: Preservativ		
Notes:	*Per EPA (2023) O	RP direct measures	nent data recorded is	"ORD referenced to		electrode". Electrod	a college of Co	597.527.1
- Notes.	* (-) DO	is recorded	was o	OKP referenced to		electrode", Electrod	e calibrated in	solution.
-	Sample		gae					
7	Bottles and A		_(collected in o	rder below)	No. 2 Table			
(1)	x	250 mL HDPE w/	HNO, 6020 Total I	Metals (A), (Cr, (C), 👩, Øh, Ni, Pb, Z	n) and 1631E (Hg) Pb, Zn) and 1631E (H		
(1)	x	500 mL HDPE w/	PE For Fur	ved Metals (A), (B),	Cr, 🕠, 📵, 🚳, Ni, I	Pb, Zn) and 1631E (F	lg)	Filtered (0.45µm)
		1571. 0 111	IVE LEVIL	/ 1				

	OF	ALTON LMSTED UGLEVAND	J. Maniharay	Well Samplin	g Field Sheet	Facility/Project:			
Date:	2/13/23		Sampling Pers	sonnel:		Initial Headspace (ppm)	(), IPPM		
Samplin	g Method: /a	s flow per	FS/MU	S		Intial-Water Level before	e purge (ft. BTOC)	13' (J:d.4)	
-deibille	ant used:		Well volume = 0.17 *						
WO-VE	Ro Quatroump	41-6000	Well Volume =			Pump Intake Depth (ft.8		E-DESCRIPTION OF	
Turb - qu	the grand-bumb	EIS		13-673	1 = 1. Dlogal	~) 0	4 bottom		
	Purge start time:	1219	Initial Flow Rate:	300	V		7/		
	Purge stop time:		Final Flow Rate:	175	Flow cell disconnected	d prior to sampling :			
		1243	1 - Auto-Garage		ty Measuremen	te			
					ty ivieasuremen	L3			
Time	Water level	Purge Rate	рН	SPC Conductivity	Temperature	Dissoved Oxygen	Redox Potential *	Turbidity	
(military)	ft	(mL/min)	pH Units	uS/cm	°C	mg/L	mV	(NTU)	
	< 0.33 ft from 2nd reading	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><!--= 0.3 mg/L</td--><td>< 10 mV</td><td>{3 readings} < 5 NTU o < 10% if >5 NTU</td></td>	< 3%	= 0.3 mg/L</td <td>< 10 mV</td> <td>{3 readings} < 5 NTU o < 10% if >5 NTU</td>	< 10 mV	{3 readings} < 5 NTU o < 10% if >5 NTU	
1220	6.89	300	10.51	992	15.9	1.72	80.6	26.6	
1223	6.98	300	6.70	980	15.8	1.63	84.6	15.7	
12210	7.07	250	6,64	910	15.5	0.38.	83.8	17.6	
1229	7.00	175	6.63	924	15.4	0.29	82.3	16.8	
1232	7.06	175	10101	935	15.3	0.31	80.8	16.3	
1235	All parm	S Stable	1-18-12	23"			1 2 2 2	30 V	
						Sample Sample			
Notes:	Sample v	of t lgi	al	s "ORP referenced to		electrode". Electrode	e calibrated in	solution.	
(1) (1)	Bottles and A	500 mL HDPE w/	_(collected in c HNO ₃ 6020 Total I HNO ₃ 6020 Dissol	Metals (6), 69, Cr, Q	0, 63 , 1 60 , Ni, Pb, Zi Cr, (2) (9) (1), Ni, F	n) and 1631E (Hg) Pb, Zn) and 1631E (H	g) 🗹 Field	Filtered (0.45µm)	

D	OF R	ALTON LMSTED JGLEVAND	Monitoring	Well Sampling	g Field Sheet	Well No. CTV Facility/Project:	W-23R2 TWAAFA			
Date: 1	2/18/23		Sampling Pers	onnel:		Initial Headspace (ppm)				
Sampling	g Method: 15	a flow peri	ESIMA	J		Intial-Water Level before	purge (ft. BTOC) LI &I			
Equipme	mt Hand.		Well volume = 0.17 *	(total well depth - wate	r level)	End-Water Level post pu	rge/sample with pump on (ft.	BTOC): 5 48'		
WC-920. WQ-45. f Turb que	12 Juntos Pump	Du-wood Howkether F15	Well Volume = 1.3 Pump Intake Depth (ft.BTOC): 17(12.5-4.81) = See							
	Purge start time:	0936	Initial Flow Rate:	250		- CVOROR	_/			
	Purge stop time:	1024	Final Flow Rate:		Flow cell disconnecte	d prior to sampling :				
	Water Quality Measurements									
Time	Water level	Purge Rate	pH	Conductivity	Temperature	Dissoved Oxygen	Redox Potential *	Turbidity		
(military)	ft	(mL/min)	pH Units	uS/cm	°C	mg/L	mV	(NTU)		
	< 0.33 ft from 2nd reading	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><!--= 0.3 mg/L</td--><td>< 10 mV</td><td>{3 readings} < 5 NTU o < 10% if >5 NTU</td></td>	< 3%	= 0.3 mg/L</td <td>< 10 mV</td> <td>{3 readings} < 5 NTU o < 10% if >5 NTU</td>	< 10 mV	{3 readings} < 5 NTU o < 10% if >5 NTU		
0938	5.02	250	7.75	685	14.6	0.67	91.5	9.20		
D9-11	5.19	200	7.31	666	14.1	0.13	93.2	10.40		
944	5.28	150	7.17	684	13.9	0.18	90.7	7.33		
0947	5.38	120	7.12	699	13.9	0113	88.6	8.89		
0950	5.47	150	711	720	13.5	0. 13	874	8.64		
0953	5.49	150	7 11	721	13.8	0:14	86.3	8.50		
0956	552	100	712	729	7.3.3	9.15	84.2	8 74		
0959	5.56	100	7.13	727	13.4	0.13	83.2	8.36		
1002	5.56	1.00	7.14	730	13.3	0.12	93.1	8.80		
1005	5 56	100	7.10	731	13 2	0.11	82.8	8.19		
1009		/00	7 17	733 > >0.33A		0.10	81.8	8.02		
	All parm	S Stable	, drawdin.	C 70.55	DIAST AC	consumed	remoted that a	iny		
0.0	+>	Sample	-2382-12	234						
1010	coulect	CIMW	+.T2KT-17	40.						
								~ _		
							Project: TWAAFA 4Q Samplers: ES/MW			
							Sample ID: CTMW-2	23R2-1223 —		
								me: 1010 —		
							Analysis:	-		
							Preservative:	_		
						-		_		
Mata:	*Por EBA (2022) O	RP direct measures	ment data recorded is	"ORP referenced to		electrode". Electrod	e calibrated in	solution.		
Notes:	- Sample		acl accorded	on referenced to	1.000	Standard Laboratory				
	- Paint Fu	mes her	er + Fi	eld Blank#	1-1323"	taken here				
V	Bottles and A	nalyses:	_(collected in c	order below)		2=\ a=d 4 co4c (1)=\				
(1)	x	250 mL HDPE w/	HNO ₃ 6020 Total	Metals (A) (G), Cr, (C	G, Q, MI, NI, PB, 2	(n) and 1631E (Hg)	e) 🗹 Field	Filtered (0.45µm)		
(1)) ×	500 mL HDPE w/	HNO ₃ 6020 Dissol	ved Metals (A), (A),	Cr, Ly, rg, Wh, Ni,	Pb, Zn) and 1631E (H	81 Li Field	riiterea (0.45µm)		
63 1	1 Y	DOWN LID	PE for ferrou	2 Thow						

Date:	12/11/13	ALTON LMSTED UGLEVAND	Monitoring Sampling Per	g Well Sampling	g Field Sheet	Well No. (Facility/Project		<u> </u>	
		6	Journal of City	ES/MW		Intial-Water Level befo	re purge (ft. BTOC)	56' (Sticke	
Sampin	g Method: ၂	o flow peri	Well volume = 0.17	* (total well depth - wate	r level)	End-Water Level post purge/sample with pump on (ft. BTOC): 5.56 (Strock)			
NI - Ges	ent Usea:	2000-14					p Intake Depth (ft.BTOC):		
NQ - YSI Turb - (72:	P. D Quet. Pump	- Mastatuk E15	Well Volume =	17(11 - 5.50 = 0.92 gr			off bottom		
	Purge start time:	1027	Initial Flow Rate		Flow cell disconnected	d prior to sampling :			
	Purge stop time:	1103	Final Flow Rate:		Flow cell disconnected	prior to sampling.	Ш		
		,,,,			ty Measuremen	ts			
Time	Water level	Purge Rate	рН	SPC Conductivity	Temperature	Dissoved Oxygen	Redox Potential	Turbidity	
(military)	ft	(mL/min)	pH Units	uS/cm	°C	mg/L	mV	(NTU)	
	< 0.33 ft from 2nd reading	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><!--= 0.3 mg/L</td--><td>< 10 mV</td><td>(NTU) {3 readings} < 5 NTU < 10% if >5 NTU</td></td>	< 3%	= 0.3 mg/L</td <td>< 10 mV</td> <td>(NTU) {3 readings} < 5 NTU < 10% if >5 NTU</td>	< 10 mV	(NTU) {3 readings} < 5 NTU < 10% if >5 NTU	
1029	5.76	300	7.98	650	11.4	5.86	144.6	21.6	
1032	5.94	300	6.85	271.5	11.3	3.70	143.7	12.5	
1035	5,58	300	6.50	254.8	11,4	1.87	145.8	12.1	
1038	5,96	300	6.38	255.5	11.4	1.02	147.0	4.05	
1041	5,96	300	6.32	256.0	11.5	0.66	149.9	2,70	
1044	5,96	300	6.27	255.8	11.5	0.32	152.0	2.42	
1047	5.96	300	6.26	262.1	11.5	0.24	153.4	2:21	
1050	5.96	300	6.27	264.4	11.5	0118	153.3	1.41	
	All parm	15 Stable		w cell					
1100	Collect	"CTMW-	24-122	3"					
							WAAFA 4Q23	1	
						Samplers		-	
							D: CTMW-24-1223	· ·	
						Date: 12/	11/23 Time: 1100	-	
						Analysis: Preservat	hve:	-	
						11000114		-	
Notes:	*Per FPA (2023) O	RP direct measuren	ent data recorded	is "ORP referenced to		electrode". Electrod	de calibrated in	solution.	
	2.5 aal	+ Sample				The same of the sa		Sold Holl	
	_			away due to	filling w/o f	ilter How die	s. met.)		
	Bottles and A		(collected in	order below)	3 3/01	, (01 00			
(1)				Metals (A)(A) Cr, (C), Fe, M, Ni, Pb, Z	n) and 1631E (Hg)	,		
(1)	1 x	500 mL HDPE W/	HNO₃ 6020 Disso	lved Metals (AI)(AS)	Cr, (0, F9, (1), Ni, I	Pb, Zn) and 1631E (H	Hg) 🗹 Field	Filtered (0.45µm)	
(1)		250ml HOPE							
1									

Date:		ALTON DLMSTED UGLEVAND	Court of tube	Well Sampling	g Field Sheet	Well No. (Facility/Project:			
	14/1/23	1	Sampling Pers			Oit ppn			
sampling	g Method:)	· flow peri		/MW			12.1		
vi - Gro	ent Used:	DV1-6-000	Well volume = 0.17						
NQ - YSI	Pro Quett. Pump	-Martenlee EIS	Well Volume = . (vell volume = . 17 (24.5 _ 12.94) = 2921 Pump Intake Depth (ft. BTOC): 1/ off bottom					
	Purge start time:	1125	Initial Flow Rate:	300					
	Purge stop time:	1248	Final Flow Rate:	350	Flow cell disconnected	prior to sampling :	V		
	200	1210			ty Measuremen	ts			
Time	Water level	Purge Rate	рН	SPC	Temperature	Dissoved Oxygen	Redox Potential	Turbidity	
(military)	ft	(mL/min)	pH Units	uS/cm	°C	mg/L	mV	(NTU)	
	< 0.33 ft from 2nd reading	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><!--= 0.3 mg/L</td--><td>< 10 mV</td><td>{3 readings} < 5 NTU < 10% if >5 NTU</td></td>	< 3%	= 0.3 mg/L</td <td>< 10 mV</td> <td>{3 readings} < 5 NTU < 10% if >5 NTU</td>	< 10 mV	{3 readings} < 5 NTU < 10% if >5 NTU	
126	12.76	300	V5/	Sint ff -	Black som	when turned	back on	3.14	
129	12.96	300	YS1 -	Troubleshor	tives.	10-1-48			
132			1	Vocesco J. Shi	1				
1135	Pun	off wh		stixed			,		
127		counces,	the state of the s	eries chan	7	unchishing pro		A 50	
728	12.91	350	6,87	2626	13.0	0.77	150.3	0.02	
231	12.92	350	6.86	2625	13.8	0:30	146.0	0.53	
234	12.92	350	6.85	2637	13.8	0:19	140.6	1.02	
1237		350	6.85	low cell	13.8	0:11	140.6	11/4	
245	All par	CTHW	240-122	1000 0200					
2-10	Cauce	Ciri	2.0						
							ject: TWAAFA 4Q23	-	
							nplers: ES/MW nple ID: CTMW-240		
			7 -					1245	
			2				lysis:	1245	
						Pre	servative;		
								1- A72700	
lotes:		RP direct measurem		s "ORP referenced to		electrode". Electrod	le calibrated in	solution.	
-	D 441 and A	- alvener	(collected in c	order below)					
(1)	Bottles and A	500 mL HDPE w/	HNO ₃ 6020 Total	Metals (A) (G) Cr, (Q, (Q , Q , Ni, Pb, Z	n) and 1631E (Hg)			
(1)	, x-	mL HDPE W/	HNO ₃ 6020 Dissol	ved Metals (A)(A),	cr, O, Fe) (6) NI,	(n) and 1631E (Hg) Pb, Zn) and 1631E (I	Hg) 🗹 Field	Filtered (0.45µm)	
11	, v.	250ml HO	06 L T.	Cluna					

(3) 3 = Total Bottles

ampling			Campall - D	autorii.		Well No. MW – 4 Facility/Project: TWAAFA				
ampling	2/18/23		Sampling Pers	10 Years 1			DIU			
	g Method: /ow	stow peri	ES/MV	(total well depth - wate		Intial-Water Level befor		B' (Stickup)		
quipme	ent Used:	2K1-10000	Well volume = 0.17	(total well depth - wate	r level)	End-Water Level post purge/sample with pump on (ft. BTOC): 7, 6 Pump Intake Depth (ft.BTOC):				
Q-451 P	tub Pump	Masterflex	Well Volume =		1.3					
urb Geo	Purge start time:		.17(13	1-5,18'\ x	gal	~ 2	off bottom			
		1490		400	Flow cell disconnected	d prior to sampling :	M			
-	Purge stop time:	1318	Final Flow Rate:	100		The state of the s	NTY			
				Water Qualit	ty Measurement	ts				
Time	Water level	Purge Rate	pH Conductivity Temperature Dissoved Oxygen Redox Potentia	Redox Potential	Turbidity					
military)	ft	(mL/min)	pH Units	uS/cm	°C	mg/L	mV	(NTU)		
	< 0.33 ft from 2nd reading	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><!--= 0.3 mg/L</td--><td>< 10 mV</td><td>(3 readings) < 5 NTU o</td></td>	< 3%	= 0.3 mg/L</td <td>< 10 mV</td> <td>(3 readings) < 5 NTU o</td>	< 10 mV	(3 readings) < 5 NTU o		
243	6.31	200	7.22	2647	13.1	0.26	19.0	<10% if >5 NTU		
246	7.10	100	7.16	2698	12.8	0 120	19.8	4.86		
49	7.12	100	7.18	2717	12.3	0	19.7	4.99		
252	7.13	100	7.18	2705	10.4	0.01	19.5	4.38		
255	7.12	100	7.19		12.4	0	19.3	4.75		
258	7:11	100	7.19	2709	12.60	0	18,60	4.70		
1	All parm	5 Stable		cell						
305	collect	HM1	-1247				1			
			1100000							
	(4.4.7)					Project:	TWAAFA 4Q23	Table 1		
						Sampler	rs: ES/MW			
	/						ID: MW-4-1223	_		
						Date: 12		·		
						Analysis Preserv		-		
								1		
otes:			ent data recorded is	"ORP referenced to		electrode". Electrode		solution.		
7.273	\$ (-100	recorded a	rs D	to Initial	pumping WL	WAS @ 4000	min , 50 6-31 = h	Flow		
-	Sample v	of + 0.75	gal '	was	reduced to 16	Doul/mm & v	ul Stabilized @	27.12' (TRU		
	Bottles and A		(collected in o		MA MA NI SI -) d 4 5 3 4 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	No.	Pul		
(1)	1 ×	250 mL HDPE W/	HNO ₃ 6020 Total N	netals (AUAS, Cr, Cu	MA MA, Ni, Pb, Zn	b) and 1631E (Hg) b, Zn) and 1631E (Hg	s) Field F	iltered (0.45µm)		
(1)	x	250 I LIDE	F for Ferro	ed Metals(B),(B), C	i, eg, es, wi, Ni, P	u, 211/ and 1031E (H)	s/ LVI Field F	iiterea (0.45μm)		
(1)	· X	ESUM FIDE	LAN FERIO	02 1.01						

Field Blank#2-1223 taken Leve!

D	OF:	ALTON DLMSTED UGLEVAND	Monitoring	; Well Samplin	g Field Sheet	Well No. PZ - 7 Facility/Project: TWAAFA			
ate:	12/11/23		Sampling Pers	onnel:				And the second	
amplin	g Method: _	Has Devi		MW		Initial Headspace (ppm) 0.0 ppm Initial-Water Level before purge (ft. BTOC) 10.94 BTOC (5)			
Adibille	THE LICENT			(total well depth - water	r level)	End-Water Level post pur	ge/sample with pump on (ft.	BTOC): 11.06'	
12-421 12-421	17068 PID.	- MasterAcx	Well Volume = .1	1(17, -10	(40.0	Pump Intake Depth (ft.BT	off bottom	711.00	
77	Purge start time:	=1322505	Initial Flow Rate:	≈ 1,03 gal					
00	Purge stop time:		Final Flow Rate:	250	Flow cell disconnected	d prior to sampling :			
	- 1.4V- 0.2(mm3)	1401		U00 Water Qualit	y Measuremen	tc			
					y Wieasuremen				
Time	Water level	Purge Rate	рН	SPC	Temperature	Dissoved Oxygen	Redox Potential *	Turbidity	
military)	ft	(mL/min)	pH Units	uS/cm	°C	mg/L	mV	(NTU)	
	< 0.33 ft from 2nd reading	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><!--= 0.3 mg/L</td--><td>< 10 mV</td><td>(3 readings) < 5 NTU < < 10% if >5 NTU</td></td>	< 3%	= 0.3 mg/L</td <td>< 10 mV</td> <td>(3 readings) < 5 NTU < < 10% if >5 NTU</td>	< 10 mV	(3 readings) < 5 NTU < < 10% if >5 NTU	
322	Purge Sto	vt -> Pu	mo died	, attemption	to charge	luse via var	paser (plugge		
338	Purge S	tart, usin	g van ge	nevator to	paved pu		, ,,		
338	11.02	250	6.37	1644	14.6	0.18	129.2	3.93	
341	11.04	400	6.29	1690	15.2	0.14	140.7	5.60	
344	11.05	400	6.27	1725	15.4	0.11	146.2	5.65	
347	11.06	400	6.26	1737	15.3	0.07	149.4	4.94	
350	11,06	4/00	6.25	1752	15.4	0.05	151.0	2.16	
353	11.06	"PZ-7.	6.25	1765	15.5	0.06	151.4	2.63	
100	Collect		- 1223"						
						Sa Sa Da Ar	pject: TWAAFA 4Q23 mplers: ES/MW mple ID: PZ-7-1223 hte: 12/11/23 Time: 1400 allysis: eservative:		
-	*Per EPA (2023), OR Sample Bottles and Ai	vd + 1.5		"ORP referenced to		electrode". Electrode	calibrated in	solution.	
(1) - (1) - (1) 2	\ x	000 mL HDPE w/ H	INO ₃ 6020 Total N	Metals (A) (S) Cr, Cu	்.டூ. மு. ரு.வி. மு cr, cu, டூ ரு. வி.	ව) and 1631E (Hg) නි.@) and 1631E (Hg	;) 🚺 Field	Filtered (0.45µm)	

Date: \	2/11/23	ALTON DLMSTED UGLEVAND	Sampling Pers			Facility/Project: TWAAFA Initial Headspace (ppm) D, O PPM Intial-Water Level before purge (ft. BTOC) 6,83 13750 (Stick) End-Water Level post purge/sample with pump on (ft. BTOC): 1,97 3				
Equipme	Method: /cm	stlow per.		ES [MW (total well depth - wate	r level)					
- daibille	ent Used:		COLORADA POR			6.12				
NQ-YSI	Pro Qualra Pump	- Musterflex	Well volume = 117 (10:12' - 6.83') = 0:57 gal			Pump Intake Depth (ft.8TOC): ~ 1 off bottom				
1438		1423	Initial Flow Rate: 300 Flow cell disconnected prior to sampling:							
= 1911-	Purge stop time:	1501	Final Flow Rate:							
					ty Measuremen	ts				
Time	Water level	Purge Rate	рН	Conductivity	Temperature	Dissoved Oxygen	Redox Potential	Turbidity		
(military)	ft	(mL/min)	pH Units	uS/cm	°C	mg/L	mV	(NTU)		
	< 0.33 ft from 2nd reading	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><!--= 0.3 mg/L</td--><td>< 10 mV</td><td>{3 readings} < 5 NTU o < 10% if >5 NTU</td></td>	< 3%	= 0.3 mg/L</td <td>< 10 mV</td> <td>{3 readings} < 5 NTU o < 10% if >5 NTU</td>	< 10 mV	{3 readings} < 5 NTU o < 10% if >5 NTU		
1423	Purge Sta	ot, Tubing	is creases	, replacing	3/ 1/4" he	er Diameter	tubing (16).			
438		eplaced,	ourge Sto	7	/					
1439	6.88	300	6.35	456.2	12.4	0.63	120.1	158		
1442	6.92	300	(0.31	459.1	12.1	0.62	124.6	117		
1445	69.92	300	6.26	1/60,2	11.9	0.56	128.6	96.8		
1-1-18	10.27	300	6.24	460.7	11.7	0.45	130.7	67.4		
1451	6.92	300	6.23	461.4	11.60	0.40	132.3	49.0		
1500	Collect	irs								
	pil parr			turb, but	SOP-124	ellows for s	Sampling	N		
	as			filtered te	interfered m	etals sampl				
	- ex	t. cond'n	& Conyligh	t + lab d/	D) require	Sampling to	begin, now.			
	c 11 a . L	- 1.07 - 1	8-1223	/						
1500		172-	0-1000							
1501	Purge Stol									
						Projects	TMA 454 4000			
	1					Sample	TWAAFA 4Q23 rs: ES/MW			
			Production of the second			Sample Sample	ID: PZ-8-1223			
						Date: 12		n —		
			1			Analysis				
						Preserv	ative:	-		
							T	-		
			Org. Video woods.			Land to the second second	Lineary 102	solution.		
Notes:	*Per EPA (2023), O	RP direct measurem	ent data recorded is	"ORP referenced to		electrode". Electrod	e calibrated in	solution.		
	- 115 ga	1 1 300.4	~ V-(
	Bottles and A	nalyses:	(collected in o	rder below)						
· ·				Metals (A), (Cr, C	u,19 (0,00 0).	(Hg) and 1631E (Hg)	,			
(1)	x.	500 mL HDPE W/	HNO, 6020 Dissol	ved Metals (A)		(H	g) 🗹 Field	Filtered (0.45µm)		
(1)	Y	250ml HD	PE for ferre	us Ivor						
rill:										

Date:	OF	ALTON DLMSTED UGLEVAND		Well Sampling	,	Well No. Project:	TWAAFA 0.2 ppm			
	12/12/13	1.	Sampling Pers				purge (ft. BTOC) - 22	1 a- /sl-k.		
Fauipme	Method: Icu	oflow peri	ES/M	(total well depth - water		Intial-Water Level before purge (ft. BTOC) 5.03 BTOC (Slick up) End-Water Level post purge/sample with pump on (ft. BTOC): 5.68 (Steen Pump Intake Depth (ft.BTOC): ~1' off before				
WL-GLO	#17068 PID-1	Meshallet	Well Volume =	7.04 2.04 (2.04)						
Turb-960	Purge start time:	E15	.17(10.2' - 5.03) %		= 0,80gal	01, 00	/			
_	Purge stop time:	1120	E422222222	300	Flow cell disconnected prior to sampling :					
	raige stop time:	1146	rinal riow kate:	Final Flow Rate: 250						
				Water Quali	ty Measurement	ts				
Time	Water level	Purge Rate	рН	SPC/ Conductivity	Temperature	Dissoved Oxygen	Redox Potential *	Turbidity		
(military)	ft	(mL/min)	pH Units	uS/cm	°C	mg/L	mV	(NTU)		
(< 0.33 ft from 2nd reading	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><!--= 0.3 mg/L</td--><td>< 10 mV</td><td>(3 readings) < 5 NTU < 10% if >5 NTU</td></td>	< 3%	= 0.3 mg/L</td <td>< 10 mV</td> <td>(3 readings) < 5 NTU < 10% if >5 NTU</td>	< 10 mV	(3 readings) < 5 NTU < 10% if >5 NTU		
1121	5.58	300	7.14	11024	14.5	6.71	-61.9	12.2		
1124	5.87	300	(0.109	1440	14.4	4.16	-18.4	8.97		
1127	5.77	300	6.58	1460	14.4	0.21	0.0	12.40		
1130	5.72	250	6.54	1472	14.11	0.16	8.0	12.60		
1133	5:68	250	6.53	1474	14.8	0,24	10.7	12.40		
51	turned o		11-2-2-4					12.30 8		
1136	5.68	250	6.52	1485	14.8	0,20	13.0	12.30		
1145	All parm			cell	11 10 11 11					
1.47	Collect	" P2-0	-1223"							
						Projec	t: TWAAFA 4Q23			
						Samp	lers: ES/MW			
					1	Samp	le ID: PZ-9-1223			
					1		12/12/23 Time: 1	145		
						Analy		117		
-						Prese	ervative:			
Notes:	*Dox 504 (2022) -	no dies	2010XX 1278 ALTON 1278	CHARLES CONTROL OF THE				1		
Notes:				is "ORP referenced to		electrode", Electro	de calibrated in	solution.		
1	Added SI		and	ng to allow !	or peri fur	upins				
	Bottles and A		(collected in	order helow)						
* (1)			HNO, 6020 Total	Metals (A) A) Cr	ന വരു വരു പ	and sease week				
(1)	1 X	SOO ML HDPE W	HNO, 6020 Disso	Ived Metals (A)	Cr. Cu. FO Min Min	(Hg) and 1631E (Hg)	ua) П	1 60.		
(//)	, v	250 ml 1.11	OPE for ferre	nov lun		Criedy and 1631E (ug) [v] Field	l Filtered (0.45μm)		
								-		

	F	ALTON LMSTED JGLEVAND	Monitoring	Well Sampling	5 i leiu sileet	Well No. TWA - UD Facility/Project: TWAAFA				
Pate:	12/12/2	023	Sampling Pers	onnel:		Initial Headspace (ppm)				
amplin	g Method: 1-	A. Aud	FS,			Intial-Water Level befor		0'		
quipme	ent Used:		Well volume = 0.17 *	(total well depth - wate	r level)	End-Water Level post p				
VL-9KO.	#7068 PID-	2K1-6000	HOI4	16.37		Pump Intake Depth (ft.BTOC): ~ 1' off bottom				
urb - 52		-Masterflar E18	Well Volume = 0		(o)) =					
	Purge start time:	1001	Initial Flow Rate: 400 Flow cell disconnected prior to sampling :		17					
	Purge stop time:	1056	Final Flow Rate:	Final Flow Rate: 300						
					ty Measuremen	ts	780 . 3			
Time	Water level	Purge Rate	рН	SPC/ Conductivity	Temperature	Dissoved Oxygen	Redox Potential	Turbidity		
(military)	ft	(mL/min)	pH Units	uS/cm	°C	mg/L	mV	(NTU)		
	< 0.33 ft from 2nd reading	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><!--= 0.3 mg/L</td--><td>< 10 mV</td><td>{3 readings} < 5 NTU < 10% if >5 NTU</td></td>	< 3%	= 0.3 mg/L</td <td>< 10 mV</td> <td>{3 readings} < 5 NTU < 10% if >5 NTU</td>	< 10 mV	{3 readings} < 5 NTU < 10% if >5 NTU		
1006	9,15	400	7.57	7808	5.70 4	b 14,1	101.8	4.21		
1009	10.78	400	7.70	7916	14.1	4.47	93.3	4.27		
1017	10.85	400	7174	7911	14.0	3.29	82.4	2.41		
1415	10.95	1/00	7.76	7910	14.0	1.86	57.7	2.62		
1013	10.86	4/00	7.76	7705	14.0	0.64	11.7	2.03		
1021	10.87	400	7.77	7909	14.0	0.33	-16.6	2.03		
024	10.89	400	7.77	7917	14.0	0.21	-35.2	2.94		
1007	10.82	300	7.77	7931	13.9	0.13	-60.3	1.32		
030	10.72	300	7.78	7955	13.8	0.07	- 80.1	0,02		
033	10:68	300	7.78	1952	13.9	0.01	-85.0	1.18		
030	10,66	300	7.78	8009	13.8	0.04	-93,5	1.00		
1039	10.63	300	7.78	8048	13.8	0.03	-100.7	0.92		
543	10.64	300	7.79	8002	13.8	0.03	-105.7	1.72		
1045	عاما ددا	300	7.79	8122	13.9	0.04	-110.9	0.83		
अष	10,64	300	7.79	\$151	13.8	0.04	-115.6	4,35		
	All parms	Stable,	d/c f100	cell				- 161400		
050	Colle	C+ "TW	A-40-12	73"	1		Set North Co.			
_						Proje	ct: TWAAFA 4Q23			
_							olers: ES/MW	11 12 22		
					1		ole ID: TWA-4D-122			
						Analy	12/12/23 Time: 10	D50		
							ervative:			
_							si vadvo.			
	*Dev EDA /20221 O	00 dienet me		llonn - f				Lauren		
lotes:				s "ORP referenced to		electrode". Electro	de calibrated in	solution.		
	to avopped	pumping vat		5gal						
	Bottles and A		(collected in c							
5 (1)	The state of the s				3,69 (6), NI, Pb, Z	In) and teats (1)				
(1)	-\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	250 ml HDPF w/	HNO. 6020 Dissol	ved Metals (A) (A)	Cr. Co. Fa Kan NI	n) and 1631E (Hg) Pb, Zn) and 1631E (I		ante de la late de		
(1)			F for fewer		- , Gr Gr Gr, NI,	ru, 211) and 1631E (1	field	Filtered (0.45µm)		
1.1		E JOHN HIM	20 4 LCAN	W) 14.00						

	OF		255 76 675	Well Samplin	g Field Sheet		ity/Project:		
	15/15/2	3	Sampling Pers			Initial Headspace (ppm) 2.7 ppm Intial-Water Level before purge (ft. BTOC) 9,55°			
Samplin	g Method: low	flow peri	ES/	MW (total well depth - wate					
-quipme	ent Used:		Well volume = 0.17 *	(total well depth - wate	r level)	End-Wa	ater Level post p	urge/sample with pump on (ft.	BTOC): /0.43'
WO - YK	#17068 PID-F	TK1-6000	Well Volume =				ntake Depth (ft.E		
Turb- Ju	turb.	E/S	117(-9.55) =				~1	off bottom	
1 - 1	Purge start time:	1215	Initial Flow Rate:	Initial Flow Rate:					
	Purge stop time:	1323	Final Flow Rate:	Flow cell disconnected prior to sampling :					
		1000			ty Measuremen	ts			
Time	Water level	Purge Rate	рН	SPC	Temperature	9	Dissoved Oxygen	Redox Potential	Turbidity
(military)	ft	(mL/min)	pH Units	uS/cm	°C		mg/L	mV	(NTU)
	< 0.33 ft from	- /					1000		{3 readings} < 5 NTU o
	2nd reading	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><</td> <td>/= 0.3 mg/L</td> <td>< 10 mV</td> <td>< 10% if >5 NTU</td>	< 3%	<	/= 0.3 mg/L	< 10 mV	< 10% if >5 NTU
1216	10.08	400	7,45	6199	15.9	2.83		18.2	5.72
1219	10,60	300	7.74	6307	16.1	0	161	-26.2	2.93
1223	10.89	300	7.80	6254	16.0	C	1.12	-46.1	3.60
1225	10.89	300	7.82	6188	16.1		1.04	-63.6	2.73
1228	10.81	150	7.83	6159	15.9	0	.0.3	-68.9	2.13
1231	10.60	150	7.84	6158	15.9		.03	-77.1	3.02
1234	10.49	150	7.84	6140	15.8	C	1,03	-83.1	3.51
1237	10,41	150	7.84	6097	15.8	0	104	-88.0	0.63
1240	10.39 All	150	7.84	4092	154		0.05	-93./	1.10
245	Collect		able, d/c	flow all					
7.3	Coccer	= TWA	-70-12°	28"					
					-	-			
						-			
						-		TWAAFA 4Q23	
					1.50			rs: ES/MW	
								ID: TWA-7D-1223	
							Date: 1		
							Analysis		_
						-		duvo.	
Notes:	*Per EPA (2023), OI	RP direct measuren	nent data recorded is	"ORP referenced to		electr	ode". Electrode	ralibrated in	22.74.0
-	Sample v	1 + 2:	75 gal				-ac relection	. contrated III	solution.
-	Throw a	way 1x	HNOZ PRIS.	250, ml HOPE	Horset Fil	len			
8	Bottles and A	naryses:	(collected in o	rder below)					
(1)	x	500 ml HDPE w/	HNO ₃ 6020 Total N	Metals (A) (G) Cr, (G	MO Ni, Pb, Zr	and :	1631E (Hg)		
(1)	1 X	500 ml HDPE w/	HNO ₃ 6020 Dissolv	red Metals (A), (A), (Cr, Q, PG, NG NI, P	b, Zn) a	and 1631E (H	Field Fi	ltered (0.45µm)
(0)	1 1	230ml HOP	E for Ferral	· Iron	= +LLO 3 pr + 15 1			The state of the s	

	OF P	LMSTED UGLEVAND	Monitoring Sampling Pers	Well Sampling	g Field Sheet	Well No. Facility/Project			
	2/13/23	1				Intial-Water Level before	O,7 ppm	01	
ampling	g Method: اوسا	tlad	ESIM	(total well depth - wate		Intial-Water Level before purge (ft. BTOC) 9.32' End-Water Level post purge/sample with pump on (ft. BTOC): 10.98			
quipme	ent Used:	5000) - INC	Well volume = 0.17	(total well depth - wate	THE PARTY OF THE P	A STATE OF THE STA	- Carlotte in the Challenger	10,48	
NQ-751	Productiopump	Hustertex E15	Well Volume =	56'-9.32)		Pump Intake Depth (ft.BTOC): ~ 1.5" off bottom			
	Purge start time:	0859	Initial Flow Rate:	Initial Flow Rate:					
	Purge stop time:	0931	Final Flow Rate:						
		5.		Water Qualit	y Measurement	ts			
Time	Water level	Purge Rate	рН	Sec Conductivity	Temperature	Dissoved Oxygen	Redox Potential	Turbidity	
(military)	ft	(mL/min)	pH Units	uS/cm	°C	mg/L	mV	(NTU)	
	< 0.33 ft from 2nd reading	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><!--= 0.3 mg/L</td--><td>< 10 mV</td><td>{3 readings} < 5 NTU o < 10% if >5 NTU</td></td>	< 3%	= 0.3 mg/L</td <td>< 10 mV</td> <td>{3 readings} < 5 NTU o < 10% if >5 NTU</td>	< 10 mV	{3 readings} < 5 NTU o < 10% if >5 NTU	
0702	9.93	250	7,91	10724	13.6	0.50	171.5	0.02	
2090	10.32	200	7.81	10631	13.7	0.92	162.1	1.24	
0908	10.62	200	7.80	10635	13.6	0.94	155.1	2.19	
1100	10.81	200	7.80	10635	13.60	0.45	149.9	3.02	
0914	10.89	200	7.79	10638	13.7	0.75	146.6	1.55	
7190	10,98	200	7.79	10671	13.6	0.78	144.3	1.72	
0920	11.00	200	7.79	10753	13.5	0.72	141.4	0.02	
12.	All pa		bu de						
0925	2 - 1 -		80-122						
							1		
			12						
						O-minut 1			
	(x					Sampler	TWAAFA 4Q23 s: ES/MW		
							ID: TWA-80-1223	1	
					7	Date: 12		-	
						Analysis		-	
						Preserva		-	
					le	200			
	rate 1		111						
Notes:			nent data recorded i	s "ORP referenced to		electrode". Electrod	e calibrated in	solution.	
-	Sample vo	1+1	gal						
1	12. 17. 17.								
R	Bottles and A		_(collected in c		Land Car				
(1)	1 x	500 mL HDPE W/	HNO ₃ 6020 Total I	Metals (A), A, Cr, C	Ø, Ø, Øh, Ni, Pb, Zr	n) and 1631E (Hg)			
(1)	1 ×	500 mL HDPE W/	PE FOR FLYK	ved Metals (A), A3,	Cr, Qu, Fg, Mh, Ni, P	b, Zn) and 1631E (H	lg) Field	Filtered (0.45µm)	
		0 110	ne I I	The second secon	The second section is a second second				

U	OF	LMSTED JGLEVAND	Monitoring	Well Sampling	g Field Sheet	Well No. TWA - 9D Facility/Project: TWAAFA				
ate:	12/14/23		Sampling Pers	onnel:		Interest in the contract of th				
amplina	Method: /o	· (h. s. a. :	ESIL			Initial Headspace (ppm) O. I ppm Intial-Water Level before purge (ft. 8TOC) 9 777				
quipme	nt Used:	+120 par		(total well depth - wate	r level)	Intial-Water Level before purge (ft. BTOC) 9.37 End-Water Level post purge/sample with pump on (ft. BTOC): 7.55?				
11.900.	#7068 PID.	541-6000	111111111111111111111111111111111111111	Asim property and				1,00		
urb-500	Ro Quetro Pump	Mesterfler E/S	Well Volume = 8.6			Pump Intake Depth (ft.BTOC):				
	Purge start time:	1424	Initial Flow Rate:							
	Purge stop time:	1526	Final Flow Rate:	350	Plow cell disconnecter	a prior to sampling :	V			
		.000			ty Measuremen	ts				
				SPC			The state of the state of the			
Time	Water level	Purge Rate	pH	Conductivity	Temperature	Oxygen	Redox Potential *	Turbidity		
(military)	ft	(mL/min)	pH Units	uS/cm	°C	mg/L	mV	(NTU)		
	< 0.33 ft from 2nd reading	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><!--= 0.3 mg/L</td--><td>< 10 mV</td><td>{3 readings} < 5 NTU < 10% if >5 NTU</td></td>	< 3%	= 0.3 mg/L</td <td>< 10 mV</td> <td>{3 readings} < 5 NTU < 10% if >5 NTU</td>	< 10 mV	{3 readings} < 5 NTU < 10% if >5 NTU		
12/26	9.53	300	7.24	12020	13.8	0.24	121.1	1.13		
429	9.55	300	7.61	12403	13.8	0.13	93.0	0.35		
432	9.56	300	7.76	11737	13.8	0.11	75.6	0.02		
435	9.58	300	7.89	11025	14.0	0.05	53.4	1.00		
438	7.53	300	7.97	9999	14.0	0.12	40.2	0.00		
441	9.58	350	7.99	9613	14.0	0.11	31.6	1,20		
-1-1-1	9.58	350	8.01	9351	14.0	0.08	71.9	0.80		
447	9.58	350	4.02	9251	13.5	0.08	10.4	0.02		
450	7.58	350	8.02	9183	13,9	0.08	0.6	0.02		
153	9.28	350	8,03	9127	14.0	0.08	-8.8	0.02		
456	7.58	350	8.03	9089	141.0	0.07	-17.8	0.02		
457	9.58	350	8.04	9070	14.0	0.07	-28.8	0.02		
502	9.58	350	8,04	9060	13.9	0.07	-33.9	0.02		
505	9.58	350	8.04	9024	13.9	0.07	-41.0	0.02		
208	9.58	350	8.04	9017	13.7	0.07	-46.2	0.02		
211	9,58	350	8.04	9009	13.7	0.07	-51.8	0102		
1514	9.58	350	8.05	8983	13.9	0.07	-26.4	0.02		
1217	9.57	350	8.05	8977	13.8	0.07	1-60,6	0.05		
-0-		ms Stak		is cell			Project: TWAAFA 40)23		
520	Collect	-DNA-	90-1223				Samplers: ES/MW Sample ID: TWA-9	0.4222		
								ime: 1520		
							Analysis:	. 1320		
							Preservative:	-		
lotes:	*Per EPA (2023), O	RP direct measure	ment data recorded is	s "ORP referenced to		electrode". Electro	: de calibrated in	solution.		
7.177%	-sample	Vol + S	3 gal t	1"2 gal						
*	Bottles and Analyses: (collected in order below)									
, ,			and the second s		200	-) d 16345 (U-)				
(1)					③, ⑥ MG, Ni, Pb, Z Cr, ⑥ ၉, MG Ni, I		un 🗖 sala	Filtered (O ar		
(1)			OPE For ferro		CI, CU CE, IVIN NI,	ro, znj and 1631E (LIEIG	Filtered (0.45µm)		

								11			
To the			T T			Well No. CC	1-2A				
		LMSTED	Monitoring	Well Sampling	g Field Sheet	Well No. CCI	TMAAFA				
Date:		- CELVAIND				Facility/Project: TWAAFA					
	11/24		Sampling Pers			Initial-Water Level before purge (R. BTOC) 2.0					
Equipm	g Method: \F	PER 1		CCD							
WL-450	INT. PID-		Well volume = 0.17 *	(total well depth - water	r level)	1.11.0700					
WQ . VG	PRE t O	-450 feri	Well Volume . 1	,17(5.8-2))	O.S' FREM BITTIN ~ 5.5'					
Turb - Leg	nie.	4. 100		= 0.65		U.S FILLIN CONT.					
	Purge start time	1416	Initial Flow Rate	200	Flow cell disconnected	nnected prior to sampling					
	Purge stop time	1450	Final Flow Rate	1 00							
				Water Qualit	y Measuremen	ts					
			Γ		Γ	Dissoved	Redox Potential	Turbidity			
Time	Water level	Purge Rate	pН	Conductivity	Temperature		*	furbiaity			
(military)	ft	(mL/min)	pH Units	uS/cm	°C	mg/L	mV	(טדא)			
,	< 0.33 ft from			= 3%</td <td>< 3%</td> <td><!--= 0.3 mg/L</td--><td>< 10 mV</td><td>(3 readings) < 5 NTU or < 10% if >5 NTU</td></td>	< 3%	= 0.3 mg/L</td <td>< 10 mV</td> <td>(3 readings) < 5 NTU or < 10% if >5 NTU</td>	< 10 mV	(3 readings) < 5 NTU or < 10% if >5 NTU			
	2nd reading	< 500 mL	< 0.1 unit			1.05	-48.2	26.3			
1413	2.03	200	6.99	1054	8.8	0.70	-46.9	13,9			
1451	203	266	6.83	1480	9.1	0.75	-10.1	12.7			
1424	7,03	200	1.75	1371	4.1	0.52	-46.6 -50.2	13,5			
1427	7.03	200	6.76	1321	9.2	8.41	-53.2	12.5			
1430	2.03	200	6,78	1295	9,2	0.41	- 59.1	11.0			
1433	2.03	700	6,77	1260		0.71	37.1	1.79			
	ALL PARINS STABLE: FLEW LELL DISCONN. RED TYRE = 18% >3 Well williames purche, METRIS NUT ANTITION.										
		4.2.1		yer = 18%	75 60 611 031	ones perces,					
1440	CCW-2A-	0129 6011	हताहा)								
			•				l				
	*Per FPA (2023), O	RP direct measurem	ent data secorded is	*ORP referenced to		electrode* Electrode	calibrated in	salution.			
Notes:	TOTAL GAL	eamen =	2 94								
	Bottles and A			roer below) <u>detals (AL, As, C+, Co</u>	re tola el si - 2	1-ad 16215 (U.)	AC				
(1)						u, zn) and 16312 (Hg	⊢ ∏ Field	Filtered (0.45µm)			
(1)	25%		ino, oozo oute n	The same of the sa	1 Will, 161, F	2, 211, 0110 10312 (118	,, , , , , , , , , , , , , , , ,	cred (0.45)Billy			
			: 7 /6	} \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	LIST.			•			
		as of their) , , ,					N.			
		Total Rottler									
(2)	3 -	3 = Total Bottles									

The same of the sa							p	FAS 1924	
0	OF	PALTON	Monitoring	; Well Samplin	g Field Sheet	Well No. CC			
Date: 1	lul all	DOLLVAND		, coen sumping	g rielu sheet	Facility/Project: TWAAFA			
Samoto	111 74		Sampling Pers		***************************************	Initial Headspace (ppm) N/A			
Equipm	g Method: 15	rice	A	c/co		intial Water Level before		1	
WI. LECT	IETA IMI PID		Matt Majoure . 0 1% .	Itotal well depth - wate	r ievel)	End-Water Level post pur	ge/sample with nump on	1 BTOX): 3.83	
	7.44 1 0	Mit	Wes values 0.17 (12.3-1.64)			Pump Intake Depth (R B)		3,83	
Turb - GC	V71.6	4001601	= 1.9 q-l.			21 FROM E		~10.3' BTOC	
	Aurge start hme	1325	Indial Flow Rate	350	T			10.5 0100	
	Purse stop time	1461	Final Flow Rate	Tribile (all discounded by the familie)					
				<u> </u>	ly Measuremen	ts			
Time	Water level	Purge Rate	рН	Conductivity	Temperature	Dissoved Oxygen	Redox Potential	Turbidity	
(contary)	ft	(mt/min)	pH Units	uS/cm	·c	mg/L	mV	(NTU)	
	< 0.33 ft from 2nd reading	< 500 mL	<01 unit	c/= 3%	< 3%	=0.3 mg/L</td <td>< 10 mV</td> <td>Breadings < 5 NTU or</td>	< 10 mV	Breadings < 5 NTU or	
1378	7.35	300	6.99		-			< 10% if >5 NTU	
1331	3.75	360	7.52	1851	11.4	0.17	-27.9	44.2	
1314	3.25	260	7,12	1829	11.5	0.16	- 41. 0	40.0 33.0	
1357	3.73	200	7.12	1325	11.4	0,13	-05.0	24-9	
1340	3.28	200	7.14	1823	11.4	0.17	-75.7	27.2	
1345	3.30	700	7.19	1867	11.7	61.0	- 88.2	23.2	
1346	3.47	200	7.19	1311	11.7	Fire	-90.7	26.2	
1349	3.64	200	7.19	13/2	11.7	0.17	-95.2	27.4	
		All inchi	STATSLE!	FLOW (FU)	ISCONNI				
			PLO TURB	= 15%, >1	avell value	ourged. Menzs	NET DARLY: CO		
1353	GGH-SE	-0124 C	ILECTED.						
								<u> </u>	
							-		
	-								
	-								
Notes:	*Per EPA (2023), O	RP direct measurem	ent data recorded is	*ORP referenced to		electrode" Electrode	calibrated in	salution.	
,,,,,,,,		fulle ull							
			J						
	Bottles and A	nalyses:	(collected in o			n			
(1)	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			Actals (A), As, Cr, Ci					
(1)			WO, COOD Direct	red Metals (AI, As, C	r, Cu, Fe, Mn, No, F	6, 2n) and 16322 (15)	Field	Filtered (0.45µm)	
-	2 x 17		7 1637	-7×6-60	think itst.			-	
		15ml Prit) (01)					-	
(2)	٦ - "	Total Bottles							

							4,7			
0		ALTON				00	111-7C			
		LMSTED LMSTED	Monitoring	Well Sampling	g Field Sheet	Well No. CCW-2C Facility/Project: TWAAFA				
_	1 11/24		Samuellan Danie			initial Headspace (ppm)				
	Method: U	51011 4111	Sampling Pers					7.1		
Equipme	nt Used:	thum text		:/cp		innus:Water Level before purge (It. 8100) 2,36 ind:Water Level post purge/sample auth pump on (It. 8100). 3,35				
WL-466	TECH INT bin.	w/A		(total well depth - wele				8,38		
WQ . 451	THE MI PID.	SER PERI	Well Valume x V 1 1 7 ([4] - 5,76)			Fump intain Depth (ft.8		~ 22'ETEC		
Turb - Sig	0 1620			= 2.65 9	. پاک	2.0 FM	om butter	20 0/00		
	Furge start time	1241	instal Flow Rate	रक र	Flow cell daconnected	d prior to sampling				
	Furge stop time:	1304	Funel Flore Rate:							
				Water Qualit	y Measuremen	15				
		-			T	Dissoved	Redox Potential			
Time	Water level	Purge Rate	рH	Conductivity	Temperature	Oxygen	•	Turbidity		
(military)	ft	(mt/min)	zrinu Kq	uS/cm	°C	. meri	Vns	(1/TU)		
	< 0.33 ft from 2nd reading	< 500 mt	< 0.1 unit	«/» 3%	< 3%	=03mg/L</td <td>< 10 my</td> <td>(3 readings) < 5 fVTU or < 10% d >5 fVTU</td>	< 10 my	(3 readings) < 5 fVTU or < 10% d >5 fVTU		
1245	8.33	350	6.96	1715	12.6	0,46	-68.9	13.7		
1248	8,38	320	1.85	1710	12.6	0.33	-853	1.3		
1251	8.35	250	695	1708	12.6	6.35	-71.0	1,5		
1254	3.38	250	6.94	1700	12.6	0,31	-15.0	7.1		
1255	su pone	s strick	FILL IELL	bis (ent.						
							<u> </u>			
1300	CCW-20	0124								
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<u> </u>							-			
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							-			
	1	<u> </u>	<u> </u>		<u> </u>					
Notes:										
	TETAL FUPLE VOL= 1.25 gd.									
	Bottles and A	natyses:	(collected in o	rder below)				· · · · · · · · · · · · · · · · · · ·		
(1)			_ *	Sociale (E.L. S.c., Co., Co	u, Sa, Ma, W, 10, 6	n) and 16316 (ilg). F	,c			
(1)	Control of the Contro			ectional till to	Er-Cu. Per trans His P	6, 2m and 16316 (H)	D Field	Filtered (0.45µm)		
(1)	रू रहे	·		11:17	THE CITY	mark with				
	- 1	Sml 1998		, (1)	£ 14 - 21.21	riter Ctv				
(2)	·/ =	Total Bottles								
,-,	•,									

person.								1117			
	TI CO	Min	Monttoring	y Well Samplin	g Field Sheet	Well Ho. CCL	1.31				
1		THOSE AVIND		,			Facility/Project: TW/AFA				
Date	1 11 2014		Sampling Pay	semuel		Initial theadense (cpm) #1//					
Samplin	& Method L	11/11	10/0	: p		Intel Water Level native poreafte BIOCI 3, GV					
Lanthen	ent Used:		1	(total Mail depth - Male	i lessi)	and Water Level post p	nike/samble with Limb in the	6100 3, 33			
W. LEC	Test lest's con	color		11/22 16	7	Fump intate frepth (ft #	atra)	scocal =			
M. 471	Falt Funn	, GEARLIN	Print yellins . 0	11 (5,8 = 3.0) = 0.72 3	()		om BUTTLA	6.3 - 4'			
Tunt ST	entill were	15/61		= 0.72 5	· · ·						
man lagrania	Perga start time	1011	bullal flew Pate	360 ml/min	Flog cell distinuecto	4 poor to tampling	N				
l	Purpestop time	1051	final flow flate								
		1-1-1	Janes e, land a market		y Mensuremen	14					
fime	Water level	Purge Rate	pH	Conductivity	Temperature	Dissoved Oxygen	Redox Potential	Turbidity			
tmilitary	11	(mt/min)	pil Units	u5/cm	"C	mel	Von	(MTU)			
-	< 0.1) ft from				. 19	*/=03me/L	× 10 m√	(3 readings) < 5 fifth of			
	Zod reading	< 500 mL	< 0.1 unti	e/= 3%	# 1%	The second	= -consistence	× 16% if >5 HTU			
1611	Parat	Britis									
1513	174	100	6.80	475	7.5	1.15	-44.6	11.8			
1016	3,13	200	4 87	1461	7.6	1.60	-65.9	19.7			
199	3.14	100	4.82	1461	7.7	1.05	-10,3	10.5			
1023	3.16	100	6.80	1456	10,0	1,64	-14.7	17.7			
1025	1 11	760	6.81	1457	10,5	1:10	-14.3	14.3			
1078	3.30	700	4,81	1457	10.1	1.10	71.0	14.6			
-13.0		CAMETELS	STABLE - C	GIN CKIL DI	16,VNECTE+	,					
		B. L.						-			
	CCW-3	1-0/24			,			And the second s			
	1035	7									
	1422						-				
	+ FILLD 1	40					-				
		71-014									
	1040	71-4167-									
	-1016-										
								-			
								-			
		-,									
	*Pel EPA (2073), GF		and the recorded is	*ORP referenced to		electrode" Electrode	calibrated in	solution			
Notasi	*Per EPA (2073), GF	P. G. JOL S	2 00 00	11		·					
	1011111 111	RUE YOU =				•					
		national .	(collected in or	der below)							
	Bottles and A	THIS - I HOUSE HILL	DUCI. 6020 fotal M	letals IAL As Cr. Cu.	Fe. Mo. Ni. Ph. Zn	o) and 1611E (Hg) /	ι,	,			
(1)			was conditional.	- 1 0 6 - 1 - 1 - 1 41 A- FE	Cu to the Mil to	b Intend 1631F (th	a Marield	Filtered (0.45µm)			
(1)	<u> </u>	OU MIL HUPE W/	7	27	0.2 / 1/ /	1117	- David 24				
	7. x 500.00	UNITED	7-6	3-1633-8-14-SPANIALA-615T-							
	1 8 125 001	rature.	1								
				A FIELD I	WHICHTE	CEW-4.	- 3A - 0124.				
(2)	3) + 3 self 24 start copies.										
	1 + 13	f fell		Ļ 1	, , , , , , , ,						
	144			l v	175ml 41	((X)					

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9		PALTON DLMSTED UOLEVAND	Monitoring	Well Sampling	Field Sheet	Well No. CC	.W -3B		
wate.	11112004		Care III			Facility/Project: TWAAFA			
Samplin	G AA	C1011 051	Sampling Pers	sonnel:		Initial Headspace (ppm)			
Equipme	ent Used:	TON FALL	Ac/			intial-Water Level before	purge (ft. BTOC) 3.54		
		1.10-	Well volume • 0 17 •	(total well depth - water	r level)	End-Water Level post pur	ge/sample with pump on (ft		
Ma. Al	I PACT Pump	NIN-	Web Volume . 0,17 (10.8 - 3,59)			Pump Intake Depth (ft. BT	OC):		
Turb. G		46-16 CHI JERI		= 1.2 gd.	')	l' recon	SITTON = 9.8"	!	
	Purge start time	1135	Initial Flow Pate		·	1 Ipart	7,1	·	
	Purge stop time.		Final Flow Rate:	715	Flow cell disconnected prior to sampling:				
		1111		700		A .			
		<u> </u>		water Qualit	y Measuremen	ts			
Time	Water level	Purge Rate	pН	Conductivity	Temperature	Dissoved Oxygen	Redox Potential	Turbidity	
(military)	ft	(mt/min)	pH Units	uS/cm	°C	mg/L	mV	(NTU)	
	< 0.33 ft from 2nd reading	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><!--= 0.3 mg/L</td--><td>< 10 mV</td><td>(3 readings) < 5 NTU or < 10% if >5 NTU</td></td>	< 3%	= 0.3 mg/L</td <td>< 10 mV</td> <td>(3 readings) < 5 NTU or < 10% if >5 NTU</td>	< 10 mV	(3 readings) < 5 NTU or < 10% if >5 NTU	
1135	PULLE	654INS						< 10% II >5 N I U	
1138	3.90	225	6.80	1230	11.1	0.44	1 10 1/	44.2	
1141	3.91	225	6,81	1233			+ 10.4		
1146	3.74	175	679		11.1	0,44	-10.8	27.8 38.2	
1149	3.94	250	6,77	1243	11.2	0.29	-31.1		
1152	3,39	200	6.33	1237	11.6	0.26	-38.3	35.2 18.1	
1155	3.90	100	6,82	1244	11.3	0.24		16.9	
1158	3.91	200	6.82	1249	11.3	0.24	-4c.1 -51.2	16.4	
11/1	ALL CAT					Has 1/2 20m		10.1	
	1000	31/10		+ 2 gall			ACTIONA.		
	·			1 E 91111	DITS PHENE	, , ,	 		
1700	CCW-3B	-0124							
1.01	COLECTI								
-	Louisir	<u> </u>							
	FIELD BI	ANK#1-01	24						
	110000	COLLECTE	o 6 ccm	3B					
		2.0000							
								•	
<u> </u>	12 504 (2021) 0	RP direct measurem	ent data secorded is	*ORP referenced to		electrode". Electrode	calibrated in	solution.	
Notes:	10172	PULLE	Vol = 20	266.		- Court of the Cou		- Albuoit	
	10170	14H7 EFFELV	FICENCE.	3.17.					
			(collected in o	rder below)	~~~~				
W. CO. T. UDDE W. UNIO. CO20 Years Motors (Al. As. Cr. Cu. Fe. Mrs. NI. Rb. 70) and 16315.					A lost strate bosts	C.			
(1)	x_500 mL HDPE w/ HNO; 6020 Dissolved Metals (Al, As, Cr, Gu, Fe, Mn, Ni, Pb, Zn) and 16315 (Hg) Field Filtered (0.45µm)								
(1)	2 x 500 ml 7 1133 B24 STANDAND LIST.								
		Sinh 1	1655	1324 STA	Motor) (18	'		•	
		3,110		*				•	

(2) Total Bottles

Mile To the property of the grand of the later

		ALTON	Monitoring	Well Sampling	Field Sheet	Well No. CT	mw-17		
	WIL E	UOLEVAND	Monitoring	, wen samping	g ricia sincer	Facility/Project: TWAAFA			
Date:	111124		Sampling Pers	onnel:		initial Headspace (ppm)	11/0		
Sampling	Method: LF	- O O -		c/co		Intial-Water Level before	purge (ft BTOC) 6,54		
Equipme	ent Usad:	TEXT		(total well depth - water	r level)	End-Water Level post pur	ge/sample with pump on (ft	81OC)	
WL - 460	INT- PID-	MA.				Pump Intake Depth (ft. 81)	OC)	,	
WQ - Y51	fil Pump	'LEC PERI	Well Volume = C.	17 (15.5-65	4)	2' 8261	n botten	~13.5 BTOC.	
Turb - 461	CINUS	HEC LAICE	=	1,5gd.					
	Purge start time	1540	Initial Flow Fate		Flow cell disconnected	d prior to sampling :	\square		
	Purge stop time	1612	Final Flow Rate:	300					
				Water Qualit	y Measuremen	ts			
Time	Water level	Purge Rate	рН	Conductivity	Temperature	Dissoved Oxygen	Redox Potential	Turbidity	
(ynditary)	ft	(mL/min)	pH Units	uS/cm	°C	m€/L	mV	(NTU)	
	< 0.33 ft from 2nd reading	< 500 mL	< 0.1 unit	= 3%</td <td>< 3%</td> <td><!--=03 mg/L</td--><td>< 10 mV</td><td>(3 readings) < 5 NTU or < 10% If >5 NTU</td></td>	< 3%	=03 mg/L</td <td>< 10 mV</td> <td>(3 readings) < 5 NTU or < 10% If >5 NTU</td>	< 10 mV	(3 readings) < 5 NTU or < 10% If >5 NTU	
1540	Pulle DEG	NE 300							
1544	7.01	300	6.86	LAO	10.0	0,49	- 30	27.7	
1547	7.05	300	4.84	612	9,8	0,43	-31	27.9	
1550	707	500	6.88	603	9,5	0.33	-44		
1553	7.09	300	6.89	604	9.4	0.34	-53	2 7.8 25.4	
1556	7.11	300	1,90	603	9.4	0,37	-58	29.5	
1559	7.11	300	6.41	601	9,3	0.31			
		ALL PAR	DS STADLE;	TURB, RPD =		ETALS JAMPLED	PEU VIC. TURY	, 0	
					NOM	ETALS JAMPLEO			
1600	(1)116-1	- 0124	COLLECTED						
						·····			
	<u> </u>								
									
	_								
-									
ļ									
 									
	 								
Notari	15 - 524 (2021) O	and direct measurem	ent data recorded is	*ORP referenced to		electrode". Electrode e	ralibrated in	solution.	
Notes:	A Tellis	TI AN (FEE IN	VICINITY D	HLING SAMPL	É				
	प निगदा प	volume =	2,5	al,					
	Bottles and A		(collected in o	rder below)		A	•		
(1)	х	500 mt HOPE w/	HNO, 6320 Total I	Metals (Al. As, Cr, Cu	Fe. Ma. Ni. Ph. Ze	1) and 16312 (Mg)		,	
(1)	х	SOO ME HOPE W!	HNO, 6020 Diecel	ed Motals (Al, As, C	z, Cv, Fe, Ma, Ni, P	b, Zo) and 1631E (Hg)	Field	Filtered (0.45µm)	
(*)		on Hore	7 1173	248 570	_				
		15 at Hoff	3 1c3.	C 10 310	(I)			·	
(2)	<u>fs) =</u>	Total Bottles			¥				



Client Name			Port of Taco	ma	Sampling Lo	cation	TWA-1			
Project #			M0615.20.01	2	Sampling Da	nte	12/12/2023			
Project Nam	ne		TWAAFA Addi Groundwater		Sampler		B. Murphy			
Sampling Ev	/ent		December 2	2023	Sample Nan	••	TWA-1-1223			
Sub Area	Sub Area			Nay	sample wan	ie	TVVA-1-1223			
FSDS QA			C. Sifford		Sample Dep	th	10.0		Pore Volume 9.60 1.56 ORP Turbidity 85.3 55.2 -19.7 230 -38.2 317 7.1 52.6 32.4 25.9 47.9 17.5 55.2 10.6 61.9 9.80	
Hydrology/l	Level Measur	ements			Purge Metho	od	Peristaltic Pu	ımp		
Date			Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW	Pore Volume	
	12/12/2023		13:38	13.54		3.94		9.60	1.56	
All depths measured from top of casing of monitoring well.										
				Water Qu	ality Data					
Time	Purge Vol (gal)	Water Level	Flowrate L/min	рН	Temp (C)	E Cond (uS/cm)	DO (mg/L)	ORP	Turbidity	
BEGAN PURG	E AT : 13:39									
Allowed p	urge water to	clear prior t	o hooking up	ysı. Water ir	nitially orange	and turbid.				
13:42	0.2	3.99	0.25						85.3	
13:45	0.5	3.99	0.25						55.2	
13:48	0.7	3.99	0.25	6.96	11.0	942	3.24	-19.7	230	
13:51	0.9	3.99	0.25	6.86	11.0	898	2.48	-38.2	317	
13:54	1.0	3.99	0.25	6.85	10.7	886	3.33	7.1	52.6	
13:57	1.2	3.99	0.25	6.84	10.2	870	3.43	32.4	25.9	
14:00	1.4	3.99	0.25	6.83	10.4	856	3.52	47.9	17.5	
14:03	1.6	3.99	0.25	6.83	10.4	855	3.52	55.2	10.6	
14:06	1.8	3.99	0.25	6.83	10.4	851	3.54	61.9	9.80	
14:09	2.0	3.99	0.25	6.82	10.4	849	3.50	66.8	8.06	
14:12	2.2	3.99	0.25	6.82	10.3	846	3.54	70.2	6.56	



Client Name	Port of Tacoma	Sampling Location	TWA-1
Project #	M0615.20.012	Sampling Date	12/12/2023

Water Quality Observations:

Cloudy then clear; brown tint then colorless; no odor; no sheen.

Sample Information:

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
Peristaltic Pump	Groundwater	14:15	VOA-Glass		
			Amber Glass		
			Yellow Poly		
			Green Poly		
			Red Total Poly	1	No
			Red Dissolved Poly	1	Yes
			Total Bottles	2	

General Sampling Comments:

Equipment Used:

Water Level Meter: Solinst Model 101; Serial Number 531501

Water Quality Meter: YSI Professional Plus; Serial Number 19K102418

Turbidity Meter: HACH 2100P; Serial Number 040500035330

Filter: SingleSample 0.45 µm Groundwater Filter Capsule; Batch AMJ 10-27-20

Total purge volume prior to sampling: 2.2 gallons.

ORP referenced to Ag/AgCl electrode.



Client Name			Port of Taco	ma	Sampling Lo	cation	TWA-2			
Project #			M0615.20.01	2	Sampling Da	ite	12/12/2023			
Project Nam	е		TWAAFA Addi Groundwater		Sampler		C. Sifford			
Sampling Event			December 2	2023	Sample Nam	20	TWA-2-1223			
Sub Area			1514 Taylor \	Way	sample Man	ie	TVVA-2-1223			
FSDS QA			C. Sifford		Sample Dep	th	6.5			
Hydrology/Level Measurements					Purge Metho	od	Peristaltic Pu	mp		
	Date		Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW	Pore Volume	
12/12/2023			13:51	9.09		2.05		7.04	1.15	
All depths measured from top of casing of monitoring well.										
Water Quality Data										
Time	Purge Vol (gal)	Water Level	Flowrate L/min	рН	Temp (C)	E Cond (uS/cm)	DO (mg/L)	ORP	Turbidity	
BEGAN PURGE	AT : 13:53									
Allowed pu	urge water to	clear prior t	o hooking up	YSI.						
13:56	0.2	2.26	0.25						20.0	
13:59	0.4	2.29	0.25	7.04	11.0	1362	2.93	120.1	13.7	
14:02	0.6	2.30	0.25	7.04	11.0	1267	1.66	115.8	9.78	
14:05	0.8	2.31	0.25	7.07	10.9	1207	1.07	111.1	6.53	
14:08	0.9	2.31	0.25	7.08	11.0	1188	0.81	106.9	5.24	
14:11	1.0	2.32	0.25	7.09	11.0	1168	0.66	102.9	4.65	
14:14	1.2	2.31	0.25	7.11	11.0	1135	0.58	98.0	3.66	
14:17	1.4	2.31	0.25	7.13	11.0	1123	0.54	94.8	3.21	
14:20	1.6	2.32	0.25	7.13	11.0	1112	0.50	91.4	3.25	



		Location TWA-2	
Project # M0615.20.	.012 Sampling	Date 12/12/20)23

Water Quality Observations:

Clear; slight yellow tint; no odor; no sheen.

Sample Information:

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
Peristaltic Pump	Groundwater	14:25	VOA-Glass		
			Amber Glass		
			Yellow Poly		
			Green Poly		
			Red Total Poly	1	No
			Red Dissolved Poly	1	Yes
			Total Bottles	2	

General Sampling Comments:

Equipment Used:

Water Level Meter: Solinst Model 101; Serial Number 223663

Water Quality Meter: YSI ProDSS; Serial Number 22C 102235

Turbidity Meter: HACH 2100Q; Serial Number 2301D000512

Filter: SingleSample 0.45 µm Groundwater Filter Capsule; Batch AMJ 10-27-20

Total purge volume prior to sampling: 1.6 gallons.

ORP referenced to Ag/AgCl electrode.



Client Name)		Port of Taco	ma	Sampling Lo	cation	TWA-3			
Project #			M0615.20.01	2	Sampling Da	ite	12/12/2023			
Project Nam	ie		TWAAFA Addi Groundwater		Sampler		C. Sifford			
Sampling Event			December 2	2023	Sample Nam	20	TWA-3-1223			
Sub Area			1514 Taylor \	Way	sample wan	ie	TVVA-3-1223			
FSDS QA			C. Sifford		Sample Dep	th	8.5			
Hydrology/Level Measurements					Purge Metho	od	Peristaltic Pu	mp		
	Date		Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW	Pore Volume	
12/12/2023			12:07	9.74		6.78		2.96	0.48	
All depths measured from top of casing of monitoring well.										
Water Quality Data										
Time	Purge Vol (gal)	Water Level	Flowrate L/min	рН	Temp (C)	E Cond (uS/cm)	DO (mg/L)	ORP	Turbidity	
BEGAN PURGE	AT: 12:09									
Allowed pu	urge water to	clear prior t	o hooking up	YSI.						
12:12	0.1	6.84	0.15						53.6	
12:17	0.2	6.86	0.15	6.67	10.7	2467	2.07	190.0	26.9	
12:20	0.4	6.87	0.15	6.68	10.7	2380	1.15	174.1	19.30	
12:23	0.5	6.86	0.15	6.69	10.7	2276	0.73	162.6	8.49	
12:26	0.6	6.86	0.15	6.69	10.8	2214	0.58	156.4	7.19	
12:29	0.7	6.86	0.15	6.70	10.7	2169	0.48	151.2	6.27	
12:32	0.9	6.87	0.15	6.70	10.7	2111	0.39	145.1	4.02	
12:35	1.1	6.86	0.15	6.70	10.7	2081	0.33	141.0	1.91	
12:38	1.2	6.86	0.15	6.70	10.8	2074	0.31	138.9	1.62	



Client Name	Port of Tacoma	Sampling Location	TWA-3
Project #	M0615.20.012	Sampling Date	12/12/2023

Water Quality Observations:

Clear; slight orange tint; no odor; no sheen.

Sample Information:

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
Peristaltic Pump	Groundwater	12:40	VOA-Glass		
			Amber Glass		
			Yellow Poly	3	No
			Green Poly		
			Red Total Poly	1	No
			Red Dissolved Poly	1	Yes
			Total Bottles	5	

General Sampling Comments:

Equipment Used:

Water Level Meter: Waterra WS-2 PFAS Free; Serial Number WS2-00616

Water Quality Meter: YSI ProDSS; Serial Number 22C 102235

Turbidity Meter: HACH 2100Q; Serial Number 2301D000512

Filter: SingleSample 0.45 µm Groundwater Filter Capsule; Batch AMJ 10-27-20

Total purge volume prior to sampling: 1.2 gallons.

Field duplicate sample TWA-9-3-1223 collected at this location.

Rinsate Blank1-1223 collected at this location.

ORP referenced to Ag/AgCl electrode.



Client Name	e		Port of Taco	ma	Sampling Lo	cation	TWA-10D		
Project #			M0615.20.01	2	Sampling Da	ite	12/12/2023		
Project Nan	ne		TWAAFA Addi Groundwater		Sampler		B. Murphy	. Murphy	
Sampling Ev	vent		December 2	2023	Sample Nan		TWA-10D-122	າວ	
Sub Area	Sub Area			Nay	sample wan	ie	100-122	23	
FSDS QA			C. Sifford		Sample Dep	th	53.5		
Hydrology/	Level Measur	ements			Purge Metho	d	Peristaltic Pu	mp	
Date			Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW	Pore Volume
	12/12/2023		12:14	58.66		9.84		48.82	7.96
		All c	depths measu	red from top	o of casing of	monitoring	well.		
				Water Qu	ality Data				
Time	Purge Vol (gal)	Water Level	Flowrate L/min	рН	Temp (C)	E Cond (uS/cm)	DO (mg/L)	ORP	Turbidity
BEGAN PURG	E AT: 12:15		_						_
Allowed p	ourge water to	o clear prior t	o hooking up	YSI.					
12:18	0.2	9.93	0.24						2.75
12:21	0.3	9.93	0.24						3.41
12:24	0.5	9.92	0.24	8.06	12.5	7149	0.23	-156.3	6.62
12:27	0.8	9.92	0.24	8.15	12.4	7542	0.17	-193.8	4.82
12:30	1.0	9.92	0.24	8.17	12.4	7639	0.16	-205.3	8.93
12:33	1.2	9.92	0.24	8.18	12.6	7641	0.10	-212.2	3.77
12:36	1.3	9.91	0.24	8.19	12.6	7697	0.13	-216.7	8.81
12:39	1.6	9.91	0.24	8.19	12.6	7708	0.13	-219.1	4.02
12:42	1.8	9.91	0.24	8.20	12.5	7739	0.09	-221.2	4.35
12:45	2.0	9.91	0.24	8.20	12.4	7743	0.09	-221.8	3.90
12:48	2.2	9.91	0.24	8.20	12.5	7752	0.09	-222.3	3.93
12:51	2.3	9.91	0.24	8.21	12.5	7782	0.08	-222.1	3.52



Client Name	Port of Tacoma	Sampling Location	TWA-10D
Project #	M0615.20.012	Sampling Date	12/12/2023

Water Quality Observations:

Clear; brown tint then colorless; no odor; no sheen.

Sample Information:

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
Peristaltic Pump	Groundwater	12:53	VOA-Glass		
			Amber Glass		
			Yellow Poly		
			Green Poly		
			Red Total Poly	1	No
			Red Dissolved Poly	1	Yes
			Total Bottles	2	

General Sampling Comments:

Equipment Used:

Water Level Meter: Solinst Model 101; Serial Number 531501

Water Quality Meter: YSI Professional Plus; Serial Number 19K102418

Turbidity Meter: HACH 2100P; Serial Number 040500035330

Filter: SingleSample 0.45 µm Groundwater Filter Capsule; Batch AMJ 10-27-20

Total purge volume prior to sampling: 2.3 gallons.

ORP referenced to Ag/AgCl electrode.



Client Nam	е		Port of Taco	ma	Sampling Lo	cation	SB-1A	SB-1A			
Project #			M0615.20.01	2	Sampling Da	nte	12/12/2023				
Project Nar	ne		TWAAFA Addi Groundwater		Sampler		B. Murphy	B. Murphy			
Sampling E	vent		December 2	2023	Cample Nam	••	CD 1 A 1000				
Sub Area			Hylebos Mar	rsh	Sample Nan	ie	SB-1A-1223				
FSDS QA	SDS QA C. Sifford Sample Depth 7.5										
Hydrology/	/Level Measurements Purge Method Peristaltic Pump										
	Date		Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW DTB-DTW Pore Vo				
	12/12/2023		15:28	11.56		2.06		9.50	1.55		
All depths measured from to					o of casing of	monitoring	well.				
				Water Qu	uality Data						
Time	Purge Vol (gal)	Water Level	Flowrate L/min	рН	Temp (C)	E Cond (uS/cm)	DO (mg/L)	ORP	Turbidity		
BEGAN PURG	SE AT: 15:29										
Allowed p	ourge water to	o clear prior t	o hooking up	YSI.							
15:32	0.2	2.43	0.24						22.4		
15:35	0.4	2.45	0.24	7.70	11.5	482.6	1.30	-94.0	20.8		
15:38	0.6	2.45	0.24	7.49	11.6	481.3	0.89	-94.0	17.0		
15:41	0.7	2.45	0.24	7.45	11.6	472.2	0.70	-89.9	8.58		
15:44	1.0	2.46	0.24	7.44	11.6	457.1	0.63	-90.2	7.02		
15:47	1.1	2.47	0.24	7.42	11.7	454.5	0.51	-88.1	5.18		
15:50	1.3	2.47	0.24	7.42	11.6	452.3	0.51	-89.3	4.60		
15:53	1.5	2.47	0.24	7.40	11.7	452.0	0.47	-88.6	4.14		
15:56	1.7	2.47	0.24	7.40	11.7	454.5	0.47	-87.6	4.08		
						-		_			



Client Name	Port of Tacoma	Sampling Location	SB-1A
Project #	M0615.20.012	Sampling Date	12/12/2023

Water Quality Observations:

Clear; colorless; no odor; no sheen.

Sample Information:

Sampling Method	Sample Type	Sampling Time	Container # Code/Preservative		Filtered
Peristaltic Pump	Groundwater	16:00	VOA-Glass		
			Amber Glass		
			Yellow Poly		
			Green Poly		
			Red Total Poly	3	No
			Red Dissolved Poly	3	Yes
			Total Bottles	6	

General Sampling Comments:

Equipment Used:

Water Level Meter: Solinst Model 101; Serial Number 531501

Water Quality Meter: YSI Professional Plus; Serial Number 19K102418

Turbidity Meter: HACH 2100P; Serial Number 040500035330

Filter: SingleSample 0.45 µm Groundwater Filter Capsule; Batch AMJ 10-27-20

Total purge volume prior to sampling: 1.7 gallons.

MS/MSD collected at this location.

ORP referenced to Ag/AgCl electrode.



Client Name	9		Port of Taco	ma	Sampling Lo	cation	SB-2A			
Project #			M0615.20.01	2	Sampling Da	ite	12/12/2023			
Project Nam	ne		TWAAFA Addi Groundwater		Sampler		C. Sifford			
Sampling Ev	vent		December 2	2023	Sample Nam		CD 2A 1222			
Sub Area			Hylebos Mar	sh	sample wan	ie	3D-2A-1223	SB-2A-1223		
FSDS QA			C. Sifford		Sample Dep	th	10.0			
Hydrology/	Level Measur	ements			Purge Metho	od	Peristaltic Pump			
	Date		Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTP-DTW DTB-DTW Pore Vo		
	12/12/2023		15:37	12.76		3.63		9.13	1.49	
All depths measured from top of casing of monitoring well.					•					
				Water Qu	ality Data					
Time	Purge Vol (gal)	Water Level	Flowrate L/min	рН	Temp (C)	E Cond (uS/cm)	DO (mg/L)	ORP	Turbidity	
BEGAN PURG	E AT: 15:38									
Allowed p	urge water to	o clear prior t	o hooking up	YSI.						
15:41	0.1	3.84	0.25						35.2	
15:44	0.2	3.84	0.25	7.13	12.0	589	3.14	87	31.0	
15:47	0.4	3.83	0.25	7.06	12.2	592	1.47	67.3	16.3	
15:50	0.5	3.87	0.25	7.02	12.3	600	0.80	28.1	11.1	
15:53	0.7	3.88	0.25	7.00	12.3	601	0.61	10.7	7.58	
15:57	0.9	3.88	0.25	6.97	12.4	598	0.45	-7.5	8.60	
16:01	1.1	3.88	0.25	6.96	12.3	596	0.34	-18.9	5.63	
16:04	1.2	3.89	0.25	6.95	12.4	595	0.31	-22.7	7.08	
16:07	1.4	3.88	0.25	6.95	12.3	592	0.27	-29.9	3.40	
16:11	1.6	3.88	0.25	6.95	12.3	589	0.24	-32.8	4.56	
16:14	1.8	3.89	0.25	6.94	12.3	587	0.22	-35.3	3.84	
_		_	_	_		_		_	_	



Client Name	Port of Tacoma	Sampling Location	SB-2A
Project #	M0615.20.012	Sampling Date	12/12/2023

Water Quality Observations:

Clear; colorless; no odor; no sheen.

Sample Information:

Sampling Method	Sample Type Sampling Time		Container Code/Preservative	#	Filtered
Peristaltic Pump	Groundwater	16:15	VOA-Glass		
			Amber Glass		
			Yellow Poly	9	No
			Green Poly		
			Red Total Poly	1	No
			Red Dissolved Poly	1	Yes
			Total Bottles	11	

General Sampling Comments:

Equipment Used:

Water Level Meter: Waterra WS-2 PFAS Free; Serial Number WS2-00616

Water Quality Meter: YSI ProDSS; Serial Number 22C 102235

Turbidity Meter: HACH 2100Q; Serial Number 2301D000512

Filter: SingleSample 0.45 µm Groundwater Filter Capsule; Batch AMJ 10-27-20

Total purge volume prior to sampling: 1.8 gallons. Field Blank1-1223 collected at this location. Rinsate Blank2-1223 collected at this location. PFAS MS/MSD collected at this location.

ORP referenced to Ag/AgCl electrode.



Client Name	e		Port of Taco	ma	Sampling Lo	cation	TWA-5D		
Project #		M0615.20.012 Sampling Date 12/13/2023							
Project Nan	ne		TWAAFA Addi Groundwater		Sampler		B. Murphy		
Sampling Ev	vent		December 2	2023	Commission Table 50 1000				
Sub Area			Hylebos Mar	sh	Sample Nan	ie	TWA-5D-1223		
FSDS QA	OS QA C. Sifford Sample Depth 28.0								
Hydrology/	Level Measur	ements	•		Purge Metho	od	Peristaltic Pump		
	Date		Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW	Pore Volume
	12/13/2023		9:12	33.09		11.67		21.42	3.49
All depths measured from top of casing of monitoring well.							-		
Water Quality Data									
Time	Purge Vol (gal)	Water Level	Flowrate L/min	рН	Temp (C)	E Cond (uS/cm)	DO (mg/L)	ORP	Turbidity
BEGAN PURG	SE AT: 9:13						-		-
Allowed p	ourge water to	o clear prior t	o hooking up	YSI.					
9:16	0.2	11.71	0.27						2.45
9:19	0.5	11.71	0.27	7.45	12.7	3734	0.45	-91.4	1.32
9:22	0.7	11.71	0.27	7.49	12.8	3728	0.20	-122.3	1.27
9:25	0.9	11.71	0.27	7.50	12.9	3731	0.14	-134.4	0.59
9:28	1.1	11.70	0.27	7.50	13.0	3738	0.11	-140.8	0.56
9:31	1.3	11.70	0.27	7.49	12.9	3739	0.10	-144.3	0.65



Project # M0615.20.01	2 Sampling Dat	te 12/13/2023

Water Quality Observations:

Clear; light brownish-yellow tint; no odor; no sheen.

Sample Information:

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
Peristaltic Pump	Groundwater	9:35	VOA-Glass		
			Amber Glass		
			Yellow Poly		
			Green Poly		
			Red Total Poly	1	No
			Red Dissolved Poly	1	Yes
			Total Bottles	2	

General Sampling Comments:

Equipment Used:

Water Level Meter: Solinst Model 101; Serial Number 531501

Water Quality Meter: YSI Professional Plus; Serial Number 19K102418

Turbidity Meter: HACH 2100P; Serial Number 040500035330

Filter: SingleSample 0.45 µm Groundwater Filter Capsule; Batch AMJ 10-27-20

Total purge volume prior to sampling: 1.3 gallons.

ORP referenced to Ag/AgCl electrode.



Client Name	;		Port of Taco	ma	Sampling Lo	cation	TWA-6D		
Project #			M0615.20.01	2	Sampling Da	ite	12/13/2023		
Project Nam	ie		TWAAFA Additional Groundwater Sampling		Sampler		C. Sifford		
Sampling Ev	ent		December 2	2023	Comple Non	••	TMA 4 D 1000)	
Sub Area			Hylebos Mar	sh	Sample Nan	ie	TWA-6D-1223		
FSDS QA			C. Sifford		Sample Dep	th	31.5		
Hydrology/l	evel Measur	ements			Purge Metho	od	Peristaltic Pump		
	Date		Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW	Pore Volume
	12/13/2023		9:09	33.92		11.32		22.60	3.68
		All c	lepths measu	red from top	o of casing of	monitoring \	vell.		
				Water Qu	ality Data				
Time	Purge Vol (gal)	Water Level	Flowrate L/min	рН	Temp (C)	E Cond (uS/cm)	DO (mg/L)	ORP	Turbidity
BEGAN PURGE AT: 9:10									
Allowed p	urge water to	o clear prior t	o hooking up	YSI.					
9:14	0.1	11.35	0.20						3.41
9:17	0.3	11.35	0.20	6.75	10.9	3853	3.27	158.3	2.17
9:20	0.4	11.35	0.20	6.80	11.2	3886	1.77	90.7	2.32
9:23	0.5	11.35	0.20	6.93	11.2	3893	1.07	19.1	2.27
9:26	0.7	11.34	0.20	6.93	11.6	3893	0.61	-32.7	1.56
9:29	0.9	11.34	0.20	6.92	11.6	3893	0.47	-45.5	1.29
9:32	1.1	11.34	0.20	6.92	11.6	3889	0.37	-55.7	1.55
9:35	1.3	11.32	0.20	6.91	11.7	3891	0.32	-61.6	1.46
9:38	1.6	11.32	0.20	6.90	11.7	3889	0.26	-68.1	1.32
9:41	1.9	11.32	0.20	6.88	11.7	3893	0.22	-70.9	1.23



Project # M0615.20.012 Sampling Date 12/13/2023	Client Name	Port of Tacoma	Sampling Location	TWA-6D
	Project #	M0615.20.012	Sampling Date	12/13/2023

Water Quality Observations:

Clear; strong yellowish-brown tint; no odor; no sheen.

Sample Information:

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
Peristaltic Pump	Groundwater 9:45		VOA-Glass		
			Amber Glass		
			Yellow Poly		
			Green Poly		
			Red Total Poly	1	No
			Red Dissolved Poly	1	Yes
			Total Bottles	2	

General Sampling Comments:

Equipment Used:

Water Level Meter: Solinst Model 101; Serial Number 223663

Water Quality Meter: YSI ProDSS; Serial Number 22C 102235

Turbidity Meter: HACH 2100Q; Serial Number 2301D000512

Filter: SingleSample 0.45 µm Groundwater Filter Capsule; Batch AMJ 10-27-20

Total purge volume prior to sampling: 1.9 gallons.

ORP referenced to Ag/AgCl electrode.



Client Name	е		Port of Taco	ma	Sampling Location SB-3A				
Project #			M0615.20.01	2	Sampling Da	ite	12/13/2023		
Project Nan	ne		TWAAFA Addi Groundwater		Sampler B. Murphy				
Sampling Ev	vent		December 2	2023	Sample Nan	20	SB-3A-1223		
Sub Area	Sub Area Hylebos Marsh		sample wan	ie	3D-3A-1223				
FSDS QA	FSDS QA C. Sifford				Sample Dep	th	8.0		
Hydrology/Level Measurements Purge Method Peristaltic Pump			ımp						
	Date		Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW	Pore Volume
	12/13/2023		10:00	12.77		2.87		9.90	1.61
		All c	lepths measu	ured from top	o of casing of	monitoring \	well.		
				Water Qu	ality Data				
Time	Purge Vol (gal)	Water Level	Flowrate L/min	рН	Temp (C)	E Cond (uS/cm)	DO (mg/L)	ORP	Turbidity
BEGAN PURG	E AT: 10:01								
10:04	0.4	2.99	0.30	7.50	12.7	799	0.24	-40.0	15.9
10:07	0.7	2.99	0.30	7.50	12.7	746	0.14	-83.90	13.8
10:10	0.9	2.99	0.30	7.47	12.7	726	0.11	-107.4	8.87
10:13	1.1	2.99	0.30	7.48	12.7	699	0.10	-122.9	6.11
10:16	1.3	2.99	0.30	7.49	12.8	680	0.09	-130.7	5.41
10:19	1.5	2.99	0.30	7.49	12.6	668	0.08	-135.3	4.71
10:22	1.7	2.99	0.30	7.50	12.6	660	0.07	-138.7	4.32
10:25	1.9	2.99	0.30	7.50	12.6	653.7	0.07	-141.3	4.04



Client Name	Port of Tacoma	Sampling Location	SB-3A
Project #	M0615.20.012	Sampling Date	12/13/2023

Water Quality Observations:

Clear.	colorless:	no	odor.	nο	sheen
CiCai,	COIONCSS	110	odoi,	110	3110011.

Sample Information:

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
Peristaltic Pump	Groundwater 10:30		VOA-Glass		
			Amber Glass		
			Yellow Poly		
			Green Poly		
			Red Total Poly	1	No
			Red Dissolved Poly	1	Yes
			Total Bottles	2	

General Sampling Comments:

Equipment Used:

Water Level Meter: Solinst Model 101; Serial Number 531501

Water Quality Meter: YSI Professional Plus; Serial Number 19K102418

Turbidity Meter: HACH 2100P; Serial Number 040500035330

Filter: SingleSample 0.45 µm Groundwater Filter Capsule; Batch AMJ 10-27-20

Total purge volume prior to sampling: 1.9 gallons.

ORP referenced to Ag/AgCl electrode.



									1
Client Nam	е		Port of Taco	ma	Sampling Location		CTMW-25D		
Project #			M0615.20.01	2	Sampling Date 12/13/2023		12/13/2023	}	
Project Nan	TWAAFA Additional Groundwater Sampling Sampler B. Murphy								
Sampling E	vent		December 2	2023	Comple Non	OT 111		1222	
Sub Area	Sub Area Potter Parcel		затріе мат	Sample Name CTMW-25D-1223					
FSDS QA C. Sifford Sample Depth 18.0									
Hydrology/	Level Measur	ements			Purge Metho	od	Peristaltic Pump		
	Date		Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW	Pore Volume
	12/13/2023			22.78		9.59		13.19	2.15
		All c	depths measu	red from top	of casing of	monitoring \	vell.	•	
				Water Qu	ality Data				
Time	Purge Vol (gal)	Water Level	Flowrate L/min	рН	Temp (C)	E Cond (uS/cm)	DO (mg/L)	ORP	Turbidity
BEGAN PURG	SE AT: 11:49								
11:52	0.2	9.61	0.30	7.14	13.5	3210	0.40	-114.7	4.04
11:55	0.5	9.61	0.30	7.14	13.6	3030	0.2	-122.70	1.92
11:58	0.7	9.61	0.30	7.14	13.6 2943		0.12	-126.9	2.31
12:01	0.9	9.61	0.30	7.13	13.7 2856		0.09	-129.8	1.50
12:04	1.2	9.61	0.30	7.13	13.6	2809	0.08	-131.6	2.96
	•								



Client Name	Port of Tacoma	Sampling Location	CTMW-25D
Project #	M0615.20.012	Sampling Date	12/13/2023

Water Quality Observations:

Clear; light brownish-yellow tint; no odor; no sheen.

Sample Information:

Sampling Method	Sample Type S		Container Code/Preservative	#	Filtered
Peristaltic Pump	Groundwater 12:05		VOA-Glass		
			Amber Glass		
			Yellow Poly		
			Green Poly		
			Red Total Poly	1	No
			Red Dissolved Poly	1	Yes
			Total Bottles	2	

General Sampling Comments:

Equipment Used:

Water Level Meter: Solinst Model 101; Serial Number 531501

Water Quality Meter: YSI Professional Plus; Serial Number 19K102418

Turbidity Meter: HACH 2100P; Serial Number 040500035330

Filter: SingleSample 0.45 µm Groundwater Filter Capsule; Batch AMJ 10-27-20

Total purge volume prior to sampling: 1.2 gallons.

ORP referenced to Ag/AgCl electrode.



Client Name	е		Port of Taco	ma	Sampling Lo	cation	CTMW-20		
Project #			M0615.20.01	2	Sampling Date 12/13/2023				
Project Nan	ne		TWAAFA Addi Groundwater		Sampler		C. Sifford		
Sampling Ev	vent		December 2	2023	Sample Nan	20	CTN/IN/ 20 12	22	
Sub Area Potter Parcel		ė	sample wan	ie	CTMW-20-1223				
FSDS QA C. Sifford				Sample Dep	th	7.0			
Hydrology/Level Measurements				Purge Metho	od	Peristaltic Pu	ımp		
	Date		Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW	Pore Volume
12/13/2023			11:38	10.64		1.28		9.36	1.53
		All c	lepths measu	ured from top	of casing of	monitoring	well.		
				Water Qu	ality Data				
Time	Purge Vol (gal)	Water Level	Flowrate L/min	рН	Temp (C)	E Cond (uS/cm)	DO (mg/L)	ORP	Turbidity
BEGAN PURG	E AT: 11:41		_						
Allowed p	ourge water to	o clear prior t	o hooking up	YSI.					
11:43	0.2	1.37	0.35						14.1
11:47	0.4	1.39	0.35	6.87	11.9	1952	2.11	-88.4	8.99
11:51	0.7	1.39	0.35	6.85	11.9	1863	1.03	-105.5	5.66
11:54	1.1	1.39	0.35	6.86	11.7	1689	0.61	-113.1	5.02
11:57	1.5	1.39	0.35	6.86	11.8	1622	0.47	-115.9	4.99
12:00	1.8	1.39	0.35	6.86	11.7	1604	0.41	-117.5	3.86
12:03	2.1	1.39	0.35	6.86	11.7	1584	0.34	-118.9	3.42



Client Name	Port of Tacoma	Sampling Location	CTMW-20
Project #	M0615.20.012	Sampling Date	12/13/2023

Water Quality Observations:

Clear; colorless; moderate petroleum hydrocarbon-like odor; no sheen; slightly foamy.

Sample Information:

Sampling Method	Sample Type Sa		Container Code/Preservative	#	Filtered
Peristaltic Pump	Groundwater 12:10		VOA-Glass		
			Amber Glass		
			Yellow Poly		
			Green Poly		
			Red Total Poly	1	No
			Red Dissolved Poly	1	Yes
			Total Bottles	2	

General Sampling Comments:

Equipment Used:

Water Level Meter: Solinst Model 101; Serial Number 223663

Water Quality Meter: YSI ProDSS; Serial Number 22C 102235

Turbidity Meter: HACH 2100Q; Serial Number 2301D000512

Filter: SingleSample 0.45 µm Groundwater Filter Capsule; Batch AMJ 10-27-20

Total purge volume prior to sampling: 2.1 gallons.

ORP referenced to Ag/AgCl electrode.



Client Name			Port of Taco	 ma	Sampling Lo	cation	CTMW-15		
Project #			M0615.20.01		Sampling Da		12/13/2023		
•			TWAAFA Addi						
Project Nam	e		Groundwater		Sampler		B. Murphy		
Sampling Ev	ent		December 2	.023	Sample Nan	Sample Name CTMW-15-1223			
Sub Area		Potter Parcel Sample Name Children 1923			20				
FSDS QA			C. Sifford		Sample Dep	th	7.0		
Hydrology/Level Measurements				Purge Metho	od	Peristaltic Pu	mp		
	Date		Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW	Pore Volume
12/13/2023			12:30	10.46		4.84		5.62	0.92
		All c	depths measu	ired from top	o of casing of	monitoring \	well.		
Water Quality Data									
Time	Purge Vol (gal)	Water Level	Flowrate L/min	рН	Temp (C)	E Cond (uS/cm)	DO (mg/L)	ORP	Turbidity
BEGAN PURGE	AT : 12:31								
12:34	0.3	6.25	0.30	7.00	12.4	754	0.21	14.1	38.6
12:37	0.5	6.81	0.30	6.97	12.1	725	0.2	5.10	30.2
12:40	0.5	7.09	0.10	7.09	11.9	707	0.18	-2.8	37.7
12:43	0.6	7.35	0.10	6.97	11.7	698	0.18	-9.8	38.7
12:46	0.7	7.53	0.10	6.97	11.8	695	0.19	-16.8	29.8
12:49	0.7	7.72	0.10	6.97	11.8	691	0.18	-26.7	
12:55	0.8	8.04	0.10	6.97	11.9	691	0.15	-42.4	29.8
12:58	1.0	8.12	0.10	6.96	11.9	690	0.15	-48.9	18.0
13:01	1.0	8.12	0.10	6.96	12.0	690	0.15	-62.3	11.2
13:04	1.1	8.12	0.10	6.94	12.0	687	0.19	-79.9	4.80
13:07	1.1	8.12	0.10	6.94	12.0	678	0.17	-89.4	2.68
13:10	1.2	8.10	0.10	6.94	12.0	660.4	0.15	-97.3	1.76



Client Name	Port of Tacoma	Sampling Location	CTMW-15
Project #	M0615.20.012	Sampling Date	12/13/2023

Water Quality Observations:

Cloudy, then clear; brownish-yellow tint, then colorless; no odor; no sheen.

Sample Information:

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
Peristaltic Pump	Groundwater	13:20	VOA-Glass		
			Amber Glass		
			Yellow Poly		
			Green Poly		
			Red Total Poly	1	No
			Red Dissolved Poly	1	Yes
			Total Bottles	2	

General Sampling Comments:

Equipment Used:

Water Level Meter: Solinst Model 101; Serial Number 531501

Water Quality Meter: YSI Professional Plus; Serial Number 19K102418

Turbidity Meter: HACH 2100P; Serial Number 040500035330

Filter: SingleSample 0.45 µm Groundwater Filter Capsule; Batch AMJ 10-27-20

Total purge volume prior to sampling: 1.2 gallons.

Flowrate reduced due to significant drawdown. Continued purging until parameters generally stabilized. Confirmed with A. Hackett in the field.

ORP referenced to Ag/AgCl electrode.



Client Name Port of Tacoma					Sampling Lo	cation	MW-1			
Project #			M0615.20.01		Sampling Date		12/13/2023			
Project Nam	Project Name TWAAFA Addit Groundwater			Sampler		C. Sifford				
Sampling Event			December 2	2023	Sample Nam	ne	MW-1-1223			
Sub Area			Potter Parce	<u> </u>	sample Hall		10100-1-1223			
FSDS QA			C. Sifford		Sample Dep	th	6.0			
Hydrology/L	evel Measur	ements	•		Purge Metho	od	Peristaltic Pu	ımp		
	Date		Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW	Pore Volume	
	12/13/2023		12:32	8.30	0.93	0.94	0.01	7.36	1.20	
		All c	lepths measu	red from top	o of casing of	monitoring	well.			
				Water Qu	ality Data					
Time	Purge Vol (gal)	Water Level	Flowrate L/min	рН	Temp (C)	E Cond (uS/cm)	DO (mg/L)	ORP	Turbidity	
BEGAN PURGE	AT: 12:33									
Allowed pu	urge water to	clear prior t	o hooking up	YSI.						
12:36	0.1	2.03	0.38						59.9	
12:50	1.0	1.85	0.25	6.64	10.2	210.5	3.76	-79.4	37.8	
12:53	1.2		0.25	6.42	10.1	208.9	1.84	-67.3	35.1	
12:59	1.7		0.25	6.37	10.2	223.5	0.78	-63.0	35.6	
13:02	1.9		0.25	6.34	10.0	216.3	0.56	-61.5	30.7	
13:05	2.1		0.25	6.34	10.2	227.9	0.42	-60.8	28.7	
13:08	2.3		0.25	6.36	10.2	233.2	0.36	-61.6	26.6	
13:11	2.5		0.25	6.34	10.2	226.4	0.30	-60.6	26.7	



Client Name	Port of Tacoma	Sampling Location	MW-1
Project #	M0615.20.012	Sampling Date	12/13/2023

Water Quality Observations:

Clear; gray tint; strong petroleum hydrocarbon-like odor; heavy rainbow sheen; tar-like blebs present.

Sample Information:

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
Peristaltic Pump	Groundwater	13:15	VOA-Glass		
			Amber Glass		
			Yellow Poly		
			Green Poly		
			Red Total Poly	1	No
			Red Dissolved Poly	1	Yes
			Total Bottles	2	

General Sampling Comments:

Equipment Used:

Water Level Meter: Geotech Interface Probe; Serial Number 4514

Water Quality Meter: YSI ProDSS; Serial Number 22C 102235

Turbidity Meter: HACH 2100Q; Serial Number 2301D000512

Filter: SingleSample 0.45 µm Groundwater Filter Capsule; Batch AMJ 10-27-20

Total purge volume prior to sampling: 2.5 gallons.

LNAPL coating the interface probe prevented water level readings after 12:53.

E Cond readings oscillated between 210 and 240 uS/cm throughout purge.

ORP referenced to Ag/AgCl electrode.



Appendix B

Analytical Laboratory Reports and Data Validation Review Reports

QA/QC SOLUTIONS, LLC



James J. Mc Ateer, Jr., BS, MRSC Managing Member 7532 Champion Hill Rd. SE Salem, Oregon 97306

Telephone: 503.763.6948 Facsimile: 503.566.2114 Cellular: 503.881.1501 email: jjmcateer@msn.com

February 18, 2023

Tasya Gray, LG DOF Dalton, Olmsted & Fuglevand 1001 SW Klickitat Way, Suite 200B Seattle, Washington 98134

Subject: Taylor Way and Alexander Ave Fill Area (TWAAFA) Site - 4thQ 2023 Groundwater

Sampling Data Validation Summary

Client Project No., Task Order No.: Not Specified, Task No. 9

QA/QC Solutions, LLC Project No.: 010524.1

Dear Tasya:

This letter documents the results of the data validation summary of selected elements completed on groundwater samples associated with Taylor Way and Alexander Ave Fill Area (TWAAFA) Site – Fourth Quarter 2023 Sampling event located in Tacoma, Washington.

The available data were validated to verify applicable laboratory quality assurance and quality control (QA/QC) measurements were reported, documented, and of sufficient quality to support its intended purpose(s). A summary of the overall assessment of data quality, the data set, a summary of the analytical methods used to complete the chemical analyses, a summary of the data validation procedures used, and a summary of the reasons why data were qualified (including other items noted during data validation) is presented below.

Overall Assessment of Data Quality

Overall, the data reported are of good quality and the results for the applicable QA/QC measurements that were used by the laboratories during the analysis of the samples were generally acceptable. Some sample results required qualification during data validation because method-specific QA/QC criteria were not met and/or based on best professional judgement. Data users should note that selected sample results maybe qualified for more than one reason. During data validation the following actions were taken:

- A total of 18 results reported as detected required qualification as estimated and were assigned a *J* data validation qualifier.
- No results reported as detected required restatement as undetected (*U*).
- \triangleright No results required rejection (R).

Analytical data that did not meet method- and/or laboratory-established control limits for applicable quality control measurements or based on best professional judgment were qualified as estimated (J) by the laboratory or during data validation. These qualified data are usable and represent data of good quality and

Tasya Gray, LG February 18, 2023 Page 2

reasonable confidence and have an acceptable degree of uncertainty (i.e., may be less precise or less accurate than unqualified data).

Data Set

The data set consisted of 38 groundwater samples, 2 field duplicates, and 2 field blanks that were collected in December 2023. A summary of the samples collected and the analyses completed are summarized in Table 1.

Analyses were completed by Friedman & Bruya, Inc. (FBI) located in Seattle, Washington and Fremont Analytical, Inc. (FAI) located in Seattle, Washington. The data and electronic data deliverable (EDDs) were reported in a total of 11 deliverables.

Analytical Methods

The analytical methods used to complete the elemental analyses are listed as follows (see also Table 1).

- ➤ Total metals (arsenic, copper, iron, lead, manganese, nickel, and zinc) by digestion and analysis by inductively coupled plasma-mass spectrometry (ICP-MS) EPA Method 6020B (U.S. EPA 2023).
- Dissolved metals (arsenic, copper, iron, lead, manganese, nickel, and zinc) by field filtration through 0.45 μm pore diameter membrane filter and analysis by ICP-MS EPA Method 6020B (U.S. EPA 2023).
- > Total mercury by oxidation, purge and trap, and Cold Vapor Atomic Fluorescence Spectrometry by Method 1631, Revision E (U.S. EPA 2002a).
- ➤ Total aluminum by digestion and analysis by ICP-MS using EPA Method 200.8 (U.S. EPA 1994).
- > Dissolved aluminum by field filtration through 0.45 μm pore diameter membrane filter and analysis by ICP-MS EPA Method 200.8 (U.S. EPA 1994).
- Ferrous iron by reducing ferrous iron into solion (phenanthroline method) and colorimetric (spectrophotometric) detection using Standard Method (SM) 3500-Fe B (APHA 2012).

Data Validation Procedures

Data validation procedures included evaluating a summary of the sample results and applicable quality control results reported by the laboratory; this level of validation is also referred to as an abbreviated data review (equivalent to "Stage 2A/2B" review per U.S. EPA 2009. The analytical data were validated generally following the applicable guidance and requirements:

- ➤ Method-specific and laboratory-established quality control requirements, as applicable.
- ➤ Guidance on Environmental Data Verification and Validation (U.S. EPA 2002b)
- ➤ Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use. OSWER No. 9200.1-85. EPA 540-R-08-005. (U.S. EPA 2009).
- National Functional Guidelines for Inorganic Data Superfund Data Review. Final. OLEM 9240.1-66, EPA 542-R-20-006, November 2020. U.S. Environmental

Tasya Gray, LG February 18, 2023 Page 3

Protection Agency (EPA), Office of Superfund Remediation and Technology Innovation (OSRTI), Washington, DC. (U.S. EPA 2020).

The laboratory data deliverables that were validated and available for review included the following:

- > Case narratives discussing analytical problems (if any) and procedures.
- > Chain-of-custody documentation to verify completeness of the data set.
- > Sample preparation logs or laboratory summary result forms to verify analytical holding times were met.
- Results for applicable method blanks and field blanks to determine whether an analyte that may have been reported as detected in a sample was the result of possible contamination introduced at the laboratory or during sampling, respectively.
- Results for applicable QC measurements (e.g., instrument calibration data, laboratory control sample (LCS) (i.e., blank spike), duplicate LCS, matrix spike [MS], and matrix spike duplicate [MSD] recoveries to assess analytical accuracy.
- Results for applicable laboratory duplicate sample, duplicate LCS, and MSD analyses to assess analytical precision as are applicable.
- > Results for the field duplicate samples to provide additional information.
- Laboratory summaries of analytical results reported for the analyses competed.

Verification and validation of 100-percent of all applicable laboratory calculations, transcriptions, review of instrument printouts, and review of bench sheets were not completed during the data validation review. There may be analytical problems that could only be identified by reviewing every instrument printout and associated analytical quality control results. Verification of all possible factors that could result in the degradation of data quality was not completed nor should be inferred at this time. The laboratory case narratives did not indicate any significant problems with data that were not reviewed during data validation. The adequacy of the sampling procedures was not completed during the data validation.

Performance based control limits established by the laboratory, applicable control limits specified in the analytical methods, and best professional judgement were used to evaluate data quality and to determine if specific data required qualification. Data qualifiers were assigned during data validation following guidance specified by U.S. EPA (2002b, 2020a, and 2020b) to the EDD when applicable QC measurement criteria were not met and qualification of the data was warranted.

Reasons for Data Qualification

A total of 18 ferrous iron results reported as detected were qualified as estimated (*J*) because analyses were completed greater than 24 hrs. from time of sample collection.

Data users should note the referenced SM 3500-Fe B (APHA 2012) does not state a definitive holding time limitation; however, an industry standard of "analyze immediately", with a default of <24 hrs. from time of collection are used by laboratories.

The ferrous iron data qualified during data validation are as follows:

Sample ID	Analyta	Concentration	Data Validation	DL (mg/L)	RL (mg/L)
Sample ID CTMW-24-1224	Analyte Iron, Ferrous, Fe+2	(mg/L) 1.19	Qualifier J	(mg/L) 0.0602	(mg/L) 0.15
CTMW-24D-1224	Iron, Ferrous, Fe+2	0.877	J	0.0602	0.15
C11V1VV-24D-1224	iioii, reiious, re+z	0.677	J	0.0002	0.13
PZ-9-1223	Iron, Ferrous, Fe+2	35.1	J	6.02	15
TWA-4D-1223	Iron, Ferrous, Fe+2	0.831	J	0.0602	0.15
TWA-7D-1223	Iron, Ferrous, Fe+2	0.381	J	0.0602	0.15
CTMW-12-1223	Iron, Ferrous, Fe+2	1.41	J	0.0602	0.15
CTMW-17-1223	Iron, Ferrous, Fe+2	0.372	J	0.0602	0.15
CTMW-17D-1223	Iron, Ferrous, Fe+2	0.886	J	0.0602	0.15
CCW-1A-1223	Iron, Ferrous, Fe+2	0.182	J	0.0602	0.15
CCW-8B-1223	Iron, Ferrous, Fe+2	13.8	J	1.51	3.75
CCW-5B-1223	Iron, Ferrous, Fe+2	10.3	J	1.51	3.75
CCW-5C-1223	Iron, Ferrous, Fe+2	8.02	J	1.51	3.75
CCW-6B-1223	Iron, Ferrous, Fe+2	19.7	J	1.51	3.75
CCW-6C-1223	Iron, Ferrous, Fe+2	10.5	J	1.51	3.75
CCW-7B-1223	Iron, Ferrous, Fe+2	20.3	J	1.51	3.75
CCW-7C-1223	Iron, Ferrous, Fe+2	1.16	J	0.0602	0.15
CCW-9-6B-1223	Iron, Ferrous, Fe+2	20.2	J	1.51	3.75
CCW-9-7B-1223	Iron, Ferrous, Fe+2	16	J	1.51	3.75

Notes

DL - detection limit

RL - reporting limit

General Comments:

- > Data users should refer to the laboratory data packages for complete information pertinent to the analyses completed.
- > Some sample results were reported from a dilution analysis that was required. In these instances, all other sample results were reported from the undiluted analysis.
- In some instances, continuing calibration and/or ongoing precision and accuracy (OPR) QC limits were not met. Qualification of associated sample results were not required because the exceedances were due to an increase of instrument sensitivity and the applicable target element was not detected in the associated sample.
- ➤ Chromium was detected in both field blanks and manganese was detected in the field blank #1. Associated sample results did not require qualification for this reason.

Tasya Gray, LG February 18, 2023 Page 5

➤ Batch QC data (e.g., MS/MSDs) were associated with several data packages. Results from batch QC samples were not used to determine whether sample data required qualification.

This concludes the data validation review. Should you have any questions regarding the information presented herein, please contact me by telephone at 503.763.6948 or by e-mail at jjmcateer@msn.com.

Cordially,

James J. Mc Ateer, Jr., BS, MRSC

Managing Member

cc: Trevor Louviere, DOF Dalton, Olmsted & Fuglevand, Inc.

Attachments

Tasya Gray, LG February 18, 2023 Page 6

References

APHA 2012. Standard Methods for the Examination of Water and Wastewater. 22nd Edition. Prepared and published jointly by the American Public Health Association, American Water Works Association, and Water Environment Federation, American Public Health Association, and Washington, DC.

U.S. EPA. 1994. Methods for the determination of metals in environmental samples. EPA-600/R-94-111. May 1994. Determination of trace elements in waters and wastes by inductively coupled plasma - mass spectrometry (EPA Method 200.8, Revision 5.4) Environmental Monitoring Systems Laboratory. Office of Research and Development. U.S. Environmental Protection Agency, Cincinnati, Ohio.

U.S. EPA 2002a. Method 1631, Revision E: Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Fluorescence Spectrometry. EPA-821-R-02-019. August 2002. U.S. Environmental Protection Agency, Office of Water, Washington, DC

U.S. EPA 2002b. Guidance on Environmental Data Verification and Data Validation. EPA QA/G-8. EPA/240/R-02/004. November 2002. U.S. Environmental Protection Agency, Office of Environmental Information, Washington DC.

U.S. EPA 2009. Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use. OSWER No. 9200.1-85. EPA 540-R-08-005. January 13, 2009. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, DC.

U.S. EPA 2020. National Functional Guidelines for Inorganic Data Superfund Data Review. Final. OLEM 9240.1-66 EPA 542-R-20-006. November 2020. Office of Superfund Remediation and Technology Innovation (OSRTI), U.S. Environmental Protection Agency.

U.S. EPA 2024. SW-846 on-line. Test methods for evaluating solid wastes, physical/chemical methods. https://www.epa.gov/hw-sw846/sw-846-compendium (last updated on June 21, 2023). U.S. Environmental Protection Agency, Office of Solid Waste, Washington, DC.

Table 1. Summary of Samples Collected and Analyses Completed

Sample Number	Laboratory ID	Laboratory	Date Collected	Time Collected	Total and Dissolved Metals by SW-846 Method 6020B	Total and Dissolved Aluminum by EPA Method 200.8	Ferrous Iron by SM 3500-Fe B	Total Mercury by EPA 1631E
CTMW-24-1223	312179-01	FBI	12/11/23	12:45	✓			
	2312283-001	FAI				✓	✓	
CTMW-24D-1223	312179-02	FBI	12/11/23	12:45	✓			
	2312283-002	FAI				✓	✓	
PZ-7-1223	312179-03	FBI	12/11/23	14:00	✓			
	2312283-003	FAI				✓	✓	
PZ-8-1223	312179-04	FBI	12/11/23	15:00	✓			
	2312283-004	FAI				✓	✓	
TWA-4D-1223	312209-01	FBI	12/12/23	10:50	✓			
	2312296-001	FAI			,	✓	✓	
PZ-9-1223	312209-02	FBI	12/12/23	11:45	✓	✓	√	
	2312296-002	FAI						
TWA-7D-1223	312209-03	FBI	12/12/23	12:45	✓			
	2312296-003	FAI				✓	✓	
CTMW-9-1223	312222-01	FBI	12/12/23	15:25	✓			
	2312314-001	FAI				✓	✓	
CTMW-8-1223	312222-02	FBI	12/12/23	15:25	✓			
	2312314-002	FAI				✓	✓	
TWA-8D-1223	312245-01	FBI	12/13/23	09:25	✓			
	2312328-001	FAI				✓	✓	
CTMW-5-1223	312245-02	FBI	12/13/23	10:40	✓			
	2312328-002	FAI				✓	✓	
CTMW-7-1223	312245-03	FBI	12/13/23	12:00	✓			
	2312328-003	FAI				✓	✓	
CTMW-18-1223	312245-04	FBI	12/13/23	12:35	✓			
	2312328-004	FAI				✓	✓	
CTMW-14-1223	312249-01	FBI	12/13/23	14:15	✓			
- ····· · · · · · · · · · · · · · · · ·	2312338-001	FAI	_, •			✓	√	

Sample Number	Laboratory ID	Laboratory	Date Collected	Time Collected	Total and Dissolved Metals by SW-846 Method 6020B	Total and Dissolved Aluminum by EPA Method 200.8	Ferrous Iron by SM 3500-Fe B	Total Mercury by EPA 1631E
CCW-3C-1223	312260-01	FBI	12/14/23	09:30	✓			
	2312350-001	FAI				✓	✓	
CCW-3A-1223	312260-02 2312350-002	FBI FAI	12/14/23	10:05	✓	✓	✓	
CCW-3B-1223	312260-03 2312350-003	FBI FAI	12/14/23	10:40	✓	√	√	
CCW-2C-1223	312260-04 2312350-004	FBI FAI	12/14/23	11:40	✓	√	√	
CCW-2A-1223	312273-01 2312365-001	FBI FAI	12/14/23	12:45	✓	✓	✓	
CCMW-2B-1223	2312365-002 312273-02	FBI FAI	12/14/23	13:55	✓	✓	√	
TWA-9D-1223	312273-03 2312365-003	FBI FAI	12/14/23	15:20	✓	✓	√	
CTMW-23R2-1223	312301-01 2312392-001	FBI FAI	12/15/23	10:10	✓	√	√	
Field Blank #1-1223	312301-02 2312392-002	FBI FAI	12/15/23	10:15	✓	√	√	✓
CTMW-11R2-1223	312301-03 2312392-003	FBI FAI	12/15/23	11:00	✓	✓	√	
CTMW-12-1223	312311-01 2312396-001	FBI FAI	12/15/23	12:05	✓	✓	√	
CTMW-17-1223	312311-02 2312396-002	FBI FAI	12/15/23	13:45	✓	√	√	✓
CTMW-17D-1223	312311-03 2312396-003	FBI FAI	12/15/23	14:25	✓	√	√	
CCW-8B-1223	312337-01 2312424-001	FBI FAI	12/18/23	10:10	✓	√	√	

Table 1, continued

Sample Number	Laboratory ID	Laboratory	Date Collected	Time Collected	Total and Dissolved Metals by SW-846 Method 6020B	Total and Dissolved Aluminum by EPA Method 200.8	Ferrous Iron by SM 3500-Fe B	Total Mercury by EPA 1631E
CCW-1A-1223	312337-02 2312424-002	FBI FAI	12/18/23	10:55	√	√	√	
CCW-1B-1223	312337-03 2312424-003	FBI FAI	12/18/23	11:40	✓	√	✓	
CCW-1C-1223	312337-04 2312424-004	FBI FAI	12/18/23	12:10	✓	✓	√	
MW-4-1223	312337-05 2312424-005	FBI FAI	12/18/23	13:05	✓	✓	✓	
Field Blank #2-1223	312337-06 2312424-006	FBI FAI	12/18/23	13:10	✓	√	√	✓
CCW-4C-1223	312337-07 2312424-007	FBI FAI	12/18/23	13:45	✓	√	√	
CCW-6B-1223	312367-01 2312462-001	FBI FAI	12/19/23	10:25	✓	√	✓	
CCW-9-6B-1223	312367-02 2312462-002	FBI FAI	12/19/23	10:30	✓	✓	✓	
CCW-6C-1223	312367-03 2312462-003	FBI FAI	12/19/23	11:05	✓	✓	✓	
CCW-7C-1223	312367-04 2312462-004	FBI FAI	12/19/23	11:45	✓	√	✓	
CCW-7B-1223	312367-05 2312462-005	FBI FAI	12/19/23	12:20	✓	√	✓	
CCW-9-7B-1223	312367-06 2312462-006	FBI FAI	12/19/23	12:25	✓	√	✓	
CCW-5B-1223	312367-07 2312462-007	FBI FAI	12/19/23	13:15	✓	✓	✓	
CCW-5C-1223	312367-08 2312462-008	FBI FAI	12/19/23	13:55	✓	√	✓	
Notes		Tota	l Number of	Samples:	42	42	42	3

FAI - Fremont Analytical, Inc.

FAI - Friedman & Bruya, Inc.

QA/QC SOLUTIONS, LLC



James J. Mc Ateer, Jr., BS, MRSC Managing Member 7532 Champion Hill Rd. SE Salem, Oregon 97306

Telephone: 503.763.6948
Facsimile: 503.566.2114
Cellular: 503.881.1501
email: jjmcateer@msn.com

February 18, 2023

Tasya Gray, LG DOF Dalton, Olmsted & Fuglevand 1001 SW Klickitat Way, Suite 200B Seattle, Washington 98134

Subject: Taylor Way and Alexander Ave Fill Area (TWAAFA) Site - 1Q2024 PFAS Groundwater

Sampling Data Validation Summary

Client Project No., Task Order No.: Not Specified, Task No. 10

QA/QC Solutions, LLC Project No.: 020324.1.1

Dear Tasya:

This letter documents the results of the data validation summary for the analysis of Per- and Polyfluoroalkyl Substances (PFAS) completed on groundwater samples and various blank samples associated with Taylor Way and Alexander Ave Fill Area (TWAAFA) Site – First Quarter 2024 PFAS Groundwater Sampling event located in Tacoma, Washington.

The available data were validated to verify applicable laboratory quality assurance and quality control (QA/QC) measurements were reported, documented, and of sufficient quality to support its intended purpose(s). A summary of the overall assessment of data quality, the data set, a summary of the analytical methods used to complete the chemical analyses, a summary of the data validation procedures used, and a summary of the reasons why data were qualified (including other items noted during data validation) is presented below.

Overall Assessment of Data Quality

Overall, the data reported are of good quality and the results for the applicable QA/QC measurements that were used by the laboratories during the analysis of the samples were generally acceptable. One sample result required qualification during data validation because a method-specific QA/QC criterion was not met. During data validation the following actions were taken:

- ➤ One result reported as detected for Perfluoropentanesulfonic acid (PFPeS) in Sample CCW-9-3A-0124 was qualified as estimated and assigned a *J* data validation qualifier.
- > No results reported as detected required restatement as undetected.
- \triangleright No results required rejection (R).

Analytical data that did not meet method- and/or laboratory-established control limits for applicable quality control measurements or based on best professional judgment were qualified as estimated (J) by the laboratory or during data validation. These qualified data are usable and represent data of good quality and

Tasya Gray, LG February 18, 2023 Page 2

reasonable confidence and have an acceptable degree of uncertainty (i.e., may be less precise or less accurate than unqualified data).

Data Set

The data set consisted of six groundwater samples, one field duplicate groundwater sample, one field blank sample, one rinsate blank sample, and one trip source water blank sample that were collected in January 11, 2024. A summary of the samples collected and the analyses completed are as follows:

Sample Number	Laboratory Sample Number	Date Collected	Time Collected
CCW-3A-0124	320-108677-1	1/11//24	1035
CCW-9-3A-0124	320-108677-2	1/11//24	1046
CCW-3B-0124	320-108677-3	1/11//24	1200
Field Blank #1-0124	320-108677-4	1/11//24	1115
CCW-2C -0124	320-108677-5	1/11//24	1300
CCW-2B-0124	320-108677-6	1/11//24	1355
CCW-2A-0124	320-108677-7	1/11//24	1440
CTMW-17-0124	320-108677-8	1/11//24	1600
Rinsate Blank #1-0124	320-108677-9	1/11//24	1630
Trip Source Water Blank#1-0124	320-108677-10	1/11//24	0900

Analyses were completed by Eurofins Sacramento located in Sacramento California. The data and electronic data deliverable (EDDs) were reported in of one deliverable.

Analytical Methods

PFASs were analyzed using 4th Draft Method 1633* Analysis of Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous, Solid, Biosolids, and Tissue Samples by LC-MS/MS (U.S. EPA 2023). Results for 40 target compounds were reported.

Data Validation Procedures

Data validation procedures included evaluating a summary of the sample results and applicable quality control results reported by the laboratory. For this data validation effort, the data were subjected to a Stage 2B level-of-effort (U.S. EPA 2009). The analytical data were validated generally following the applicable guidance and requirements:

- ➤ Method-specific and laboratory-established quality control requirements, as applicable.
- > Guidance on Environmental Data Verification and Validation (U.S. EPA 2002)
- ➤ Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use. OSWER No. 9200.1-85. EPA 540-R-08-005. (U.S. EPA 2009).

^{*}Finalized for the Aqueous Matrices: Wastewater, Surface Water, and Groundwater

Data users should note there currently is no EPA National Functional Guidelines for the validation of non-drinking water matrices.

The laboratory data deliverables that were validated and available for review included the following:

- > Case narratives discussing analytical problems (if any) and procedures.
- > Chain-of-custody documentation to verify completeness of the data set.
- > Sample preparation logs or laboratory summary result forms to verify analytical holding times were met. Holding times were acceptable.
- Results for applicable initial (ICAL) and continuing calibration (CCV) standards results (see pages 1,287 to 2,388 in the Tier 4 data package).
 - o The maximum ICAL QC limit for the relative standard deviation/relative standard error (RSE) is ≤20%
 - ICAL results are acceptable.
 - The maximum CCV QC limit for the relative standard deviation (RSD) is $\pm 30\%$
 - CCV results are acceptable.
- Results for applicable method blanks, the field blanks, the rinsate blank and the trip source water blank to determine whether an analyte that may have been reported as detected in a sample was the result of possible contamination introduced at the laboratory or during sampling.
 - o No PFASs were detected in any blank
- Results for applicable a labeled isotope dilution analytes (IDA) were reviewed to assess the correction of the bias of the sample results.
 - IDA recoveries are acceptable. See summary of IDA recoveries for each sample reported with accompanying applicable QC limits in the data package
- > Results for applicable internal standards to assess sensitivity and response is stable during each analysis.
 - o A QC limit for internal standards area count is 50–200 percent
 - Internal standards results are acceptable
- ➤ Results for all ion ratios (see pages 748 to 793 in the Tier 4 data package) to assess if matrix interferences may have resulted in a potential bias of the results quantified
 - o A QC limit for the transition ion ratios is 50-150%
 - Ion ratios are acceptable with one exception; see Reasons for Data Qualification section below for details
- Recoveries for laboratory control sample (LCS) (i.e., blank spike) and low-level LCS to assess analytical accuracy in absence of matrix effects.
 - o See summary of LCS and LLCS recoveries in the data per with accompanying applicable QC limits in the data package

- LCS and LLCS recoveries are acceptable
- > RPDs for the duplicate sample analysis to assess analytical precision.
 - o A QC limit for the RPD for sample duplicate results is $\pm 30\%$
 - RPDS for duplicate sample analysis are acceptable
- Results for the field duplicate samples to provide additional information.
- Laboratory summaries of analytical results reported for the analyses competed.

Verification and validation of 100-percent of all applicable laboratory calculations, transcriptions, review of instrument printouts, and review of bench sheets were not completed during the data validation review. There may be analytical problems that could only be identified by reviewing every instrument printout and associated analytical quality control results. Verification of all possible factors that could result in the degradation of data quality was not completed nor should be inferred at this time. The laboratory case narratives did not indicate any significant problems with data that were not reviewed during data validation. The adequacy of the sampling procedures was not completed during the data validation.

Performance based control limits established by the laboratory, applicable control limits specified in the analytical methods, and best professional judgement were used to evaluate data quality and to determine if specific data required qualification. Data qualifiers were assigned during data validation following guidance specified by U.S. EPA (2002) to the EDD when applicable QC measurement criteria were not met and qualification of the data was warranted.

Reasons for Data Qualification

The result reported as detected for Perfluoropentanesulfonic acid (PFPeS) for Sample CCW-9-3A-0124 required qualification as estimated (J) data validation qualifier because the mass ion ratio was outside the QC limit of 50-150%. An ion ratio of 16.073 was reported for PFPeS (see page 748 of 2,903 in the Tier 4 data package). The target ratio is 1.838 and the ion limits are 0.93 - 2.80.

Eurofins Sacramento noted the following in the case narrative regarding this exceedance:

"Method 1633: The "I" qualifier means the transition mass ratio for the indicated analyte for Perfluoropentanesulfonic acid (PFPeS) was outside the established ratio limits. The qualitative identification of the analyte has some degree of uncertainty, and the reported value may have some high bias. However, analyst judgment was used to positively identify the analyte: CCW-9-3A-0124 (320-108687-2). The sample was reanalyzed with concurring result, therefore, the best set of data was reported."

General Comments:

- > Data users should refer to the laboratory data packages for complete information pertinent to the analyses completed.
- As noted in the case narrative:
 - o "The following continuing calibration blank (CCB) was flagged for Isotope Dilution Analyte (IDA) recovery above the method recommended limit: CCB 320-735099/5. The purpose of the CCB is to test for instrument contamination. As the CCB was non-detect for all native analytes, the bracketing continuing calibration verification (CCV) was in

Tasya Gray, LG February 18, 2023 Page 5

control, and the IDA of the associated samples recovered within limits, there is no adverse impact on data quality; therefore, the data have been reported." None of the associated sample results required qualification for this reason\

➤ An RPD of 38 was reported for PFPeS-RA (a reanalysis) for the duplicate sample analysis completed on CCW-3B-0124. Since concentration of 4.2 ng/L and 2.84 ng/L were reported, the control limit of ±30% is not applicable because these concentrations are not >5x the reporting limit of 2.0 ng/L.

This concludes the data validation review. Should you have any questions regarding the information presented herein, please contact me by telephone at 503.763.6948 or by e-mail at jjmcateer@msn.com.

Cordially,

James J. Mc Ateer, Jr., BS, MRSC

Managing Member

cc: Trevor Louviere, DOF Dalton, Olmsted & Fuglevand, Inc.

Attachments

Tasya Gray, LG February 18, 2023 Page 6

References

U.S. EPA 2002 Guidance on Environmental Data Verification and Data Validation. EPA QA/G-8. EPA/240/R-02/004. November 2002. U.S. Environmental Protection Agency, Office of Environmental Information, Washington DC.

U.S. EPA 2009. Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use. OSWER No. 9200.1-85. EPA 540-R-08-005. January 13, 2009. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, DC.

U.S. EPA 2023. 4th Draft Method 1633* Analysis of Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous, Solid, Biosolids, and Tissue Samples by LC-MS/MS. EPA 821-D-23-001. U.S. Environmental Protection Agency. Office of Water (4303T), Office of Science and Technology Engineering and Analysis Division. 1200 Pennsylvania Avenue, NW Washington, DC 20460.

U.S. EPA 2024. SW-846 on-line. Test methods for evaluating solid wastes, physical/chemical methods. https://www.epa.gov/hw-sw846/sw-846-compendium (last updated on June 21, 2023). U.S. Environmental Protection Agency, Office of Solid Waste, Washington, DC.

Data Quality Assurance/Quality Control Review

Project No. M0615.20.012 | February 8, 2024 | Port of Tacoma

Maul Foster & Alongi, Inc. (MFA), conducted an independent review of the quality of analytical results for groundwater and associated quality control samples collected on December 12 and 13, 2023, at the Taylor Way and Alexander Avenue Fill Area in Tacoma, Washington.

Friedman & Bruya, Inc. (F&B), Fremont Analytical, Inc. (Fremont), and Eurofins Environment Testing Northern California, LLC, located in West Sacramento, California (Eurofins-WS), performed the analyses. MFA reviewed F&B report number 312247 and Eurofins-WS report number 320-108065-1. F&B subcontracted total and dissolved aluminum analysis to Fremont and the results are included in report 312247. The analyses performed and the samples analyzed are listed in the following tables. Not all analyses were performed on all samples.

Analysis	Reference
Per- and polyfluoroalkyl substances	EPA 1633
Total and dissolved metals	EPA 6020B, EPA 200.8

Note

EPA = U.S. Environmental Protection Agency.

Samples Analyzed					
Report	312247	Report 320-108065-1			
TWA-3-1223	Filter Blank1-1223	TWA-3-1223			
TWA-9-3-1223	TWA-5D-1223	TWA-9-3-1223			
TWA-10D-1223	TWA-6D-1223	Rinsate Blank1-1223			
TWA-1-1223	SB-3A-1223	Field Blank1-1223			
TWA-2-1223	CTMW-25D-1223	SB-2A-1223			
Field Blank1-1223	CTMW-20-1223	Rinsate Blank2-1223			
SB-1A-1223	MW-1-1223	Trip Blank1-1223			
SB-2A-1223	CTMW-15-1223				

Data Qualification

Analytical results were evaluated according to applicable sections of U.S. Environmental Protection Agency (EPA) guidelines for data review (EPA 2020a, 2020b) and appropriate laboratory- and method-specific guidelines (EPA 1986, Eurofins-WS 2023, F&B 2022, Fremont 2023).

Based on the results of the data quality review procedures described below, the data, with the appropriate final data qualifiers assigned, are considered acceptable for their intended use. Final data qualifiers represent qualifiers originating from the laboratory and accepted by the reviewer, and data qualifiers assigned by the reviewer during validation.

Final data qualifiers:

- J+ = result is estimated, but the result may be biased high.
- K = result is an estimated maximum potential concentration.
- U = result is non-detect at the method reporting limit (MRL).

• UJ = result is non-detect with an estimated MRL.

Total and Dissolved Compounds

For report 312247, total and dissolved EPA Methods 6020B and 200.8 metals results were compared. Where dissolved metals results were greater than their associated total results, qualification was not required when the relative percent difference (RPD) was less than 20 percent.

All detected total metals results were greater than their associated dissolved metals results or met the RPD acceptance criteria.

Estimated Maximum Potential Concentration Results

According to the case narrative accompanying report 320-108065-1, the EPA Method 1633 transition mass ratio for PFOS was outside the established ratio limits for samples TWA-3-1223 and TWA-9-3-1223. The laboratory noted that the samples were reanalyzed with similar results. The laboratory qualified the associated sample results as estimated maximum potential concentrations, and the reviewer accepted the laboratory qualifications, as shown in the following table.

Report	Sample	Analyte	Original Result (ng/L)	Qualified Result (ng/L)
320-108065-1	TWA-3-1223	PFOS	16 K	16 K ^(a)
320-106063-1	TWA-9-3-1223	PF05	18 K	18 K ^(a)

Notes

K = result is an estimated maximum potential concentration.

Sample Conditions

Sample Custody

Sample custody was appropriately documented on the chain-of-custody (COC) forms accompanying the reports.

Holding Times

Extractions and analyses were performed within the recommended holding times.

Preservation and Sample Storage

According to the case narrative accompanying report 320-108065-1, the EPA Method 1633 portion of sample SB-2A-1223 had a thin layer of sediment present in the bottom of the bottle prior to extraction. Qualification by the reviewer due to the presence of sediment was not required.

The samples were preserved and stored appropriately.

Sample Filtration

Field samples for dissolved EPA Method 6020B and 200.8 analysis were field-filtered with a 0.45-micron filter during sample collection.

ng/L = nanograms per liter.

⁽a)Qualification from the laboratory was accepted by the reviewer.

Reporting Limits

The laboratories evaluated results to MRLs. Samples that required dilutions because of high analyte concentrations, matrix interferences, and/or dilutions necessary for preparation and/or analysis were reported with raised MRLs.

The reviewer confirmed that when samples were diluted for analysis or when a higher sample volume was used for the extraction F&B provided the preparation or dilution factor after the laboratory sample identification number.

Blanks

Field quality sample results may be qualified as a result of laboratory instrument or batch information, but original or unvalidated laboratory results associated with field quality control samples are used to assess impact on field samples.

When the sample result was greater than the MRL and within five (for organics) or ten (for inorganics) times the associated blank concentration, the reviewer qualified the sample result with J+. Non-detect sample results and sample results greater than five (for organics) or ten (for inorganics) times the blank concentration did not require qualification.

Calibration Blanks

Initial calibration blanks (ICBs) and continuing calibration blanks (CCBs) are used to assess analytical background contamination. ICB and CCB results were not required for validation but were reviewed when provided by Fremont for EPA Method 200.8 in report 312247.

All ICB and CCB results reviewed were non-detect to MRLs.

Method Blanks

Laboratory method blanks are used to assess whether laboratory contamination was introduced during sample preparation and analysis. Laboratory method blank analyses were performed at the required frequencies. For purposes of data qualification, the laboratory method blanks were associated with all samples prepared in the analytical batch.

All laboratory method blank results were non-detect to MRLs.

Equipment Rinsate Blanks

Equipment rinsate blanks are used to evaluate field equipment decontamination.

Two equipment rinsate blanks were submitted with sample delivery group (SDG) 320-108065-1 for EPA Method 1633 analysis. Groundwater samples are associated with equipment rinsate blanks based on sample locations, as shown in the following table.

Report	Equipment Rinsate Blank	Associated Sample(s)
320-108065-1	Rinsate Blank1-1223	TWA-3-1223
	RINSate Blank1-1223	TWA-9-3-1223
	Rinsate Blank2-1223	SB-2A-1223

All equipment rinsate blank results were non-detect to MRLs.

Field Blanks

Field blanks are used to assess if contamination from field conditions was introduced during sampling, preservation, and shipment to the laboratory.

A field blank sample (Field Blank1-1223) was submitted with SDG 312247 for EPA Methods 6020B and 200.8 total metals analysis and with SDG 320-108065-1 for EPA Method 1633 analysis. The field blank is associated with all groundwater sample results provided in reports 312247 and 320-108065-1. The field blank had several detections above MRLs, as shown in the table below.

Report	Analysis	Analyte	Field Blank Result (ug/L)
		Total chromium	1.72
312247	EPA 6020B	Total copper	3.07
312247		Total manganese	1.44
	EPA 200.8	Total aluminum	19.4

Notes

EPA = U.S. Environmental Protection Agency.

ug/L = micrograms per liter.

Similar dissolved chromium, dissolved manganese, and dissolved aluminum detections are present in the filter blank, as described and evaluated in the section below. However, the field blank had a total copper detection while the filter blank did not have a dissolved copper detection. In lieu of similar field and filter blank copper detections, the reviewer evaluated dissolved copper sample results based on the field blank total copper detection and qualified accordingly. Qualifications by the reviewer based on the field blank are shown in the following table:

Report	Sample	Analyte	Field Blank Result (ug/L)	Original Result (ug/L)	Qualified Result (ug/L)
	TWA-3-1223			4.21	4.21 J+
	TWA-9-3-1223	Discolus disconner	2.07(a)	3.76	3.76 J+
	TWA-1-1223	Dissolved copper	3.07 ^(a)	3.57	3.57 J+
	TWA-2-1223			10.2	10.2 J+
	TWA-3-1223			4.50	4.50 J+
	TWA-9-3-1223			4.66	4.66 J+
	TWA-10D-1223		3.07	4.11	4.11 J+
	TWA-1-1223	Total copper		3.88	3.88 J+
	TWA-2-1223			10.4	10.4 J+
312247	SB-1A-1223			2.57	2.57 J+
312241	TWA-6D-1223			2.97	2.97 J+
	CTMW-25D-1223			2.74	2.74 J+
	MW-1-1223			6.59	6.59 J+
	TWA-1-1223	Total manganese	1.44	11.2	11.2 J+
	CTMW-25D-1223	Total chromium	1.72	15.9	15.9 J+
	TWA-10D-1223			46.4	46.4 J+
	TWA-1-1223			14.8	14.8 J+
	TWA-2-1223	Total aluminum	19.4	34.1	34.1 J+
	SB-2A-1223			49.9	49.9 J+
	TWA-5D-1223			19.7	19.7 J+

Report	Sample	Analyte	Field Blank Result (ug/L)	Original Result (ug/L)	Qualified Result (ug/L)
	TWA-6D-1223			75.6	75.6 J+
	CTMW-25D-1223			88.0	88.0 J+
	MW-1-1223			71.1	71.1 J+

Notes

J+ = result is estimated, but the result may be biased high.

ug/L = micrograms per liter.

(a)Field blank result for total copper.

All remaining field blank results were non-detect to MRLs.

Filter Blanks

Filter blanks are used to evaluate whether contamination was introduced during field filtering procedures.

A filter blank sample (Filter Blank1-1223) was submitted with SDG 312247 for EPA Method 6020B and 200.8 dissolved metals analysis. The filter blank is associated with all dissolved groundwater sample metals results provided in report 312247, since all dissolved groundwater samples were collected and filtered using consistent sampling protocols. The filter blank had several detections above MRLs, as shown in the table below.

Report	Analysis	Analyte	Filter Blank Result (ug/L)
	EPA 6020B	Dissolved chromium	1.71
312247	EPA 0020B	Dissolved manganese	1.87
	EPA 200.8	Dissolved aluminum	17.5

Notes

EPA = U.S. Environmental Protection Agency.

ug/L = micrograms per liter.

Similar total chromium, total manganese, and total aluminum detections are present in the field blank, but dissolved metals sample results are evaluated based on the filter blank detections, except for dissolved copper, which is qualified in the Field Blank section above. Qualifications by the reviewer based on the filter blank are shown in the following table:

Report	Sample	Analyte	Filter Blank Result (ug/L)	Original Result (ug/L)	Qualified Result (ug/L)
	TWA-1-1223	Dissolved manganese	1.87	3.57	3.57 J+
	CTMW-25D-1223	Dissolved chromium	1.71	12.6	12.6 J+
	TWA-10D-1223	Dissolved aluminum	17.5	14.3	14.3 J+
312247	SB-2A-1223			11.1	11.1 J+
TWA-5D-1223 TWA-6D-1223	TWA-5D-1223			11.4	11.4 J+
	TWA-6D-1223		17.5	49.9	49.9 J+
	CTMW-25D-1223			59.2	59.2 J+
	MW-1-1223			16.6	16.6 J+

Notes

J+ = result is estimated, but the result may be biased high. ug/L = micrograms per liter.

All remaining filter blank results were non-detect to MRLs.

Trip Blanks

Trip blanks are used to evaluate whether per- and polyfluoroalkyl substance contamination was introduced during sample storage and during shipment between the sampling location and the laboratory.

A trip blank (Trip Blank1-1223) was submitted with SDG 320-108065-1 for EPA Method 1633 analysis. The trip blank is associated with all groundwater and associated quality control samples submitted with SDG report 320-108065-1, since all samples were shipped together in a single cooler.

All trip blank results were non-detect to MRLs.

Laboratory Control Sample and Laboratory Control Sample Duplicate Results

A laboratory control sample (LCS) and a laboratory control sample duplicate (LCSD) are spiked with target analytes to provide information about laboratory precision and accuracy. The LCS were prepared and analyzed at the required frequency. No LCSDs were reported; thus, laboratory precision was evaluated using matrix spike (MS) and matrix spike duplicate (MSD) results.

In report 320-108065-1, Eurofins-WS reported an "LLCS" for EPA Method 1633. The reviewer confirmed that this is a low-level LCS.

All LCS results were within acceptance limits for percent recovery.

Laboratory Duplicate Results

Laboratory duplicate results are used to evaluate laboratory precision.

Laboratory duplicate results were only reported by Fremont in report 312247 for dissolved aluminum by EPA Method 200.0. This laboratory duplicate sample was prepared and analyzed at the required frequency. Laboratory precision was evaluated using MS and MSD results for the remaining batches.

Laboratory duplicate results greater than five times the MRL were evaluated using laboratory RPD control limits. Laboratory duplicate results less than five times the MRL, including non-detects, were evaluated using a control limit of the MRL of the parent sample; the absolute difference of the laboratory duplicate sample result and the parent sample result, or the MRL for non-detects, was compared to the MRL of the parent sample.

The laboratory duplicate result met the acceptance criterion.

Matrix Spike and Matrix Spike Duplicate Results

MS and MSD results are used to evaluate laboratory precision, accuracy, and the effect of the sample matrix on sample preparation and analysis. All MS and MSD samples were prepared and analyzed at the required frequency.

When MS and MSD were prepared from samples with high concentrations of target analytes, associated MS and/or MSD percent recovery and/or RPD control limit exceedances did not require qualification because spike concentrations could not be accurately quantified. High concentrations of target analytes are defined as four times the spike amount for all analyses.

According to report 320-108065-1, EPA Method 1633 batch 733325 MSD prepared with sample SB-2A-1223 had a PFHxA result above the upper percent recovery acceptance limit of 145 percent, at 150 percent. The associated PFHxA sample result was non-detect and thus did not require

qualification by the reviewer. The MSD also had a PFDoS result below the lower percent recovery acceptance limit of 50 percent, at 43 percent. The reviewer qualified the associated sample result, as shown in the following table.

Report	Sample	Analyte	Original Result (ng/L)	Qualified Result (ng/L)
320-108065-1	SB-2A-1223	PFDoS	2.0 U	2.0 UJ

Notes

ng/L = nanograms per liter.

U = result is non-detect at the method reporting limit.

UJ = result is non-detect with an estimated method reporting limit.

All remaining MS and MSD results were within acceptance limits for percent recovery and RPD.

Isotope Dilution Results

According to report 320-108065-1, EPA Method 1633 samples were spiked with isotopically labeled carbon-13 or deuterated analog standards to quantify the relative response of analytes in each sample.

The reviewer confirmed that Eurofins-WS performed calibration by isotope dilution for the 24 available target analytes and quantitated the remaining target analytes using a closely related labeled analog.

All isotope dilution recoveries were within acceptance limits.

Calibration Verification Results

Initial calibration verification (ICV) and continuing calibration verification (CCV) results are used to verify the accuracy of the instrument calibration and demonstrate instrument precision and accuracy through the end of the sample batch. CCV results were not required for validation but were reviewed when provided by Fremont for EPA Method 200.8 in report 312247.

All CCV results provided were within percent recovery acceptance limits.

Field Duplicate Results

Field duplicate samples measure both field and laboratory precision. The following field duplicate and parent sample pair was submitted for analysis:

Reports	Parent Sample	Field Duplicate Sample
312247 and	TWA-3-1223	TWA-9-3-1223
320-108065-1	TWA-3-1223	TWA-9-3-1223

MFA uses acceptance criteria of 100 percent RPD for results that are less than five times the MRL or 50 percent RPD for results that are greater than five times the MRL. RPD was not evaluated when both results in the sample pair were non-detect.

All field duplicate results met the RPD acceptance criteria.

Data Package

The data packages were reviewed for transcription errors, omissions, and anomalies.

The reviewer confirmed with the laboratories that F&B and Fremont are not accredited for aluminum analysis by EPA Method 6020B, which was requested on the COC form accompanying report 312247. Fremont is accredited for aluminum analysis by EPA Method 200.8. F&B subcontracted the total and dissolved aluminum analysis to Fremont for analysis by EPA Method 200.8 to meet accreditation requirements.

At MFA's request, report 312247 was revised on February 8, 2024, to correct the sample name for the field duplicate sample. The name was updated from TWA-9-1223 to TWA-9-3-1223.

No other issues were found.

References

- EPA. 1986. Test Methods for Evaluating Solid Waste, Physical/Chemical Methods. EPA publication SW-846. 3rd ed. U.S. Environmental Protection Agency. Final updates I (1993), II (1995), IIA (1994), IIB (1995), III (1997), IIIA (1999), IIIB (2005), IV (2008), V (2015), VI phase I (2017), VI phase II (2018), VI phase II (2019), VII phase I (2019), and VII phase II (2020).
- EPA. 2020a. *National Functional Guidelines for Inorganic Superfund Methods Data Review.* EPA 542-R-20-006. U.S. Environmental Protection Agency, Office of Superfund Remediation and Technology Innovation: Washington, DC. November.
- EPA. 2020b. *National Functional Guidelines for Organic Superfund Methods Data Review.* EPA 540-R-20-005. U.S. Environmental Protection Agency, Office of Superfund Remediation and Technology Innovation: Washington, DC. November.
- Eurofins-WS. 2023. *Quality Assurance Manual*. Rev. 6.3. Eurofins Environment Testing Northern California, LLC: West Sacramento, CA. November 14.
- F&B. 2022. Quality Assurance Manual. Rev. 18. Friedman & Bruya, Inc.: Seattle, WA. December 9.
- Fremont. 2023. Quality Assurance. Rev. 3.7. Fremont Analytical, Inc.: Seattle, WA. April 18.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Vineta Mills, M.S. Eric Young, B.S. 5500 4th Avenue South Seattle, WA 98108 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

December 22, 2023

Trevor Louviere, Project Manager Dalton Olmsted Fuglevand 1001 SW Klickitat Way, Suite 200B Seattle, WA 98134

Dear Mr Louviere:

Included are the results from the testing of material submitted on December 11, 2023 from the TWAAFA-001, F&BI 312179 project. There are 22 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures

c: Anthony Cerruti, Tasya Gray

DOF1222R.DOC

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on December 11, 2023 by Friedman & Bruya, Inc. from the Dalton Olmsted Fuglevand TWAAFA-001, F&BI 312179 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Dalton Olmsted Fuglevand
312179 -01	CTMW-24-1223
312179 -02	CTMW-24D-1223
312179 -03	PZ-7-1223
312179 -04	PZ-8-1223

The samples were sent to Fremont Analytical for ferrous iron, total aluminum, and dissolved aluminum analyses. The report is enclosed.

The 6020B total and dissolved arsenic calibration standard exceeded the acceptance criteria for sample CTMW-24-1223 and for the iron calibration standard in the total method blank. The metals were not detected, therefore this did not represent an out of control condition.

Lead and zinc in the 6020B dissolved matrix spike and matrix spike duplicate did not meet the acceptance criteria. The laboratory control sample passed the acceptance criteria, therefore the results were due to matrix effect.

All other quality control requirements were acceptable.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: CTMW-24-1223 Client: Dalton Olmsted Fuglevand

Date Received: 12/11/23Project: TWAAFA-001 Lab ID: Date Extracted: 12/12/23 312179-01Date Analyzed: 12/16/23 Data File: 312179-01.196 Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) SPOperator:

 $\begin{array}{c} & Concentration \\ Analyte: & ug/L\ (ppb) \end{array}$

Arsenic <1 k Copper <1 Iron 999 Manganese 94.2

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: CTMW-24D-1223 Client: Dalton Olmsted Fuglevand

Date Received: 12/11/23Project: TWAAFA-001 Lab ID: 312179-02 Date Extracted: 12/12/23 Date Analyzed: 12/16/23 Data File: 312179-02.197 Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) SPOperator:

Concentration

Analyte: ug/L (ppb)

Copper <1 Manganese 211

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: CTMW-24D-1223 Client: Dalton Olmsted Fuglevand

 Date Received:
 12/11/23
 Project:
 TWAAFA-001

 Date Extracted:
 12/12/23
 Lab ID:
 312179-02 x5

 Date Analyzed:
 12/15/23
 Data File:
 312179-02 x5.171

 $\begin{array}{cccc} \text{Matrix:} & \text{Water} & \text{Instrument:} & \text{ICPMS2} \\ \text{Units:} & \text{ug/L (ppb)} & \text{Operator:} & \text{SP} \end{array}$

Concentration

Analyte: ug/L (ppb)

Arsenic <5 Iron 7,370

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method $6020\mathrm{B}$

Client ID:	PZ-7-1223	Client:	Dalton Olmsted Fuglevand
Date Received:	12/11/23	Project:	TWAAFA-001
Date Extracted:	12/12/23	Lab ID:	312179-03
Date Analyzed:	12/16/23	Data File:	312179-03.198
Matrix:	Water	Instrument:	ICPMS2
Units:	11g/L (nnh)	Operator	SP

Cilius.	ug/Li (ppb)	Operato
Analyte:	Concentra ug/L (pp	
Iron	207	
Lead	<1	
Manganese	10.8	
Nickel	3.43	
Zinc	26.6	

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: PZ-7-1223 Client: Dalton Olmsted Fuglevand

 Date Received:
 12/11/23
 Project:
 TWAAFA-001

 Date Extracted:
 12/12/23
 Lab ID:
 312179-03 x5

 Date Analyzed:
 12/15/23
 Data File:
 312179-03 x5.172

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Arsenic <5

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: PZ-8-1223 Client: Dalton Olmsted Fuglevand

Date Received: 12/11/23Project: TWAAFA-001 Lab ID: Date Extracted: 12/12/23 312179-04 Date Analyzed: 12/16/23 Data File: 312179-04.199 Matrix: Water Instrument: ICPMS2

Units: ug/L (ppb) Operator: SP

Concentration ug/L (ppb)

Lead <1

Analyte:

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: PZ-8-1223 Client: Dalton Olmsted Fuglevand

 Date Received:
 12/11/23
 Project:
 TWAAFA-001

 Date Extracted:
 12/12/23
 Lab ID:
 312179-04 x5

 Date Analyzed:
 12/15/23
 Data File:
 312179-04 x5.173

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Analyte: Concentration ug/L (ppb)

 Arsenic
 <5</td>

 Manganese
 1,280

 Nickel
 11.7

 Zinc
 <25</td>

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: PZ-8-1223 Client: Dalton Olmsted Fuglevand

 Date Received:
 12/11/23
 Project:
 TWAAFA-001

 Date Extracted:
 12/12/23
 Lab ID:
 312179-04 x200

 Date Analyzed:
 12/20/23
 Data File:
 312179-04 x200.047

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Iron 44,800

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Dalton Olmsted Fuglevand
		_	

Date Received: Not Applicable Project: TWAAFA-001
Date Extracted: 12/12/23 Lab ID: I3-977 mb2
Date Analyzed: 12/15/23 Data File: I3-977 mb2.167

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

	Concentration
Analyte:	ug/L (ppb)

 Arsenic
 <1</td>

 Copper
 <1</td>

 Iron
 <50</td>

 Lead
 <1</td>

 Manganese
 <1</td>

 Nickel
 <1</td>

 Zinc
 <5</td>

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Date Received: 12/11/23Project: TWAAFA-001Lab ID: Date Extracted: 12/13/23 312179-01Date Analyzed: 12/16/23 Data File: 312179-01.207 Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) SPOperator:

 $\begin{array}{c} & Concentration \\ Analyte: & ug/L\ (ppb) \end{array}$

Arsenic <1 k Copper <1 Iron 919 Manganese 79.8

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: CTMW-24D-1223 Client: Dalton Olmsted Fuglevand

Date Received: 12/11/23Project: TWAAFA-001 Lab ID: 312179-02 Date Extracted: 12/13/23 Date Analyzed: 12/16/23 Data File: 312179-02.208 Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) SPOperator:

Concentration

Analyte: ug/L (ppb)

Copper <1 Manganese 211

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: CTMW-24D-1223 Client: Dalton Olmsted Fuglevand

 Date Received:
 12/11/23
 Project:
 TWAAFA-001

 Date Extracted:
 12/13/23
 Lab ID:
 312179-02 x5

 Date Analyzed:
 12/15/23
 Data File:
 312179-02 x5.182

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Arsenic <5 Iron 7,370

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

PZ-7-1223	Client:	Dalton Olmsted Fuglevand
12/11/23	Project:	TWAAFA-001
12/13/23	Lab ID:	312179-03
12/16/23	Data File:	312179-03.209
Water	Instrument:	ICPMS2
	12/11/23 12/13/23 12/16/23	12/11/23 Project: 12/13/23 Lab ID: 12/16/23 Data File:

Matrix: Water Instrument: ICI Units: ug/L (ppb) Operator: SP

	Concentration
Analyte:	ug/L (ppb)
Iron	1.660

Lead 11.1 Manganese 37.2 Nickel 4.08 Zinc 35.3

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: PZ-7-1223 Client: Dalton Olmsted Fuglevand

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Arsenic 5.02

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: PZ-8-1223 Client: Dalton Olmsted Fuglevand

Date Received: 12/11/23Project: TWAAFA-001Lab ID: 312179-04 Date Extracted: 12/13/23 Date Analyzed: 12/16/23 Data File: 312179-04.210 Matrix: Water Instrument: ICPMS2

Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Lead <1

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	PZ-8-1223	Client:	Dalton Olmsted Fuglevand

 Date Received:
 12/11/23
 Project:
 TWAAFA-001

 Date Extracted:
 12/13/23
 Lab ID:
 312179-04 x5

 Date Analyzed:
 12/16/23
 Data File:
 312179-04 x5.184

 $\begin{array}{c} & Concentration \\ Analyte: & ug/L\ (ppb) \end{array}$

 Arsenic
 5.19

 Manganese
 1,250

 Nickel
 10.1

 Zine
 75.7

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: PZ-8-1223 Client: Dalton Olmsted Fuglevand

 Date Received:
 12/11/23
 Project:
 TWAAFA-001

 Date Extracted:
 12/13/23
 Lab ID:
 312179-04 x100

 Date Analyzed:
 12/18/23
 Data File:
 312179-04 x100.084

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Iron 47,400

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Dalton Olmsted Fuglevand
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Date Received:Not ApplicableProject:TWAAFA-001Date Extracted:12/13/23Lab ID:I3-981 mb2Date Analyzed:12/13/23Data File:I3-981 mb2.053

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

 $\begin{array}{c} & Concentration \\ Analyte: & ug/L\ (ppb) \end{array}$

 Arsenic
 <1</td>

 Copper
 <1</td>

 Iron
 <50 k</td>

 Lead
 <1</td>

 Manganese
 <1</td>

 Nickel
 <1</td>

 Zinc
 <5</td>

ENVIRONMENTAL CHEMISTS

Date of Report: 12/22/23 Date Received: 12/11/23

Project: TWAAFA-001, F&BI 312179

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 6020B

Laboratory Code: 312157-01 (Matrix Spike)

				Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Arsenic	ug/L (ppb)	10	2.50	75 b	76 b	75-125	1 b
Copper	ug/L (ppb)	20	<5	75	77	75 - 125	3
Iron	ug/L (ppb)	100	9,650	0 b	0 b	75 - 125	nm
Lead	ug/L (ppb)	10	<1	71 vo	73 vo	75 - 125	3
Manganese	ug/L (ppb)	20	1,800	0 b	0 b	75 - 125	nm
Nickel	ug/L (ppb)	20	50.9	66 b	69 b	75 - 125	4 b
Zinc	ug/L (ppb)	50	<5	73 vo	74 vo	75 - 125	1

Laboratory Code: Laboratory Control Sample

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	ug/L (ppb)	10	94	80-120
Copper	ug/L (ppb)	20	92	80-120
Iron	ug/L (ppb)	100	90	80-120
Lead	ug/L (ppb)	10	95	80-120
Manganese	ug/L (ppb)	20	85	80-120
Nickel	ug/L (ppb)	20	93	80-120
Zinc	ug/L (ppb)	50	96	80-120

ENVIRONMENTAL CHEMISTS

Date of Report: 12/22/23 Date Received: 12/11/23

Project: TWAAFA-001, F&BI 312179

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 312178-02 (Matrix Spike)

				Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Arsenic	ug/L (ppb)	10	1.64	93	92	75-125	1
Copper	ug/L (ppb)	20	<5	85	87	75 - 125	2
Iron	ug/L (ppb)	100	503	117 b	115 b	75 - 125	2 b
Lead	ug/L (ppb)	10	<1	77	78	75 - 125	1
Manganese	ug/L (ppb)	20	118	119 b	121 b	75 - 125	$2 \mathrm{\ b}$
Nickel	ug/L (ppb)	20	2.74	89	89	75 - 125	0
Zinc	ug/L (ppb)	50	<5	92	94	75 - 125	2

Laboratory Code: Laboratory Control Sample

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	ug/L (ppb)	10	93	80-120
Copper	ug/L (ppb)	20	97	80-120
Iron	ug/L (ppb)	100	101	80-120
Lead	ug/L (ppb)	10	90	80-120
Manganese	ug/L (ppb)	20	87	80-120
Nickel	ug/L (ppb)	20	96	80-120
Zinc	ug/L (ppb)	50	98	80-120

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.
- c The presence of the analyte may be due to carryover from previous sample injections.
- cf The sample was centrifuged prior to analysis.
- d The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv Insufficient sample volume was available to achieve normal reporting limits.
- f The sample was laboratory filtered prior to analysis.
- fb The analyte was detected in the method blank.
- fc The analyte is a common laboratory and field contaminant.
- hr The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs Headspace was present in the container used for analysis.
- ht The analysis was performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of control limits due to sample matrix effects.
- j The analyte concentration is reported below the standard reporting limit. The value reported is an estimate
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- k The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.
- lc The presence of the analyte is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

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312179	· / //	T		SAMI	PLERS (sa	ignature	40				•		- 1	Pag		ROLIN	OF
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Address 1001 SW F				Dissolv	ARKS ved metals s	amples fie		ed at 0	.45)	IN	VOIC			SA Dispose	MPLI e after	E DIS	SPOSAL
Phone 215-767-7749	Email <u>ace</u>	erruti@dofn	w.com	Projec	before anal ct Specific	e RLs -	Yes)/ 1	No			DOF			Archive Other_			QUESTED
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Matrix	# of Bottles	Total Metals 6020B (As, Cr, Cu, Mn, Ni, Pb, Zn)	Dissolved Metals 6020B (As, Cr, Cu, Mn, Ni, Pb,	Total Mercury 1631E	Dissolved Mercury 1631E	Total Metals (Al, Fe)	Dissolved Metals (Al, Fe)	Ferrous		ANAL		MS/MSD Collected? (Y/N)	Notes
CTHW-24-1223	01 A-C	12/11/23	1100	W	3	\times	X			X	X	X					Tot/O.SS Hetals! Al, As, Cu, Fe, Mn
TMW-24D-1223	02	12/11/13	1245	W	3	\geq	\geq			\geq	\geq	\geq					Tot/Diss netals i Al, As, Cu, Fe, Ha Tot Diss metals
PZ-7-1223	03	12/11/23	1400	W	3	\geq	\times			\geq	X	\times					AI, AS, Fe, Mr, N. P.
PZ-8-1223	04 1	12/11/23	1200	W	3	\times	X			\times	\times	\times					Al, As, Fr, Ma, Ni, Ph
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Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029 Ph. (206) 285-8282

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
	Relinquished by:	Michael her st	Clean Earth	12/11/23	16:4
	Received by:	ANH PHAN	F86	12/11/23	16:47
	Relinquished by:				98
,	Received by:				



3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya Michael Erdahl 5500 4th Ave S Seattle, WA 98108

RE: 312179

Work Order Number: 2312283

December 19, 2023

Attention Michael Erdahl:

Fremont Analytical, Inc. received 4 sample(s) on 12/12/2023 for the analyses presented in the following report.

Dissolved Metals by EPA Method 200.8 Ferrous Iron by SM3500-Fe B Total Metals by EPA Method 200.8

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910



Date: 12/19/2023

CLIENT: Friedman & Bruya Work Order Sample Summary

Project: 312179 **Work Order:** 2312283

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2312283-001	CTMW-24-1224	12/11/2023 11:00 AM	12/12/2023 9:30 AM
2312283-002	CTMW-24D-1224	12/11/2023 12:45 PM	12/12/2023 9:30 AM
2312283-003	PZ-7-1223	12/11/2023 2:00 PM	12/12/2023 9:30 AM
2312283-004	PZ-8-1223	12/11/2023 3:00 PM	12/12/2023 9:30 AM

Original Page 2 of 11



Case Narrative

WO#: **2312283**Date: **12/19/2023**

CLIENT: Friedman & Bruya

Project: 312179

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Original Page 3 of 11



Qualifiers & Acronyms

WO#: **2312283**

Date Reported: 12/19/2023

Qualifiers:

- * Flagged value is not within established control limits
- B Analyte detected in the associated Method Blank
- D Dilution was required
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- I Analyte with an internal standard that does not meet established acceptance criteria
- J Analyte detected below Reporting Limit
- N Tentatively Identified Compound (TIC)
- Q Analyte with an initial or continuing calibration that does not meet established acceptance criteria
- S Spike recovery outside accepted recovery limits
- ND Not detected at the Reporting Limit
- R High relative percent difference observed

Acronyms:

%Rec - Percent Recovery

CCB - Continued Calibration Blank

CCV - Continued Calibration Verification

DF - Dilution Factor

DUP - Sample Duplicate

HEM - Hexane Extractable Material

ICV - Initial Calibration Verification

LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate

MCL - Maximum Contaminant Level

MB or MBLANK - Method Blank

MDL - Method Detection Limit

MS/MSD - Matrix Spike / Matrix Spike Duplicate

PDS - Post Digestion Spike

Ref Val - Reference Value

REP - Sample Replicate

RL - Reporting Limit

RPD - Relative Percent Difference

SD - Serial Dilution

SGT - Silica Gel Treatment

SPK - Spike

Surr - Surrogate



Analytical Report

Work Order: 2312283

Date Reported: 12/19/2023

CLIENT: Friedman & Bruya

Project: 312179

Lab ID: 2312283-001 **Collection Date:** 12/11/2023 11:00:00 AM

Client Sample ID: CTMW-24-1224 Matrix: Water

Chome Campions:	· - ·					
Analyses	Result	RL Qual	Units	DF	Date Analyzed	
Dissolved Metals by EPA Method	1 200.8		Batc	h ID: 42	343 Analyst: JR	
Aluminum	23.1	10.0	μg/L	1	12/15/2023 4:15:00 PM	
Total Metals by EPA Method 200	<u>).8</u>		Batc	h ID: 42	345 Analyst: JR	
Aluminum	40.2	10.0	μg/L	1	12/15/2023 1:55:00 PM	
Ferrous Iron by SM3500-Fe B			Batc	h ID: R8	8304 Analyst: FG	
Ferrous Iron	1.19	0.150 H	mg/L	1	12/12/2023 2:17:54 PM	

Lab ID: 2312283-002 **Collection Date:** 12/11/2023 12:45:00 PM

Client Sample ID: CTMW-24D-1224 Matrix: Water

Official Campic ID. Of MAY-24D	1227		Watin. V	vator	
Analyses	Result	RL Qual	Units	DF	Date Analyzed
Dissolved Metals by EPA Metho	od 200.8		Batc	h ID: 420	343 Analyst: JR
Aluminum	13.0	10.0	μg/L	1	12/15/2023 4:17:00 PM
Total Metals by EPA Method 20	0.8		Batc	h ID: 420	345 Analyst: JR
Aluminum	13.6	10.0	μg/L	1	12/15/2023 1:57:00 PM
Ferrous Iron by SM3500-Fe B			Batc	h ID: R8	8304 Analyst: FG
Ferrous Iron	0.877	0.150 H	mg/L	1	12/12/2023 2:17:54 PM

Original Page 5 of 11



Analytical Report

Work Order: 2312283

Date Reported: 12/19/2023

CLIENT: Friedman & Bruya

Project: 312179

Lab ID: 2312283-003 **Collection Date:** 12/11/2023 2:00:00 PM

Client Sample ID: PZ-7-1223 Matrix: Water

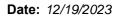
Analyses	Result	RL Qual	Units	DF	Date Analyzed
Dissolved Metals by EPA Method	1 200.8		Batcl	h ID: 423	343 Analyst: JR
Aluminum	46.7	10.0	μg/L	1	12/15/2023 4:08:00 PM
Total Metals by EPA Method 200	<u>.8</u>		Batcl	h ID: 420	Analyst: JR
Aluminum	49.9	10.0	μg/L	1	12/15/2023 2:00:00 PM
Ferrous Iron by SM3500-Fe B			Batcl	h ID: R8	8304 Analyst: FG
Ferrous Iron	41.7	15.0 D	mg/L	100	12/12/2023 2:17:54 PM

Lab ID: 2312283-004 **Collection Date:** 12/11/2023 3:00:00 PM

Client Sample ID: PZ-8-1223 Matrix: Water

Analyses	Result	RL Qual	Units	DF	Date Analyzed
Dissolved Metals by EPA Metho	<u>d 200.8</u>		Batch	n ID: 423	343 Analyst: JR
Aluminum	51.1	10.0	μg/L	1	12/15/2023 4:25:00 PM
Total Metals by EPA Method 20	0.8		Batch	n ID: 423	345 Analyst: JR
Aluminum	401	10.0	μg/L	1	12/15/2023 2:02:00 PM
Ferrous Iron by SM3500-Fe B			Batch	ı ID: R8	8304 Analyst: FG
Ferrous Iron	0.266	0.150	mg/L	1	12/12/2023 2:17:54 PM

Original Page 6 of 11





CLIENT: Friedman & Bruya

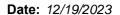
Project: 312179

QC SUMMARY REPORT

Ferrous Iron by SM3500-Fe B

Ferrous Iron ND 0.150	Project: 312179								i cirous ii	on by om	0000 1 0 2
Analyte Result RL SPK value SPK Ref Val	Sample ID: MB-R88304	SampType: MBLK			Units: mg/L		Prep Date	12/12/2023	RunNo	o: 88304	
Sample ID: LCS-R88304 SampType: LCS Units: mg/L Prep Date: 12/12/2023 RunNo: 88304 Analysis Date: 12/12/2023 SeqNo: 1843422 Analyse Result RL SPK value SPK Ref Val SPK Ref Val SPK Ref Val Rep Date: 12/12/2023 RunNo: 88304 RunNo	Client ID: MBLKW	Batch ID: R88304					Analysis Date	12/12/2023	SeqNo	o: 1843421	
Sample ID: LCS-R88304 SampType: LCS Units: mg/L Prep Date: 12/12/2023 SeqNo: 1843422	Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit RPD Re	ef Val %	RPD RPDL	imit Qual
Client ID: LCSW Batch ID: R88304 Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit QRPD Ref Val Ref Val Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit QRPD Ref Val	Ferrous Iron	ND	0.150								
Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Q Ferrous Iron 0.393 0.150 0.4000 0 98.3 85 115 Sample ID: 2312283-004ADUP SampType: DUP Units: mg/L Prep Date: 12/12/2023 RunNo: 88304 Client ID: PZ-8-1223 Batch ID: R88304 Analyse Date: 12/12/2023 SeqNo: 1843550 Sample ID: 2312283-004AMS SampType: MS Units: mg/L Prep Date: 12/12/2023 SeqNo: 1843551 Sample ID: 2312283-004AMS SampType: MS Units: mg/L Prep Date: 12/12/2023 RunNo: 88304 Client ID: PZ-8-1223 Batch ID: R88304 Analyse Date: 12/12/2023 RunNo: 88304 SampType: MS Units: mg/L Prep Date: 12/12/2023 SeqNo: 1843551 Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Q Ferrous Iron 0.735 0.150 0.4000 0.2663 117 70 130 Sample ID: 2312283-004AMSD SampType: MSD Units: mg/L Prep Date: 12/12/2023 RunNo: 88304 SampType: MSD Units: mg/L Prep Date: 12/12/2023 RunNo: 88304 Analysis Date: 12/12/2023 SeqNo: 1843552 Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Q Analysis Date: 12/12/2023 SeqNo: 1843552 Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Q	Sample ID: LCS-R88304	SampType: LCS			Units: mg/L		Prep Date	: 12/12/2023	RunNo	D: 88304	
Ferrous Iron 0.393 0.150 0.4000 0 98.3 85 115 Sample ID: 2312283-004ADUP SampType: DUP Units: mg/L Prep Date: 12/12/2023 RunNo: 88304 Client ID: PZ-8-1223 Batch ID: R88304 Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Q Sample ID: 2312283-004AMS SampType: MS Units: mg/L Prep Date: 12/12/2023 RunNo: 88304 Client ID: PZ-8-1223 Batch ID: R88304 PRDLimit Q Sample ID: 2312283-004AMS SampType: MS Units: mg/L Prep Date: 12/12/2023 RunNo: 88304 Client ID: PZ-8-1223 Batch ID: R88304 Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Q Ferrous Iron 0.735 0.150 0.4000 0.2663 117 70 130 Sample ID: 2312283-004AMSD SampType: MSD Units: mg/L Prep Date: 12/12/2023 RunNo: 88304 Sample ID: 2312283-004AMSD SampType: MSD Units: mg/L Prep Date: 12/12/2023 SeqNo: 1843552 Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Q Analysis Date: 12/12/2023 SeqNo: 1843552 Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Q	Client ID: LCSW	Batch ID: R88304					Analysis Date	12/12/2023	SeqNo	o: 1843422	
Sample ID: 2312283-004ADUP SampType: DUP Units: mg/L Prep Date: 12/12/2023 RunNo: 88304 Client ID: PZ-8-1223 Batch ID: R88304 Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Q Ferrous Iron 0.327 0.150 Units: mg/L Prep Date: 12/12/2023 RunNo: 88304	Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit RPD Re	ef Val %	RPD RPDL	imit Qual
Client ID: PZ-8-1223 Batch ID: R88304 Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Q Ref Val Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Q Ref Val Ref Va	Ferrous Iron	0.393	0.150	0.4000	0	98.3	85	115			
Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Q Ferrous Iron 0.327 0.150 Units: mg/L Prep Date: 12/12/2023 RunNo: 88304 Client ID: PZ-8-1223 Batch ID: R88304 Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Q Ferrous Iron 0.735 0.150 0.4000 0.2663 117 70 130 Sample ID: 2312283-004AMSD SampType: MSD Units: mg/L Prep Date: 12/12/2023 RunNo: 88304 Client ID: PZ-8-1223 Batch ID: R88304 Analysis Date: 12/12/2023 SeqNo: 1843551 Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Q Client ID: PZ-8-1223 Batch ID: R88304 Analysis Date: 12/12/2023 SeqNo: 1843552 Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Q Client ID: PZ-8-1223 Batch ID: R88304 Analysis Date: 12/12/2023 SeqNo: 1843552 Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Q	Sample ID: 2312283-004ADUP	SampType: DUP			Units: mg/L		Prep Date	12/12/2023	RunNo	D: 88304	
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Sample ID: 2312283-004AMS SampType: MS Units: mg/L Prep Date: 12/12/2023 12/12/2023 RunNo: 88304 Client ID: PZ-8-1223 Batch ID: R88304 Analysis Date: 12/12/2023 SeqNo: 1843551 Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Q Ferrous Iron 0.735 0.150 0.4000 0.2663 117 70 130 Sample ID: 2312283-004AMSD SampType: MSD Units: mg/L Prep Date: 12/12/2023 RunNo: 88304 Client ID: PZ-8-1223 Batch ID: R88304 Analysis Date: 12/12/2023 SeqNo: 1843552 Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Q	Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit RPD Re	ef Val %	RPD RPDL	imit Qual
Client ID: PZ-8-1223 Batch ID: R88304 Analysis Date: 12/12/2023 SeqNo: 1843551 Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Q Ferrous Iron 0.735 0.150 0.4000 0.2663 117 70 130 Total Control Co	Ferrous Iron	0.327	0.150					0.	2663	20.4	20
Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Q Ferrous Iron 0.735 0.150 0.4000 0.2663 117 70 130 Sample ID: 2312283-004AMSD SampType: MSD Units: mg/L Prep Date: 12/12/2023 RunNo: 88304 Client ID: PZ-8-1223 Batch ID: R88304 Analysis Date: 12/12/2023 SeqNo: 1843552 Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Q	Sample ID: 2312283-004AMS	SampType: MS			Units: mg/L		Prep Date	12/12/2023	RunNo	p: 88304	
Ferrous Iron 0.735 0.150 0.4000 0.2663 117 70 130 Sample ID: 2312283-004AMSD SampType: MSD Units: mg/L Prep Date: 12/12/2023 RunNo: 88304 Client ID: PZ-8-1223 Batch ID: R88304 Analysis Date: 12/12/2023 SeqNo: 1843552 Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Q	Client ID: PZ-8-1223	Batch ID: R88304					Analysis Date	12/12/2023	SeqNo	o: 1843551	
Sample ID: 2312283-004AMSD SampType: MSD Units: mg/L Prep Date: 12/12/2023 RunNo: 88304 Client ID: PZ-8-1223 Batch ID: R88304 Analysis Date: 12/12/2023 SeqNo: 1843552 Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Q	Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit RPD Re	ef Val %	RPD RPDL	imit Qual
Client ID: PZ-8-1223 Batch ID: R88304 Analysis Date: 12/12/2023 SeqNo: 1843552 Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Q	Ferrous Iron	0.735	0.150	0.4000	0.2663	117	70	130			
Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Q	Sample ID: 2312283-004AMSD	SampType: MSD			Units: mg/L		Prep Date	12/12/2023	RunNo	p: 88304	
	Client ID: PZ-8-1223	Batch ID: R88304					Analysis Date	12/12/2023	SeqNo	o: 1843552	
Ferrous Iron 0.738 0.150 0.4000 0.2663 118 70 130 0.7348 0.410 30	Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit RPD Re	ef Val %	RPD RPDL	imit Qual
	Ferrous Iron	0.738	0.150	0.4000	0.2663	118	70	130 0.	7348 0	0.410	30

Original Page 7 of 11





CLIENT: Friedman & Bruya

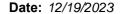
Project: 312179

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

,						
Sample ID: MB-42343	SampType: MBLK			Units: µg/L	Prep Date: 12/14/2023 RunNo: 88400	
Client ID: MBLKW	Batch ID: 42343				Analysis Date: 12/15/2023 SeqNo: 1845895	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit	Qual
Aluminum	ND	10.0				
Sample ID: LCS-42343	SampType: LCS			Units: µg/L	Prep Date: 12/14/2023 RunNo: 88400	
Client ID: LCSW	Batch ID: 42343				Analysis Date: 12/15/2023 SeqNo: 1845896	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit	Qual
Aluminum	1,050	10.0	1,000	0	105 85 115	
Sample ID: 2312283-003CDUP	SampType: DUP			Units: µg/L	Prep Date: 12/14/2023 RunNo: 88400	
Client ID: PZ-7-1223	Batch ID: 42343				Analysis Date: 12/15/2023 SeqNo: 1845898	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit	d Qual
Aluminum	47.4	10.0			46.74 1.47 30)
Sample ID: 2312283-003CMS	SampType: MS			Units: µg/L	Prep Date: 12/14/2023 RunNo: 88400	
Client ID: PZ-7-1223	Batch ID: 42343				Analysis Date: 12/15/2023 SeqNo: 1845899	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit	. Qual
Aluminum	1,130	10.0	1,000	46.74	108 50 150	
Sample ID: 2312328-003BMS	SampType: MS			Units: µg/L	Prep Date: 12/14/2023 RunNo: 88400	
Client ID: BATCH	Batch ID: 42343				Analysis Date: 12/15/2023 SeqNo: 1845913	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit	d Qual
Aluminum	1,040	10.0	1,000	3.483	103 50 150	

Original Page 8 of 11





QC SUMMARY REPORT

CLIENT: Friedman & Bruya

Dissolved Metals by EPA Method 200.8

Project: 312179

Sample ID: MB-42344 FB

SampType: MBLK Units: µg/L

RL

Prep Date: 12/14/2023

RunNo: **88400**

Client ID: MBLKW

Batch ID: 42343

Analysis Date: 12/15/2023

SeqNo: 1845923

Analyte

Daton 1D. **42040**

Result

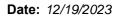
SPK value SPK Ref Val

%REC LowLimit HighLimit RPD Ref Val

%RPD RPDLimit Qual

Aluminum ND 10.0

Original Page 9 of 11





CLIENT: Friedman & Bruya

Project: 312179

QC SUMMARY REPORT

Total Metals by EPA Method 200.8

Froject. 312179								-	
Sample ID: MB-42345	SampType: MBLK			Units: µg/L		Prep Date:	12/14/2023	RunNo: 88387	
Client ID: MBLKW	Batch ID: 42345					Analysis Date:	12/15/2023	SeqNo: 1845604	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	ND	10.0							
Sample ID: LCS-42345	SampType: LCS			Units: µg/L		Prep Date:	12/14/2023	RunNo: 88387	
Client ID: LCSW	Batch ID: 42345					Analysis Date:	12/15/2023	SeqNo: 1845563	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	1,030	10.0	1,000	0	103	85	115		
Sample ID: 2312355-001DDUP	SampType: DUP			Units: µg/L		Prep Date:	12/14/2023	RunNo: 88387	
Client ID: BATCH	Batch ID: 42345					Analysis Date:	12/15/2023	SeqNo: 1845565	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	ND	10.0					16.30	97.4 30	
Sample ID: 2312355-001DMS	SampType: MS			Units: µg/L		Prep Date:	12/14/2023	RunNo: 88387	
Client ID: BATCH	Batch ID: 42345					Analysis Date:	12/15/2023	SeqNo: 1845566	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	1,040	10.0	1,000	16.30	102	70	130		
Sample ID: 2312277-002AMS	SampType: MS			Units: µg/L		Prep Date:	12/14/2023	RunNo: 88387	
Client ID: BATCH	Batch ID: 42345					Analysis Date:	12/15/2023	SeqNo: 1845584	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	1,240	10.0	1,000	153.4	109	70	130		

Original Page 10 of 11



Sample Log-In Check List

Client Name:	FB		Work Order Numb	per: 2312283	
Logged by:	Lyann Rivera		Date Received:	12/12/202	3 9:30:00 AM
Chain of Cus	stody				
1. Is Chain of	Custody complete?		Yes 🗸	No 🗌	Not Present
2. How was th	ne sample delivered?		<u>Courier</u>		
<u>Log In</u>					
3. Custody Se (Refer to co	als present on shipping containe omments for Custody Seals not ir	r/cooler? itact)	Yes	No 🗌	Not Present ✓
4. Was an atte	empt made to cool the samples?		Yes 🗹	No 🗌	NA \square
5. Were all ite	ms received at a temperature of	>2°C to 6°C *	Yes 🗹	No 🗌	na 🗆
6. Sample(s) i	n proper container(s)?		Yes 🗸	No \square	
7. Sufficient sa	ample volume for indicated test(s	3)?	Yes 🗸	No 🗌	
8. Are sample	s properly preserved?		Yes 🗸	No \square	
9. Was preser	vative added to bottles?		Yes 🗸	No \square	NA \square
					HCL, HNO3
10. Is there hea	adspace in the VOA vials?		Yes 🗌	No 📙	NA 🗸
11. Did all sam	ples containers arrive in good co	ndition(unbroken)?		No 📙	
12. Does paper	work match bottle labels?		Yes 🗹	No 🗌	
13. Are matrice	s correctly identified on Chain of	Custody?	Yes 🗸	No 🗌	
14. Is it clear w	hat analyses were requested?		Yes 🗸	No 🗌	
15. Were all ho be met?	ld times (except field parameters	, pH e.g.) able to	Yes	No 🗸	
	dling (if applicable)				
=	t notified of all discrepancies with	this order?	Yes	No 🗌	NA 🗸
Pers	on Notified:		Pate:		
By W	/hom:	V	′ia:	one Fax	☐ In Person
Rega	arding:				
Clien	t Instructions:				
17. Additional	remarks:				
Item Information	on				
	Item #	Temp °C			
Sample		0.1			

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Original Page 11 of 11

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 5500 4th Ave S

City, State, ZIP Seattle, WA 98108

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

REMARKS	312179	PROJECT NAME/NO.	SUBCONTRACTER Fremont
	D-589	PO#	
	REMARKS	312179	

	PO# D-589
SAMPLE DISPOSAL Dispose after 30 days Return samples Will call with instructions	TURNAROUND TIME Standard TAT RUSH Rush charges authorized by:

Fax (206) 283-5044	Seattle, WA 98119-2029 Ph. (206) 285-8282	3012 16th Avenue We	Friedman & Bruya, Inc.					PZ-8-1223	PZ-7-1223	CTMW-24D-1223	CTMW-24-1223	Sample ID	
												Lab ID	
Received by:	Relinquished by:		SI					12/11/2023	12/11/2023	12/11/2023	12/11/2023	Date Sampled	
		tothe	SIGNATURE					1500	1400	1245	1100	Time Sampled	
			1					1500 water	1400 water	1245 water	1100 water	Matrix	
	8	MICHA	Michael					1		1	1	# of jars	
	"colon	Michael Bruani	PR					×	×	×	×	ferrous iron	
	3	111	PRINT NAME									sulfate	
	6		AME									alkalinity	1
	t	2										ferrous iron	NAL
	C											dissolved gases	NALYSES REQUESTED
		Tited	Fried									TOC	REQ
	7	Than t	COM					ж	×	×	×	Total Al	UEST
	1) 2	COMPANY					×	K	×	*	Desolved Al	ED
		94	20	Ц				-	_	-		- FF	
	12/12/2	12/12/28	DATE		1								
	3 730	246	TIME									Notes	

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Vineta Mills, M.S. Eric Young, B.S.

5500 4th Avenue South Seattle, WA 98108 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

December 27, 2023

Trevor Louviere, Project Manager Dalton Olmsted Fuglevand 1001 SW Klickitat Way, Suite 200B Seattle, WA 98134

Dear Mr Louviere:

Included are the results from the testing of material submitted on December 21, 2023 from the TWAAFA-001, F&BI 312209 project. There are 20 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures

c: Anthony Cerruti, Tasya Gray

DOF1227R.DOC

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on December 21, 2023 by Friedman & Bruya, Inc. from the Dalton Olmsted Fuglevand TWAAFA-001, F&BI 312209 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Dalton Olmsted Fuglevand
312209 -01	TWA-4D-1223
312209 -02	PZ-9-1223
312209 -03	TWA-7D-1223

The samples were sent to Fremont Analytical for ferrous iron, total aluminum, and dissolved aluminum analyses. The report is enclosed.

The 6020B iron total and dissolved calibration standard associated with the method blanks exceeded the acceptance criteria. The metal was not detected in the method blanks, therefore this did not represent an out of control condition.

All other quality control requirements were acceptable.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: TWA-4D-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/21/23 Project: TWAAFA-001, F&BI 312209

Lab ID: Date Extracted: 12/13/23 312209-01 Date Analyzed: 12/16/23 Data File: 312209-01.200 Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) SPOperator:

Concentration

Analyte: ug/L (ppb)

 Copper
 1.18

 Iron
 4,040

 Manganese
 106

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: TWA-4D-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/21/23 Project: TWAAFA-001, F&BI 312209

 Date Extracted:
 12/13/23
 Lab ID:
 312209-01 x5

 Date Analyzed:
 12/15/23
 Data File:
 312209-01 x5.174

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Arsenic 10.3

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: PZ-9-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/21/23 Project: TWAAFA-001, F&BI 312209

 Date Extracted:
 12/13/23
 Lab ID:
 312209-02

 Date Analyzed:
 12/16/23
 Data File:
 312209-02.201

 Matrix:
 Water
 Instrument:
 ICPMS2

Units: ug/L (ppb) Operator: SP

Concentration ug/L (ppb)

Lead <1

Analyte:

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: PZ-9-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/21/23 Project: TWAAFA-001, F&BI 312209

 Date Extracted:
 12/13/23
 Lab ID:
 312209-02 x5

 Date Analyzed:
 12/15/23
 Data File:
 312209-02 x5.175

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Analyte: Concentration ug/L (ppb)

 Arsenic
 8.57

 Manganese
 3,090

 Nickel
 <5</td>

 Zinc
 <25</td>

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: PZ-9-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/21/23 Project: TWAAFA-001, F&BI 312209

 Date Extracted:
 12/13/23
 Lab ID:
 312209-02 x200

 Date Analyzed:
 12/20/23
 Data File:
 312209-02 x200.048

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Iron 34,600

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: TWA-7D-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/21/23 Project: TWAAFA-001, F&BI 312209

Lab ID: Date Extracted: 12/13/23 312209-03 Date Analyzed: 12/16/23 Data File: 312209-03.202 Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) SPOperator:

Concentration

Analyte: ug/L (ppb)

Copper<1</th>Iron1,510Manganese118

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: TWA-7D-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/21/23 Project: TWAAFA-001, F&BI 312209

 Date Extracted:
 12/13/23
 Lab ID:
 312209-03 x5

 Date Analyzed:
 12/15/23
 Data File:
 312209-03 x5.176

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Arsenic 7.82

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: Method Blank Client: Dalton Olmsted Fuglevand Date Received: Not Applicable Project: TWAAFA-001, F&BI 312209

 Date Extracted:
 12/13/23
 Lab ID:
 13-980 mb2

 Date Analyzed:
 12/13/23
 Data File:
 13-980 mb2.052

 Materials:
 12/13/23
 Data File:
 13-980 mb2.052

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

 $\begin{array}{c} \text{Concentration} \\ \text{Analyte:} \\ \text{ug/L (ppb)} \end{array}$

 Arsenic
 <1</td>

 Copper
 <1</td>

 Iron
 <50 k</td>

 Lead
 <1</td>

 Manganese
 <1</td>

 Nickel
 <1</td>

 Zinc
 <5</td>

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: TWA-4D-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/21/23 Project: TWAAFA-001, F&BI 312209

Lab ID: Date Extracted: 12/13/23 312209-01 Date Analyzed: 12/16/23 Data File: 312209-01.211 Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) SPOperator:

Concentration

Analyte: ug/L (ppb)

 Copper
 1.03

 Iron
 4,080

 Manganese
 105

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: TWA-4D-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/21/23 Project: TWAAFA-001, F&BI 312209

 Date Extracted:
 12/13/23
 Lab ID:
 312209-01 x5

 Date Analyzed:
 12/16/23
 Data File:
 312209-01 x5.185

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Arsenic 9.85

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: PZ-9-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/21/23 Project: TWAAFA-001, F&BI 312209

Lab ID: Date Extracted: 12/13/23 312209-02 Date Analyzed: 12/16/23 Data File: 312209-02.212 Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) SPOperator:

Concentration

Analyte: ug/L (ppb)

Lead <1

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: PZ-9-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/21/23 Project: TWAAFA-001, F&BI 312209

 $\begin{array}{cccc} \text{Matrix:} & \text{Water} & \text{Instrument:} & \text{ICPMS2} \\ \text{Units:} & \text{ug/L (ppb)} & \text{Operator:} & \text{SP} \end{array}$

Analyte: Concentration ug/L (ppb)

 Arsenic
 9.82

 Manganese
 2,970

 Nickel
 <5</td>

 Zinc
 <25</td>

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: PZ-9-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/21/23 Project: TWAAFA-001, F&BI 312209

 Date Extracted:
 12/13/23
 Lab ID:
 312209-02 x100

 Date Analyzed:
 12/18/23
 Data File:
 312209-02 x100.085

 $\begin{array}{cccc} \text{Matrix:} & \text{Water} & \text{Instrument:} & \text{ICPMS2} \\ \text{Units:} & \text{ug/L (ppb)} & \text{Operator:} & \text{SP} \end{array}$

Concentration

Analyte: ug/L (ppb)

Iron 38,700

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: TWA-7D-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/21/23 Project: TWAAFA-001, F&BI 312209

Lab ID: Date Extracted: 12/13/23 312209-03 Date Analyzed: 12/16/23 Data File: 312209-03.213 Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) SPOperator:

Concentration

Analyte: ug/L (ppb)

 Copper
 0.750

 Iron
 1,590

 Manganese
 113

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: TWA-7D-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/21/23 Project: TWAAFA-001, F&BI 312209

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Arsenic 7.86

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: Method Blank Client: Dalton Olmsted Fuglevand Date Received: Not Applicable Project: TWAAFA-001, F&BI 312209

Date Extracted: 12/13/23 Lab ID: I3-981 mb2
Date Analyzed: 12/13/23 Data File: I3-981 mb2.053
Matrix: Water Instrument: ICPMS2

Units: water Instrument: ICP:
Units: ug/L (ppb) Operator: SP

 $\begin{array}{c} \text{Concentration} \\ \text{Analyte:} \\ \text{ug/L (ppb)} \end{array}$

 Arsenic
 <1</td>

 Copper
 <0.4</td>

 Iron
 <50 k</td>

 Lead
 <1</td>

 Manganese
 <1</td>

 Nickel
 <1</td>

 Zinc
 <5</td>

ENVIRONMENTAL CHEMISTS

Date of Report: 12/27/23 Date Received: 12/21/23

Project: TWAAFA-001, F&BI 312209

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 6020B

Laboratory Code: 312178-01 (Matrix Spike)

				Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Arsenic	ug/L (ppb)	10	1.16	99	103	75-125	4
Copper	ug/L (ppb)	20	<5	90	91	75 - 125	1
Iron	ug/L (ppb)	100	350	$95 \mathrm{\ b}$	98 b	75 - 125	3 b
Lead	ug/L (ppb)	10	<1	78	80	75 - 125	3
Manganese	ug/L (ppb)	20	150	113 b	118 b	75 - 125	4 b
Nickel	ug/L (ppb)	20	4.66	96 b	96 b	75 - 125	0 b
Zinc	ug/L (ppb)	50	<5	96	98	75 - 125	2

Laboratory Code: Laboratory Control Sample

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	ug/L (ppb)	10	94	80-120
Copper	ug/L (ppb)	20	97	80-120
Iron	ug/L (ppb)	100	95	80-120
Lead	ug/L (ppb)	10	90	80-120
Manganese	ug/L (ppb)	20	87	80-120
Nickel	ug/L (ppb)	20	97	80-120
Zinc	ug/L (ppb)	50	98	80-120

ENVIRONMENTAL CHEMISTS

Date of Report: 12/27/23 Date Received: 12/21/23

Project: TWAAFA-001, F&BI 312209

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 312178-02 (Matrix Spike)

				Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Arsenic	ug/L (ppb)	10	1.64	93	92	75-125	1
Copper	ug/L (ppb)	20	<5	85	87	75 - 125	2
Iron	ug/L (ppb)	100	503	117 b	115 b	75 - 125	2 b
Lead	ug/L (ppb)	10	<1	77	78	75 - 125	1
Manganese	ug/L (ppb)	20	118	119 b	121 b	75 - 125	$2 \mathrm{\ b}$
Nickel	ug/L (ppb)	20	2.74	89	89	75 - 125	0
Zinc	ug/L (ppb)	50	<5	92	94	75 - 125	2

Laboratory Code: Laboratory Control Sample

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	ug/L (ppb)	10	93	80-120
Copper	ug/L (ppb)	20	97	80-120
Iron	ug/L (ppb)	100	101	80-120
Lead	ug/L (ppb)	10	90	80-120
Manganese	ug/L (ppb)	20	87	80-120
Nickel	ug/L (ppb)	20	96	80-120
Zinc	ug/L (ppb)	50	98	80-120

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.
- c The presence of the analyte may be due to carryover from previous sample injections.
- cf The sample was centrifuged prior to analysis.
- d The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv Insufficient sample volume was available to achieve normal reporting limits.
- f The sample was laboratory filtered prior to analysis.
- fb The analyte was detected in the method blank.
- fc The analyte is a common laboratory and field contaminant.
- hr The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs Headspace was present in the container used for analysis.
- ht The analysis was performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of control limits due to sample matrix effects.
- j The analyte concentration is reported below the standard reporting limit. The value reported is an estimate
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- k The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.
- lc The presence of the analyte is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

312209

Report To: Anthony Cerruti / Trevor Louviere CC: Tasya Gray

Company DOF

Address_ 1001 SW Klickitat Way

City, State, ZIP Seattle, WA 98134

Phone 215-767-7749 Email acerruti@dofnw.com

Project Specific RLs (Yes)/ No

Dissolved metals samples field filtered at 0.45 micron before analysis

REMARKS

PROJECT NAME

TWAAFA

SAMPLE CHAIN OF CUSTODY SAMPLERS (signature)

12/12/25

Page#_

TURNAROUND TIME

Standard Turnaround

Rush charges authorized by: _RUSH_

TWAAFA-001

PO#

INVOICE TO

DOF

Dispose after 30 days Other Archive Samples SAMPLE DISPOSAL

Friedman & Bruya, Inc.						8			SEPT-CI-AMI	(DV 12 1516	IWA-40-1223		
		,	13						03 1	20	<u>-</u>	01 A-C	Lab ID	
SIGN Relinquished by:					et .				Shti cto	012110	101010	01 A-C 12/12/23	Date Sampled	
SIGNATURE								±€	Shti	110		1050	Time Sampled	
									٤	_ 2	-	٤	Sample Matrix	
									S	3)	w	# of Bottles	
PRINT NAME				.\			-		X		*	X	Total Metals 6020B (As, Cr, Cu, Mn, Ni, Pb, Zn) Dissolved Metals 6020B (As, Cr, Cu, Mn, Ni, Pb, Zn)	
Æ													Total Mercury 1631E Dissolved Mercury 1631E	
-							1	7/	X	\nearrow	χ	\setminus	Total Metals (Al, Fe)	
COMPANY		Samp1							X	X	**************************************	X	Dissolved Metals (Al, Fe) Fivou S Ivon	
YNY		les received				1							, and a	ANATA
DATE	V.	ved at 1			\ 			4	. 4	D-	7	. 4	MS/MSD Collected? (Y/N) Note	Odd Ddo
TIME		+°C						AI, AS, CL. FE, HA	ot/0:35 Hetacs:	All As F. Mr. N. Pb7	1, As, Fe, Mn, Cu	Tot/0.25 Hetals;	Notes	Tipompi

Ph. (206) 285-8282

Received by:

Relinquished by:

Courbered under

Custody Send by

Delivery Express

12/12/23

1320

12/12/23 DATE

1320

TIME

Nhan

Phan

FEBI

12/12/23

14/0

Ellioth Schamann

DAT

Seattle, WA 98119-2029 3012 16th Avenue West Friedman & Bruya, Inc.

Relinquished by: 205

Received by:



3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya Michael Erdahl 5500 4th Ave S Seattle, WA 98108

RE: 312209

Work Order Number: 2312296

December 19, 2023

Attention Michael Erdahl:

Fremont Analytical, Inc. received 3 sample(s) on 12/12/2023 for the analyses presented in the following report.

Dissolved Metals by EPA Method 200.8 Ferrous Iron by SM3500-Fe B Total Metals by EPA Method 200.8

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Date: 12/19/2023



CLIENT: Friedman & Bruya Work Order Sample Summary

Project: 312209 **Work Order:** 2312296

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2312296-001	TWA-4D-1223	12/12/2023 10:50 AM	12/12/2023 3:07 PM
2312296-002	PZ-9-1223	12/12/2023 11:45 AM	12/12/2023 3:07 PM
2312296-003	TWA-7D-1223	12/12/2023 12:45 PM	12/12/2023 3:07 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned



Case Narrative

WO#: **2312296**Date: **12/19/2023**

CLIENT: Friedman & Bruya

Project: 312209

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.



Qualifiers & Acronyms

WO#: **2312296**

Date Reported: 12/19/2023

Qualifiers:

- * Flagged value is not within established control limits
- B Analyte detected in the associated Method Blank
- D Dilution was required
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- I Analyte with an internal standard that does not meet established acceptance criteria
- J Analyte detected below Reporting Limit
- N Tentatively Identified Compound (TIC)
- Q Analyte with an initial or continuing calibration that does not meet established acceptance criteria
- S Spike recovery outside accepted recovery limits
- ND Not detected at the Reporting Limit
- R High relative percent difference observed

Acronyms:

%Rec - Percent Recovery

CCB - Continued Calibration Blank

CCV - Continued Calibration Verification

DF - Dilution Factor

DUP - Sample Duplicate

HEM - Hexane Extractable Material

ICV - Initial Calibration Verification

LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate

MCL - Maximum Contaminant Level

MB or MBLANK - Method Blank

MDL - Method Detection Limit

MS/MSD - Matrix Spike / Matrix Spike Duplicate

PDS - Post Digestion Spike

Ref Val - Reference Value

REP - Sample Replicate

RL - Reporting Limit

RPD - Relative Percent Difference

SD - Serial Dilution

SGT - Silica Gel Treatment

SPK - Spike

Surr - Surrogate



Analytical Report

Work Order: 2312296

Date Reported: 12/19/2023

CLIENT: Friedman & Bruya

Project: 312209

Lab ID: 2312296-001 **Collection Date:** 12/12/2023 10:50:00 AM

Client Sample ID: TWA-4D-1223 Matrix: Water

Analyses	Result	RL Qual	Units	DF	Date Analyzed
Dissolved Metals by EPA Method	200.8		Batch	ID: 42	343 Analyst: JR
Aluminum	ND	10.0	μg/L	1	12/15/2023 4:27:00 PM
Total Metals by EPA Method 200	<u>.8</u>		Batch	ID: 42	377 Analyst: JR
Aluminum	10.2	10.0	μg/L	1	12/19/2023 12:58:00 PM
Ferrous Iron by SM3500-Fe B			Batch	ID: R8	8304 Analyst: FG
Ferrous Iron	0.831	0.150	mg/L	1	12/12/2023 2:17:54 PM

Lab ID: 2312296-002 **Collection Date:** 12/12/2023 11:45:00 AM

Client Sample ID: PZ-9-1223 Matrix: Water

Analyses	Result	RL Qual	Units	DF	Date Analyzed
Dissolved Metals by EPA Method	<u>I 200.8</u>		Batc	h ID: 42	343 Analyst: JR
Aluminum	19.3	10.0	μg/L	1	12/15/2023 4:30:00 PM
Total Metals by EPA Method 200	<u>).8</u>		Batc	h ID: 42	377 Analyst: JR
Aluminum	27.6	10.0	μg/L	1	12/19/2023 1:01:00 PM
Ferrous Iron by SM3500-Fe B			Batc	h ID: R8	8304 Analyst: FG
Ferrous Iron	35.1	15.0 E) mg/L	100	12/12/2023 2:17:54 PM



Analytical Report

Work Order: **2312296**Date Reported: **12/19/2023**

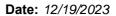
CLIENT: Friedman & Bruya

Project: 312209

Lab ID: 2312296-003 **Collection Date:** 12/12/2023 12:45:00 PM

Client Sample ID: TWA-7D-1223 Matrix: Water

Analyses	Result	RL Qual	Units	DF	Date Analyzed
Dissolved Metals by EPA Method	<u>d 200.8</u>		Batch	n ID: 42	343 Analyst: JR
Aluminum	ND	10.0	μg/L	1	12/15/2023 4:32:00 PM
Total Metals by EPA Method 200	<u>).8</u>		Batch	n ID: 42	377 Analyst: JR
Aluminum	ND	10.0	μg/L	1	12/19/2023 1:03:00 PM
Ferrous Iron by SM3500-Fe B			Batch	ı ID: R8	8304 Analyst: FG
Ferrous Iron	0.381	0.150	mg/L	1	12/12/2023 2:17:54 PM



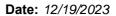


CLIENT: Friedman & Bruya **QC SUMMARY REPORT**

Ferrous Iron by SM3500-Fe B

Project : 312209					rerrous from by Swissou-Fe
Sample ID: MB-R88304	SampType: MBLK			Units: mg/L	Prep Date: 12/12/2023 RunNo: 88304
Client ID: MBLKW	Batch ID: R88304				Analysis Date: 12/12/2023 SeqNo: 1843421
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Ferrous Iron	ND	0.150			
Sample ID: LCS-R88304	SampType: LCS			Units: mg/L	Prep Date: 12/12/2023 RunNo: 88304
Client ID: LCSW	Batch ID: R88304				Analysis Date: 12/12/2023 SeqNo: 1843422
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Ferrous Iron	0.393	0.150	0.4000	0	98.3 85 115
Sample ID: 2312283-004ADUP	SampType: DUP			Units: mg/L	Prep Date: 12/12/2023 RunNo: 88304
Client ID: BATCH	Batch ID: R88304				Analysis Date: 12/12/2023 SeqNo: 1843550
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Ferrous Iron	0.327	0.150			0.2663 20.4 20
Sample ID: 2312283-004AMS	SampType: MS			Units: mg/L	Prep Date: 12/12/2023 RunNo: 88304
Client ID: BATCH	Batch ID: R88304				Analysis Date: 12/12/2023 SeqNo: 1843551
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Ferrous Iron	0.735	0.150	0.4000	0.2663	117 70 130
Sample ID: 2312283-004AMSD	SampType: MSD			Units: mg/L	Prep Date: 12/12/2023 RunNo: 88304
Client ID: BATCH	Batch ID: R88304				Analysis Date: 12/12/2023 SeqNo: 1843552
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Ferrous Iron	0.738	0.150	0.4000	0.2663	118 70 130 0.7348 0.410 30

Page 7 of 12 Original





CLIENT: Friedman & Bruya

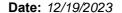
Project: 312209

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Project: 312209					•
Sample ID: MB-42343	SampType: MBLK			Units: µg/L	Prep Date: 12/14/2023 RunNo: 88400
Client ID: MBLKW	Batch ID: 42343				Analysis Date: 12/15/2023 SeqNo: 1845895
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qua
Aluminum	ND	10.0			
Sample ID: LCS-42343	SampType: LCS			Units: µg/L	Prep Date: 12/14/2023 RunNo: 88400
Client ID: LCSW	Batch ID: 42343				Analysis Date: 12/15/2023 SeqNo: 1845896
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qua
Aluminum	1,050	10.0	1,000	0	105 85 115
Sample ID: 2312283-003CDUP	SampType: DUP			Units: μg/L	Prep Date: 12/14/2023 RunNo: 88400
Client ID: BATCH	Batch ID: 42343				Analysis Date: 12/15/2023 SeqNo: 1845898
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qua
Aluminum	47.4	10.0			46.74 1.47 30
Sample ID: 2312283-003CMS	SampType: MS			Units: μg/L	Prep Date: 12/14/2023 RunNo: 88400
Client ID: BATCH	Batch ID: 42343				Analysis Date: 12/15/2023 SeqNo: 1845899
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qua
Aluminum	1,130	10.0	1,000	46.74	108 50 150
Sample ID: 2312328-003BMS	SampType: MS			Units: μg/L	Prep Date: 12/14/2023 RunNo: 88400
Client ID: BATCH	Batch ID: 42343				Analysis Date: 12/15/2023 SeqNo: 1845913
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qua
Aluminum	1,040	10.0	1,000	3.483	103 50 150

Original Page 8 of 12





Project:

QC SUMMARY REPORT

CLIENT: Friedman & Bruya

312209

Dissolved Metals by EPA Method 200.8

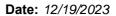
Sample ID: MB-42344 FB SampType: MBLK Units: µg/L Prep Date: 12/14/2023 RunNo: 88400

Client ID: **MBLKW** Batch ID: **42343** Analysis Date: **12/15/2023** SeqNo: **1845923**

Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Aluminum ND 10.0

Original Page 9 of 12





CLIENT: Friedman & Bruya

Project: 312209

QC SUMMARY REPORT

Total Metals by EPA Method 200.8

110ject. 012200									
Sample ID: MB-42377	SampType: MBLK			Units: μg/L		Prep Date:	12/18/2023	RunNo: 88449	
Client ID: MBLKW	Batch ID: 42377					Analysis Date	12/19/2023	SeqNo: 1847008	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit F	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	ND	10.0							
Sample ID: LCS-42377	SampType: LCS			Units: µg/L		Prep Date:	12/18/2023	RunNo: 88449	
Client ID: LCSW	Batch ID: 42377					Analysis Date	12/19/2023	SeqNo: 1847009	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit F	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	1,050	10.0	1,000	0	105	85	115		
Sample ID: 2312404-001ADUP	SampType: DUP			Units: μg/L		Prep Date:	12/18/2023	RunNo: 88449	
Client ID: BATCH	Batch ID: 42377					Analysis Date	12/19/2023	SeqNo: 1847011	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit F	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	132	10.0					128.3	2.76 30	
Sample ID: 2312404-001AMS	SampType: MS			Units: μg/L		Prep Date:	12/18/2023	RunNo: 88449	
Client ID: BATCH	Batch ID: 42377					Analysis Date	12/19/2023	SeqNo: 1847012	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit F	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	1,170	10.0	1,000	128.3	105	70	130		
Sample ID: 2312318-001CMS	SampType: MS			Units: μg/L		Prep Date:	12/18/2023	RunNo: 88449	
Client ID: BATCH	Batch ID: 42377					Analysis Date	12/19/2023	SeqNo: 1846967	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit F	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	1,130	10.0	1,000	76.68	106	70	130		

Original Page 10 of 12



Sample Log-In Check List

Clie	ent Name:	FB		W	ork Order Nu	mber: 2312296		
Log	gged by:	Lyann Rivera		D	ate Received:	12/12/202	23 3:07:00 PM	
Chai	n of Custo	<u>ody</u>						
1. 1	s Chain of Cu	ustody complete?			Yes 🗸	No 🗌	Not Present	
2. F	low was the	sample delivered?			Client			
Log I	<u>In</u>							
		s present on shipping container ments for Custody Seals not in			Yes	No 🗌	Not Present ✓	
4. V	Vas an attem	pt made to cool the samples?			Yes 🗸	No 🗌	NA \square	
5. W	Vere all items	received at a temperature of	>2°C to 6°C	*	Yes 🗹	No 🗌	NA 🗌	
6. S	Sample(s) in p	proper container(s)?			Yes 🗸	No 🗌		
7. S	Sufficient sam	ple volume for indicated test(s	?		Yes 🗸	No \square		
8. A	re samples p	properly preserved?			Yes 🗸	No \square		
9. V	Vas preserva	tive added to bottles?			Yes	No 🗹	NA \square	
10. ls	s there heads	space in the VOA vials?			Yes	No 🗌	NA 🗹	
11. D	oid all sample	s containers arrive in good cor	dition(unbroker	n)?	Yes 🗸	No 🗌		
12. ^D	oes paperwo	ork match bottle labels?			Yes 🗸	No 🗌		
13. A	Are matrices o	correctly identified on Chain of	Custody?		Yes 🗸	No 🗌		
14. ls	s it clear what	t analyses were requested?			Yes 🗸	No 🗌		
	Vere all hold to be met?	times (except field parameters	pH e.g.) able to	0	Yes 🗸	No 🗌		
		ing (if applicable)						
16.	Was client no	otified of all discrepancies with	this order?		Yes	No 🗌	NA 🗸	
	Person	Notified:		Date:				
	By Who	om:		Via:	eMail 🗌	Phone Fax	☐ In Person	
	Regardi	ing:						
	Client Ir	nstructions:						
17.	Additional re	marks:						
Item I	<u>Information</u>							
		Item #	Temp ⁰C					
	Sample		1.0					

^{*} Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Phone #_ (206) 285-8282 merdahl@friedmanandbruya.com	City, State, ZIP Seattle, WA 98108	Address 5500 4th Ave S	Company Friedman and Bruya, Inc.	Send Report To Michael Erdahl
В	REMARKS	312209	PROJECT NAME/NO.	SUBCONTRACTER Fremont
		D-589	PO#	

FCUSTODY	2525	
	Page #1 of1	
	TURNAROUND TIME	
PO#	⊠ Standard TAT RUSH	of 12
D-589	Rush charges authorized by:	12
	SAMPLE DISPOSAL Dispose after 30 days	Page
	Return samples	
	Will call with instructions	

Fax (206) 283-5044	Ph. (206) 285-8282	Seattle, WA 98119-2029	3012 16th Avenue West	Friedman & Bruya, Inc.							TWA-7D-1223	PZ-9-1223	TWA-4D-1223	Sample ID	
		_	_	nc.										Lab ID	
Received by:	Relinquished by	Received by:	Relinguisher by: O	SI							12/12/2023	12/12/2023	12/12/2023	Date Sampled	
	0000	MAN	Sul	SIGNATURE							1245	1145	1050	Time Sampled	
											water	1145 water	water	Matrix	
		Alli	Michael Erdahl								ಬ	3	3	# of jars	
			l Erde	PR							×	×	х	ferrous iron	П
		Miller	Ы	PRINT NAME							×	×	×	total aluminum dissolved	
		19		ME	<u> </u>	\perp	-			_	×	×	×	aluminum	A
														ferrous iron	NAL
					Щ									dissolved gases	SES
		7	Fried		Ш									TOC	REQ
		7	man	CON											NALYSES REQUESTED
			Friedman & Bruya	COMPANY											CED
			ıya	Y											
		12/	12	D	Ш						L		L		Ц
		12/12/23	12/11/13	DATE										N	
		1507	1436	TIME										Notes	

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Vineta Mills, M.S. Eric Young, B.S.

5500 4th Avenue South Seattle, WA 98108 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

December 22, 2023

Anthony Cerruti, Project Manager Dalton Olmsted Fuglevand 1001 SW Klickitat Way, Suite 200B Seattle, WA 98134

Dear Mr Cerruti:

Included are the results from the testing of material submitted on December 12, 2023 from the TWAAFA-001, F&BI 312222 project. There are 14 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures

c: Trevor Louviere, Tasya Gray

DOF1222R.DOC

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on December 12, 2023 by Friedman & Bruya, Inc. from the Dalton Olmsted Fuglevand TWAAFA-001, F&BI 312222 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Dalton Olmsted Fuglevand</u>
010000 01	OMM (NIII 0 1000

312222 -01 CTMW-9-1223 312222 -02 CTMW-8-1223

The samples were sent to Fremont Analytical for ferrous iron, total aluminum, and dissolved aluminum analyses. The report is enclosed.

All quality control requirements were acceptable.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: CTMW-9-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/12/23 Project: TWAAFA-001, F&BI 312222

Lab ID: Date Extracted: 12/13/23 312222-01Date Analyzed: 12/16/23 Data File: 312222-01.203 Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) SPOperator:

Concentration

Analyte: ug/L (ppb)

Copper <1 Iron 4,460 Manganese 373

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: CTMW-9-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/12/23 Project: TWAAFA-001, F&BI 312222

 Date Extracted:
 12/13/23
 Lab ID:
 312222-01 x5

 Date Analyzed:
 12/15/23
 Data File:
 312222-01 x5.177

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Arsenic 8.65

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: CTMW-8-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/12/23 Project: TWAAFA-001, F&BI 312222

Lab ID: Date Extracted: 12/13/23 312222-02 Date Analyzed: 12/16/23 Data File: 312222-02.206 Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) SPOperator:

Concentration

Analyte: ug/L (ppb)

Copper <1 Iron 4,270 Manganese <1

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: CTMW-8-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/12/23 Project: TWAAFA-001, F&BI 312222

 Date Extracted:
 12/13/23
 Lab ID:
 312222-02 x5

 Date Analyzed:
 12/15/23
 Data File:
 312222-02 x5.178

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Arsenic <5

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: Method Blank Client: Dalton Olmsted Fuglevand Date Received: Not Applicable Project: TWAAFA-001, F&BI 312222

 Date Extracted:
 12/13/23
 Lab ID:
 I3-980 mb2

 Date Analyzed:
 12/13/23
 Data File:
 I3-980 mb2.052

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

 $\begin{array}{c} & Concentration \\ Analyte: & ug/L\ (ppb) \end{array}$

 Arsenic
 <1</td>

 Copper
 <1</td>

 Iron
 <50 k</td>

 Manganese
 <1</td>

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: CTMW-9-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/12/23 Project: TWAAFA-001, F&BI 312222

Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Copper1.10Manganese398

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: CTMW-9-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/12/23 Project: TWAAFA-001, F&BI 312222

 Date Extracted:
 12/13/23
 Lab ID:
 312222-01 x5

 Date Analyzed:
 12/16/23
 Data File:
 312222-01 x5.188

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Arsenic 8.91 Iron 8,430

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: CTMW-8-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/12/23 Project: TWAAFA-001, F&BI 312222

Lab ID: 312222-02 Date Extracted: 12/13/23 Date Analyzed: 12/16/23 Data File: $312222 \hbox{-} 02.215$ Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) SPOperator:

 $\begin{array}{c} & Concentration \\ Analyte: & ug/L\ (ppb) \end{array}$

 Copper
 1.14

 Iron
 4,300

 Manganese
 2.45

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: CTMW-8-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/12/23 Project: TWAAFA-001, F&BI 312222

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Arsenic <5

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: Method Blank Client: Dalton Olmsted Fuglevand Date Received: Not Applicable Project: TWAAFA-001, F&BI 312222

 Date Extracted:
 12/13/23
 Lab ID:
 I3-978 mb2

 Date Analyzed:
 12/18/23
 Data File:
 I3-978 mb2.041

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

 $\begin{array}{c} \text{Concentration} \\ \text{Analyte:} \\ \text{ug/L (ppb)} \end{array}$

Arsenic <1 Copper <1 Iron <50 Manganese <1

ENVIRONMENTAL CHEMISTS

Date of Report: 12/22/23 Date Received: 12/12/23

Project: TWAAFA, F&BI 312222

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 6020B

Laboratory Code: 312178-01 (Matrix Spike)

				Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Arsenic	ug/L (ppb)	10	1.16	99	103	75-125	4
Copper	ug/L (ppb)	20	<5	90	91	75 - 125	1
Iron	ug/L (ppb)	100	350	95 b	98 b	75 - 125	3 b
Manganese	ug/L (ppb)	20	150	113 b	118 b	75 - 125	4 b

Laboratory Code: Laboratory Control Sample

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	ug/L (ppb)	10	94	80-120
Copper	ug/L (ppb)	20	97	80-120
Iron	ug/L (ppb)	100	95	80-120
Manganese	ug/L (ppb)	20	87	80-120

ENVIRONMENTAL CHEMISTS

Date of Report: 12/22/23 Date Received: 12/12/23

Project: TWAAFA, F&BI 312222

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 312177-01 (Matrix Spike)

				Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Arsenic	ug/L (ppb)	10	<1	112	110	75-125	2
Copper	ug/L (ppb)	20	<5	100	97	75 - 125	3
Iron	ug/L (ppb)	100	419	118 b	103 b	75 - 125	14 b
Manganese	ug/L (ppb)	20	335	96 b	21 b	75 - 125	128 b

Laboratory Code: Laboratory Control Sample

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	ug/L (ppb)	10	94	80-120
Copper	ug/L (ppb)	20	97	80-120
Iron	ug/L (ppb)	100	93	80-120
Manganese	ug/L (ppb)	20	89	80-120

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.
- c The presence of the analyte may be due to carryover from previous sample injections.
- cf The sample was centrifuged prior to analysis.
- d The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv Insufficient sample volume was available to achieve normal reporting limits.
- f The sample was laboratory filtered prior to analysis.
- fb The analyte was detected in the method blank.
- fc The analyte is a common laboratory and field contaminant.
- hr The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs Headspace was present in the container used for analysis.
- ht The analysis was performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of control limits due to sample matrix effects.
- j The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- k The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.
- lc The presence of the analyte is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

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312222				SAMI	PLERS (si	ignature	2)							Page	#	of	
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Sample ID	Lab ID	Date	Time	Sample	# of	Total Metals 6020B (As, Cr, Cu, Mn, Ni, Pb, Zn)	feta Mn	Total Mercury 1631E	Dissolved Mercury 1631E	Total Metals (Al, Fe)	Dissolved Metals (Al, Fe)	220			MS/MSD Collected?	(N)	Notes
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CTMW-9-1223		12/12/23	1130	1/4		$\langle \cdot \rangle$	$\langle \cdot \rangle$			$\langle \cdot \rangle$	$\langle \cdot \rangle$	$\langle \cdot \rangle$					DS Metals:
CTMW-8-1223	02 V	12/12/23	1525	W	3	X	\angle			X	X	\times					As, Cu, Fe, Hn
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Received by:

Ph. (206) 285-8282



3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya Michael Erdahl 5500 4th Ave S Seattle, WA 98108

RE: 312222

Work Order Number: 2312314

December 20, 2023

Attention Michael Erdahl:

Fremont Analytical, Inc. received 2 sample(s) on 12/13/2023 for the analyses presented in the following report.

Dissolved Metals by EPA Method 200.8 Ferrous Iron by SM3500-Fe B Total Metals by EPA Method 200.8

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910



Date: 12/20/2023

CLIENT: Friedman & Bruya Work Order Sample Summary

Project: 312222 **Work Order**: 2312314

 Lab Sample ID
 Client Sample ID
 Date/Time Collected
 Date/Time Received

 2312314-001
 CTMW-9-1223
 12/12/2023 2:30 PM
 12/13/2023 11:05 AM

 2312314-002
 CTMW-8-1223
 12/12/2023 3:25 PM
 12/13/2023 11:05 AM

Original Page 2 of 10



Case Narrative

WO#: **2312314**Date: **12/20/2023**

CLIENT: Friedman & Bruya

Project: 312222

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Original Page 3 of 10



Qualifiers & Acronyms

WO#: **2312314**

Date Reported: 12/20/2023

Qualifiers:

- * Flagged value is not within established control limits
- B Analyte detected in the associated Method Blank
- D Dilution was required
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- I Analyte with an internal standard that does not meet established acceptance criteria
- J Analyte detected below Reporting Limit
- N Tentatively Identified Compound (TIC)
- Q Analyte with an initial or continuing calibration that does not meet established acceptance criteria
- S Spike recovery outside accepted recovery limits
- ND Not detected at the Reporting Limit
- R High relative percent difference observed

Acronyms:

%Rec - Percent Recovery

CCB - Continued Calibration Blank

CCV - Continued Calibration Verification

DF - Dilution Factor

DUP - Sample Duplicate

HEM - Hexane Extractable Material

ICV - Initial Calibration Verification

LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate

MCL - Maximum Contaminant Level

MB or MBLANK - Method Blank

MDL - Method Detection Limit

MS/MSD - Matrix Spike / Matrix Spike Duplicate

PDS - Post Digestion Spike

Ref Val - Reference Value

REP - Sample Replicate

RL - Reporting Limit

RPD - Relative Percent Difference

SD - Serial Dilution

SGT - Silica Gel Treatment

SPK - Spike

Surr - Surrogate



Analytical Report

Work Order: 2312314

Date Reported: 12/20/2023

CLIENT: Friedman & Bruya

Project: 312222

Lab ID: 2312314-001 **Collection Date:** 12/12/2023 2:30:00 PM

Client Sample ID: CTMW-9-1223 Matrix: Water

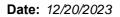
Analyses	Result	PQL Qual	Units	DF	Date Analyzed
Dissolved Metals by EPA Method	200.8		Batch	n ID: 42	343 Analyst: JR
Aluminum	ND	10.0	μg/L	1	12/18/2023 1:09:00 PM
Total Metals by EPA Method 200.	<u>8</u>		Batch	n ID: 42	377 Analyst: JR
Aluminum	25.9	10.0	μg/L	1	12/19/2023 1:10:00 PM
Ferrous Iron by SM3500-Fe B			Batch	ı ID: R8	8320 Analyst: FG
Ferrous Iron	0.889	0.150	mg/L	1	12/13/2023 12:30:00 PM

Lab ID: 2312314-002 **Collection Date:** 12/12/2023 3:25:00 PM

Client Sample ID: CTMW-8-1223 Matrix: Water

Analyses	Result	PQL Qual	Units	DF	Date Analyzed
Dissolved Metals by EPA Method	200.8		Batch	n ID: 420	343 Analyst: JR
Aluminum	212	10.0	μg/L	1	12/18/2023 1:11:00 PM
Total Metals by EPA Method 200.	<u>8</u>		Batch	n ID: 423	377 Analyst: JR
Aluminum	218	10.0	μg/L	1	12/19/2023 1:13:00 PM
Ferrous Iron by SM3500-Fe B			Batch	ı ID: R8	8320 Analyst: FG
Ferrous Iron	ND	0.150	mg/L	1	12/13/2023 12:30:00 PM

Original Page 5 of 10





CLIENT: Friedman & Bruya

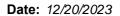
Project: 312222

QC SUMMARY REPORT

Ferrous Iron by SM3500-Fe B

Project : 312222					I GIIV	ous Iron by Swissou-i e L
Sample ID: MB-R88320	SampType: MBLK			Units: mg/L	Prep Date: 12/13/2023	RunNo: 88320
Client ID: MBLKW	Batch ID: R88320				Analysis Date: 12/13/2023	SeqNo: 1844051
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Ferrous Iron	ND	0.150				
Sample ID: LCS-R88320	SampType: LCS			Units: mg/L	Prep Date: 12/13/2023	RunNo: 88320
Client ID: LCSW	Batch ID: R88320				Analysis Date: 12/13/2023	SeqNo: 1844052
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Ferrous Iron	0.436	0.150	0.4000	0	109 85 115	
Sample ID: 2312314-002CDUP	SampType: DUP			Units: mg/L	Prep Date: 12/13/2023	RunNo: 88320
Client ID: CTMW-8-1223	Batch ID: R88320				Analysis Date: 12/13/2023	SeqNo: 1844056
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Ferrous Iron	ND	0.150			0	20
Sample ID: 2312314-002CMS	SampType: MS			Units: mg/L	Prep Date: 12/13/2023	RunNo: 88320
Client ID: CTMW-8-1223	Batch ID: R88320				Analysis Date: 12/13/2023	SeqNo: 1844057
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Ferrous Iron	0.390	0.150	0.4000	0	97.6 70 130	
Sample ID: 2312314-002CMSD	SampType: MSD			Units: mg/L	Prep Date: 12/13/2023	RunNo: 88320
Client ID: CTMW-8-1223	Batch ID: R88320				Analysis Date: 12/13/2023	SeqNo: 1844058
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Ferrous Iron	0.433	0.150	0.4000	0	108 70 130 0.3902	10.3 30

Original Page 6 of 10





CLIENT: Friedman & Bruya

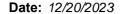
Project: 312222

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: I	MB-42343	SampType: MBLK			Units: µg/L		Prep Date: 12/14/2023	RunNo: 88400
Client ID:	MBLKW	Batch ID: 42343					Analysis Date: 12/15/2023	SeqNo: 1845895
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum		ND	10.0					
Sample ID: I	LCS-42343	SampType: LCS			Units: µg/L		Prep Date: 12/14/2023	RunNo: 88400
Client ID:	LCSW	Batch ID: 42343					Analysis Date: 12/15/2023	SeqNo: 1845896
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum		1,050	10.0	1,000	0	105	85 115	
Sample ID:	2312283-003CDUP	SampType: DUP			Units: µg/L		Prep Date: 12/14/2023	RunNo: 88400
Client ID:	BATCH	Batch ID: 42343					Analysis Date: 12/15/2023	SeqNo: 1845898
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum		47.4	10.0				46.74	1.47 30
Sample ID: :	2312283-003CMS	SampType: MS			Units: µg/L		Prep Date: 12/14/2023	RunNo: 88400
Client ID:	BATCH	Batch ID: 42343					Analysis Date: 12/15/2023	SeqNo: 1845899
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum		1,130	10.0	1,000	46.74	108	50 150	
Sample ID:	2312328-003BMS	SampType: MS			Units: µg/L		Prep Date: 12/14/2023	RunNo: 88400
Client ID:	ВАТСН	Batch ID: 42343					Analysis Date: 12/15/2023	SeqNo: 1845913
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum		1,040	10.0	1,000	3.483	103	50 150	

Original Page 7 of 10





QC SUMMARY REPORT

CLIENT: Friedman & Bruya

Dissolved Metals by EPA Method 200.8

Project: 312222

Sample ID: MB-42344 FB

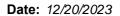
SampType: MBLK Units: µg/L Prep Date: 12/14/2023 RunNo: 88400

Client ID: MBLKW Batch ID: 42343 Analysis Date: 12/15/2023 SeqNo: 1845923

Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Aluminum ND 10.0

Original Page 8 of 10





CLIENT: Friedman & Bruya

Project: 312222

QC SUMMARY REPORT

Total Metals by EPA Method 200.8

110ject. 012222					
Sample ID: MB-42377	SampType: MBLK			Units: µg/L	Prep Date: 12/18/2023 RunNo: 88449
Client ID: MBLKW	Batch ID: 42377				Analysis Date: 12/19/2023 SeqNo: 1847008
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	ND	10.0			
Sample ID: LCS-42377	SampType: LCS			Units: µg/L	Prep Date: 12/18/2023 RunNo: 88449
Client ID: LCSW	Batch ID: 42377				Analysis Date: 12/19/2023 SeqNo: 1847009
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	1,050	10.0	1,000	0	105 85 115
Sample ID: 2312404-001ADUP	SampType: DUP			Units: µg/L	Prep Date: 12/18/2023 RunNo: 88449
Client ID: BATCH	Batch ID: 42377				Analysis Date: 12/19/2023 SeqNo: 1847011
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	132	10.0			128.3 2.76 30
Sample ID: 2312404-001AMS	SampType: MS			Units: µg/L	Prep Date: 12/18/2023 RunNo: 88449
Client ID: BATCH	Batch ID: 42377				Analysis Date: 12/19/2023 SeqNo: 1847012
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	1,170	10.0	1,000	128.3	105 70 130
Sample ID: 2312318-001CMS	SampType: MS			Units: µg/L	Prep Date: 12/18/2023 RunNo: 88449
Client ID: BATCH	Batch ID: 42377				Analysis Date: 12/19/2023 SeqNo: 1846967
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	1,130	10.0	1,000	76.68	106 70 130

Original Page 9 of 10



Sample Log-In Check List

Client Name: FB				Work Order Nu	mber: 2312314	
Logged by: Lyann	Rivera			Date Received:	12/13/202	3 11:05:00 AM
Chain of Custody						
1. Is Chain of Custody o	omplete?			Yes 🗸	No 🗌	Not Present
2. How was the sample	delivered?			Client		
<u>Log In</u>						
Custody Seals present (Refer to comments for the comments)				Yes	No 🗌	Not Present ✓
4. Was an attempt made	to cool the samples?			Yes 🗸	No 🗌	NA \square
5. Were all items receive	ed at a temperature of	>2°C to 6°C	*	Yes 🗸	No 🗌	NA \square
6. Sample(s) in proper c	ontainer(s)?			Yes 🗸	No \square	
7. Sufficient sample volu	me for indicated test(s	s)?		Yes 🗸	No 🗌	
8. Are samples properly	preserved?			Yes 🗸	No 🗌	
9. Was preservative add	ed to bottles?			Yes	No 🗸	NA \square
10. Is there headspace in	the VOA vials?			Yes	No 🗌	NA 🗸
11. Did all samples contain	ners arrive in good co	ndition(unbroke	en)?	Yes 🗸	No 🗌	
12. Does paperwork match	h bottle labels?			Yes 🗹	No 🗌	
13. Are matrices correctly	identified on Chain of	Custody?		Yes 🗸	No 🗌	
14. Is it clear what analys	es were requested?			Yes 🗸	No 🗌	
15. Were all hold times (e be met?	xcept field parameters	, pH e.g.) able	e to	Yes 🗸	No 🗌	
Special Handling (if	applicable)					
16. Was client notified of		this order?		Yes	No 🗌	NA 🗸
Person Notified	: -		Date:			
By Whom:			Via:	eMail	Phone Fax	In Person
Regarding:						
Client Instruction	ns:					
17. Additional remarks:						
Item Information						
	m #	Temp °C				
Sample		2.3				

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Original Page 10 of 10

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Send Report To	Send Report To Michael Erdahl
Company	Friedman and Bruya, Inc.
Address	5500 4th Ave S
City State ZIP	City State ZIP Seattle WA 98108

City State ZIP Seattle WA 98108 REMARKS	Address 5500 4th Ave S	ruya, Inc.	Send Report To Michael Erdahl SUBCON
EMARKS	312222	PROJECT NAME/NO.	SUBCONTRACTER Fremont
	D-589	PO#	

SAMPLE DISPOSAL Dispose after 30 days Return samples Will call with instructions	■ Standard TAT RUSH Rush charges authorized by:	Page #l ofl

Fax (206) 283-5044	Ph. (206) 285-8282	Seattle, WA 98119-2029	3012 16th Avenue West	Friedman & Bruva.						CTMW-8-1223	CTMW-9-1223	Sample ID	
				Inc.								Lab ID	
Received by:	Relinquished by:	Received by:	Relimquished by: Q	SI						12/12/2023	12/12/2023	Date Sampled	
		/	Lux	SIGNATURE						1525	1430	Time Sampled	
			0	1						1525 water	1430 water	Matrix	
		Non	Michael Erdahl							3	ယ	# of jars	
		Norther la PR	el Erdi	PI	- 1					×	×	total aluminum	
		6	ahl	TNIS						×	×	dissolved aluminum	
		Res		PRINT NAME						×	×	ferrous iron	
												ferrous iron	ANAI
												dissolved gases	ANALYSES REQUESTED
			Fried									TOC	REQ
		FA	lman	CON									UEST
		1	Friedman & Bruya	COMPANY		17							ED
			ya	Y									
		13/13/43	17/18/75	DATE		+	H						
				I								Notes	
		105	23.39	TIME									

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Vineta Mills, M.S. Eric Young, B.S. 5500 4th Avenue South Seattle, WA 98108 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

December 28, 2023

Trevor Louviere, Project Manager Dalton Olmsted Fuglevand 1001 SW Klickitat Way, Suite 200B Seattle, WA 98134

Dear Mr Louviere:

Included are the results from the testing of material submitted on December 13, 2023 from the TWAAFA-001, F&BI 312245 project. There are 16 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures

c: Anthony Cerruti, Tasya Gray

DOF1228R.DOC

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on December 13, 2023 by Friedman & Bruya, Inc. from the Dalton Olmsted Fuglevand TWAAFA-001, F&BI 312245 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Dalton Olmsted Fuglevand
312245 -01	TWA-8D-1223
312245 -02	CTMW-5-1223
312245 -03	CTMW-7-1223
312245 -04	CTMW-18-1223

The samples were sent to Fremont Analytical for ferrous iron, total aluminum, and dissolved aluminum analyses. The report is enclosed.

The 6020B total arsenic calibration standard exceeded the acceptance criteria in sample CTMW-7-1223. The metal was not detected, therefore this did not represent an out of control condition.

Several metals in the total 6020B matrix spike and matrix spike duplicate failed the acceptance criteria. The laboratory control sample passed the acceptance criteria, therefore the results were due to matrix effect.

All other quality control requirements were acceptable.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	TWA-8D-1223	Client:	Dalton Olmsted Fuglevand
Date Received:	12/13/23	Project:	TWAAFA-001, F&BI 312245
Data Extracted	19/10/99	I oh ID:	212245 01 75

 Date Extracted:
 12/19/23
 Lab ID:
 312245-01 x5

 Date Analyzed:
 12/21/23
 Data File:
 312245-01 x5.213

389

 $\begin{array}{cccc} \text{Matrix:} & \text{Water} & \text{Instrument:} & \text{ICPMS2} \\ \text{Units:} & \text{ug/L (ppb)} & \text{Operator:} & \text{SP} \end{array}$

Analyte:	Concentration ug/L (ppb)
Arsenic	15.9
Copper	3.57
Iron	2,250

Manganese

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	CTMW-5-1223	Client:	Dalton Olmsted Fuglevand
Date Received:	12/13/23	Project:	TWAAFA-001, F&BI 312245
Date Extracted:	12/19/23	Lab ID:	312245-02 x5
Date Analyzed:	12/21/23	Data File:	312245-02 x5.214

 $\begin{array}{cccc} \text{Matrix:} & \text{Water} & \text{Instrument:} & \text{ICPMS2} \\ \text{Units:} & \text{ug/L (ppb)} & \text{Operator:} & \text{SP} \end{array}$

Analyte:	Concentration ug/L (ppb)
Arsenic	49.5
Copper	163
Iron	1,130
Manganese	71.9
Nickel	19.0
Zinc	556

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: CTMW-7-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/13/23 Project: TWAAFA-001, F&BI 312245

 Date Extracted:
 12/19/23
 Lab ID:
 312245-03 x5

 Date Analyzed:
 12/21/23
 Data File:
 312245-03 x5.215

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Analyte: Concentration ug/L (ppb)

 Arsenic
 <5</td>

 Copper
 2.12

 Iron
 16,700

 Manganese
 558

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	CTMW-18-1223	Client:	Dalton Olmsted Fuglevand
Date Received:	12/13/23	Project:	TWAAFA-001, F&BI 312245

 Date Extracted:
 12/19/23
 Lab ID:
 312245-04 x5

 Date Analyzed:
 12/21/23
 Data File:
 312245-04 x5.219

 $\begin{array}{cccc} \text{Matrix:} & \text{Water} & \text{Instrument:} & \text{ICPMS2} \\ \text{Units:} & \text{ug/L (ppb)} & \text{Operator:} & \text{SP} \end{array}$

 $\begin{array}{c} \text{Concentration} \\ \text{Analyte:} \\ \text{ug/L (ppb)} \end{array}$

 Arsenic
 5.08

 Copper
 8.11

 Iron
 1,190

 Manganese
 1,540

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: Method Blank Client: Dalton Olmsted Fuglevand Date Received: Not Applicable Project: TWAAFA-001, F&BI 312245

 Date Extracted:
 12/19/23
 Lab ID:
 I3-1001 mb2

 Date Analyzed:
 12/20/23
 Data File:
 I3-1001 mb2.152

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

 $\begin{array}{c} \text{Concentration} \\ \text{Analyte:} \\ \text{ug/L (ppb)} \end{array}$

 Arsenic
 <1</td>

 Copper
 <0.4</td>

 Iron
 <50</td>

 Manganese
 <1</td>

 Nickel
 <1</td>

 Zinc
 <5</td>

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	TWA-8D-1223	Client:	Dalton Olmsted Fuglevand
Date Received:	12/13/23	Project:	TWAAFA-001, F&BI 312245

 Date Extracted:
 12/14/23
 Lab ID:
 312245-01 x2

 Date Analyzed:
 12/18/23
 Data File:
 312245-01 x2.099

 $\begin{array}{c} \text{Concentration} \\ \text{Analyte:} \\ \text{ug/L (ppb)} \end{array}$

 Arsenic
 14.9

 Copper
 <2</td>

 Iron
 1,980

 Manganese
 348

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: CTMW-5-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/13/23 Project: TWAAFA-001, F&BI 312245

Lab ID: Date Extracted: 12/14/23 312245-02 Date Analyzed: 12/16/23 Data File: 312245-02.219 Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) SPOperator:

 $\begin{array}{c} \text{Concentration} \\ \text{Analyte:} \\ \text{ug/L (ppb)} \end{array}$

 Copper
 200

 Nickel
 17.8

 Zinc
 568

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: CTMW-5-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/13/23 Project: TWAAFA-001, F&BI 312245

 Date Extracted:
 12/14/23
 Lab ID:
 312245-02 x5

 Date Analyzed:
 12/16/23
 Data File:
 312245-02 x5.191

Concentration ug/L (ppb)

Analyte: ug/L (ppb)

Arsenic 55.7

 Arsenic
 55.7

 Iron
 1,200

 Manganese
 70.7

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: CTMW-7-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/13/23 Project: TWAAFA-001, F&BI 312245

Lab ID: Date Extracted: 12/14/23 312245-03 Date Analyzed: 12/16/23 Data File: 312245-03.220 Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) SPOperator:

Concentration

Analyte: ug/L (ppb)

Copper <1

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: CTMW-7-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/13/23 Project: TWAAFA-001, F&BI 312245

 Date Extracted:
 12/14/23
 Lab ID:
 312245-03 x5

 Date Analyzed:
 12/16/23
 Data File:
 312245-03 x5.194

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

 $\begin{array}{lll} \text{Arsenic} & <5 \text{ k} \\ \text{Iron} & 16,100 \\ \text{Manganese} & 552 \end{array}$

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CTMW-18-1223	Client:	Dalton Olmsted Fuglevand
Date Received:	12/13/23	Project:	TWAAFA-001, F&BI 312245

 Date Extracted:
 12/14/23
 Lab ID:
 312245-04 x5

 Date Analyzed:
 12/21/23
 Data File:
 312245-04 x5.115

 $\begin{array}{cccc} \text{Matrix:} & \text{Water} & \text{Instrument:} & \text{ICPMS2} \\ \text{Units:} & \text{ug/L (ppb)} & \text{Operator:} & \text{SP} \end{array}$

 $\begin{array}{c} \text{Concentration} \\ \text{Analyte:} \\ \text{ug/L (ppb)} \end{array}$

 Arsenic
 6.04

 Copper
 20.0

 Iron
 1,320

 Manganese
 1,430

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Dalton Olmsted Fuglevand
Date Received:	Not Applicable	Project:	TWAAFA-001, F&BI 312245
T . T		T 1 TT	T

Date Extracted: 12/14/23Lab ID: I3-989 mbDate Analyzed: 12/18/23 Data File: I3-989 mb.068 Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

<1

<5

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Copper	<1
Iron	< 50
Manganese	<1

Nickel

Zinc

ENVIRONMENTAL CHEMISTS

Date of Report: 12/28/23 Date Received: 12/13/23

Project: TWAAFA-001, F&BI 312245

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 6020B

Laboratory Code: 312273-02 x10 (Matrix Spike)

				Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Arsenic	ug/L (ppb)	10	1,110	304 b	625 b	75-125	69 b
Copper	ug/L (ppb)	20	< 50	89	87	75 - 125	2
Iron	ug/L (ppb)	100	4,770	133 b	210 b	75 - 125	45 b
Manganese	ug/L (ppb)	20	188	103 b	110 b	75 - 125	7 b
Nickel	ug/L (ppb)	20	12.4	90 b	86 b	75 - 125	$5~\mathrm{b}$
Zinc	ug/L (ppb)	50	< 50	94	96	75-125	2

Laboratory Code: Laboratory Control Sample

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	ug/L (ppb)	10	87	80-120
Copper	ug/L (ppb)	20	91	80-120
Iron	ug/L (ppb)	100	87	80-120
Manganese	ug/L (ppb)	20	83	80-120
Nickel	ug/L (ppb)	20	91	80-120
Zinc	ug/L (ppb)	50	95	80-120

ENVIRONMENTAL CHEMISTS

Date of Report: 12/28/23 Date Received: 12/13/23

Project: TWAAFA-001, F&BI 312245

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 312250-01 (Matrix Spike)

				Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Arsenic	ug/L (ppb)	10	11.8	99 b	99 b	75-125	0 b
Copper	ug/L (ppb)	20	<5	50 vo	52 vo	75 - 125	4
Iron	ug/L (ppb)	100	23,400	2160 b	$3270 \mathrm{\ b}$	75 - 125	41 b
Manganese	ug/L (ppb)	20	1,220	531 b	816 b	75 - 125	42 b
Nickel	ug/L (ppb)	20	<1	51 vo	54 vo	75 - 125	6
Zinc	ug/L (ppb)	50	<5	57 vo	58 vo	75 - 125	2

Laboratory Code: Laboratory Control Sample

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	ug/L (ppb)	10	91	80-120
Copper	ug/L (ppb)	20	91	80-120
Iron	ug/L (ppb)	100	83	80-120
Manganese	ug/L (ppb)	20	87	80-120
Nickel	ug/L (ppb)	20	94	80-120
Zinc	ug/L (ppb)	50	89	80-120

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.
- c The presence of the analyte may be due to carryover from previous sample injections.
- cf The sample was centrifuged prior to analysis.
- d The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv Insufficient sample volume was available to achieve normal reporting limits.
- f The sample was laboratory filtered prior to analysis.
- fb The analyte was detected in the method blank.
- fc The analyte is a common laboratory and field contaminant.
- hr The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs Headspace was present in the container used for analysis.
- ht The analysis was performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of control limits due to sample matrix effects.
- j The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- k The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.
- lc The presence of the analyte is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

SAMPLE CHAIN OF CUSTODY

12/13/25 L3

Page#_

Standard Turnaround TURNAROUND TIME

Rush charges authorized by: SAMPLE DISPOSAL

Dispose after 30 days Other_ Archive Samples

SAMPLERS (signature) Project Specific RLs (Yes)/ No Dissolved metals samples field filtered at 0.45 REMARKS PROJECT NAME micron before analysis TWAAFA 3 TWAAFA-001 INVOICE TO PO# DOF

Phone 215-767-7749 Email acerruti@dofnw.com

City, State, ZIP Seattle, WA 98134

Address__

1001 SW Klickitat Way

Company_DOF

Report To: Anthony Cerruti / Trevor Louviere

CC: Tasya Gray

312245

CTHW-18-1223 TWA-80-1223 2861-1-MMIJ CTMW-5-1223 Sample ID 05 40 01 A-C Lab ID 12/13/23 12/13/13 12/13/23 12/10/21 | CC/C1/E1 Sampled | Sampled Date 1235 1040 2590 Time Sample Matrix 3 Z Z I Bottles (1) W W # of ω Total Metals 6020B (As, Cr, Cu, Mn, Ni, Pb, Zn) Dissolved Metals 6020B, (As, Cr, Cu, Mn, Ni, Pb, Total Mercury 1631E Samples received Dissolved Mercury 1631E Total Metals (Al, Fe) Dissolved Metals (Al, Fe) Ferrows ANALYSES REQUESTED MS/MSD Collected? (Y/N) AIR CUTE, HA Al, As Cu Fe, Ha, Ni Tet/Diss Metals: Tot/piss Hetais: A1, As, Cu, Fx, H. Al, AS, Cu, Fa, Ha CONTROL BUILDING Notes

Seattle, WA 9811: 3012 16th Avenue Friedman & Brus Ph. (206) 285-828

Received by:	19-2029 Relinquished by:	e West Received by:	vya, Inc. Relinquished by: WS	
m		Courieved under	by: GDS	SIGNATURE
ANH PHAN		Sourieved under Custody seal by Delivery Frances	Elicott Scheumann	PRINT NAME
F86		Fupress	Dot-	COMPANY
12/13/25/15:07		12/13/23 134C	12/13/23 1340	DATE
40:51		1340	1340	TIME



3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya Michael Erdahl 5500 4th Ave S Seattle, WA 98108

RE: 312245

Work Order Number: 2312328

December 20, 2023

Attention Michael Erdahl:

Fremont Analytical, Inc. received 4 sample(s) on 12/13/2023 for the analyses presented in the following report.

Dissolved Metals by EPA Method 200.8 Ferrous Iron by SM3500-Fe B Total Metals by EPA Method 200.8

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910



Date: 12/20/2023

CLIENT: Friedman & Bruya Work Order Sample Summary

Project: 312245 **Work Order:** 2312328

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2312328-001	TWA-8D-1223	12/13/2023 9:25 AM	12/13/2023 4:00 PM
2312328-002	CTMW-5-1223	12/13/2023 10:40 AM	12/13/2023 4:00 PM
2312328-003	CTMW-7-1223	12/13/2023 12:00 PM	12/13/2023 4:00 PM
2312328-004	CTMW-18-1223	12/13/2023 12:35 PM	12/13/2023 4:00 PM

Original Page 2 of 19



Case Narrative

WO#: **2312328**Date: **12/20/2023**

CLIENT: Friedman & Bruya

Project: 312245

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Original Page 3 of 19



Qualifiers & Acronyms

WO#: **2312328**

Date Reported: 12/20/2023

Qualifiers:

- * Flagged value is not within established control limits
- B Analyte detected in the associated Method Blank
- D Dilution was required
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- I Analyte with an internal standard that does not meet established acceptance criteria
- J Analyte detected below Reporting Limit
- N Tentatively Identified Compound (TIC)
- Q Analyte with an initial or continuing calibration that does not meet established acceptance criteria
- S Spike recovery outside accepted recovery limits
- ND Not detected at the Reporting Limit
- R High relative percent difference observed

Acronyms:

%Rec - Percent Recovery

CCB - Continued Calibration Blank

CCV - Continued Calibration Verification

DF - Dilution Factor

DUP - Sample Duplicate

HEM - Hexane Extractable Material

ICV - Initial Calibration Verification

LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate

MCL - Maximum Contaminant Level

MB or MBLANK - Method Blank

MDL - Method Detection Limit

MS/MSD - Matrix Spike / Matrix Spike Duplicate

PDS - Post Digestion Spike

Ref Val - Reference Value

REP - Sample Replicate

RL - Reporting Limit

RPD - Relative Percent Difference

SD - Serial Dilution

SGT - Silica Gel Treatment

SPK - Spike

Surr - Surrogate



Analytical Report

Work Order: 2312328

Date Reported: 12/20/2023

CLIENT: Friedman & Bruya

Project: 312245

Lab ID: 2312328-001 **Collection Date:** 12/13/2023 9:25:00 AM

Client Sample ID: TWA-8D-1223 Matrix: Water

Analyses	Result	RL Qual	Units	DF	Date Analyzed
Dissolved Metals by EPA Metho	d 200.8		Batc	h ID: 420	343 Analyst: JR
Aluminum	ND	10.0	μg/L	1	12/18/2023 1:13:00 PM
Total Metals by EPA Method 20	<u>0.8</u>		Batcl	h ID: 423	378 Analyst: JR
Aluminum	ND	10.0	μg/L	1	12/19/2023 5:14:00 PM
Ferrous Iron by SM3500-Fe B			Batc	h ID: R8	8336 Analyst: SLL
Ferrous Iron	0.408	0.150	mg/L	1	12/14/2023 8:06:01 AM

Lab ID: 2312328-002 **Collection Date:** 12/13/2023 10:40:00 AM

Client Sample ID: CTMW-5-1223 Matrix: Water

Analyses	Result	RL Qual	Units	DF	Date Analyzed
Dissolved Metals by EPA Method 200.8				n ID: 42	343 Analyst: JR
Aluminum	392	10.0	μg/L	1	12/18/2023 1:16:00 PM
Total Metals by EPA Method 200.8				n ID: 42	378 Analyst: JR
Aluminum	425	10.0	μg/L	1	12/19/2023 5:07:00 PM
Ferrous Iron by SM3500-Fe B			Batch	n ID: R8	8336 Analyst: SLL
Ferrous Iron	0.454	0.150	mg/L	1	12/14/2023 8:06:01 AM

Original Page 5 of 19



Analytical Report

Work Order: 2312328

Date Reported: 12/20/2023

CLIENT: Friedman & Bruya

Project: 312245

Lab ID: 2312328-003 **Collection Date:** 12/13/2023 12:00:00 PM

Client Sample ID: CTMW-7-1223 Matrix: Water

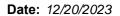
Analyses	Result	RL Qual	Units	DF	Date Analyzed
Dissolved Metals by EPA Method 2	200.8		Batch	n ID: 42	343 Analyst: JR
Aluminum	ND	10.0	μg/L	1	12/18/2023 1:18:00 PM
Total Metals by EPA Method 200.8	<u>3</u>		Batch	n ID: 42	378 Analyst: JR
Aluminum	ND	10.0	μg/L	1	12/19/2023 5:17:00 PM
Ferrous Iron by SM3500-Fe B			Batcl	n ID: R8	8336 Analyst: SLL
Ferrous Iron	13.5	3.75 D	mg/L	25	12/14/2023 8:06:01 AM

Lab ID: 2312328-004 **Collection Date:** 12/13/2023 12:35:00 PM

Client Sample ID: CTMW-18-1223 Matrix: Water

Analyses	Result	RL Qual	Units	DF	Date Analyzed
Dissolved Metals by EPA Method 2	200.8		Batch	n ID: 42	343 Analyst: JR
Aluminum	29.1	10.0	μg/L	1	12/15/2023 4:54:00 PM
Total Metals by EPA Method 200.8	<u>3</u>		Batch	n ID: 42	378 Analyst: JR
Aluminum	189	10.0	μg/L	1	12/19/2023 5:19:00 PM
Ferrous Iron by SM3500-Fe B			Batch	ı ID: R8	8336 Analyst: SLL
Ferrous Iron	1.00	0.150	mg/L	1	12/14/2023 8:06:01 AM

Original Page 6 of 19





CLIENT: Friedman & Bruya

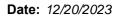
Project: 312245

QC SUMMARY REPORT

Ferrous Iron by SM3500-Fe B

110,000										
Sample ID: CCV-R88336A	SampType: CCV			Units: mg/L		Prep Date:	12/14/2023	RunNo: 883	36	
Client ID: CCV	Batch ID: R88336				A	Analysis Date:	12/14/2023	SeqNo: 184	4402	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit F	lighLimit RPD Ref Val	%RPD	RPDLimit	Qual
Ferrous Iron	0.414	0.150	0.4000	0	104	85	115			
Sample ID: MB-R88336	SampType: MBLK			Units: mg/L		Prep Date:	12/14/2023	RunNo: 883	36	
Client ID: MBLKW	Batch ID: R88336				A	Analysis Date:	12/14/2023	SeqNo: 184	4403	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit F	lighLimit RPD Ref Val	%RPD	RPDLimit	Qual
Ferrous Iron	ND	0.150								
Sample ID: LCS-R88336	SampType: LCS			Units: mg/L		Prep Date:	12/14/2023	RunNo: 883	36	
Client ID: LCSW	Batch ID: R88336				,	Analysis Date:	12/14/2023	SeqNo: 184	4404	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit F	lighLimit RPD Ref Val	%RPD	RPDLimit	Qual
Ferrous Iron	0.417	0.150	0.4000	0	104	85	115			
Sample ID: 2312328-001CDUP	SampType: DUP			Units: mg/L		Prep Date:	12/14/2023	RunNo: 883	36	
Client ID: TWA-8D-1223	Batch ID: R88336				,	Analysis Date:	12/14/2023	SeqNo: 184	4406	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit F	lighLimit RPD Ref Val	%RPD	RPDLimit	Qual
Ferrous Iron	0.445	0.150					0.4084	8.50	20	
Sample ID: 2312328-001CMS	SampType: MS			Units: mg/L		Prep Date:	12/14/2023	RunNo: 883	36	
Client ID: TWA-8D-1223	Batch ID: R88336				,	Analysis Date:	12/14/2023	SeqNo: 184	4407	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit F	lighLimit RPD Ref Val	%RPD	RPDLimit	Qual
Ferrous Iron	0.910	0.150	0.4000	0.4084	125	70	130			

Original Page 7 of 19





CLIENT: Friedman & Bruya

Project: 312245

QC SUMMARY REPORT

Ferrous Iron by SM3500-Fe B

Sample ID: 2312328-001CMSD SampType: MSD Batch ID: R88336 Result RL SPK value SPK Ref Val SPK Ref										
Analyte	Sample ID: 2312328-001CMSD	SampType: MSD			Units: mg/L		Prep Date	e: 12/14/2023	RunNo: 88336	
Ferrous Iron 0.925 0.150 0.4000 0.4084 129 70 130 0.9100 1.65 30 Sample ID: CCV-R88336B SampType: CCV Units: mg/L Prep Date: 12/14/2023 RunNo: 88336 RunNo: 88336 SeqNo: 1844412 SeqNo: 1844412 SeqNo: 1844412 Analysis Date: 12/14/2023 RunNo: 88336 SeqNo: 1844412 SeqNo: 1844413 SeqNo:	Client ID: TWA-8D-1223	Batch ID: R88336					Analysis Date	e: 12/14/2023	SeqNo: 1844408	
Sample D: CCV-R88336B SampType: CCV Batch D: R88336 Result RL SPK value SPK Ref Val WREC LowLimit HighLimit RPD Ref Val WRPD RPDLimit Result RL SPK value SPK Ref Val WREC LowLimit HighLimit RPD Ref Val WRPD RPDLimit Result RESULT Result RL SPK value SPK Ref Val WREC LowLimit HighLimit RPD Ref Val WRPD RPDLimit Result RE	Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Client ID: CCV Batch ID: R88336 Result RL SPK value SPK Ref Val SPK	Ferrous Iron	0.925	0.150	0.4000	0.4084	129	70	130 0.9100	1.65 30	
Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Ferrous Iron 0.427 0.150 0.4000 0 107 85 115 SEQ No: 1844 \$\text{Value}\$ \$\text{Value}\$ \$\text{Virits: mg/L}\$ Prep Date: 12/14/2023 RunNo: 88336 \$\text{SeqNo: 1844}13 \$\text{Value}\$ \$\text{Value}\$ \$\text{SPK value}\$ \$\text{SPK value}\$ \$\text{SPK Ref Val}\$ \$\text{WREC}\$ \$\text{LowLimit}\$ \$\text{HighLimit}\$ \$\text{RPD Ref Val}\$ \$\text{Reg No: 1844}13 \$\text{SeqNo: 1844}13 \$\text{SeqNo: 1844}13 \$\text{Reg Noise}\$ \$\text{Ref Val}\$ \$\text{NREC}\$ \$\text{LowLimit}\$ \$\text{HighLimit}\$ \$\text{RPD Ref Val}\$ \$\text{Reg Noise}\$ \$Reg Noi	Sample ID: CCV-R88336B	SampType: CCV			Units: mg/L		Prep Date	e: 12/14/2023	RunNo: 88336	
Ferrous Iron	Client ID: CCV	Batch ID: R88336					Analysis Date	e: 12/14/2023	SeqNo: 1844412	
Sample ID: CCB-R88336B	Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Client ID: CCB Batch ID: R88336 Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Refrous Iron ND 0.150 ND ND 0.150 ND ND ND ND ND ND ND N	Ferrous Iron	0.427	0.150	0.4000	0	107	85	115		
Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Ferrous Iron ND 0.150 Units: mg/L Prep Date: 12/14/2023 RunNo: 88336 RunNo: 88336 RunNo: 88336 SeqNo: 1845060 Analysis Date: 12/14/2023 SeqNo: 1845060 Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Ferrous Iron 0.448 0.150 0.4000 0 112 85 115 RunNo: 88336 RunNo: 88336 RunNo: 88336 RunNo: 88336 Analysis Date: 12/14/2023 RunNo: 88336 RunNo: 88336 <t< td=""><td>Sample ID: CCB-R88336B</td><td>SampType: CCB</td><td></td><td></td><td>Units: mg/L</td><td></td><td>Prep Date</td><td>e: 12/14/2023</td><td>RunNo: 88336</td><td></td></t<>	Sample ID: CCB-R88336B	SampType: CCB			Units: mg/L		Prep Date	e: 12/14/2023	RunNo: 88336	
Ferrous Iron ND 0.150 SampType: CCV Units: mg/L Prep Date: 12/14/2023 RunNo: 88336 Client ID: CCV-R88336C SampType: CCV Units: mg/L Analysis Date: 12/14/2023 SeqNo: 1845060 Analyte Result RL SPK value SPK Ref Val REC LowLimit HighLimit RPD Ref Val RPD RPDLimit Ferrous Iron 0.448 0.150 0.4000 0 112 85 115 Sample ID: CCB-R88336C SampType: CCB Units: mg/L Prep Date: 12/14/2023 RunNo: 88336 Client ID: CCB Batch ID: R88336 Analyte Result RL SPK value SPK Ref Val REC LowLimit HighLimit RPD Ref Val Report Result RL SPK value SPK Ref Val REC LowLimit HighLimit RPD Ref Val Report Re	Client ID: CCB	Batch ID: R88336					Analysis Date	e: 12/14/2023	SeqNo: 1844413	
Sample ID: CCV-R88336C SampType: CCV Units: mg/L Prep Date: 12/14/2023 12/14/2023 RunNo: 88336 Client ID: CCV Batch ID: R88336 Result RESPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Ferrous Iron 0.448 0.150 0.4000 0 112 85 115 Image: CCB Reset of the control of the contr	Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Client ID: CCV Batch ID: R88336 REsult RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Ferrous Iron 0.448 0.150 0.4000 0 112 85 115	Ferrous Iron	ND	0.150							
Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Ferrous Iron 0.448 0.150 0.4000 0 112 85 115 Image: CCB Reseasce of the company of the com	Sample ID: CCV-R88336C	SampType: CCV			Units: mg/L		Prep Date	e: 12/14/2023	RunNo: 88336	
Ferrous Iron 0.448 0.150 0.4000 0 112 85 115 Sample ID: CCB-R88336C SampType: CCB Units: mg/L Prep Date: 12/14/2023 RunNo: 88336 Client ID: CCB Batch ID: R88336 Analysis Date: 12/14/2023 SeqNo: 1845068 Analyte Result Result SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit	Client ID: CCV	Batch ID: R88336					Analysis Date	e: 12/14/2023	SeqNo: 1845060	
Sample ID: CCB-R88336C SampType: CCB Units: mg/L Prep Date: 12/14/2023 RunNo: 88336 Client ID: CCB Batch ID: R88336 Analysis Date: 12/14/2023 SeqNo: 1845068 Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit	Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Client ID: CCB Batch ID: R88336 Analysis Date: 12/14/2023 SeqNo: 1845068 Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit	Ferrous Iron	0.448	0.150	0.4000	0	112	85	115		
Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit	Sample ID: CCB-R88336C	SampType: CCB			Units: mg/L		Prep Date	e: 12/14/2023	RunNo: 88336	
	Client ID: CCB	Batch ID: R88336					Analysis Date	e: 12/14/2023	SeqNo: 1845068	
Ferrous Iron ND 0.150	Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
	Ferrous Iron	ND	0.150							

Original Page 8 of 19





CLIENT: Friedman & Bruya

Project: 312245

Client ID: CCV

QC SUMMARY REPORT

Ferrous Iron by SM3500-Fe B

Sample ID: CCV-R88336D SampType: CCV Units: mg/L Prep Date: 12/14/2023 RunNo: 88336

Batch ID: **R88336** Analysis Date: **12/14/2023** SeqNo: **1845066**

Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Ferrous Iron 0.433 0.150 0.4000 0 108 85 115

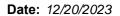
Sample ID: CCB-R88336D SampType: CCB Units: mg/L Prep Date: 12/14/2023 RunNo: 88336

Client ID: CCB Batch ID: R88336 Analysis Date: 12/14/2023 SeqNo: 1845067

Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Ferrous Iron ND 0.150

Original Page 9 of 19





CLIENT: Friedman & Bruya

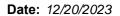
Project: 312245

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Project: 312245					Dissolved Met	uis by El A Metriou 200.
Sample ID: ICB	SampType: ICB			Units: µg/L	Prep Date: 12/15/2023	RunNo: 88400
Client ID: ICB	Batch ID: 42343				Analysis Date: 12/15/2023	SeqNo: 1845892
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum	ND	10.0				
Sample ID: ICV	SampType: ICV			Units: μg/L	Prep Date: 12/15/2023	RunNo: 88400
Client ID: ICV	Batch ID: 42343				Analysis Date: 12/15/2023	SeqNo: 1845893
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum	1,470	10.0	1,500	0	98.0 90 110	
Sample ID: MB-42343	SampType: MBLK			Units: µg/L	Prep Date: 12/14/2023	RunNo: 88400
Client ID: MBLKW	Batch ID: 42343				Analysis Date: 12/15/2023	SeqNo: 1845895
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum	ND	10.0				
Sample ID: LCS-42343	SampType: LCS			Units: µg/L	Prep Date: 12/14/2023	RunNo: 88400
Client ID: LCSW	Batch ID: 42343				Analysis Date: 12/15/2023	SeqNo: 1845896
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum	1,050	10.0	1,000	0	105 85 115	
Sample ID: 2312283-003CDUP	SampType: DUP			Units: µg/L	Prep Date: 12/14/2023	RunNo: 88400
Client ID: BATCH	Batch ID: 42343				Analysis Date: 12/15/2023	SeqNo: 1845898
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum	47.4	10.0			46.74	1.47 30

Original Page 10 of 19





CLIENT: Friedman & Bruya

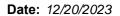
Project: 312245

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: 2312283-003CMS	SampType: MS			Units: µg/L		Prep Date: 12/14/2023	RunNo: 88400
Client ID: BATCH	Batch ID: 42343					Analysis Date: 12/15/2023	SeqNo: 1845899
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum	1,130	10.0	1,000	46.74	108	50 150	
Sample ID: CCV-42343A	SampType: CCV			Units: µg/L		Prep Date: 12/15/2023	RunNo: 88400
Client ID: CCV	Batch ID: 42343					Analysis Date: 12/15/2023	SeqNo: 1845902
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum	1,050	10.0	1,000	0	105	90 110	
Sample ID: CCB-42343A	SampType: CCB			Units: µg/L		Prep Date: 12/15/2023	RunNo: 88400
Client ID: CCB	Batch ID: 42343					Analysis Date: 12/15/2023	SeqNo: 1845903
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum	ND	10.0					
Sample ID: 2312328-003BMS	SampType: MS			Units: µg/L		Prep Date: 12/14/2023	RunNo: 88400
Client ID: CTMW-7-1223	Batch ID: 42343					Analysis Date: 12/15/2023	SeqNo: 1845913
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum	1,040	10.0	1,000	3.483	103	50 150	
Sample ID: CCV-42343B	SampType: CCV			Units: µg/L		Prep Date: 12/15/2023	RunNo: 88400
Client ID: CCV	Batch ID: 42343					Analysis Date: 12/15/2023	SeqNo: 1845914
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum	1,080	10.0	1,000	0	108	90 110	

Original Page 11 of 19





Friedman & Bruya

Project: 312245

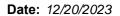
CLIENT:

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Project: 312245						•
Sample ID: CCB-42343B	SampType: CCB			Units: µg/L	Prep Date: 12/15/2023	RunNo: 88400
Client ID: CCB	Batch ID: 42343				Analysis Date: 12/15/2023	SeqNo: 1845915
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum	ND	10.0				
Sample ID: MB-42344 FB	SampType: MBLK			Units: µg/L	Prep Date: 12/14/2023	RunNo: 88400
Client ID: MBLKW	Batch ID: 42343				Analysis Date: 12/15/2023	SeqNo: 1845923
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum	ND	10.0				
Sample ID: CCV-42343C	SampType: CCV			Units: µg/L	Prep Date: 12/15/2023	RunNo: 88400
Client ID: CCV	Batch ID: 42343				Analysis Date: 12/15/2023	SeqNo: 1845924
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum	1,070	10.0	1,000	0	107 90 110	
Sample ID: CCB-42343C	SampType: CCB			Units: µg/L	Prep Date: 12/15/2023	RunNo: 88400
Client ID: CCB	Batch ID: 42343				Analysis Date: 12/15/2023	SeqNo: 1845925
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum	ND	10.0				
Sample ID: ICB	SampType: ICB			Units: µg/L	Prep Date: 12/18/2023	RunNo: 88400
Client ID: ICB	Batch ID: 42343				Analysis Date: 12/18/2023	SeqNo: 1846208
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum	ND	10.0				

Original Page 12 of 19





CLIENT: Friedman & Bruya

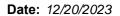
Project: 312245

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

F10ject. 312243								•	
Sample ID: ICV	SampType: ICV			Units: µg/L		Prep Date:	12/18/2023	RunNo: 8840 (0
Client ID: ICV	Batch ID: 42343					Analysis Date:	12/18/2023	SeqNo: 1846 2	209
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit F	HighLimit RPD Ref Val	%RPD F	RPDLimit Qua
Aluminum	1,480	10.0	1,500	0	98.4	90	110		
Sample ID: CCV-42343D	SampType: CCV			Units: µg/L		Prep Date:	12/18/2023	RunNo: 8840 (0
Client ID: CCV	Batch ID: 42343					Analysis Date:	12/18/2023	SeqNo: 1846 1	190
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit F	HighLimit RPD Ref Val	%RPD F	RPDLimit Qua
Aluminum	1,060	10.0	1,000	0	106	90	110		
Sample ID: CCB-42343D	SampType: CCB			Units: µg/L		Prep Date:	12/18/2023	RunNo: 8840 0	0
Client ID: CCB	Batch ID: 42343					Analysis Date:	12/18/2023	SeqNo: 1846 1	191
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit F	HighLimit RPD Ref Val	%RPD F	RPDLimit Qua
Aluminum	ND	10.0							
Sample ID: CCV-42343E	SampType: CCV			Units: µg/L		Prep Date:	12/18/2023	RunNo: 8840 (0
Client ID: CCV	Batch ID: 42343					Analysis Date:	12/18/2023	SeqNo: 1846 1	196
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit F	HighLimit RPD Ref Val	%RPD F	RPDLimit Qua
Aluminum	1,050	10.0	1,000	0	105	90	110		
Sample ID: CCB-42343E	SampType: CCB			Units: µg/L		Prep Date:	12/18/2023	RunNo: 8840 0	0
Client ID: CCB	Batch ID: 42343					Analysis Date:	12/18/2023	SeqNo: 1846 1	197
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit F	HighLimit RPD Ref Val	%RPD F	RPDLimit Qua
Aluminum	ND	10.0			_				

Original Page 13 of 19





CLIENT: Friedman & Bruya

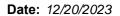
Project: 312245

QC SUMMARY REPORT

Total Metals by EPA Method 200.8

Project: 312245					
Sample ID: ICB	SampType: ICB			Units: µg/L	Prep Date: 12/19/2023 RunNo: 88458
Client ID: ICB	Batch ID: 42378				Analysis Date: 12/19/2023 SeqNo: 1847318
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	ND	10.0			
Sample ID: ICV	SampType: ICV			Units: µg/L	Prep Date: 12/19/2023 RunNo: 88458
Client ID: ICV	Batch ID: 42378				Analysis Date: 12/19/2023 SeqNo: 1847319
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	1,470	10.0	1,500	0	98.3 90 110
Sample ID: CCV-42378A	SampType: CCV			Units: μg/L	Prep Date: 12/19/2023 RunNo: 88458
Client ID: CCV	Batch ID: 42378				Analysis Date: 12/19/2023 SeqNo: 1847321
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	1,060	10.0	1,000	0	106 90 110
Sample ID: CCB-42378A	SampType: CCB			Units: μg/L	Prep Date: 12/19/2023 RunNo: 88458
Client ID: CCB	Batch ID: 42378				Analysis Date: 12/19/2023 SeqNo: 1847322
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	ND	10.0			
Sample ID: MB-42378	SampType: MBLK			Units: μg/L	Prep Date: 12/18/2023 RunNo: 88458
Client ID: MBLKW	Batch ID: 42378				Analysis Date: 12/19/2023 SeqNo: 1847323
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	ND	10.0			

Original Page 14 of 19





CLIENT: Friedman & Bruya

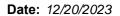
Project: 312245

QC SUMMARY REPORT

Total Metals by EPA Method 200.8

Sample ID: LCS-42378	SampType: LCS			Units: µg/L		Prep Date	: 12/18/2023	RunNo: 88458	
Client ID: LCSW	Batch ID: 42378					Analysis Date	: 12/19/2023	SeqNo: 1847324	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	1,040	10.0	1,000	0	104	85	115		
Sample ID: 2312328-002ADUP	SampType: DUP			Units: µg/L		Prep Date	: 12/18/2023	RunNo: 88458	
Client ID: CTMW-5-1223	Batch ID: 42378					Analysis Date	: 12/19/2023	SeqNo: 1847326	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	416	20.0					424.5	1.99 30	
Sample ID: 2312328-002AMS	SampType: MS			Units: µg/L		Prep Date	: 12/18/2023	RunNo: 88458	
Client ID: CTMW-5-1223	Batch ID: 42378					Analysis Date	: 12/19/2023	SeqNo: 1847327	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	2,530	20.0	2,000	424.5	105	70	130		
Sample ID: CCV-42378B	SampType: CCV			Units: μg/L		Prep Date	: 12/19/2023	RunNo: 88458	
Client ID: CCV	Batch ID: 42378					Analysis Date	: 12/19/2023	SeqNo: 1847332	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	1,070	10.0	1,000	0	107	90	110		
Sample ID: CCB-42378B	SampType: CCB			Units: μg/L		Prep Date	: 12/19/2023	RunNo: 88458	
Client ID: CCB	Batch ID: 42378					Analysis Date	: 12/19/2023	SeqNo: 1847333	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	ND	10.0							

Original Page 15 of 19





CLIENT: Friedman & Bruya

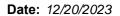
Project: 312245

QC SUMMARY REPORT

Total Metals by EPA Method 200.8

110ject. 012240									
Sample ID: CCV-42378C	SampType: CCV			Units: μg/L		Prep Date	12/19/2023	RunNo: 88458	
Client ID: CCV	Batch ID: 42378					Analysis Date	12/19/2023	SeqNo: 1847344	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit RPD Ref Val	%RPD RPDLi	mit Qua
Aluminum	1,040	10.0	1,000	0	104	90	110		
Sample ID: CCB-42378C	SampType: CCB			Units: µg/L		Prep Date	12/19/2023	RunNo: 88458	
Client ID: CCB	Batch ID: 42378					Analysis Date	12/19/2023	SeqNo: 1847345	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit RPD Ref Val	%RPD RPDLi	mit Qua
Aluminum	ND	10.0							
Sample ID: 2312336-001AMS	SampType: MS			Units: μg/L		Prep Date	: 12/18/2023	RunNo: 88458	
Client ID: BATCH	Batch ID: 42378					Analysis Date	12/19/2023	SeqNo: 1847346	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit RPD Ref Val	%RPD RPDLi	mit Qua
Aluminum	1,080	10.0	1,000	49.99	103	70	130		
Sample ID: CCV-42378D	SampType: CCV			Units: µg/L		Prep Date	: 12/19/2023	RunNo: 88458	
Client ID: CCV	Batch ID: 42378					Analysis Date	12/19/2023	SeqNo: 1847353	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit RPD Ref Val	%RPD RPDLi	mit Qua
Aluminum	1,030	10.0	1,000	0	103	90	110		
Sample ID: CCB-42378D	SampType: CCB			Units: µg/L		Prep Date	: 12/19/2023	RunNo: 88458	
Client ID: CCB	Batch ID: 42378					Analysis Date	12/19/2023	SeqNo: 1847354	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit RPD Ref Val	%RPD RPDLi	mit Qua
Aluminum	ND	10.0							

Original Page 16 of 19





CLIENT: Friedman & Bruya

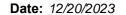
Project: 312245

QC SUMMARY REPORT

Total Metals by EPA Method 200.8

Project: 312245					Total metals by El A method 200
Sample ID: ICB	SampType: ICB			Units: µg/L	Prep Date: 12/20/2023 RunNo: 88458
Client ID: ICB	Batch ID: 42378				Analysis Date: 12/20/2023 SeqNo: 1847455
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qua
Aluminum	ND	10.0			
Sample ID: ICV	SampType: ICV			Units: µg/L	Prep Date: 12/20/2023 RunNo: 88458
Client ID: ICV	Batch ID: 42378				Analysis Date: 12/20/2023 SeqNo: 1847456
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qua
Aluminum	1,490	10.0	1,500	0	99.0 90 110
Sample ID: CCV-42378E	SampType: CCV			Units: µg/L	Prep Date: 12/20/2023 RunNo: 88458
Client ID: CCV	Batch ID: 42378				Analysis Date: 12/20/2023 SeqNo: 1847458
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qua
Aluminum	1,030	10.0	1,000	0	103 90 110
Sample ID: CCB-42378E	SampType: CCB			Units: µg/L	Prep Date: 12/20/2023 RunNo: 88458
Client ID: CCB	Batch ID: 42378				Analysis Date: 12/20/2023 SeqNo: 1847459
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qua
Aluminum	ND	10.0			
Sample ID: CCV-42378F	SampType: CCV			Units: µg/L	Prep Date: 12/20/2023 RunNo: 88458
Client ID: CCV	Batch ID: 42378				Analysis Date: 12/20/2023 SeqNo: 1847465
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qua
Aluminum	1,040	10.0	1,000	0	104 90 110

Original Page 17 of 19





QC SUMMARY REPORT

CLIENT: Friedman & Bruya

Total Metals by EPA Method 200.8

Project: 312245

Sample ID: CCB-42378F

SampType: CCB Units: µg/L

Prep Date: 12/20/2023 RunNo: 88458

Client ID: CCB Batch ID: 42378 Analysis Date: 12/20/2023 SeqNo: 1847466

Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Aluminum ND 10.0

Original Page 18 of 19



Sample Log-In Check List

Clie	ent Name:	FB			Work (Order Num	ber: 2312328		
Log	gged by:	Morgan Wils	son		Date R	eceived:	12/13/20	23 4:00:00 PM	
Chai	n of Custo	ody							
1. 1	s Chain of C	ustody comple	ete?		Yes	· 🗸	No 🗌	Not Present	
2. F	How was the	sample delive	red?		Clie	<u>nt</u>			
Log l	<u>In</u>								
•			hipping container/ tody Seals not into		Yes		No 🗌	Not Present 🗹	
4. V	Vas an attem	pt made to co	ol the samples?		Yes	✓	No 🗌	NA \square	
5. W	Vere all items	s received at a	temperature of >	·2°C to 6°C *	Yes	✓	No 🗌	NA 🗆	
6. S	ample(s) in p	proper contain	er(s)?		Yes		No 🗸		
7. S	Sufficient sam	nple volume fo	r indicated test(s)	?	Yes	✓	No 🗌		
8. A	re samples p	properly prese	rved?		Yes	✓	No 🗌		
9. W	Vas preserva	tive added to	bottles?		Yes	✓	No \square	NA \square	
							_	HCL	
10. ls	s there heads	space in the V	OA vials?		Yes		No 🗌	NA 🗸	
11. D	id all sample	es containers a	arrive in good cond	dition(unbroken)?	Yes	✓	No 🗌		
12. ^D	oes paperwo	ork match bott	le labels?		Yes	✓	No 📙		
13. A	are matrices	correctly identi	ified on Chain of C	Custody?	Yes	✓	No 🗌		
14. ls	s it clear wha	t analyses we	re requested?		Yes	✓	No 🗌		
	Vere all hold e met?	times (except	field parameters,	pH e.g.) able to	Yes	✓	No 🗌		
Spec	cial Handl	ling (if app	<u>licable)</u>						
16.	Was client n	otified of all di	screpancies with t	his order?	Ye	s \square	No 🗌	NA 🗹	
	Person	Notified:		D	ate:				
	By Who	om:		V	'ia: eM	lail 🔲 Pl	hone Fax	☐ In Person	
	Regard	ing:							
	Client I	nstructions:							
17.	Additional re	marks:							
Item I	Inform ation								
		Item #		Temp °C					

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Sample

Original Page 19 of 19

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Send Report To	Send Report To Michael Erdahl	
Company	Friedman and Bruya, Inc.	
Address	5500 4th Ave S	
City, State, ZIP_	City, State, ZIP Seattle, WA 98108	

Phone # (206) 285-8282 merdahl@friedmanandbruya.com	City, State, ZIP Seattle, WA 98108	Address 5500 4th Ave S	Company Friedman and Bruya, Inc.	Send Report To Michael Erdahl
TIER IV REPORT	REMARKS	312245 D-594	PROJECT NAME/NO. PO#	SUBCONTRACTER Fremont

Page # 1 of TURNAROUND TIME I Standard TAT RUSH Rush charges authorized by: SAMPLE DISPOSAL Dispose after 30 days Return samples Will call with instructions

			. 1			 	10			ات		
Fax (206) 283-5044	Seattle, WA 98119-2029 Ph. (206) 285-8282	3012 16th Avenue West	Friedman & Bruya, Inc.				CTMW-18-1223	CTMW-7-1223	CTMW-5-1223	TWA-8D-1223	Sample ID	
			с. П								Lab ID	
Received by:	Received by: Relinquished by:	Relinquished by:	SI				12/13/2023	12/13/2023	12/13/2023	12/13/2023	Date Sampled	
	as Marilla	2 y	SIGNATURE				1235	1200	1040	925	Time Sampled	
				2			1235 water	1200 water	1040 water	925 water	Matrix	
	1	Micha					3	<u>ى</u>	ယ	3	# of jars	
	All Milver	Michael Erdahl	PF				×	×	×	х	total aluminum	
	4116	ıhl	PRINT NAME				×	×	×	×	dissolved aluminum	
	1		AME				×	×	×	×	ferrous iron	A
				\vdash		++	+	-	_			NALYS
		দ				+	+					NALYSES REQUESTED
	7	Friedman & Bruya	C		\Box	$\dagger \dagger$	+					SQUES
	4	ın & B	COMPANY		\Box	T	\dagger					STED
		ruya	YY									
	12	12			\perp		+					Ц
	2/3/23	12/15/21	DATE								Notes	
	1600	4151	TIME								ø G	

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Vineta Mills, M.S. Eric Young, B.S. 5500 4th Avenue South Seattle, WA 98108 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

December 29, 2024

Trevor Louviere, Project Manager Dalton Olmsted Fuglevand 1001 SW Klickitat Way, Suite 200B Seattle, WA 98134

Dear Mr Louviere:

Included are the amended results from the testing of material submitted on December 13, 2023 from the TWAAFA-001, F&BI 312249 project. The sample ID was corrected.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures

c: Anthony Cerruti, Tasya Gray

DOF1227R.DOC

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Vineta Mills, M.S. Eric Young, B.S.

5500 4th Avenue South Seattle, WA 98108 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

December 27, 2023

Trevor Louviere, Project Manager Dalton Olmsted Fuglevand 1001 SW Klickitat Way, Suite 200B Seattle, WA 98134

Dear Mr Louviere:

Included are the results from the testing of material submitted on December 13, 2023 from the TWAAFA-001, F&BI 312249 project. There are 10 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures

c: Anthony Cerruti, Tasya Gray

DOF1227R.DOC

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on December 13, 2023 by Friedman & Bruya, Inc. from the Dalton Olmsted Fuglevand TWAAFA-001, F&BI 312249 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u> <u>Dalton Olmsted Fuglevand</u>

312249 -01 CTMW-14-1223

Sample CTMW-14-1223 was sent to Fremont Analytical for ferrous iron, total aluminum, and dissolved aluminum analyses. The report is enclosed.

Copper in the 6020B total matrix spike and matrix spike duplicate did not meet the acceptance criteria. The laboratory control sample passed the acceptance criteria, therefore the results were due to matrix effect.

The 6020B total arsenic calibration standard exceeded the acceptance criteria in sample CTMW-14-1223. The metal was not detected, therefore this did not represent an out of control condition.

All other quality control requirements were acceptable.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	CTMW-14-1223	Client:	Dalton Olmsted Fuglevand
Date Received:	12/13/23	Project:	TWAAFA-001, F&BI 312249
Date Extracted:	12/19/23	Lab ID:	312249-01

 Date Extracted:
 12/19/25
 Lab ID:
 512249-01

 Date Analyzed:
 12/21/23
 Data File:
 312249-01.305

 Matrix:
 Water
 Instrument:
 ICPMS2

 Units:
 ug/L (ppb)
 Operator:
 SP

Analyte: Concentration ug/L (ppb)

Arsenic 3.78
Iron 156
Manganese 3.53

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: CTMW-14-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/13/23 Project: TWAAFA-001, F&BI 312249

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Copper 5.62

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: Method Blank Client: Dalton Olmsted Fuglevand Date Received: Not Applicable Project: TWAAFA-001, F&BI 312249

 Date Extracted:
 12/19/23
 Lab ID:
 I3-1001 mb2

 Date Analyzed:
 12/20/23
 Data File:
 I3-1001 mb2.152

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

 $\begin{array}{c} & Concentration \\ Analyte: & ug/L\ (ppb) \end{array}$

 Arsenic
 <1</td>

 Copper
 <1</td>

 Iron
 <50</td>

 Manganese
 <1</td>

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CTMW-14-1223	Client:	Dalton Olmsted Fuglevand
Date Received:	12/13/23	Project:	TWAAFA-001, F&BI 312249

312249-01Date Extracted: 12/14/23Lab ID: Date Analyzed: 12/16/23 Data File: 312249 - 01.225Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) SPOperator:

 $\begin{array}{c} & Concentration \\ Analyte: & ug/L\ (ppb) \end{array}$

 Copper
 4.73

 Iron
 220

 Manganese
 <5</td>

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: CTMW-14-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/13/23 Project: TWAAFA-001, F&BI 312249

 Date Extracted:
 12/14/23
 Lab ID:
 312249-01 x5

 Date Analyzed:
 12/20/23
 Data File:
 312249-01 x5.067

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Arsenic <5 k

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: Method Blank Client: Dalton Olmsted Fuglevand Date Received: Not Applicable Project: TWAAFA-001, F&BI 312249

12/14/23 Lab ID: Date Extracted: I3-989 mb Date Analyzed: 12/15/23 Data File: I3-989 mb.094 Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) SPOperator:

Analyte: Concentration ug/L (ppb)

 Arsenic
 <1</td>

 Copper
 <1</td>

 Iron
 <50</td>

 Manganese
 <5</td>

ENVIRONMENTAL CHEMISTS

Date of Report: 12/27/23 Date Received: 12/13/23

Project: TWAAFA-001, F&BI 312249

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 6020B

Laboratory Code: 312273-02 x10 (Matrix Spike)

				Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Arsenic	ug/L (ppb)	10	1,110	304 b	625 b	75-125	69 b
Copper	ug/L (ppb)	20	< 50	89	87	75 - 125	2
Iron	ug/L (ppb)	100	4,770	133 b	210 b	75 - 125	45 b
Manganese	ug/L (ppb)	20	188	103 b	110 b	75 - 125	7 b

Laboratory Code: Laboratory Control Sample

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	ug/L (ppb)	10	87	80-120
Copper	ug/L (ppb)	20	91	80-120
Iron	ug/L (ppb)	100	87	80-120
Manganese	ug/L (ppb)	20	83	80-120

ENVIRONMENTAL CHEMISTS

Date of Report: 12/27/23 Date Received: 12/13/23

Project: TWAAFA-001, F&BI 312249

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 312250-01 (Matrix Spike)

				Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Arsenic	ug/L (ppb)	10	11.8	99 b	99 b	75-125	0 b
Copper	ug/L (ppb)	20	<5	50 vo	52 vo	75 - 125	4
Iron	ug/L (ppb)	100	23,400	2160 b	$3270 \mathrm{\ b}$	75 - 125	41 b
Manganese	ug/L (ppb)	20	1,220	531 b	816 b	75 - 125	$42 \mathrm{b}$

Laboratory Code: Laboratory Control Sample

			$\operatorname{Percent}$	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	ug/L (ppb)	10	91	80-120
Copper	ug/L (ppb)	20	91	80-120
Iron	ug/L (ppb)	100	83	80-120
Manganese	ug/L (ppb)	20	87	80-120

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.
- c The presence of the analyte may be due to carryover from previous sample injections.
- cf The sample was centrifuged prior to analysis.
- d The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv Insufficient sample volume was available to achieve normal reporting limits.
- f The sample was laboratory filtered prior to analysis.
- fb The analyte was detected in the method blank.
- fc The analyte is a common laboratory and field contaminant.
- hr The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs Headspace was present in the container used for analysis.
- ht The analysis was performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of control limits due to sample matrix effects.
- j The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- k The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.
- lc The presence of the analyte is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Report To: Anthony Cerruti / Trevor Louviere

Address 1001 SW Klickitat Way

Company DOF

City, State, ZIP_Seattle, WA 98134

Phone 215-767-7749 Email acerruti@dofnw.com

SAMPLE CHAIN OF CUSTODY 12/13/25 LI

SAMPLERS (signature)	
PROJECT NAME	PO#
-	TWAAFA-001
TWAAFA	
REMARKS	INVOICE TO
Dissolved metals samples field filtered at 0.45	
micron before analysis	DOF
Project Specific RLs - (Yes)/ No	

Standard Turnaround
RUSH
Rush charges authorized by:

TURNAROUND TIME

Page#_

Dispose after 30 days

SAMPLE DISPOSAL

Archive Samples

Other_

Friedman & Bruya, Inc.					" (Called	~	Mary State	Secretaria de la composición del composición de la composición de la composición de la composición del composición de la composición del composición de la composición del composición del composición de la composición del composición del composición del composición del composición del composición del	And the second s		CTHW-14-1223	Sample ID	
					0						01 A-C 12/13/23	Lab ID	
Relinquished by) fS				9	>					12/13/23	Date Sampled	
7	SIGNATURE										1412	Time Sampled	
A											Σ	Sample Matrix	
7							\				ω	# of Bottles	
Miller	P		2					•	- ,		X	Total Metals 6020B (As, Cr, Cu, Mn, Ni, Pb, Zn)	
6	PRINT NAME										X	Dissolved Metals 6020B (As, Cr, Cu, Mn, Ni, Pb,	8
Love	AME			Samp]						+		Total Mercury 1631E Dissolved Mercury 1631E	
		-		ples re							X	Total Metals (Al, Fe)	
7				es received						1	X	Dissolved Metals (Al, Fe)	4
Moan	CO			22							X	Firrans	
M	COMPANY			٥ •									
and the	YY			റ്									ANALYSES REQUESTED
S	DATE											MS/MSD Collected? (Y/N)	ES REG
2/2	Н										124/0: 11/AS	7	UEST
15:59	TIME										701/0:53 repos	Notes	ED
										M	16		

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

	SIGNATUKE	PRINT NAME	COMPANY	DATE	TIME
Bruya, Inc.	Relinquished by	Mochael Wordt	Clark Earth	12/10/23 15:5	15:5
nue West		ANHPHAN	FAA	12/13/23	15:59
8119-2029	Relinquished by:				9
-8282	Received by:				



3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya Michael Erdahl 5500 4th Ave S Seattle, WA 98108

RE: 312249

Work Order Number: 2312339

December 21, 2023

Attention Michael Erdahl:

Fremont Analytical, Inc. received 1 sample(s) on 12/14/2023 for the analyses presented in the following report.

Dissolved Metals by EPA Method 200.8 Ferrous Iron by SM3500-Fe B Total Metals by EPA Method 200.8

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

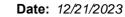
All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910





CLIENT: Friedman & Bruya Work Order Sample Summary

Project: 312249 **Work Order:** 2312339

Lab Sample ID Client Sample ID Date/Time Collected Date/Time Received

2312339-001 CTMW-14-1223 12/13/2023 2:15 PM 12/14/2023 10:36 AM



Case Narrative

WO#: **2312339**Date: **12/21/2023**

CLIENT: Friedman & Bruya

Project: 312249

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.



Qualifiers & Acronyms

WO#: **2312339**

Date Reported: 12/21/2023

Qualifiers:

- * Flagged value is not within established control limits
- B Analyte detected in the associated Method Blank
- D Dilution was required
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- I Analyte with an internal standard that does not meet established acceptance criteria
- J Analyte detected below Reporting Limit
- N Tentatively Identified Compound (TIC)
- Q Analyte with an initial or continuing calibration that does not meet established acceptance criteria
- S Spike recovery outside accepted recovery limits
- ND Not detected at the Reporting Limit
- R High relative percent difference observed

Acronyms:

%Rec - Percent Recovery

CCB - Continued Calibration Blank

CCV - Continued Calibration Verification

DF - Dilution Factor

DUP - Sample Duplicate

HEM - Hexane Extractable Material

ICV - Initial Calibration Verification

LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate

MCL - Maximum Contaminant Level

MB or MBLANK - Method Blank

MDL - Method Detection Limit

MS/MSD - Matrix Spike / Matrix Spike Duplicate

PDS - Post Digestion Spike

Ref Val - Reference Value

REP - Sample Replicate

RL - Reporting Limit

RPD - Relative Percent Difference

SD - Serial Dilution

SGT - Silica Gel Treatment

SPK - Spike

Surr - Surrogate



Analytical Report

Work Order: **2312339**Date Reported: **12/21/2023**

Client: Friedman & Bruya Collection Date: 12/13/2023 2:15:00 PM

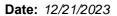
Project: 312249

Lab ID: 2312339-001 **Matrix:** Water

Client Sample ID: CTMW-14-1223

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Metals by EPA Metho	<u>d 200.8</u>			Batcl	n ID:	42413 Analyst: SLL
Aluminum	21.4	10.0		μg/L	1	12/21/2023 10:59:00 AM
Total Metals by EPA Method 20	0.8			Batcl	n ID:	42397 Analyst: SLL
Aluminum	55.2	10.0		μg/L	1	12/21/2023 2:31:00 PM
Ferrous Iron by SM3500-Fe B				Batcl	n ID:	R88336 Analyst: SLL
Ferrous Iron	ND	0.150		mg/L	1	12/14/2023 11:00:00 AM

Original





CLIENT: Friedman & Bruya

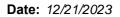
Project: 312249

QC SUMMARY REPORT

Ferrous Iron by SM3500-Fe B

110ject. 012240										
Sample ID: CCV-R88336A	SampType: CCV			Units: mg/L		Prep Date:	12/14/2023	RunNo: 883 3	36	
Client ID: CCV	Batch ID: R88336					Analysis Date:	12/14/2023	SeqNo: 184 4	4402	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	HighLimit RPD Ref Val	%RPD	RPDLimit	Qual
Ferrous Iron	0.414	0.150	0.4000	0	104	85	115			
Sample ID: MB-R88336	SampType: MBLK			Units: mg/L		Prep Date:	12/14/2023	RunNo: 883 3	36	
Client ID: MBLKW	Batch ID: R88336					Analysis Date:	12/14/2023	SeqNo: 184 4	4403	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	HighLimit RPD Ref Val	%RPD	RPDLimit	Qual
Ferrous Iron	ND	0.150								
Sample ID: LCS-R88336	SampType: LCS			Units: mg/L		Prep Date:	12/14/2023	RunNo: 883 3	36	
Client ID: LCSW	Batch ID: R88336					Analysis Date:	12/14/2023	SeqNo: 184 4	4404	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit F	HighLimit RPD Ref Val	%RPD	RPDLimit	Qua
Ferrous Iron	0.417	0.150	0.4000	0	104	85	115			
Sample ID: 2312328-001CDUP	SampType: DUP			Units: mg/L		Prep Date:	12/14/2023	RunNo: 8833	36	
Client ID: BATCH	Batch ID: R88336					Analysis Date:	12/14/2023	SeqNo: 184 4	4406	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit F	HighLimit RPD Ref Val	%RPD	RPDLimit	Qua
Ferrous Iron	0.445	0.150					0.4084	8.50	20	
Sample ID: 2312328-001CMS	SampType: MS			Units: mg/L		Prep Date:	12/14/2023	RunNo: 883 3	36	
Client ID: BATCH	Batch ID: R88336					Analysis Date:	12/14/2023	SeqNo: 184 4	4407	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit F	HighLimit RPD Ref Val	%RPD	RPDLimit	Qua
Ferrous Iron	0.910	0.150	0.4000	0.4084	125	70	130			

Original Page 6 of 16





CLIENT: Friedman & Bruya

Project: 312249

QC SUMMARY REPORT

Ferrous Iron by SM3500-Fe B

110ject. 012240									
Sample ID: 2312328-001CMSD	SampType: MSD			Units: mg/L		Prep Date	e: 12/14/2023	RunNo: 88336	
Client ID: BATCH	Batch ID: R88336					Analysis Date	e: 12/14/2023	SeqNo: 1844408	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Ferrous Iron	0.925	0.150	0.4000	0.4084	129	70	130 0.9100	1.65 30	
Sample ID: CCV-R88336B	SampType: CCV			Units: mg/L		Prep Date	e: 12/14/2023	RunNo: 88336	
Client ID: CCV	Batch ID: R88336					Analysis Date	e: 12/14/2023	SeqNo: 1844412	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Ferrous Iron	0.427	0.150	0.4000	0	107	85	115		
Sample ID: CCB-R88336B	SampType: CCB			Units: mg/L		Prep Date	e: 12/14/2023	RunNo: 88336	
Client ID: CCB	Batch ID: R88336					Analysis Date	e: 12/14/2023	SeqNo: 1844413	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Ferrous Iron	ND	0.150							
Sample ID: CCV-R88336C	SampType: CCV			Units: mg/L		Prep Date	e: 12/14/2023	RunNo: 88336	
Client ID: CCV	Batch ID: R88336					Analysis Date	e: 12/14/2023	SeqNo: 1845060	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Ferrous Iron	0.448	0.150	0.4000	0	112	85	115		
Sample ID: CCB-R88336C	SampType: CCB			Units: mg/L		Prep Date	e: 12/14/2023	RunNo: 88336	
Client ID: CCB	Batch ID: R88336					Analysis Date	e: 12/14/2023	SeqNo: 1845068	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Ferrous Iron	ND	0.150							

Original Page 7 of 16

Date: 12/21/2023



Work Order: 2312339

CLIENT: Friedman & Bruya

Project: 312249

Client ID: CCV

QC SUMMARY REPORT

Ferrous Iron by SM3500-Fe B

Sample ID: CCV-R88336D SampType: CCV Units: mg/L Prep Date: 12/14/2023 RunNo: 88336

Batch ID: **R88336** Analysis Date: **12/14/2023** SeqNo: **1845066**

Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Ferrous Iron 0.433 0.150 0.4000 0 108 85 115

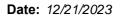
Sample ID: CCB-R88336D SampType: CCB Units: mg/L Prep Date: 12/14/2023 RunNo: 88336

Client ID: CCB Batch ID: R88336 Analysis Date: 12/14/2023 SeqNo: 1845067

Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Ferrous Iron ND 0.150

Original Page 8 of 16





CLIENT: Friedman & Bruya

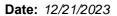
Project: 312249

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Project : 312249					Dissolved metals by El A method 200.0
Sample ID: ICB	SampType: ICB			Units: µg/L	Prep Date: 12/21/2023 RunNo: 88496
Client ID: ICB	Batch ID: 42413				Analysis Date: 12/21/2023 SeqNo: 1848083
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	ND	10.0			
Sample ID: ICV	SampType: ICV			Units: μg/L	Prep Date: 12/21/2023 RunNo: 88496
Client ID: ICV	Batch ID: 42413				Analysis Date: 12/21/2023 SeqNo: 1848084
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	1,450	10.0	1,500	0	96.8 90 110
Sample ID: MB-42413	SampType: MBLK			Units: µg/L	Prep Date: 12/21/2023 RunNo: 88496
Client ID: MBLKW	Batch ID: 42413				Analysis Date: 12/21/2023 SeqNo: 1848085
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	ND	10.0			
Sample ID: LCS-42413	SampType: LCS			Units: µg/L	Prep Date: 12/21/2023 RunNo: 88496
Client ID: LCSW	Batch ID: 42413				Analysis Date: 12/21/2023 SeqNo: 1848086
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	906	10.0	1,000	0	90.6 85 115
Sample ID: 2312341-007BDUP	SampType: DUP			Units: µg/L	Prep Date: 12/21/2023 RunNo: 88496
Client ID: BATCH	Batch ID: 42413				Analysis Date: 12/21/2023 SeqNo: 1848088
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	ND	10.0			0 30

Original Page 9 of 16





CLIENT: Friedman & Bruya

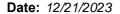
Project: 312249

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: 2312341-007BMS	SampType: MS			Units: μg/L		Prep Date:	12/21/2023	RunNo: 88496	
Client ID: BATCH	Batch ID: 42413					Analysis Date:	12/21/2023	SeqNo: 1848089	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	ighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	1,020	10.0	1,000	0	102	50	150		
Sample ID: 2312341-007BMSD	SampType: MSD			Units: µg/L		Prep Date:	12/21/2023	RunNo: 88496	
Client ID: BATCH	Batch ID: 42413					Analysis Date:	12/21/2023	SeqNo: 1848090	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	ighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	1,170	10.0	1,000	0	117	50	150 1,022	13.2 30	
Sample ID: CCV-42413A	SampType: CCV			Units: µg/L		Prep Date:	12/21/2023	RunNo: 88496	
Client ID: CCV	Batch ID: 42413					Analysis Date:	12/21/2023	SeqNo: 1848092	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	ighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	993	10.0	1,000	0	99.3	90	110		
Sample ID: CCB-42413A	SampType: CCB			Units: μg/L		Prep Date:	12/21/2023	RunNo: 88496	
Client ID: CCB	Batch ID: 42413					Analysis Date:	12/21/2023	SeqNo: 1848093	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	ighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	ND	10.0							
Sample ID: CCV-42413B	SampType: CCV			Units: μg/L		Prep Date:	12/21/2023	RunNo: 88496	
Client ID: CCV	Batch ID: 42413					Analysis Date:	12/21/2023	SeqNo: 1848104	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	ighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	1,020	10.0	1,000	0	102	90	110		

Original Page 10 of 16





Project:

QC SUMMARY REPORT

CLIENT: Friedman & Bruya

312249

Dissolved Metals by EPA Method 200.8

 Sample ID: CCB-42413B
 SampType: CCB
 Units: μg/L
 Prep Date: 12/21/2023
 RunNo: 88496

Client ID: CCB Batch ID: 42413 Analysis Date: 12/21/2023 SeqNo: 1848105

Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Aluminum ND 10.0

 Sample ID: 2312350-004BMS
 SampType: MS
 Units: μg/L
 Prep Date: 12/21/2023
 RunNo: 88496

Client ID: **BATCH** Batch ID: **42413** Analysis Date: **12/21/2023** SeqNo: **1848114**

Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Aluminum 1,050 10.0 1,000 8.025 105 50 150

Sample ID: CCV-42413C SampType: CCV Units: μg/L Prep Date: 12/21/2023 RunNo: 88496

Client ID: CCV Batch ID: 42413 Analysis Date: 12/21/2023 SeqNo: 1848115

Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Aluminum 1,010 10.0 1,000 0 101 90 110

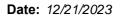
Sample ID: CCB-42413C SampType: CCB Units: μg/L Prep Date: 12/21/2023 RunNo: 88496

Client ID: **CCB** Batch ID: **42413** Analysis Date: **12/21/2023** SeqNo: **1848116**

Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Aluminum ND 10.0

Original Page 11 of 16





CLIENT: Friedman & Bruya

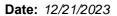
Project: 312249

QC SUMMARY REPORT

Total Metals by EPA Method 200.8

Project:	312249									•		
Sample ID: ICB		SampType	: ICB			Units: µg/L		Prep Date:	12/21/2023	RunNo: 8850	9	
Client ID: ICB		Batch ID:	42397					Analysis Date:	12/21/2023	SeqNo: 1848	375	
Analyte		F	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit F	HighLimit RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum			ND	10.0								
Sample ID: ICV		SampType	: ICV			Units: µg/L		Prep Date:	12/21/2023	RunNo: 8850	9	
Client ID: ICV		Batch ID:	42397					Analysis Date:	12/21/2023	SeqNo: 1848	376	
Analyte		F	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit F	lighLimit RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum			1,450	10.0	1,500	0	96.8	90	110			
Sample ID: CCV-	42397A	SampType	: CCV			Units: µg/L		Prep Date:	12/21/2023	RunNo: 8850	19	
Client ID: CCV		Batch ID:	42397					Analysis Date:	12/21/2023	SeqNo: 1848	377	
Analyte		F	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit F	lighLimit RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum			986	10.0	1,000	0	98.6	90	110			
Sample ID: CCB-	42397A	SampType	: ССВ			Units: µg/L		Prep Date:	12/21/2023	RunNo: 8850	19	
Client ID: CCB		Batch ID:	42397					Analysis Date:	12/21/2023	SeqNo: 1848	378	
Analyte		F	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit F	lighLimit RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum			ND	10.0								
Sample ID: MB-4	2397	SampType	: MBLK			Units: μg/L		Prep Date:	12/19/2023	RunNo: 8850)9	
Client ID: MBL	KW	Batch ID:	42397					Analysis Date:	12/21/2023	SeqNo: 1848	379	
Analyte		F	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit F	lighLimit RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum			ND	10.0			_	_				

Original Page 12 of 16





CLIENT: Friedman & Bruya

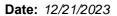
Project: 312249

QC SUMMARY REPORT

Total Metals by EPA Method 200.8

Sample ID: 2312365-002AMS	SampType: MS			Units: µg/L	Prep Date: 12/19/2023 RunNo: 88509
Client ID: BATCH	Batch ID: 42397				Analysis Date: 12/21/2023 SeqNo: 1848382
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qu
Aluminum	728	10.0	1,000	0	72.8 70 130
Sample ID: 2312365-002AMSD	SampType: MSD			Units: µg/L	Prep Date: 12/19/2023 RunNo: 88509
Client ID: BATCH	Batch ID: 42397				Analysis Date: 12/21/2023 SeqNo: 1848383
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qu
Aluminum	926	10.0	1,000	0	92.6 70 130 728.2 24.0 30
Sample ID: CCV-42397B	SampType: CCV			Units: µg/L	Prep Date: 12/21/2023 RunNo: 88509
Client ID: CCV	Batch ID: 42397				Analysis Date: 12/21/2023 SeqNo: 1848393
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qu
Aluminum	1,010	10.0	1,000	0	101 90 110
Sample ID: CCB-42397B	SampType: CCB			Units: μg/L	Prep Date: 12/21/2023 RunNo: 88509
Client ID: CCB	Batch ID: 42397				Analysis Date: 12/21/2023 SeqNo: 1848394
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qu
Aluminum	ND	10.0			
Sample ID: 2312350-001AMS	SampType: MS			Units: µg/L	Prep Date: 12/19/2023 RunNo: 88509
Client ID: BATCH	Batch ID: 42397				Analysis Date: 12/21/2023 SeqNo: 1848396
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qu
Aluminum	865	10.0	1,000	34.80	83.1 70 130

Original Page 13 of 16





CLIENT: Friedman & Bruya

Project: 312249

QC SUMMARY REPORT

Total Metals by EPA Method 200.8

Sample ID: CCV-42397C	SampType: CCV			Units: µg/L	Prep Date: 12/2	21/2023	RunNo: 885	09	
Client ID: CCV	Batch ID: 42397				Analysis Date: 12/2	21/2023	SeqNo: 184	8405	
Analyte	Result	RL	SPK value	SPK Ref Val	REC LowLimit HighLin	mit RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	998	10.0	1,000	0	99.8 90 1	10			
Sample ID: CCB-42397C	SampType: CCB			Units: µg/L	Prep Date: 12/2	21/2023	RunNo: 885	09	
Client ID: CCB	Batch ID: 42397				Analysis Date: 12/2	21/2023	SeqNo: 184	8406	
Analyte	Result	RL	SPK value	SPK Ref Val	REC LowLimit HighLin	nit RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	10.0							
Sample ID: CCV-42397D	SampType: CCV			Units: μg/L	Prep Date: 12/2	21/2023	RunNo: 885	09	
Client ID: CCV	Batch ID: 42397				Analysis Date: 12/2	21/2023	SeqNo: 184	8412	
Analyte	Result	RL	SPK value	SPK Ref Val	REC LowLimit HighLin	nit RPD Ref Val	%RPD	RPDLimit	Qua
Aluminum	986	10.0	1,000	0	98.6 90 1	10			
Sample ID: CCB-42397D	SampType: CCB			Units: μg/L	Prep Date: 12/2	21/2023	RunNo: 885	09	
Client ID: CCB	Batch ID: 42397				Analysis Date: 12/2	21/2023	SeqNo: 184	8413	
Analyte	Result	RL	SPK value	SPK Ref Val	REC LowLimit HighLin	nit RPD Ref Val	%RPD	RPDLimit	Qua
Aluminum	ND	10.0							
Sample ID: LCS-42397	SampType: LCS			Units: μg/L	Prep Date: 12/1	19/2023	RunNo: 885	09	
Client ID: LCSW	Batch ID: 42397				Analysis Date: 12/2	21/2023	SeqNo: 184	8471	
Analyte	Result	RL	SPK value	SPK Ref Val	REC LowLimit HighLin	mit RPD Ref Val	%RPD	RPDLimit	Qua

Original Page 14 of 16



Sample Log-In Check List

Cli	ent Name:	FB				Work O	rder Numb	per: 2312339		
Lo	gged by:	Morgan Wils	son			Date Re	eceived:	12/14/20	23 10:36:00 AM	
Chai	in of Custo	ody								
1.	ls Chain of C	ustody comple	ete?			Yes	✓	No 🗌	Not Present	
2.	How was the	sample delive	red?			Clier	<u>nt</u>			
<u>Log</u>	<u>In</u>									
			hipping container tody Seals not in			Yes		No 🗌	Not Present 🗹	
4. V	Was an attem	npt made to co	ol the samples?			Yes	✓	No \square	NA \square	
5. V	Were all items	s received at a	temperature of	>2°C to 6°C	*	Yes	•	No 🗌	NA 🗆	
6. 5	Sample(s) in	proper contain	er(s)?			Yes	✓	No 🗌		
7. 5	Sufficient sam	nple volume fo	r indicated test(s)?		Yes	✓	No \square		
8. <i>F</i>	re samples ہ	properly prese	rved?			Yes	✓	No \square		
9. V	Was preserva	ative added to	bottles?			Yes	✓	No \square	NA \square	
10 l	s there heads	space in the V	ΩA vials?			Yes		No 🗆	HCL NA ✓	
-			arrive in good cor	ndition(unbro	oken)?	Yes	<u>✓</u>	No \square	10.	
		ork match bott			,.	Yes	✓	No 🗆		
-			fied on Chain of	Custody?		Yes	✓	No ∐		
		it analyses wei				Yes		No ∐		
	Were all hold be met?	times (except	field parameters	, рн e.g.) аb	ole to	Yes	✓	No 🗀		
<u>Spe</u>	<u>cial Handl</u>	ling (if appl	<u>licable)</u>							
16.	Was client n	otified of all di	screpancies with	this order?		Yes	; 🗌	No 🗌	NA 🗹	_
	Person	Notified:			Date:					
	By Who	om:			Via:	eM	ail 🗌 Ph	one 🗌 Fax	☐ In Person	
	Regard	ling:								
	Client I	nstructions:								
17.	Additional re	marks:								_
Item	<u>Information</u>									
		Item #		Temp ⁰C						
	Sample			5.2						

^{*} Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Fremont	
SUBCONTRACTER	
SUBCONTRACT SAMPLE CHAIN OF CUSTOMY	SUBCONTR

Page # 1 of TURNAROUND TIME

Page 16 of 16

Send Report To Mich Company Friec Address 5500 City, State, ZIP Seatt Phone # (206) 285-82 CTMW-14-1223	Michael Erdal Friedman and 5500 4th Ave S Seattle, WA 9th Lab ID Sa 12	Michael Erdahl Friedman and Bruya, Inc 5500 4th Ave S Seattle, WA 98108 Lab Date ID Sampled 12/13/2023	Time		PROJECT NAME/NO. 312249 REMARKS TIER IV, EIN atrix # of aluminum dissolved	T NAME/NO. 312249 TIER IV, EIM dissolved x total aluminum dissolved	dissolved aluminum	× ferrous iron		ferrous iron dissolved gases TOC TOC REQUESTED	TOC REQUESTION AND TOC	JEST	ED R. N	TURNAROL RUSH Rush charges auth SAMPLE I Dispose after 30 Return samples Will call with in	ard T. ard T. AMPI a after a fine	horize DISPO 0 days s nstruc	Notes
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Friedman & Bruva Inc		S	GNATURE	1		PH	PRINT NAME	AME		1		COMPANY	PAN	Y	_	DATE	-
3012 16th Avenue West		Restrigenstreet by & M	the or	1	Micha	Michael Erdahl	hl				Friedman & Bruya	man &	Br	uya	1	2/M/21	
Seattle, WA 98119-2029		Received by:	Milment			Ahi	Miller	3			7	A)				1	1
Ph. (206) 285-8282		Relinquished by:															
Fax (206) 283-5044		Received by:				1											

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Vineta Mills, M.S. Eric Young, B.S.

5500 4th Avenue South Seattle, WA 98108 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

December 29, 2023

Trevor Louviere, Project Manager Dalton Olmsted Fuglevand 1001 SW Klickitat Way, Suite 200B Seattle, WA 98134

Dear Mr Louviere:

Included are the results from the testing of material submitted on December 14, 2023 from the TWAAFA-001, F&BI 312260 project. There are 20 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures

c: Anthony Cerruti, Tasya Gray

DOF1229R.DOC

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on December 14, 2023 by Friedman & Bruya, Inc. from the Dalton Olmsted Fuglevand TWAAFA-001, F&BI 312260 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Dalton Olmsted Fuglevand
312260 -01	CCW-3C-1223
312260 -02	CCW-3A-1223
312260 -03	CCW-3B-1223
312260 -04	CCW-2C-1223

The samples were sent to Fremont Analytical for ferrous iron, total aluminum, and dissolved aluminum analyses. The report is enclosed.

All quality control requirements were acceptable.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Lab ID: Date Extracted: 12/18/23 312260-01Date Analyzed: 12/21/23 Data File: 312260-01.238 Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) SPOperator:

Concentration

Analyte: ug/L (ppb)

Arsenic 1.56 Copper 0.484 Manganese 868

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: CCW-3C-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/14/23 Project: TWAAFA-001, F&BI 312260

 Date Extracted:
 12/18/23
 Lab ID:
 312260-01 x5

 Date Analyzed:
 12/22/23
 Data File:
 312260-01 x5.157

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Iron 8,180

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	CCW-3A-1223	Client:	Dalton Olmsted Fuglevand
Date Received:	12/14/23	Project:	TWAAFA-001, F&BI 312260
Date Extracted:	12/18/23	Lab ID:	312260-02
Date Analyzed:	12/21/23	Data File:	312260-02.239
Matrix:	Water	Instrument:	ICPMS2

Matrix: Water ug/L (ppb) Units: Operator: SP

Analyte:	Concentration ug/L (ppb)
Arsenic	67.9
Copper	0.913
Lead	<1
Manganese	81.6
Nickel	148
Zinc	433

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: CCW-3A-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/14/23 Project: TWAAFA-001, F&BI 312260

 Date Extracted:
 12/18/23
 Lab ID:
 312260-02 x5

 Date Analyzed:
 12/22/23
 Data File:
 312260-02 x5.158

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Iron 15,000

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: CCW-3B-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/14/23 Project: TWAAFA-001, F&BI 312260

Lab ID: Date Extracted: 12/18/23 312260-03 Date Analyzed: 12/21/23 Data File: 312260-03.240 Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) SPOperator:

Analyte: Concentration ug/L (ppb)

 Arsenic
 3.08

 Copper
 <0.48</td>

 Iron
 4,990

 Manganese
 959

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: CCW-2C-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/14/23 Project: TWAAFA-001, F&BI 312260

Lab ID: Date Extracted: 12/18/23 312260-04 Date Analyzed: 12/21/23 Data File: 312260-04.241 Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) SPOperator:

Concentration

Analyte: ug/L (ppb)

Arsenic 2.95 Copper 0.576 Manganese 145

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: CCW-2C-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/14/23 Project: TWAAFA-001, F&BI 312260

 Date Extracted:
 12/18/23
 Lab ID:
 312260-04 x5

 Date Analyzed:
 12/22/23
 Data File:
 312260-04 x5.160

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Iron 7,420

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: Method Blank Client: Dalton Olmsted Fuglevand Date Received: Not Applicable Project: TWAAFA-001, F&BI 312260

Date Extracted: 12/18/23 Lab ID: I3-1003 mb
Date Analyzed: 12/18/23 Data File: I3-1003 mb.143
Matrix: Water Instrument: ICPMS2

Matrix: Water Instrument: ICPMS
Units: ug/L (ppb) Operator: SP

 $\begin{array}{c} & Concentration \\ Analyte: & ug/L\ (ppb) \end{array}$

 Arsenic
 <1</td>

 Copper
 <0.48</td>

 Iron
 <50</td>

 Lead
 <1</td>

 Manganese
 <1</td>

 Nickel
 <1</td>

 Zinc
 <5</td>

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Lab ID: Date Extracted: 12/18/23 312260-01Date Analyzed: 12/21/23 Data File: 312260-01.294 Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) SPOperator:

Concentration

Analyte: ug/L (ppb)

Arsenic 1.50 Manganese 978

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: CCW-3C-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/14/23 Project: TWAAFA-001, F&BI 312260

 Date Extracted:
 12/18/23
 Lab ID:
 312260-01 x5

 Date Analyzed:
 12/22/23
 Data File:
 312260-01 x5.161

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Copper <2.4 Iron 8,750

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CCW-3A-1223	Client:	Dalton Olmsted Fuglevand
Date Received:	12/14/23	Project:	TWAAFA-001, F&BI 312260

Analyte:	Concentration ug/L (ppb)
Arsenic	94.3
Copper	4.78
Iron	19,500
Lead	33.4
Manganese	87.5
Nickel	175
Zinc	583

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: CCW-3B-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/14/23 Project: TWAAFA-001, F&BI 312260

Lab ID: Date Extracted: 12/18/23 312260-03 Date Analyzed: 12/21/23 Data File: 312260-03.296 Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) SPOperator:

Concentration

Analyte: ug/L (ppb)

Arsenic 3.10

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: CCW-3B-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/14/23 Project: TWAAFA-001, F&BI 312260

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

 Copper
 <2.4</td>

 Iron
 4,490

 Manganese
 965

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: CCW-2C-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/14/23 Project: TWAAFA-001, F&BI 312260

Lab ID: Date Extracted: 12/18/23 312260-04 Date Analyzed: 12/21/23 Data File: 312260-04.297 Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) SPOperator:

Concentration

Analyte: ug/L (ppb)

Arsenic 2.80 Manganese 156

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: CCW-2C-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/14/23 Project: TWAAFA-001, F&BI 312260

 Date Extracted:
 12/18/23
 Lab ID:
 312260-04 x5

 Date Analyzed:
 12/22/23
 Data File:
 312260-04 x5.164

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

 $\begin{array}{c} \text{Copper} & <2.4 \\ \text{Iron} & 7,620 \end{array}$

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: Method Blank Client: Dalton Olmsted Fuglevand Date Received: Not Applicable Project: TWAAFA-001, F&BI 312260

 Date Extracted:
 12/18/23
 Lab ID:
 13-1004 mb

 Date Analyzed:
 12/18/23
 Data File:
 13-1004 mb.145

 Materials:
 12/18/23
 Data File:
 13-1004 mb.145

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

 $\begin{array}{c} & Concentration \\ Analyte: & ug/L\ (ppb) \end{array}$

 Arsenic
 <1</td>

 Copper
 <0.48</td>

 Iron
 <50</td>

 Lead
 <1</td>

 Manganese
 <1</td>

 Nickel
 <1</td>

 Zinc
 <5</td>

ENVIRONMENTAL CHEMISTS

Date of Report: 12/29/23 Date Received: 12/14/23

Project: TWAAFA-001, F&BI 312260

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 6020B

Laboratory Code: 312247-07 (Matrix Spike)

				Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Arsenic	ug/L (ppb)	10	2.13	105 b	104 b	75-125	1 b
Copper	ug/L (ppb)	20	<5	85	85	75 - 125	0
Iron	ug/L (ppb)	100	2,320	84 b	$125 \mathrm{b}$	75 - 125	39 b
Lead	ug/L (ppb)	10	<1	80	79	75 - 125	1
Manganese	ug/L (ppb)	20	141	84 b	99 b	75 - 125	16 b
Nickel	ug/L (ppb)	20	3.29	89	88	75 - 125	1
Zinc	ug/L (ppb)	50	<5	92	93	75 - 125	1

Laboratory Code: Laboratory Control Sample

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	ug/L (ppb)	10	94	80-120
Copper	ug/L (ppb)	20	94	80-120
Iron	ug/L (ppb)	100	100	80-120
Lead	ug/L (ppb)	10	91	80-120
Manganese	ug/L (ppb)	20	87	80-120
Nickel	ug/L (ppb)	20	94	80-120
Zinc	ug/L (ppb)	50	94	80-120

ENVIRONMENTAL CHEMISTS

Date of Report: 12/29/23 Date Received: 12/14/23

Project: TWAAFA-001, F&BI 312260

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 312247-07 (Matrix Spike)

				Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Arsenic	ug/L (ppb)	10	2.41	105 b	103 b	75-125	2 b
Copper	ug/L (ppb)	20	<5	83	81	75 - 125	2
Iron	ug/L (ppb)	100	2,950	88 b	0 b	75 - 125	200 b
Lead	ug/L (ppb)	10	<1	78	76	75 - 125	3
Manganese	ug/L (ppb)	20	147	89 b	78 b	75 - 125	13 b
Nickel	ug/L (ppb)	20	3.28	88	84	75 - 125	5
Zinc	ug/L (ppb)	50	<5	91	89	75 - 125	2

Laboratory Code: Laboratory Control Sample

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	ug/L (ppb)	10	95	80-120
Copper	ug/L (ppb)	20	95	80-120
Iron	ug/L (ppb)	100	96	80-120
Lead	ug/L (ppb)	10	94	80-120
Manganese	ug/L (ppb)	20	89	80-120
Nickel	ug/L (ppb)	20	97	80-120
Zinc	ug/L (ppb)	50	97	80-120

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.
- c The presence of the analyte may be due to carryover from previous sample injections.
- cf The sample was centrifuged prior to analysis.
- d The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dy Insufficient sample volume was available to achieve normal reporting limits.
- f The sample was laboratory filtered prior to analysis.
- fb The analyte was detected in the method blank.
- fc The analyte is a common laboratory and field contaminant.
- hr The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs Headspace was present in the container used for analysis.
- ht The analysis was performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of control limits due to sample matrix effects.
- j The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- k The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.
- lc The presence of the analyte is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

CCW-38-1273 CCW-3A-1223 CCW-2C-1223 Company_DOF Report To: Anthony Cerruti / Trevor Louviere Address_ Phone 215-767-7749 Email acerruti@dofnw.com City, State, ZIP Seattle, WA 98134 CCN-3C-1723 Sample ID Seattle, WA 98119-2029 3011 16th Avenue West Friedman & Bruya, Inc. Ph. (206) 285-8282 1001 SW Klickitat Way Ö 10 20 0 Lab ID A-C 17/14/23/09:30 Relinquished by: Relinquished by: Received by: Received by: CC: Tasya Gray 52/11/23 Sampled 12/4/23 21/11/23 Date SIGNATURE 1005 Sampled 1140 0401 Time Western S 9 SAMPLE CHAIN OF CUSTODY Matrix Sample SAMPLERS (signature) PROJECT NAME 2 2 Project Specific RLs -Dissolved metals samples field filtered at 0.45 REMARKS 2 2 micron before analysis Bottles # of W C W 6 TWAAFA TRSYA Total Metals 6020B Elliett Scheumann Wesley Frank (As, Cr, Cu, Mn, Ni, Pb, Yes)/ No Dissolved Metals 6020B (As, Cr, Cu, Mn, Ni, Pb, 7n) PRINT NAME 2 ~~~~ FULB Total Mercury 1631E Dissolved Mercury 1631E TWAAFA-001 Total Metals (Al, Fe) INVOICE TO PO# DOF samples received at Dissolved Metals (Al, Fe) 12/14/23 Ferrous 7007 097 DOF 18 Iron COMPANY Rush charges authorized by: Standard Turnaround Other_ Dispose after 30 days ANALYSES REQUESTED RUSH Archive Samples TURNAROUND TIME Page # SAMPLE DISPOSAL MS/MSD Collected? 12/14/23 12/1/23 1302 12/14/23 2/14/23/1302 DATE (Y/N) 20 M. AS, Car, Fe, As, V Al As Cu, Fe Ma Tat/RS) Metals: Totals Hetais. MI, As, Co., Fe, Ha Al, As, Ci, To, Mi 1 Spaper Sent Le Notes 05(1 1150 TIME



3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya Michael Erdahl 5500 4th Ave S Seattle, WA 98108

RE: 312260

Work Order Number: 2312350

December 21, 2023

Attention Michael Erdahl:

Fremont Analytical, Inc. received 4 sample(s) on 12/14/2023 for the analyses presented in the following report.

Dissolved Metals by EPA Method 200.8 Ferrous Iron by SM3500-Fe B Total Metals by EPA Method 200.8

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Date: 12/21/2023



CLIENT: Friedman & Bruya Work Order Sample Summary

Project: 312260 **Work Order:** 2312350

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2312350-001	CCW-3C-1223	12/14/2023 9:30 AM	12/14/2023 2:15 PM
2312350-002	CCW-3A-1223	12/14/2023 10:05 AM	12/14/2023 2:15 PM
2312350-003	CCW-3B-1223	12/14/2023 10:40 AM	12/14/2023 2:15 PM
2312350-004	CCW-2C-1223	12/14/2023 11:40 AM	12/14/2023 2:15 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned



Case Narrative

WO#: **2312350**Date: **12/21/2023**

CLIENT: Friedman & Bruya

Project: 312260

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.



Qualifiers & Acronyms

WO#: **2312350**

Date Reported: 12/21/2023

Qualifiers:

- * Flagged value is not within established control limits
- B Analyte detected in the associated Method Blank
- D Dilution was required
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- I Analyte with an internal standard that does not meet established acceptance criteria
- J Analyte detected below Reporting Limit
- N Tentatively Identified Compound (TIC)
- Q Analyte with an initial or continuing calibration that does not meet established acceptance criteria
- S Spike recovery outside accepted recovery limits
- ND Not detected at the Reporting Limit
- R High relative percent difference observed

Acronyms:

%Rec - Percent Recovery

CCB - Continued Calibration Blank

CCV - Continued Calibration Verification

DF - Dilution Factor

DUP - Sample Duplicate

HEM - Hexane Extractable Material

ICV - Initial Calibration Verification

LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate

MCL - Maximum Contaminant Level

MB or MBLANK - Method Blank

MDL - Method Detection Limit

MS/MSD - Matrix Spike / Matrix Spike Duplicate

PDS - Post Digestion Spike

Ref Val - Reference Value

REP - Sample Replicate

RL - Reporting Limit

RPD - Relative Percent Difference

SD - Serial Dilution

SGT - Silica Gel Treatment

SPK - Spike

Surr - Surrogate



Analytical Report

Work Order: **2312350**Date Reported: **12/21/2023**

CLIENT: Friedman & Bruya

Project: 312260

Lab ID: 2312350-001 **Collection Date:** 12/14/2023 9:30:00 AM

Client Sample ID: CCW-3C-1223 Matrix: Water

Chone Campions. Con Co 122	Matrix: Water					
Analyses	Result	RL Qual	Units	DF	Date Analyzed	_
Dissolved Metals by EPA Method	d 200.8		Batc	h ID: 424	413 Analyst: SLL	
Aluminum	ND	10.0	μg/L	1	12/21/2023 11:45:00 AM	
Total Metals by EPA Method 20	0.8		Batc	h ID: 42:	397 Analyst: SLL	
Aluminum	34.8	10.0	μg/L	1	12/21/2023 2:43:00 PM	
Ferrous Iron by SM3500-Fe B			Batc	h ID: R8	8336 Analyst: SLL	
Ferrous Iron	3.24	0.750 D	mg/L	5	12/14/2023 6:10:01 PM	

Lab ID: 2312350-002 **Collection Date:** 12/14/2023 10:05:00 AM

Client Sample ID: CCW-3A-1223 Matrix: Water

Analyses Result **RL Qual** Units DF **Date Analyzed** Batch ID: 42413 Analyst: SLL **Dissolved Metals by EPA Method 200.8** Aluminum ND 10.0 12/21/2023 11:48:00 AM Batch ID: 42397 Analyst: SLL **Total Metals by EPA Method 200.8** 10.0 12/21/2023 2:47:00 PM Aluminum 49.0 μg/L Ferrous Iron by SM3500-Fe B Batch ID: R88336 Analyst: SLL Ferrous Iron 9.08 3.75 25 12/14/2023 6:10:01 PM mg/L



Analytical Report

Work Order: 2312350

Date Reported: 12/21/2023

CLIENT: Friedman & Bruya

Project: 312260

Lab ID: 2312350-003 **Collection Date:** 12/14/2023 10:40:00 AM

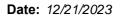
Client Sample ID: CCW-3B-1223 Matrix: Water

Analyses	Result	RL Qual	Units	DF	Date Analyzed
Dissolved Metals by EPA Method 200.8			Batc	h ID: 42	413 Analyst: SLL
Aluminum	ND	10.0	μg/L	1	12/21/2023 11:50:00 AM
Total Metals by EPA Method 20	0.8		Batc	h ID: 42	397 Analyst: SLL
Aluminum	12.6	10.0	μg/L	1	12/21/2023 2:50:00 PM
Ferrous Iron by SM3500-Fe B			Batc	h ID: R8	8336 Analyst: SLL
Ferrous Iron	2.42	0.750	O mg/L	5	12/14/2023 6:10:01 PM

Lab ID: 2312350-004 **Collection Date:** 12/14/2023 11:40:00 AM

Client Sample ID: CCW-2C-1223 Matrix: Water

Analyses	Result	RL Qual	Units	DF	Date Analyzed
Dissolved Metals by EPA Method	d 200.8		Batc	h ID: 424	413 Analyst: SLL
Aluminum	ND	10.0	μg/L	1	12/21/2023 11:53:00 AM
Total Metals by EPA Method 20	0.8		Batc	h ID: 42	397 Analyst: SLL
Aluminum	11.5	10.0	μg/L	1	12/21/2023 2:52:00 PM
Ferrous Iron by SM3500-Fe B			Batc	h ID: R8	8336 Analyst: SLL
Ferrous Iron	1.98	0.750	D mg/L	5	12/14/2023 6:10:01 PM





CLIENT: Friedman & Bruya

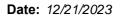
Project: 312260

QC SUMMARY REPORT

Ferrous Iron by SM3500-Fe B

F10ject. 312200									•	
Sample ID: CCV-R88336A	SampType: CCV			Units: mg/L		Prep Date:	12/14/2023	RunNo: 883	336	
Client ID: CCV	Batch ID: R88336					Analysis Date:	12/14/2023	SeqNo: 184	44402	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD	RPDLimit	Qua
Ferrous Iron	0.414	0.150	0.4000	0	104	85	115			
Sample ID: MB-R88336	SampType: MBLK			Units: mg/L		Prep Date:	12/14/2023	RunNo: 883	336	
Client ID: MBLKW	Batch ID: R88336					Analysis Date:	12/14/2023	SeqNo: 184	44403	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD	RPDLimit	Qua
Ferrous Iron	ND	0.150								
Sample ID: LCS-R88336	SampType: LCS			Units: mg/L		Prep Date:	12/14/2023	RunNo: 883	336	
Client ID: LCSW	Batch ID: R88336					Analysis Date:	12/14/2023	SeqNo: 184	44404	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD	RPDLimit	Qua
Ferrous Iron	0.417	0.150	0.4000	0	104	85	115			
Sample ID: 2312328-001CDUP	SampType: DUP			Units: mg/L		Prep Date:	12/14/2023	RunNo: 883	336	
Client ID: BATCH	Batch ID: R88336					Analysis Date:	12/14/2023	SeqNo: 184	44406	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD	RPDLimit	Qua
Ferrous Iron	0.445	0.150					0.4084	8.50	20	
Sample ID: 2312328-001CMS	SampType: MS			Units: mg/L		Prep Date:	12/14/2023	RunNo: 883	336	
Client ID: BATCH	Batch ID: R88336					Analysis Date:	12/14/2023	SeqNo: 184	44407	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit F	lighLimit RPD Ref Val	%RPD	RPDLimit	Qua
Ferrous Iron	0.910	0.150	0.4000	0.4084	125	70	130			

Original Page 7 of 17





CLIENT: Friedman & Bruya

Project: 312260

QC SUMMARY REPORT

Ferrous Iron by SM3500-Fe B

Sample ID: 2312328-001CMSD	SampType: MSD			Units: mg/L		Prep Date	12/14/2023	RunNo: 88336	
Client ID: BATCH	Batch ID: R88336					Analysis Date	12/14/2023	SeqNo: 1844408	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Ferrous Iron	0.925	0.150	0.4000	0.4084	129	70	130 0.9100	1.65 30	
Sample ID: CCV-R88336B	SampType: CCV			Units: mg/L		Prep Date	: 12/14/2023	RunNo: 88336	
Client ID: CCV	Batch ID: R88336					Analysis Date	12/14/2023	SeqNo: 1844412	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Ferrous Iron	0.427	0.150	0.4000	0	107	85	115		
Sample ID: CCB-R88336B	SampType: CCB			Units: mg/L		Prep Date	12/14/2023	RunNo: 88336	
Client ID: CCB	Batch ID: R88336					Analysis Date	12/14/2023	SeqNo: 1844413	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Ferrous Iron	ND	0.150							
Sample ID: CCV-R88336C	SampType: CCV			Units: mg/L		Prep Date	: 12/14/2023	RunNo: 88336	
Client ID: CCV	Batch ID: R88336					Analysis Date	12/14/2023	SeqNo: 1845060	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Ferrous Iron	0.448	0.150	0.4000	0	112	85	115		
Sample ID: CCB-R88336C	SampType: CCB			Units: mg/L		Prep Date	12/14/2023	RunNo: 88336	
Client ID: CCB	Batch ID: R88336					Analysis Date	12/14/2023	SeqNo: 1845068	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Ferrous Iron	ND	0.150							

Original Page 8 of 17

Date: 12/21/2023



Work Order: 2312350

CLIENT: Friedman & Bruya

Project: 312260

QC SUMMARY REPORT

Ferrous Iron by SM3500-Fe B

Sample ID: CCV-R88336D SampType: CCV Units: mg/L Prep Date: 12/14/2023 RunNo: 88336

Client ID: CCV Batch ID: R88336 Analysis Date: 12/14/2023 SeqNo: 1845066

Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Ferrous Iron 0.433 0.150 0.4000 0 108 85 115

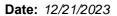
Sample ID: CCB-R88336D SampType: CCB Units: mg/L Prep Date: 12/14/2023 RunNo: 88336

Client ID: CCB Batch ID: R88336 Analysis Date: 12/14/2023 SeqNo: 1845067

Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Ferrous Iron ND 0.150

Original Page 9 of 17





Aluminum

QC SUMMARY REPORT

30

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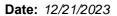
Dissolved Metals by EPA Method 200.8

Project: 312	260				Dissolved Metals by EPA Method 200.
Sample ID: ICB	SampType: ICB			Units: μg/L	Prep Date: 12/21/2023 RunNo: 88496
Client ID: ICB	Batch ID: 42413				Analysis Date: 12/21/2023 SeqNo: 1848083
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	ND	10.0			
Sample ID: ICV	SampType: ICV			Units: µg/L	Prep Date: 12/21/2023 RunNo: 88496
Client ID: ICV	Batch ID: 42413				Analysis Date: 12/21/2023 SeqNo: 1848084
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	1,450	10.0	1,500	0	96.8 90 110
Sample ID: MB-42413	SampType: MBLK			Units: µg/L	Prep Date: 12/21/2023 RunNo: 88496
Client ID: MBLKW	Batch ID: 42413				Analysis Date: 12/21/2023 SeqNo: 1848085
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	ND	10.0			
Sample ID: LCS-42413	SampType: LCS			Units: µg/L	Prep Date: 12/21/2023 RunNo: 88496
Client ID: LCSW	Batch ID: 42413				Analysis Date: 12/21/2023 SeqNo: 1848086
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	906	10.0	1,000	0	90.6 85 115
Sample ID: 2312341-007	BDUP SampType: DUP			Units: µg/L	Prep Date: 12/21/2023 RunNo: 88496
Client ID: BATCH	Batch ID: 42413				Analysis Date: 12/21/2023 SeqNo: 1848088
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Original Page 10 of 17

ND

10.0





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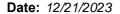
Project: 312260

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: 2312341-007BMS	SampType: MS			Units: μg/L		Prep Date:	12/21/2023	RunNo: 88496	
Client ID: BATCH	Batch ID: 42413					Analysis Date:	12/21/2023	SeqNo: 1848089	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	1,020	10.0	1,000	0	102	50	150		
Sample ID: 2312341-007BMSD	SampType: MSD			Units: µg/L		Prep Date:	12/21/2023	RunNo: 88496	
Client ID: BATCH	Batch ID: 42413					Analysis Date:	12/21/2023	SeqNo: 1848090	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	1,170	10.0	1,000	0	117	50	150 1,022	13.2 30	
Sample ID: CCV-42413A	SampType: CCV			Units: µg/L		Prep Date:	12/21/2023	RunNo: 88496	
Client ID: CCV	Batch ID: 42413					Analysis Date:	12/21/2023	SeqNo: 1848092	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	993	10.0	1,000	0	99.3	90	110		
Sample ID: CCB-42413A	SampType: CCB			Units: μg/L		Prep Date:	12/21/2023	RunNo: 88496	
Client ID: CCB	Batch ID: 42413					Analysis Date:	12/21/2023	SeqNo: 1848093	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	ND	10.0							
Sample ID: CCV-42413B	SampType: CCV			Units: μg/L		Prep Date:	12/21/2023	RunNo: 88496	
Client ID: CCV	Batch ID: 42413					Analysis Date:	12/21/2023	SeqNo: 1848104	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	1,020	10.0	1,000	0	102	90	110		

Original Page 11 of 17





Friedman & Bruya CLIENT:

ND

10.0

312260 **Project:**

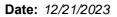
Aluminum

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: CCB-42413B SampType: CCB Prep Date: 12/21/2023 RunNo: 88496 Units: µg/L Client ID: CCB Analysis Date: 12/21/2023 Batch ID: 42413 SeqNo: 1848105 Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual Analyte Aluminum ND 10.0 Sample ID: 2312350-004BMS SampType: MS Units: µq/L Prep Date: 12/21/2023 RunNo: 88496 Client ID: CCW-2C-1223 Batch ID: 42413 Analysis Date: 12/21/2023 SeqNo: 1848114 LowLimit HighLimit RPD Ref Val Analyte Result RI SPK value SPK Ref Val. %REC %RPD RPDLimit Qual Aluminum 1,050 10.0 1,000 8.025 105 50 150 Sample ID: CCV-42413C SampType: CCV Units: µq/L Prep Date: 12/21/2023 RunNo: 88496 Client ID: CCV Batch ID: 42413 Analysis Date: 12/21/2023 SeqNo: 1848115 Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual 0 90 Aluminum 1,010 10.0 1,000 101 110 Sample ID: CCB-42413C SampType: CCB Units: µg/L Prep Date: 12/21/2023 RunNo: 88496 Client ID: CCB Batch ID: 42413 Analysis Date: 12/21/2023 SeqNo: 1848116 Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Analyte Qual

Page 12 of 17 Original





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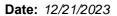
Project: 312260

QC SUMMARY REPORT

Total Metals by EPA Method 200.8

Project: 312260								,	
Sample ID: ICB	SampType: ICB			Units: µg/L		Prep Date:	12/21/2023	RunNo: 88509	
Client ID: ICB	Batch ID: 42397					Analysis Date:	12/21/2023	SeqNo: 1848375	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD RPDLi	mit Qual
Aluminum	ND	10.0							
Sample ID: ICV	SampType: ICV			Units: µg/L		Prep Date:	12/21/2023	RunNo: 88509	
Client ID: ICV	Batch ID: 42397					Analysis Date:	12/21/2023	SeqNo: 1848376	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD RPDLi	mit Qual
Aluminum	1,450	10.0	1,500	0	96.8	90	110		
Sample ID: CCV-42397A	SampType: CCV			Units: µg/L		Prep Date:	12/21/2023	RunNo: 88509	
Client ID: CCV	Batch ID: 42397					Analysis Date:	12/21/2023	SeqNo: 1848377	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD RPDLi	mit Qual
Aluminum	986	10.0	1,000	0	98.6	90	110		
Sample ID: CCB-42397A	SampType: CCB			Units: µg/L		Prep Date:	12/21/2023	RunNo: 88509	
Client ID: CCB	Batch ID: 42397					Analysis Date:	12/21/2023	SeqNo: 1848378	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD RPDLi	mit Qua
Aluminum	ND	10.0							
Sample ID: MB-42397	SampType: MBLK			Units: μg/L		Prep Date:	12/19/2023	RunNo: 88509	
Client ID: MBLKW	Batch ID: 42397					Analysis Date:	12/21/2023	SeqNo: 1848379	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD RPDLi	mit Qua
Aluminum	ND	10.0							

Original Page 13 of 17





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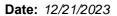
Project: 312260

QC SUMMARY REPORT

Total Metals by EPA Method 200.8

Sample ID: 2312365-002AMS	SampType: MS			Units: μg/L	Prep Date: 12/19/2023	RunNo: 88509
Client ID: BATCH	Batch ID: 42397				Analysis Date: 12/21/2023	SeqNo: 1848382
Analyte	Result	RL	SPK value	SPK Ref Val	REC LowLimit HighLimit RPD Re	Val %RPD RPDLimit Qual
Aluminum	728	10.0	1,000	0	2.8 70 130	
Sample ID: 2312365-002AMSD	SampType: MSD			Units: µg/L	Prep Date: 12/19/2023	RunNo: 88509
Client ID: BATCH	Batch ID: 42397				Analysis Date: 12/21/2023	SeqNo: 1848383
Analyte	Result	RL	SPK value	SPK Ref Val	REC LowLimit HighLimit RPD Re	Val %RPD RPDLimit Qual
Aluminum	926	10.0	1,000	0	2.6 70 130 7	28.2 24.0 30
Sample ID: CCV-42397B	SampType: CCV			Units: μg/L	Prep Date: 12/21/2023	RunNo: 88509
Client ID: CCV	Batch ID: 42397				Analysis Date: 12/21/2023	SeqNo: 1848393
Analyte	Result	RL	SPK value	SPK Ref Val	REC LowLimit HighLimit RPD Re	Val %RPD RPDLimit Qual
Aluminum	1,010	10.0	1,000	0	101 90 110	
Sample ID: CCB-42397B	SampType: CCB			Units: μg/L	Prep Date: 12/21/2023	RunNo: 88509
Client ID: CCB	Batch ID: 42397				Analysis Date: 12/21/2023	SeqNo: 1848394
Analyte	Result	RL	SPK value	SPK Ref Val	REC LowLimit HighLimit RPD Re	Val %RPD RPDLimit Qual
Aluminum	ND	10.0				
Sample ID: 2312350-001AMS	SampType: MS			Units: μg/L	Prep Date: 12/19/2023	RunNo: 88509
Client ID: CCW-3C-1223	Batch ID: 42397				Analysis Date: 12/21/2023	SeqNo: 1848396
Analyte	Result	RL	SPK value	SPK Ref Val	REC LowLimit HighLimit RPD Re	Val %RPD RPDLimit Qual
Aluminum	865	10.0	1,000	34.80	33.1 70 130	

Original Page 14 of 17





CLIENT: Friedman & Bruya

Project: 312260

QC SUMMARY REPORT

Total Metals by EPA Method 200.8

110ject. 512200									
Sample ID: CCV-42397C	SampType: CCV			Units: µg/L		Prep Date:	12/21/2023	RunNo: 88509	
Client ID: CCV	Batch ID: 42397					Analysis Date:	12/21/2023	SeqNo: 1848405	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	ighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	998	10.0	1,000	0	99.8	90	110		
Sample ID: CCB-42397C	SampType: CCB			Units: µg/L		Prep Date:	12/21/2023	RunNo: 88509	
Client ID: CCB	Batch ID: 42397					Analysis Date:	12/21/2023	SeqNo: 1848406	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	ighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	ND	10.0							
Sample ID: CCV-42397D	SampType: CCV			Units: µg/L		Prep Date:	12/21/2023	RunNo: 88509	
Client ID: CCV	Batch ID: 42397					Analysis Date:	12/21/2023	SeqNo: 1848412	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	ighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	986	10.0	1,000	0	98.6	90	110		
Sample ID: CCB-42397D	SampType: CCB			Units: µg/L		Prep Date:	12/21/2023	RunNo: 88509	
Client ID: CCB	Batch ID: 42397					Analysis Date:	12/21/2023	SeqNo: 1848413	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	ighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	ND	10.0							

Original Page 15 of 17



Sample Log-In Check List

Cli	ent Name:	FB		Woi	k Order Num			
Lo	gged by:	Morgan Wilson		Date	e Received:	12/14/202	3 2:15:00 PM	
Chai	in of Custo	odv						
		ustody complete?		,	Yes ✓	No 🗌	Not Present	
		sample delivered?		<u>(</u>	<u>Client</u>			
Log	In							
_					. \Box	\Box		
		s present on shipping container ments for Custody Seals not in		Y	′es □	No 📙	Not Present ✓	
4. V	Was an attem	pt made to cool the samples?		Υ	es 🗸	No 🗌	NA \square	
5. V	Were all items	received at a temperature of	>2°C to 6°C	* Y	es 🗸	No 🗌	NA 🗌	
6. S	Sample(s) in բ	proper container(s)?		Υ	es 🗸	No 🗌		
7. 8	Sufficient sam	ple volume for indicated test(s)?	Υ	es 🗸	No \square		
8. <i>P</i>	Are samples p	properly preserved?		Υ	es 🗸	No \square		
9. V	Was preserva	tive added to bottles?		Υ	'es 🗸	No \square	NA \square	
							HCL	
_		space in the VOA vials?			′es ∐	No 🗀	NA 🗸	
		es containers arrive in good cor	ıdition(unbrokeı	•	′es ⊻	No 🗀		
12. [Does paperwo	ork match bottle labels?		Y	′es ✔	No 🗀		
13. A	Are matrices o	correctly identified on Chain of	Custody?	Υ	′es ✓	No 🗌		
14. ls	s it clear wha	t analyses were requested?		Υ	'es 🗸	No 🗌		
	Were all hold be met?	times (except field parameters	pH e.g.) able t	to Y	es 🗸	No 🗌		
		ing (if applicable)						
16.	Was client no	otified of all discrepancies with	this order?		Yes	No 🗌	NA 🗹	_
	Person	Notified:		Date:				
	By Who	om:		Via:	eMail 🔲 F	Phone Fax	In Person	
	Regard	ing:						
	Client In	nstructions:						
17.	Additional re	marks:						
ltem	<u>Information</u>							
1.5111		Item #	Temp °C					
	Comple		0.8					

^{*} Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Send Report To	Send Report To Michael Erdahl	Fremont	
Company	Friedman and Bruva, Inc.	PROJECT NAME/NO.	PO#
		312260	D-596
Address	5500 4th Ave S		
City State ZIP	City State ZIP Seattle WA 98108	REMARKS	
Phone # (206) 2	Phone # (206) 285-8282 merdahl@friedmanandbruya.com	m TIER IV, EIM	

Fax (206) 288-5044	Ph. (206) 285-8282	Seattle, WA 98119-2029	3012 16th Avenue West	Friedman & Bruya, Inc.	CCW-2C-1223	CCW-3B-1223	CCW-3A-1223	CCW-3C-1223	Sample ID Lab	
Received by.	Relinquished by:	Received by:	Relinquished by:	SJ	12/14/2023	12/14/2023	12/14/2023	12/14/2023	Date Sampled	
) (and	SIGNATURE	1140	1040	1005	930	Time Sampled	
					1140 water	1040 water	1005 water	930 water	Matrix	
		Nont	Micha		ω.	3	33	ಎ	# of jars	
		Sylven	Michael Erdahl	PRI	×	×	×	х	total aluminum dissolved	
		13		PRINT NAME	* ×	x	x	x	aluminum	
		8		ME					ferrous iron	UNI
									dissolved gases	PIST
			Fried						TOC	ALIONO BEACEDIA
		TA	Friedman & Bruya	COMPANY			-			TIGHT
		7	Bruya	ANY						-
		12/4/2	12/14/25	DATE					No	
		1415	1327	TIME					Notes	

Rush charges authorized by: ⊠ Standard TAT RUSH Return samples Will call with instructions Dispose after 30 days TURNAROUND TIME SAMPLE DISPOSAL Page #

Page 17 of 17

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Vineta Mills, M.S. Eric Young, B.S.

5500 4th Avenue South Seattle, WA 98108 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

December 29, 2023

Trevor Louviere, Project Manager Dalton Olmsted Fuglevand 1001 SW Klickitat Way, Suite 200B Seattle, WA 98134

Dear Mr Louviere:

Included are the results from the testing of material submitted on December 14, 2023 from the TWAAFA-001, F&BI 312273 project. There are 19 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures

c: Anthony Cerruti, Tasya Gray

DOF1229R.DOC

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on December 14, 2023 by Friedman & Bruya, Inc. from the Dalton Olmsted Fuglevand TWAAFA-001, F&BI 312273 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Dalton Olmsted Fuglevand
312273 -01	CCW-2A-1223
312273 -02	CCW-2B-1223
312273 -03	TWA-9D-1223

The samples were sent to Fremont Analytical for ferrous iron, total aluminum, and dissolved aluminum analyses. The report is enclosed.

All quality control requirements were acceptable.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: CCW-2A-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/14/23 Project: TWAAFA-001, F&BI 312273

Lab ID: Date Extracted: 12/18/23 312273-01Date Analyzed: 12/19/23 Data File: 312273 - 01.286Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) SPOperator:

Concentration

Analyte: ug/L (ppb)

Arsenic 2.09 Copper 0.669 Manganese 836

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: CCW-2A-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/14/23 Project: TWAAFA-001, F&BI 312273

Date Extracted: 12/18/23 Lab ID: 312273-01 x50
Date Analyzed: 12/20/23 Data File: 312273-01 x50.075

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Iron 12,100

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: CCW-2B-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/14/23 Project: TWAAFA-001, F&BI 312273

Lab ID: Date Extracted: 12/18/23 312273-02 Date Analyzed: 12/19/23 Data File: 312273 - 02.266Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) SPOperator:

Concentration

Analyte: ug/L (ppb)

Copper <0.6 Manganese 200

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: CCW-2B-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/14/23 Project: TWAAFA-001, F&BI 312273

 Date Extracted:
 12/18/23
 Lab ID:
 312273-02 x5

 Date Analyzed:
 12/19/23
 Data File:
 312273-02 x5.251

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Arsenic 1,150

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: CCW-2B-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/14/23 Project: TWAAFA-001, F&BI 312273

 Date Extracted:
 12/18/23
 Lab ID:
 312273-02 x50

 Date Analyzed:
 12/20/23
 Data File:
 312273-02 x50.050

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Iron 4,180

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: TWA-9D-1223 Client: Dalton Olmsted Fuglevand
Date Received: 12/14/23 Project: TWAAFA-001, F&BI 312273
Date Extracted: 12/18/23 Lab ID: 312273-03

 Date Extracted:
 12/18/23
 Lab ID:
 312273-03

 Date Analyzed:
 12/19/23
 Data File:
 312273-03.287

 Matrix:
 Water
 Instrument:
 ICPMS2

 Units:
 ug/L (ppb)
 Operator:
 SP

Analyte: Concentration ug/L (ppb)

Copper1.10Iron461Manganese49.2

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: TWA-9D-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/14/23 Project: TWAAFA-001, F&BI 312273

 Date Extracted:
 12/18/23
 Lab ID:
 312273-03 x5

 Date Analyzed:
 12/19/23
 Data File:
 312273-03 x5.252

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Arsenic 15.6

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: Method Blank Client: Dalton Olmsted Fuglevand Date Received: Not Applicable Project: TWAAFA-001, F&BI 312273

Date Extracted: 12/18/23 Lab ID: I3-1001 mb
Date Analyzed: 12/18/23 Data File: I3-1001 mb.051
Matrix: Water Instrument: ICPMS2

Units: ug/L (ppb) Operator: SP

Analyte: Concentration ug/L (ppb)

 Arsenic
 <1</td>

 Copper
 <0.6</td>

 Iron
 <50</td>

 Manganese
 <1</td>

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CCW-2A-1223	Client:	Dalton Olmsted Fuglevand
Date Received:	12/14/23	Project:	TWAAFA-001, F&BI 312273
T . T			

Date Extracted: 12/18/23Lab ID: 312273-01Date Analyzed: 12/19/23 Data File: 312273-01.290 Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) SPOperator:

 $\begin{array}{c} & Concentration \\ Analyte: & ug/L\ (ppb) \end{array}$

Arsenic 4.88 Copper 7.59 Manganese 883

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: CCW-2A-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/14/23 Project: TWAAFA-001, F&BI 312273

Date Extracted: 12/18/23 Lab ID: 312273-01 x100
Date Analyzed: 12/20/23 Data File: 312273-01 x100.051

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Iron 14,000

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: CCW-2B-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/14/23 Project: TWAAFA-001, F&BI 312273

Lab ID: Date Extracted: 12/18/23 312273-02 Date Analyzed: 12/19/23 Data File: 312273-02.279 Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) SPOperator:

Concentration

Analyte: ug/L (ppb)

Copper 0.730 Manganese 211

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: CCW-2B-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/14/23 Project: TWAAFA-001, F&BI 312273

 Date Extracted:
 12/18/23
 Lab ID:
 312273-02 x50

 Date Analyzed:
 12/20/23
 Data File:
 312273-02 x50.052

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Arsenic 1,140 Iron 4,430

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: TWA-9D-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/14/23 Project: TWAAFA-001, F&BI 312273

 Date Extracted:
 12/18/23
 Lab ID:
 312273-03 x4

 Date Analyzed:
 12/20/23
 Data File:
 312273-03 x4.060

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Copper <2.4

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: TWA-9D-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/14/23 Project: TWAAFA-001, F&BI 312273

 Date Extracted:
 12/18/23
 Lab ID:
 312273-03 x10

 Date Analyzed:
 12/19/23
 Data File:
 312273-03 x10.137

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Analyte: Concentration ug/L (ppb)

Arsenic 11.7 Iron 806 Manganese 63.1

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: Method Blank Client: Dalton Olmsted Fuglevand Date Received: Not Applicable Project: TWAAFA-001, F&BI 312273

Lab ID: Date Extracted: 12/18/23 I3-999 mb Date Analyzed: 12/18/23 Data File: I3-999 mb.049 Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) SPOperator:

Analyte: Concentration ug/L (ppb)

 Arsenic
 <1</td>

 Copper
 <0.6</td>

 Iron
 <50</td>

 Manganese
 <1</td>

ENVIRONMENTAL CHEMISTS

Date of Report: 12/29/23 Date Received: 12/14/23

Project: TWAAFA-001, F&BI 312273

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 6020B

Laboratory Code: 312273-02 x10 (Matrix Spike)

				Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Arsenic	ug/L (ppb)	10	1,110	304 b	625 b	75-125	69 b
Copper	ug/L (ppb)	20	< 50	89	87	75 - 125	2
Iron	ug/L (ppb)	100	4,770	133 b	210 b	75 - 125	45 b
Manganese	ug/L (ppb)	20	188	103 b	110 b	75 - 125	7 b

Laboratory Code: Laboratory Control Sample

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	ug/L (ppb)	10	87	80-120
Copper	ug/L (ppb)	20	91	80-120
Iron	ug/L (ppb)	100	87	80-120
Manganese	ug/L (ppb)	20	83	80-120

ENVIRONMENTAL CHEMISTS

Date of Report: 12/29/23 Date Received: 12/14/23

Project: TWAAFA-001, F&BI 312273

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 312273-02 x10 (Matrix Spike)

				Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Arsenic	ug/L (ppb)	10	1,200	0 b	0 b	75-125	nm
Copper	ug/L (ppb)	20	< 50	91	90	75 - 125	1
Iron	ug/L (ppb)	100	5,320	0 b	0 b	75 - 125	nm
Manganese	ug/L (ppb)	20	205	13 b	37 b	75 - 125	96 b

Laboratory Code: Laboratory Control Sample

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	ug/L (ppb)	10	87	80-120
Copper	ug/L (ppb)	20	91	80-120
Iron	ug/L (ppb)	100	89	80-120
Manganese	ug/L (ppb)	20	88	80-120

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.
- c The presence of the analyte may be due to carryover from previous sample injections.
- cf The sample was centrifuged prior to analysis.
- d The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv Insufficient sample volume was available to achieve normal reporting limits.
- f The sample was laboratory filtered prior to analysis.
- fb The analyte was detected in the method blank.
- fc The analyte is a common laboratory and field contaminant.
- hr The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs Headspace was present in the container used for analysis.
- ht The analysis was performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of control limits due to sample matrix effects.
- j The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- k The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.
- lc The presence of the analyte is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Ph. (206) 285-8282 Received by:	3012 16th Avenue West Seattle, WA 98119-2029 Received by:	Friedman & Bruya, Inc. Before is the by: Before is the base of t			A FA			TWA-9D-1223 03 A-C 12/14/23 1520	CCW-28-1273 01 A-I 12/24/13 1355	CCW-2A-1223 01 A-C 12/14/23 1245	Sample ID Lab ID Date Time Sampled Sampled		Phone 215-767-7749 Email acerruti@dofnw.com	City, State, ZIP_Seattle, WA 98134		Company DOF	Report To: Anthony Cerruti / Trevor Louviere	3/2173
								٤	٤	٤	Sample Matrix B		Project S	REMARKS Dissolved met		PROJEC		SAMPLE CHAIN OF CUS
		1/40				_		W	2	W	Bottles Total Metals 6020B		Project Specific RLs	REMARKS Dissolved metals samples field filtered	TW	PROJECT NAME	ć	MPLE CHAIN OF
		PRINT				$\mid \cdot \mid$		X			(As, Cr, Cu, Mn, Ni, Pb, Zn) Dissolved Metals 6020B	*	s (Yes)/	les field filt	TWAAFA		503	OF CU
	Que -	TNAME									Zn) Total Mercury 1631E		No	ered at 0.45			,	JSTODY
	0	2						X	X	X	Dissolved Mercury 1631E Total Metals (Al, Fe)							X
		Cle						X		X	Dissolved Metals (Al, Fe)	*	DOF	INVOICE TO		PO# TWAAFA-001		12/1
	T	COMPANY	Samples				$\left \cdot \right $	X	X	X	Ferrors	$\left \cdot \right $		TO	<u> </u>) 		4/23
		Y	les rece	,								ANALY	Other_	SAI Dispose	Rush char	Standar RUSH	TUR	Page#
	h/K/	DATE 19/W	received at					Z	~	Z	MS/MSD Collected? (Y/N)	ANALYSES REQUESTED	Other	SAMPLE DISPOSAL Dispose after 30 days	Rush charges authorized by:	Standard Turnaround	TURNAROUND TIME	# 23
	16	23	to o					A1, A5, C-		AI, AS, C., TR, H-	N_0	QUESTE	=	POSAL	rized by:	ound	D TIME	of
	1651	TIME						5, G. K. T.	77,77	AI, AS, C., TR, H.	Notes	D						



3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya Michael Erdahl 5500 4th Ave S Seattle, WA 98108

RE: 312273

Work Order Number: 2312365

December 27, 2023

Attention Michael Erdahl:

Fremont Analytical, Inc. received 3 sample(s) on 12/15/2023 for the analyses presented in the following report.

Dissolved Metals by EPA Method 200.8 Ferrous Iron by SM3500-Fe B Total Metals by EPA Method 200.8

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Date: 12/27/2023



CLIENT: Friedman & Bruya Work Order Sample Summary

Project: 312273 **Work Order:** 2312365

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2312365-001	CCMW-2A-1223	12/14/2023 12:45 PM	12/15/2023 11:45 AM
2312365-002	CCMW-2B-1223	12/14/2023 1:55 PM	12/15/2023 11:45 AM
2312365-003	TWA-9D-1223	12/14/2023 3:20 PM	12/15/2023 11:45 AM



Case Narrative

WO#: **2312365**Date: **12/27/2023**

CLIENT: Friedman & Bruya

Project: 312273

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Notations:

In the original Ferrous Iron run, sample "TWA-9D-1223" was inadvertently used for the MS/MSD in place of "CCMW-2B-1223". To correct for the issue, "CCMW-2B-1223" was used for the MS/MSD in the following run and the results are presented in this report.



Qualifiers & Acronyms

WO#: **2312365**

Date Reported: 12/27/2023

Qualifiers:

- * Flagged value is not within established control limits
- B Analyte detected in the associated Method Blank
- D Dilution was required
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- I Analyte with an internal standard that does not meet established acceptance criteria
- J Analyte detected below Reporting Limit
- N Tentatively Identified Compound (TIC)
- Q Analyte with an initial or continuing calibration that does not meet established acceptance criteria
- S Spike recovery outside accepted recovery limits
- ND Not detected at the Reporting Limit
- R High relative percent difference observed

Acronyms:

%Rec - Percent Recovery

CCB - Continued Calibration Blank

CCV - Continued Calibration Verification

DF - Dilution Factor

DUP - Sample Duplicate

HEM - Hexane Extractable Material

ICV - Initial Calibration Verification

LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate

MCL - Maximum Contaminant Level

MB or MBLANK - Method Blank

MDL - Method Detection Limit

MS/MSD - Matrix Spike / Matrix Spike Duplicate

PDS - Post Digestion Spike

Ref Val - Reference Value

REP - Sample Replicate

RL - Reporting Limit

RPD - Relative Percent Difference

SD - Serial Dilution

SGT - Silica Gel Treatment

SPK - Spike

Surr - Surrogate



Analytical Report

Work Order: 2312365

Date Reported: 12/27/2023

Client: Friedman & Bruya Collection Date: 12/14/2023 12:45:00 PM

Project: 312273

Lab ID: 2312365-001 **Matrix:** Water

Client Sample ID: CCMW-2A-1223

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Metals by EPA Meth	od 200.8			Batc	n ID: 424	426 Analyst: SS
Aluminum	35.3	10.0		μg/L	1	12/22/2023 7:33:00 PM
Total Metals by EPA Method 2	00.8			Batcl	n ID: 420	397 Analyst: SLL
Aluminum	41.7	10.0		μg/L	1	12/21/2023 2:26:00 PM
Ferrous Iron by SM3500-Fe B				Batcl	n ID: R8	8407 Analyst: FG
Ferrous Iron	10.7	3.75	D	mg/L	25	12/15/2023 12:17:59 PM



Analytical Report

Work Order: **2312365**Date Reported: **12/27/2023**

Client: Friedman & Bruya Collection Date: 12/14/2023 1:55:00 PM

Project: 312273

Lab ID: 2312365-002 **Matrix:** Water

Client Sample ID: CCMW-2B-1223

Analyses	Result	RL (Qual	Units	DF	Date Analyzed
Dissolved Metals by EPA Method	1 200.8			Batch	n ID:	42426 Analyst: SS
Aluminum	ND	10.0		μg/L	1	12/22/2023 7:24:00 PM
Total Metals by EPA Method 200) <u>.8</u>			Batch	n ID:	42397 Analyst: SLL
Aluminum	ND	10.0		μg/L	1	12/21/2023 2:19:00 PM
Ferrous Iron by SM3500-Fe B				Batch	n ID:	R88407 Analyst: FG
Ferrous Iron	0.747	0.150		mg/L	1	12/15/2023 12:17:59 PM



Analytical Report

Work Order: 2312365

Date Reported: 12/27/2023

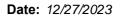
Client: Friedman & Bruya Collection Date: 12/14/2023 3:20:00 PM

Project: 312273

Lab ID: 2312365-003 **Matrix:** Water

Client Sample ID: TWA-9D-1223

Analyses	Result	RL C	Qual	Units	DF	Date Analyzed
Dissolved Metals by EPA Method	1 200.8			Batch	n ID:	42426 Analyst: SS
Aluminum	ND	10.0		μg/L	1	12/22/2023 7:35:00 PM
Total Metals by EPA Method 200	<u>).8</u>			Batch	n ID:	42397 Analyst: SLL
Aluminum	ND	10.0		μg/L	1	12/21/2023 2:28:00 PM
Ferrous Iron by SM3500-Fe B				Batch	n ID:	R88407 Analyst: FG
Ferrous Iron	0.399	0.150		mg/L	1	12/15/2023 12:17:59 PM





CLIENT: Friedman & Bruya

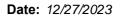
Project: 312273

QC SUMMARY REPORT

Ferrous Iron by SM3500-Fe B

512273							-	
Sample ID: CCV-R88407A	SampType: CCV			Units: mg/L	Prep Dat	e: 12/15/2023	RunNo: 88407	
Client ID: CCV	Batch ID: R88407				Analysis Dat	e: 12/15/2023	SeqNo: 1846072	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Ferrous Iron	0.439	0.150	0.4000	0	110 85	115		
Sample ID: CCB-R88407	SampType: CCB			Units: mg/L	Prep Dat	e: 12/15/2023	RunNo: 88407	
Client ID: CCB	Batch ID: R88407				Analysis Dat	e: 12/15/2023	SeqNo: 1846073	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Ferrous Iron	ND	0.150						
Sample ID: LCS-R88407	SampType: LCS			Units: mg/L	Prep Dat	e: 12/15/2023	RunNo: 88407	
Client ID: LCSW	Batch ID: R88407				Analysis Dat	e: 12/15/2023	SeqNo: 1846074	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Ferrous Iron	0.454	0.150	0.4000	0	113 85	115		
Sample ID: MB-R88407	SampType: MBLK			Units: mg/L	Prep Dat	e: 12/15/2023	RunNo: 88407	
Client ID: MBLKW	Batch ID: R88407				Analysis Dat	e: 12/15/2023	SeqNo: 1846075	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Ferrous Iron	ND	0.150						
Sample ID: 2312365-003CDUP	SampType: DUP			Units: mg/L	Prep Dat	e: 12/15/2023	RunNo: 88407	
Client ID: TWA-9D-1223	Batch ID: R88407				Analysis Dat	e: 12/15/2023	SeqNo: 1846079	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Ferrous Iron	0.396	0.150				0.3993	0.760 20	

Original Page 8 of 21





CLIENT: Friedman & Bruya

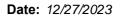
Project: 312273

QC SUMMARY REPORT

Ferrous Iron by SM3500-Fe B

Project: 312273								•	
Sample ID: 2312365-003CMS	SampType: MS			Units: mg/L		Prep Date	: 12/15/2023	RunNo: 88407	
Client ID: TWA-9D-1223	Batch ID: R88407					Analysis Date	12/15/2023	SeqNo: 1846080	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Ferrous Iron	0.789	0.150	0.4000	0.3993	97.5	70	130		
Sample ID: 2312365-003CMSD	SampType: MSD			Units: mg/L		Prep Date	: 12/15/2023	RunNo: 88407	
Client ID: TWA-9D-1223	Batch ID: R88407					Analysis Date	12/15/2023	SeqNo: 1846081	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Ferrous Iron NOTES:	0.934	0.150	0.4000	0.3993	134	70	130 0.7892	16.8 30	S
S - Spiked amount was low related	tive to sample concentratio	n. Outlying	spike recover	ies may be expected	l				
Sample ID: CCV-R88407B	SampType: CCV			Units: mg/L		Prep Date	12/15/2023	RunNo: 88407	
Client ID: CCV	Batch ID: R88407					Analysis Date	12/15/2023	SeqNo: 1846236	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Ferrous Iron	0.433	0.150	0.4000	0	108	85	115		
Sample ID: CCB-R88407B	SampType: CCB			Units: mg/L		Prep Date	: 12/15/2023	RunNo: 88407	
Client ID: CCB	Batch ID: R88407					Analysis Date	12/15/2023	SeqNo: 1846237	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Ferrous Iron	ND	0.150							
Sample ID: CCV-R88407C	SampType: CCV			Units: mg/L		Prep Date	: 12/15/2023	RunNo: 88407	
Client ID: CCV	Batch ID: R88407					Analysis Date	12/15/2023	SeqNo: 1846241	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Ferrous Iron	0.405	0.150	0.4000	0	101	85	115		

Original Page 9 of 21





CLIENT: Friedman & Bruya

Project: 312273

Ferrous Iron

QC SUMMARY REPORT

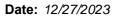
Ferrous Iron by SM3500-Fe B

Project: 312273							•	
Sample ID: CCB-R88407C	SampType: CCB			Units: mg/L	Prep D	ate: 12/15/2023	RunNo: 88407	
Client ID: CCB	Batch ID: R88407				Analysis D	ate: 12/15/2023	SeqNo: 1846242	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Ferrous Iron	ND	0.150						
Sample ID: CCV-R88521	SampType: CCV			Units: mg/L	Prep D	ate: 12/18/2023	RunNo: 88521	
Client ID: CCV	Batch ID: R88521				Analysis D	ate: 12/18/2023	SeqNo: 1848523	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Ferrous Iron	0.417	0.150	0.4000	0	104 85	115		
Sample ID: CCB-R88521	SampType: CCB			Units: mg/L	Prep D	ate: 12/18/2023	RunNo: 88521	
Client ID: CCB	Batch ID: R88521				Analysis D	ate: 12/18/2023	SeqNo: 1848524	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Ferrous Iron	ND	0.150						
Sample ID: LCS-R88521	SampType: LCS			Units: mg/L	Prep D	ate: 12/18/2023	RunNo: 88521	
Client ID: LCSW	Batch ID: R88521				Analysis D	ate: 12/18/2023	SeqNo: 1848525	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Ferrous Iron	0.448	0.150	0.4000	0	112 85	115		
Sample ID: MB-R88521	SampType: MBLK			Units: mg/L	Prep D	ate: 12/18/2023	RunNo: 88521	
Client ID: MBLKW	Batch ID: R88521				Analysis D	ate: 12/18/2023	SeqNo: 1848526	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual

Original Page 10 of 21

ND

0.150





CLIENT: Friedman & Bruya

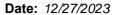
Project: 312273

QC SUMMARY REPORT

Ferrous Iron by SM3500-Fe B

Sample ID: 2312396-002ADUP	SampType: DUP			Units: mg/L		Prep Date	12/18/2023		RunNo: 885	521	
Client ID: BATCH	Batch ID: R88521					Analysis Date	12/18/2023		SeqNo: 184	18529	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit RPD F	Ref Val	%RPD	RPDLimit	Qual
Ferrous Iron	0.363	0.150						0.3721	2.47	20	Н
Sample ID: 2312396-002AMS	SampType: MS			Units: mg/L		Prep Date	: 12/18/2023		RunNo: 885	521	
Client ID: BATCH	Batch ID: R88521					Analysis Date	12/18/2023		SeqNo: 184	18530	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit RPD F	Ref Val	%RPD	RPDLimit	Qual
Ferrous Iron	0.798	0.150	0.4000	0.3721	107	70	130				Н
Sample ID: 2312396-002AMSD	SampType: MSD			Units: mg/L		Prep Date	12/18/2023		RunNo: 885	521	
Client ID: BATCH	Batch ID: R88521					Analysis Date	12/18/2023		SeqNo: 184	18531	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit RPD F	Ref Val	%RPD	RPDLimit	Qual
Ferrous Iron	0.777	0.150	0.4000	0.3721	101	70	130	0.7982	2.69	30	Н
Sample ID: CCV-R88521	SampType: CCV			Units: mg/L		Prep Date	12/18/2023		RunNo: 885	521	
Client ID: CCV	Batch ID: R88521					Analysis Date	12/18/2023		SeqNo: 184	18533	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit RPD F	Ref Val	%RPD	RPDLimit	Qual
Ferrous Iron	0.457	0.150	0.4000	0	114	85	115				
Sample ID: CCB-R88521	SampType: CCB			Units: mg/L		Prep Date	12/18/2023		RunNo: 885	521	
Client ID: CCB	Batch ID: R88521					Analysis Date	12/18/2023		SeqNo: 184	18534	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit RPD F	Ref Val	%RPD	RPDLimit	Qual
Ferrous Iron	ND	0.150									

Original Page 11 of 21





CLIENT: Friedman & Bruya

Project: 312273

QC SUMMARY REPORT

Ferrous Iron by SM3500-Fe B

Sample ID: 2312365-002CMS	SampType: MS			Units: mg/L		Prep Da	te: 12/18/2	2023	RunNo: 885	521	
Client ID: CCMW-2B-1223	Batch ID: R88521					Analysis Da	te: 12/18/2	2023	SeqNo: 184	18536	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ferrous Iron NOTES: S - Spiked amount was low related.	0.647 ive to sample concentration	0.150 n. Outlying	0.4000 spike recoveri	0.5262 es may be expected	30.2	70	130				SH
Sample ID: 2312365-002CMSD	SampType: MSD			Units: mg/L		Prep Da	te: 12/18/2	2023	RunNo: 885	521	

Sample ID: 2312365-002CMSD	SampType: MSD			Units: mg/L		Prep Dat	te: 12/18/2	023	RunNo: 885	521	
Client ID: CCMW-2B-1223	Batch ID: R88521					Analysis Da	te: 12/18/2	023	SeqNo: 18 4	↓8537	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ferrous Iron	0.659	0.150	0.4000	0.5262	33.2	70	130	0.6471	1.85	30	SH

NOTES:

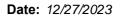
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Sample ID: CCV-R88521	SampType: CCV			Units: mg/L		Prep Da	te: 12/18/2	023	RunNo: 885	521	
Client ID: CCV	Batch ID: R88521					Analysis Da	te: 12/18/2	2023	SeqNo: 184	18538	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ferrous Iron	0.439	0.150	0.4000	0	110	85	115				

Sample ID: CCB-R88521	SampType: CCB		Units: mg/L		Prep Date: 12/18/2023	RunNo: 88521
Client ID: CCB	Batch ID: R88521				Analysis Date: 12/18/2023	SeqNo: 1848539
Analyte	Result	RL	SPK value SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual

Ferrous Iron ND 0.150

Original Page 12 of 21



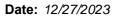


QC SUMMARY REPORT

CLIENT: Friedman & Bruya

Project: 3	12273						Dissolved Me	tals by EPA Method	200.8
Sample ID: ICB	SampType: ICB			Units: µg/L		Prep Date	12/22/2023	RunNo: 88568	
Client ID: ICB	Batch ID: 4242	6				Analysis Date	12/22/2023	SeqNo: 1849551	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	ND	10.0							
Sample ID: ICV	SampType: ICV			Units: µg/L		Prep Date	: 12/22/2023	RunNo: 88568	
Client ID: ICV	Batch ID: 4242	6				Analysis Date	12/22/2023	SeqNo: 1849552	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	1,510	10.0	1,500	0	101	90	110		
Sample ID: CCV-4252	26A SampType: CCV			Units: µg/L		Prep Date	: 12/22/2023	RunNo: 88568	
Client ID: CCV	Batch ID: 4242	6				Analysis Date	12/22/2023	SeqNo: 1849555	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	996	10.0	1,000	0	99.6	90	110		
Sample ID: CCB-4252	26A SampType: CCB			Units: µg/L		Prep Date	: 12/22/2023	RunNo: 88568	
Client ID: CCB	Batch ID: 4242	6				Analysis Date	12/22/2023	SeqNo: 1849556	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	ND	10.0							
Sample ID: MB-42420	SampType: MBL	K		Units: µg/L		Prep Date	: 12/22/2023	RunNo: 88568	
Client ID: MBLKW	Batch ID: 4242	6				Analysis Date	12/22/2023	SeqNo: 1849557	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	ND	10.0							

Page 13 of 21 Original





CLIENT: Friedman & Bruya

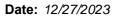
Project: 312273

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

110ject. 012270									
Sample ID: LCS-42426	SampType: LCS			Units: µg/L		Prep Date	: 12/22/2023	RunNo: 88568	
Client ID: LCSW	Batch ID: 42426					Analysis Date	12/22/2023	SeqNo: 1849558	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit RPD Ref Val	I %RPD RPDLimit	Qual
Aluminum	1,020	10.0	1,000	0	102	85	115		
Sample ID: 2312365-002BDUP	SampType: DUP			Units: µg/L		Prep Date	12/22/2023	RunNo: 88568	
Client ID: CCMW-2B-1223	Batch ID: 42426					Analysis Date	12/22/2023	SeqNo: 1849560	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit RPD Ref Val	I %RPD RPDLimit	Qual
Aluminum	ND	10.0					0	30	
Sample ID: 2312365-002BMS	SampType: MS			Units: µg/L		Prep Date	12/22/2023	RunNo: 88568	
Client ID: CCMW-2B-1223	Batch ID: 42426					Analysis Date	12/22/2023	SeqNo: 1849561	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit RPD Ref Val	I %RPD RPDLimit	Qual
Aluminum	1,030	10.0	1,000	0	103	50	150		
Sample ID: 2312365-002BMSD	SampType: MSD			Units: µg/L		Prep Date	: 12/22/2023	RunNo: 88568	
Client ID: CCMW-2B-1223	Batch ID: 42426					Analysis Date	12/22/2023	SeqNo: 1849562	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit RPD Ref Val	I %RPD RPDLimit	Qual
Aluminum	1,040	10.0	1,000	0	104	50	150 1,032	2 0.643 30	
Sample ID: CCV-42526B	SampType: CCV			Units: µg/L		Prep Date	: 12/22/2023	RunNo: 88568	
Client ID: CCV	Batch ID: 42426					Analysis Date	12/22/2023	SeqNo: 1849567	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit RPD Ref Val	I %RPD RPDLimit	Qual
Aluminum	1,040	10.0	1,000	0	104	90	110		

Original Page 14 of 21





CLIENT: Friedman & Bruya

Project: 312273

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Project: 3122/3								,	
Sample ID: CCB-42526B	SampType: CCB			Units: µg/L		Prep Date:	12/22/2023	RunNo: 88568	
Client ID: CCB	Batch ID: 42426					Analysis Date:	12/22/2023	SeqNo: 1849568	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD RPDLi	mit Qua
Aluminum	ND	10.0							
Sample ID: 2312427-001CMS	SampType: MS			Units: µg/L		Prep Date:	12/22/2023	RunNo: 88568	
Client ID: BATCH	Batch ID: 42426					Analysis Date:	12/22/2023	SeqNo: 1849578	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD RPDLi	mit Qua
Aluminum	1,010	10.0	1,000	0	101	50	150		
Sample ID: CCV-42526C	SampType: CCV			Units: µg/L		Prep Date:	12/22/2023	RunNo: 88568	
Client ID: CCV	Batch ID: 42426					Analysis Date:	12/22/2023	SeqNo: 1849579	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD RPDLi	mit Qua
Aluminum	1,010	10.0	1,000	0	101	90	110		
Sample ID: CCB-42526C	SampType: CCB			Units: µg/L		Prep Date:	12/22/2023	RunNo: 88568	
Client ID: CCB	Batch ID: 42426					Analysis Date:	12/22/2023	SeqNo: 1849580	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD RPDLi	mit Qua
Aluminum	ND	10.0							
Sample ID: CCV-42526D	SampType: CCV			Units: µg/L		Prep Date:	12/22/2023	RunNo: 88568	
Client ID: CCV	Batch ID: 42426					Analysis Date:	12/22/2023	SeqNo: 1849694	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD RPDLi	mit Qua
Aluminum	1,010	10.0	1,000	0	101	90	110		

Original Page 15 of 21

Date: 12/27/2023



Work Order: 2312365

QC SUMMARY REPORT

CLIENT: Friedman & Bruya

Dissolved Metals by EPA Method 200.8

Project: 312273

Sample ID: CCB-42526C

SampType: CCB Units: µg/L

Prep Date: 12/22/2023 RunN

RunNo: 88568

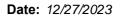
Client ID: CCB Batch ID: 42426

Analysis Date: 12/22/2023 SeqNo: 1849695

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Aluminum ND 10.0

Original Page 16 of 21





CLIENT: Friedman & Bruya

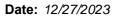
Project: 312273

QC SUMMARY REPORT

Total Metals by EPA Method 200.8

512273						-
Sample ID: ICB	SampType: ICB			Units: µg/L	Prep Date: 12/21/2023	RunNo: 88509
Client ID: ICB	Batch ID: 42397				Analysis Date: 12/21/2023	SeqNo: 1848375
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum	ND	10.0				
Sample ID: ICV	SampType: ICV			Units: µg/L	Prep Date: 12/21/2023	RunNo: 88509
Client ID: ICV	Batch ID: 42397				Analysis Date: 12/21/2023	SeqNo: 1848376
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum	1,450	10.0	1,500	0	96.8 90 110	
Sample ID: CCV-42397A	SampType: CCV			Units: µg/L	Prep Date: 12/21/2023	RunNo: 88509
Client ID: CCV	Batch ID: 42397				Analysis Date: 12/21/2023	SeqNo: 1848377
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum	986	10.0	1,000	0	98.6 90 110	
Sample ID: CCB-42397A	SampType: CCB			Units: µg/L	Prep Date: 12/21/2023	RunNo: 88509
Client ID: CCB	Batch ID: 42397				Analysis Date: 12/21/2023	SeqNo: 1848378
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum	ND	10.0				
Sample ID: MB-42397	SampType: MBLK			Units: µg/L	Prep Date: 12/19/2023	RunNo: 88509
Client ID: MBLKW	Batch ID: 42397				Analysis Date: 12/21/2023	SeqNo: 1848379
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum	ND	10.0				

Original Page 17 of 21





CLIENT: Friedman & Bruya

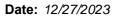
Project: 312273

QC SUMMARY REPORT

Total Metals by EPA Method 200.8

Sample ID: 2312365-002AMS	SampType: MS			Units: µg/L		Prep Date:	12/19/2023	RunNo: 88509	
Client ID: CCMW-2B-1223	Batch ID: 42397					Analysis Date:	12/21/2023	SeqNo: 1848382	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	728	10.0	1,000	0	72.8	70	130		
Sample ID: 2312365-002AMSD	SampType: MSD			Units: µg/L		Prep Date:	12/19/2023	RunNo: 88509	
Client ID: CCMW-2B-1223	Batch ID: 42397					Analysis Date:	12/21/2023	SeqNo: 1848383	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	926	10.0	1,000	0	92.6	70	130 728.2	24.0 30	
Sample ID: CCV-42397B	SampType: CCV			Units: µg/L		Prep Date:	12/21/2023	RunNo: 88509	
Client ID: CCV	Batch ID: 42397					Analysis Date:	12/21/2023	SeqNo: 1848393	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	1,010	10.0	1,000	0	101	90	110		
Sample ID: CCB-42397B	SampType: CCB			Units: µg/L		Prep Date:	12/21/2023	RunNo: 88509	
Client ID: CCB	Batch ID: 42397					Analysis Date:	12/21/2023	SeqNo: 1848394	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	ND	10.0							
Sample ID: 2312350-001AMS	SampType: MS			Units: µg/L		Prep Date:	12/19/2023	RunNo: 88509	
Client ID: BATCH	Batch ID: 42397					Analysis Date:	12/21/2023	SeqNo: 1848396	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	865	10.0	1,000	34.80	83.1	70	130		

Original Page 18 of 21





CLIENT: Friedman & Bruya

Project: 312273

QC SUMMARY REPORT

Total Metals by EPA Method 200.8

512273						•
Sample ID: CCV-42397C	SampType: CCV			Units: μg/L	Prep Date: 12/21/2023	RunNo: 88509
Client ID: CCV	Batch ID: 42397				Analysis Date: 12/21/2023	SeqNo: 1848405
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum	998	10.0	1,000	0	99.8 90 110	
Sample ID: CCB-42397C	SampType: CCB			Units: µg/L	Prep Date: 12/21/2023	RunNo: 88509
Client ID: CCB	Batch ID: 42397				Analysis Date: 12/21/2023	SeqNo: 1848406
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum	ND	10.0				
Sample ID: CCV-42397D	SampType: CCV			Units: μg/L	Prep Date: 12/21/2023	RunNo: 88509
Client ID: CCV	Batch ID: 42397				Analysis Date: 12/21/2023	SeqNo: 1848412
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum	986	10.0	1,000	0	98.6 90 110	
Sample ID: CCB-42397D	SampType: CCB			Units: µg/L	Prep Date: 12/21/2023	RunNo: 88509
Client ID: CCB	Batch ID: 42397				Analysis Date: 12/21/2023	SeqNo: 1848413
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum	ND	10.0				
Sample ID: LCS-42397	SampType: LCS			Units: μg/L	Prep Date: 12/19/2023	RunNo: 88509
Client ID: LCSW	Batch ID: 42397				Analysis Date: 12/21/2023	SeqNo: 1848471
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum	1,020	10.0	1,000	0	102 85 115	

Original Page 19 of 21



Sample Log-In Check List

Clie	ent Name:	FB			Work Orde	er Numbe	r: 2312365		
Lo	gged by:	Lyann Rivera			Date Rece	eived:	12/15/202	3 11:45:00 AM	
<u>Chai</u>	in of Custo	ody							
1.	ls Chain of C	ustody complete?			Yes 🖢	/	No 🗌	Not Present	
2. 1	How was the	sample delivered?			Courier	[
Log	<u>In</u>								
		s present on shipping containe ments for Custody Seals not i			Yes		No \square	Not Present ✓	
4. V	Nas an attem	pt made to cool the samples?)		Yes 🛂	•	No \square	NA 🗆	
5. V	Were all items	s received at a temperature of	>2°C to 6°C	*	Yes 🛂	•	No 🗌	NA \square	
6. S	Sample(s) in	proper container(s)?			Yes 🗸	•	No \square		
7. 8	Sufficient sam	ple volume for indicated test(s)?		Yes 🗸	•	No \square		
8. <i>P</i>	8. Are samples properly preserved?					•	No \square		
9. V	Was preserva	tive added to bottles?			Yes		No 🗸	NA \square	
10. ls	s there heads	space in the VOA vials?			Yes 🗆		No \square	NA 🗹	
11. Did all samples containers arrive in good condition(unbroken)?					Yes 🗸	•	No 🗌		
12. 🛚	Does paperwo	ork match bottle labels?			Yes 🗸	•	No \square		
13. ^A	Are matrices	correctly identified on Chain o	f Custody?		Yes 🗸	•	No 🗌		
14. ls	s it clear wha	t analyses were requested?			Yes 🛂	•	No 🗌		
	Were all hold be met?	times (except field parameter	s, pH e.g.) abl	le to	Yes 🛂	•	No \square		
<u>Spe</u>	<u>cial Handl</u>	<u>ling (if applicable)</u>							
16.	Was client n	otified of all discrepancies with	n this order?		Yes		No 🗌	NA 🗸	_
	Person	Notified:		Date					
	By Who	om:		Via:	eMail	Phor	ne 🗌 Fax	☐ In Person	
	Regard	ing:							
	Client I	nstructions:							
17.	Additional re	marks:							_
<u>Item</u>	<u>Information</u>								
		Item #	Temp °C						
	Sample		2.6						

^{*} Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Seattle, WA 98119-2029 Ph. (206) 285-8282 Fax (206) 283-5044	3012 16th Avenue West	Friedman & Bruya, Inc.	Sample ID CCMW-2A-1223 CCMW-2B-1232 TWA-9D-1223		Phone # (206) 28	City, State, ZIP	Address	Company	Send Report To
2 2029	West	a, Inc.	Lab		85-8282	Seattle, V	5500 4th Ave S	Friedma	Michael Erdahl
Relinquished by:	1/4	S	Date Sampled 12/14/2023 12/14/2023 12/14/2023		(206) 285-8282 merdahl@friedmanandbruya.com	Seattle, WA 98108	Ave S	Friedman and Bruya, Inc	Erdahl
	tra	SIGNATURE	Time Sampled 1245 1355 1520		manandbruya.			nc.	
	(7	Matrix water water water		com	REN		PRO	SUB
Broke	Michael Erdahl		# of jars		Tier	REMARKS		PROJECT NAME/NO	SUBCONTRACTER Fremont
The state of the s	el Erc	.p	× × × total aluminum		IV, E		312273	AME	TRACTER Fremont
	lahl	PRINT NAME	× × × dissolved aluminum		Tier IV, EQuIS 4		73	/NO.	ER It
Col		NAM	× × × ferrous iron						
E		(3)	ferrous iron	ANA		-	_		
			dissolved gases	YSE					
	Frie		TOC	ANALYSES REQUESTED			D-596	PO#	
7	Friedman & Bruya	COI		UEST					
	& Bru	COMPANY		CED			R	×	7
-	ıya	Y			Return Will ca	S./ Dispose	ish cha	Standa	TU
13/1923	12/5/25	DATE	MS/MD N		Return samples Will call with instructions	SAMPLE DISPOSAL Dispose after 30 days	Rush charges authorized by:	⊠ Standard TAT RUSH	Page # 1 of TURNAROUND TIME
	9	-1	Notes		tions	DSAL	d by:		of

TIME

9469

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TURNAROUND TIME l of

Page 21 of 21

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Vineta Mills, M.S. Eric Young, B.S.

5500 4th Avenue South Seattle, WA 98108 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

December 29, 2023

Trevor Louviere, Project Manager Dalton Olmsted Fuglevand 1001 SW Klickitat Way, Suite 200B Seattle, WA 98134

Dear Mr Louviere:

Included are the results from the testing of material submitted on December 15, 2023 from the TWAAFA-001, F&BI 312301 project. There are 16 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures

c: Anthony Cerruti, Tasya Gray

DOF1229R.DOC

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on December 15, 2023 by Friedman & Bruya, Inc. from the Dalton Olmsted Fuglevand TWAAFA-001, F&BI 312301 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Dalton Olmsted Fuglevand
312301 -01	CTMW-23R2-1223
312301 -02	Field Blank #1-1223
312301 -03	CTMW-11R2-1223

The samples were sent to Fremont Analytical for ferrous iron, total aluminum, and dissolved aluminum analyses. The report is enclosed.

The 1631E calibration standard exceeded the acceptance criteria. Mercury was not detected, therefore this did not represent an out of control condition.

All other quality control requirements were acceptable.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	CTMW-23R2-1223	Client:	Dalton Olmsted Fuglevand
Date Received:	12/15/23	Project:	TWAAFA-001, F&BI 312301
Date Extracted:	12/18/23	Lab ID:	312301-01
		T . T111	

Date Analyzed: 12/19/23 Data File: 312301-01.288
Matrix: Water Instrument: ICPMS2
Units: ug/L (ppb) Operator: SP

 $\begin{array}{c} \text{Concentration} \\ \text{Analyte:} \\ \text{ug/L (ppb)} \end{array}$

 Arsenic
 3.59

 Copper
 0.607

 Iron
 660

 Manganese
 493

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: CTMW-11R2-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/15/23 Project: TWAAFA-001, F&BI 312301

Date Extracted: 12/18/23 Lab ID: 312301-03 x4
Date Analyzed: 12/20/23 Data File: 312301-03 x4.059

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Copper <2.4

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: CTMW-11R2-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/15/23 Project: TWAAFA-001, F&BI 312301

 Date Extracted:
 12/18/23
 Lab ID:
 312301-03 x5

 Date Analyzed:
 12/19/23
 Data File:
 312301-03 x5.254

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Arsenic <5 Manganese <5

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: CTMW-11R2-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/15/23 Project: TWAAFA-001, F&BI 312301

 Date Extracted:
 12/18/23
 Lab ID:
 312301-03 x50

 Date Analyzed:
 12/19/23
 Data File:
 312301-03 x50.128

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Iron 4,260

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: Method Blank Client: Dalton Olmsted Fuglevand Date Received: Not Applicable Project: TWAAFA-001, F&BI 312301

Date Extracted: 12/18/23 Lab ID: I3-1001 mb
Date Analyzed: 12/18/23 Data File: I3-1001 mb.051
Matrix: Water Instrument: ICPMS2

Units: ug/L (ppb) Operator: SP

 $\begin{array}{c} \text{Concentration} \\ \text{Analyte:} \\ \text{ug/L (ppb)} \end{array}$

 Arsenic
 <1</td>

 Copper
 <0.6</td>

 Iron
 <50</td>

 Manganese
 <1</td>

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CTMW-23R2-1223	Client:	Dalton Olmsted Fuglevand
Date Received:	12/15/23	Project:	TWAAFA-001, F&BI 312301
Date Extracted:	12/18/23	Lab ID:	312301-01
Date Analyzed:	12/19/23	Data File:	312301-01.292
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	3.45
Copper	1.92
Iron	780
Manganese	542

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Field Blank #1-1223	Client:	Dalton Olmsted Fuglevand
Date Received:	12/15/23	Project:	TWAAFA-001, F&BI 312301
Date Extracted:	12/18/23	Lab ID:	312301-02
Date Analyzed:	12/19/23	Data File:	312301-02.293
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)	
Arsenic	<1	
Chromium	1.22	
Copper	< 0.6	
Iron	<50	
Lead	<1	
Manganese	1.46	
Nickel	<1	
Zinc	<5	

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: CTMW-11R2-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/15/23 Project: TWAAFA-001, F&BI 312301

 Date Extracted:
 12/18/23
 Lab ID:
 312301-03 x2

 Date Analyzed:
 12/19/23
 Data File:
 312301-03 x2.147

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

 $\begin{array}{ll} \text{Copper} & 1.67 \\ \text{Iron} & 3,520 \\ \text{Manganese} & <2 \end{array}$

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: CTMW-11R2-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/15/23 Project: TWAAFA-001, F&BI 312301

 Date Extracted:
 12/18/23
 Lab ID:
 312301-03 x5

 Date Analyzed:
 12/19/23
 Data File:
 312301-03 x5.265

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Arsenic <5

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Dalton Olmsted Fuglevand
Date Received:	Not Applicable	Project:	TWAAFA-001, F&BI 312301
T . T		T 1 TT	TO 000 1

Date Extracted: 12/18/23Lab ID: I3-999 mbDate Analyzed: 12/18/23 Data File: I3-999 mb.049 Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

<5

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Chromium	<1
Copper	< 0.6
Iron	< 50
Lead	<1
Manganese	<1
Nickel	<1

Zinc

ENVIRONMENTAL CHEMISTS

Date of Report: 12/29/23 Date Received: 12/15/23

Project: TWAAFA-001, F&BI 312301

Date Extracted: 12/18/23 Date Analyzed: 12/26/23

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E

Results Reported as ug/L (ppb)

Sample ID Total Mercury

Laboratory ID

Field Blank #1-1223 <0.02 k

312301-02

Method Blank <0.02 k

i3-1000 MB

ENVIRONMENTAL CHEMISTS

Date of Report: 12/29/23 Date Received: 12/15/23

Project: TWAAFA-001, F&BI 312301

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 6020B

Laboratory Code: 312273-02 x10 (Matrix Spike)

				Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Arsenic	ug/L (ppb)	10	1,110	304 b	625 b	75-125	69 b
Chromium	ug/L (ppb)	20	<10	86	84	75 - 125	2
Copper	ug/L (ppb)	20	< 50	89	87	75 - 125	2
Iron	ug/L (ppb)	100	4,770	133 b	210 b	75 - 125	45 b
Lead	ug/L (ppb)	10	<10	82	79	75 - 125	4
Manganese	ug/L (ppb)	20	188	103 b	110 b	75 - 125	7 b
Nickel	ug/L (ppb)	20	12.4	90 b	86 b	75 - 125	$5~\mathrm{b}$
Zinc	ug/L (ppb)	50	< 50	94	96	75 - 125	2

Laboratory Code: Laboratory Control Sample

			$\operatorname{Percent}$	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	ug/L (ppb)	10	87	80-120
Chromium	ug/L (ppb)	20	90	80-120
Copper	ug/L (ppb)	20	91	80-120
Iron	ug/L (ppb)	100	87	80-120
Lead	ug/L (ppb)	10	88	80-120
Manganese	ug/L (ppb)	20	83	80-120
Nickel	ug/L (ppb)	20	91	80-120
Zinc	ug/L (ppb)	50	95	80-120

ENVIRONMENTAL CHEMISTS

Date of Report: 12/29/23 Date Received: 12/15/23

Project: TWAAFA-001, F&BI 312301

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 312273-02 x10 (Matrix Spike)

				Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Arsenic	ug/L (ppb)	10	1,200	0 b	0 b	75-125	nm
Chromium	ug/L (ppb)	20	<10	90	89	75 - 125	1
Copper	ug/L (ppb)	20	< 50	91	90	75 - 125	1
Iron	ug/L (ppb)	100	5,320	0 b	0 b	75 - 125	nm
Lead	ug/L (ppb)	10	<10	85	84	75 - 125	1
Manganese	ug/L (ppb)	20	205	13 b	37 b	75 - 125	96 b
Nickel	ug/L (ppb)	20	12.4	92 b	89 b	75 - 125	3 b
Zinc	ug/L (ppb)	50	< 50	92	91	75 - 125	1

Laboratory Code: Laboratory Control Sample

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	ug/L (ppb)	10	87	80-120
Chromium	ug/L (ppb)	20	95	80-120
Copper	ug/L (ppb)	20	91	80-120
Iron	ug/L (ppb)	100	89	80-120
Lead	ug/L (ppb)	10	91	80-120
Manganese	ug/L (ppb)	20	88	80-120
Nickel	ug/L (ppb)	20	94	80-120
Zinc	ug/L (ppb)	50	95	80-120

ENVIRONMENTAL CHEMISTS

Date of Report: 12/29/23 Date Received: 12/15/23

Project: TWAAFA-001, F&BI 312301

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E

Laboratory Code: Laboratory Control Sample

			Percent	$\operatorname{Percent}$		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Mercury	ug/L (ppb)	0.01	109	118	66-126	8

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.
- c The presence of the analyte may be due to carryover from previous sample injections.
- cf The sample was centrifuged prior to analysis.
- d The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv Insufficient sample volume was available to achieve normal reporting limits.
- f The sample was laboratory filtered prior to analysis.
- fb The analyte was detected in the method blank.
- fc The analyte is a common laboratory and field contaminant.
- hr The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs Headspace was present in the container used for analysis.
- ht The analysis was performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of control limits due to sample matrix effects.
- j The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- k The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.
- lc The presence of the analyte is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

CTHW-23R2-1223 CTMW-1182-1223 Field Blank#1-1223 Address_ Company DOF Report To: Anthony Cerruti / Trevor Louviere Phone 215-767-7749 Email acerruti@dofnw.com City, State, ZIP Seattle, WA 98134 Seattle, WA 98119-2029 3012 16th Avenue West Friedman & Bruya, Inc. Ph. (206) 285-8282 Sample ID 1001 SW Klickitat Way 02 A-B 12/15/23 01 A-C 121,5/23 03 AC 12/15/13 Lab ID Received by: Relinquished by: Relinquished by: Received by: cc: Tasya Gray Sampled Date SIGNATURE Time Sampled 1015 1100 1010 proviewed Sample SAMPLE CHAIN OF CUSTODY Matrix E Z SAMPLERS (signature) Mygen Z PROJECT NAME Project Specific RLs micron before analysis Dissolved metals samples field filtered at 0.45 REMARKS Bottles ω # of S Custody Seal by Delivery Express Ciliat Schuman When Phan TWAAFA Total Metals 6020B (As, Cr, Cu, Mn, Ni, Pb, Zn) Yes / No PRINT NAME Dissolved Metals 6020B 23 (As, Cr, Cu, Mn, Ni, Pb, Zn) Total Mercury 1631E Dissolved Mercury 1631E Total Metals (Al, Fe) TWAAFA-001 INVOICE TO DOF Dissolved Metals (Al, Fe) 7827 Samples received Ferrous DOT COMPANY 115/23 Rush charges authorized by: Standard Turnaround Dispose after 30 days ANALYSES REQUESTED **Archive Samples** RUSH TURNAROUND TIME SAMPLE DISPOSAL at 12/15/23 | 1325 415113 12/15/23 MS/MSD Collected? DATE W (Y/N) ALL HOLD PO 27 Tot Mins Co Can Po ALL HOLD PO 27 Tot 10:55 Hetals ! Al, AS, Cu, Fe, Ma Al, AS, Cu, TR, Tax Tot/Diss Metals å Notes 1115 TIME

Z

In Mund



3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya Michael Erdahl 5500 4th Ave S Seattle, WA 98108

RE: 312301

Work Order Number: 2312392

December 27, 2023

Attention Michael Erdahl:

Fremont Analytical, Inc. received 3 sample(s) on 12/15/2023 for the analyses presented in the following report.

Dissolved Metals by EPA Method 200.8 Ferrous Iron by SM3500-Fe B Total Metals by EPA Method 200.8

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Date: 12/27/2023



CLIENT: Friedman & Bruya Work Order Sample Summary

Project: 312301 **Work Order:** 2312392

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2312392-001	CTMW-23R2-1223	12/15/2023 10:10 AM	12/15/2023 4:20 PM
2312392-002	Field Blank#1-1223	12/15/2023 10:15 AM	12/15/2023 4:20 PM
2312392-003	CTMW-11R2-1223	12/15/2023 11:00 AM	12/15/2023 4:20 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned



Case Narrative

WO#: **2312392**Date: **12/27/2023**

CLIENT: Friedman & Bruya

Project: 312301

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.



Qualifiers & Acronyms

WO#: **2312392**

Date Reported: 12/27/2023

Qualifiers:

- * Flagged value is not within established control limits
- B Analyte detected in the associated Method Blank
- D Dilution was required
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- I Analyte with an internal standard that does not meet established acceptance criteria
- J Analyte detected below Reporting Limit
- N Tentatively Identified Compound (TIC)
- Q Analyte with an initial or continuing calibration that does not meet established acceptance criteria
- S Spike recovery outside accepted recovery limits
- ND Not detected at the Reporting Limit
- R High relative percent difference observed

Acronyms:

%Rec - Percent Recovery

CCB - Continued Calibration Blank

CCV - Continued Calibration Verification

DF - Dilution Factor

DUP - Sample Duplicate

HEM - Hexane Extractable Material

ICV - Initial Calibration Verification

LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate

MCL - Maximum Contaminant Level

MB or MBLANK - Method Blank

MDL - Method Detection Limit

MS/MSD - Matrix Spike / Matrix Spike Duplicate

PDS - Post Digestion Spike

Ref Val - Reference Value

REP - Sample Replicate

RL - Reporting Limit

RPD - Relative Percent Difference

SD - Serial Dilution

SGT - Silica Gel Treatment

SPK - Spike

Surr - Surrogate



Analytical Report

Work Order: 2312392
Date Reported: 12/27/2023

Client: Friedman & Bruya Collection Date: 12/15/2023 10:10:00 AM

Project: 312301

Lab ID: 2312392-001 **Matrix:** Water

Client Sample ID: CTMW-23R2-1223

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Metals by EPA Method	d 200.8			Batch	n ID: 4	2426 Analyst: SS
Aluminum	22.8	10.0		μg/L	1	12/22/2023 7:38:00 PM
Total Metals by EPA Method 200	0.8			Batch	n ID: 4	2425 Analyst: SLL
Aluminum	77.2	10.0		μg/L	1	12/22/2023 6:22:00 PM
Ferrous Iron by SM3500-Fe B				Batch	n ID: F	R88407 Analyst: FG
Ferrous Iron	0.272	0.150		mg/L	1	12/15/2023 12:17:59 PM

Original



Analytical Report

Work Order: **2312392**Date Reported: **12/27/2023**

Client: Friedman & Bruya Collection Date: 12/15/2023 10:15:00 AM

Project: 312301

Lab ID: 2312392-002 **Matrix:** Water

Client Sample ID: Field Blank#1-1223

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Metals by EPA Method 200.8	3			Batch	n ID: 42	425 Analyst: SLL
Aluminum	ND	10.0		μg/L	1	12/22/2023 6:24:00 PM
Ferrous Iron by SM3500-Fe B				Batch	ı ID: R8	88407 Analyst: FG
Ferrous Iron	ND	0.150		mg/L	1	12/15/2023 12:17:59 PM

Original



Analytical Report

Work Order: **2312392**Date Reported: **12/27/2023**

Client: Friedman & Bruya Collection Date: 12/15/2023 11:00:00 AM

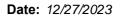
Project: 312301

Lab ID: 2312392-003 **Matrix:** Water

Client Sample ID: CTMW-11R2-1223

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Metals by EPA Meth	od 200.8			Batch	n ID: 4	2426 Analyst: SS
Aluminum	394	10.0		μg/L	1	12/22/2023 7:40:00 PM
Total Metals by EPA Method 2	00.8			Batch	n ID: 4	2425 Analyst: SLL
Aluminum	397	10.0		μg/L	1	12/22/2023 6:27:00 PM
Ferrous Iron by SM3500-Fe B				Batch	ı ID: R	88407 Analyst: FG
Ferrous Iron	ND	0.150		mg/L	1	12/15/2023 12:17:59 PM

Original





CLIENT: Friedman & Bruya

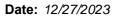
Project: 312301

QC SUMMARY REPORT

Ferrous Iron by SM3500-Fe B

512301									-		
Sample ID: CCV-R88407A	SampType: CCV			Units: mg/L	Prep Date: 12/15/2023 Analysis Date: 12/15/2023			RunNo: 884	407		
Client ID: CCV	Batch ID: R88407							SeqNo: 1846072			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC Low	vLimit HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Ferrous Iron	0.439	0.150	0.4000	0	110	85 115					
Sample ID: CCB-R88407	SampType: CCB			Units: mg/L	Prep Date: 12/15/2023			RunNo: 88407			
Client ID: CCB	Batch ID: R88407				Analysis Date: 12/15/2023			SeqNo: 1846073			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC Low	vLimit HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Ferrous Iron	ND	0.150									
Sample ID: LCS-R88407	SampType: LCS			Units: mg/L	Prep Date: 12/15/2023			RunNo: 88407			
Client ID: LCSW	Batch ID: R88407				Analysis Date: 12/15/2023			SeqNo: 1846074			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC Low	vLimit HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Ferrous Iron	0.454	0.150	0.4000	0	113	85 115					
Sample ID: MB-R88407	SampType: MBLK			Units: mg/L	Prep Date: 12/15/2023		RunNo: 88407				
Client ID: MBLKW	Batch ID: R88407				Analy	/sis Date: 12/15/2	023	SeqNo: 184	46075		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC Low	vLimit HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Ferrous Iron	ND	0.150									
Sample ID: 2312365-003CDUP	SampType: DUP			Units: mg/L	Pi	rep Date: 12/15/2	023	RunNo: 88407			
Client ID: BATCH	Batch ID: R88407				Analy	Analysis Date: 12/15/2023 Se			SeqNo: 1846079		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC Low	vLimit HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Ferrous Iron	0.396	0.150					0.3993	0.760	20		

Original Page 8 of 19





CLIENT: Friedman & Bruya

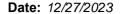
Project: 312301

QC SUMMARY REPORT

Ferrous Iron by SM3500-Fe B

Sample ID: 2312365-	003CMS SampTyp	ne. MS			Units: mg/L		Pren Date:	12/15/2023	RunNo: 88407		
Client ID: BATCH	1 31	Batch ID: R88407			orinto. Ing/L		Analysis Date:		SeqNo: 1846080		
Analyte	ButoniB	Result	RL	SPK value	SPK Ref Val	%REC	•	lighLimit RPD Ref Val	%RPD RPDLimit	Qual	
									7010 D IN DEIIIII	Quai	
Ferrous Iron		0.789	0.150	0.4000	0.3993	97.5	70	130			
Sample ID: 2312365 -	003CMSD SampTyp	SampType: MSD			Units: mg/L		Prep Date: 12/15/2023		RunNo: 88407		
Client ID: BATCH	Batch ID:	R88407					Analysis Date: 12/15/2023		SeqNo: 1846081		
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD RPDLimit	Qual	
Ferrous Iron NOTES:		0.934	0.150	0.4000	0.3993	134	70	130 0.7892	16.8 30	S	
S - Spiked amount	was low relative to sample	concentration	n. Outlying	spike recoveri	es may be expected	-					
Sample ID: CCV-R88	107B SampTyp	e: CCV			Units: mg/L	Prep Date: 12/15/2023			RunNo: 88407		
Client ID: CCV	Batch ID:	R88407					Analysis Date:	12/15/2023	SeqNo: 1846236		
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit F	lighLimit RPD Ref Val	%RPD RPDLimit	Qual	
Ferrous Iron		0.433	0.150	0.4000	0	108	85	115			
Sample ID: CCB-R88	407B SampTyp	SampType: CCB			Units: mg/L	Prep Date:		12/15/2023	RunNo: 88407		
Client ID: CCB	Batch ID:	R88407					Analysis Date:	12/15/2023	SeqNo: 1846237		
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit F	lighLimit RPD Ref Val	%RPD RPDLimit	Qual	
Ferrous Iron		ND	0.150								
Sample ID: CCV-R88	107C SampTyp	pe: CCV			Units: mg/L		Prep Date:	12/15/2023	RunNo: 88407		
Client ID: CCV	Batch ID:	R88407					Analysis Date:	12/15/2023	SeqNo: 1846241		
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit F	lighLimit RPD Ref Val	%RPD RPDLimit	Qual	
		0.405		0.4000							

Original Page 9 of 19





CLIENT: Friedman & Bruya

Project: 312301

QC SUMMARY REPORT

Ferrous Iron by SM3500-Fe B

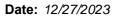
Sample ID: CCB-R88407C SampType: CCB Units: mg/L Prep Date: 12/15/2023 RunNo: 88407

Client ID: **CCB** Batch ID: **R88407** Analysis Date: **12/15/2023** SeqNo: **1846242**

Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Ferrous Iron ND 0.150

Original Page 10 of 19





Friedman & Bruya

Project: 312301

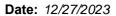
CLIENT:

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

110ject. 012001										
Sample ID: ICB	SampType: ICB			Units: µg/L		Prep Date:	12/22/2023	RunNo: 88	568	
Client ID: ICB	Batch ID: 42426					Analysis Date:	12/22/2023	SeqNo: 184	49551	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	10.0								
Sample ID: ICV	SampType: ICV			Units: µg/L		Prep Date:	12/22/2023	RunNo: 88	568	
Client ID: ICV	Batch ID: 42426					Analysis Date:	12/22/2023	SeqNo: 184	49552	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	1,510	10.0	1,500	0	101	90	110			
Sample ID: CCV-42526A	SampType: CCV			Units: µg/L		Prep Date:	12/22/2023	RunNo: 88	568	
Client ID: CCV	Batch ID: 42426					Analysis Date:	12/22/2023	SeqNo: 184	49555	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	996	10.0	1,000	0	99.6	90	110			
Sample ID: CCB-42526A	SampType: CCB			Units: µg/L		Prep Date:	12/22/2023	RunNo: 88	568	
Client ID: CCB	Batch ID: 42426					Analysis Date:	12/22/2023	SeqNo: 184	49556	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	10.0								
Sample ID: MB-42426	SampType: MBLK			Units: µg/L		Prep Date:	12/22/2023	RunNo: 88	568	
Client ID: MBLKW	Batch ID: 42426					Analysis Date:	12/22/2023	SeqNo: 184	49557	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD	RPDLimit	Qua
Aluminum	ND	10.0								

Original Page 11 of 19





CLIENT: Friedman & Bruya

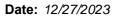
Project: 312301

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: LCS-42426	SampType: LCS			Units: µg/L		Prep Date:	12/22/2023	RunNo: 8856		
Client ID: LCSW	Batch ID: 42426					Analysis Date:	12/22/2023	SeqNo: 1849	558	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD	RPDLimit Qu	(ual
Aluminum	1,020	10.0	1,000	0	102	85	115			
Sample ID: 2312365-002BDUP	SampType: DUP			Units: µg/L		Prep Date:	12/22/2023	RunNo: 8856		
Client ID: BATCH	Batch ID: 42426					Analysis Date:	12/22/2023	SeqNo: 1849	560	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD	RPDLimit Qu	()ual
Aluminum	ND	10.0					0		30	
Sample ID: 2312365-002BMS	SampType: MS			Units: µg/L		Prep Date:	12/22/2023	RunNo: 8856	 88	
Client ID: BATCH	Batch ID: 42426					Analysis Date:	12/22/2023	SeqNo: 1849)561	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD	RPDLimit Qu	(ual
Aluminum	1,030	10.0	1,000	0	103	50	150			
Sample ID: 2312365-002BMSD	SampType: MSD			Units: μg/L		Prep Date:	12/22/2023	RunNo: 8856		
Client ID: BATCH	Batch ID: 42426					Analysis Date:	12/22/2023	SeqNo: 1849	562	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD	RPDLimit Qu	(ual
Aluminum	1,040	10.0	1,000	0	104	50	150 1,032	0.643	30	
Sample ID: CCV-42526B	SampType: CCV			Units: μg/L		Prep Date:	12/22/2023	RunNo: 8856	 88	
Client ID: CCV	Batch ID: 42426					Analysis Date:	12/22/2023	SeqNo: 1849)567	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD	RPDLimit Qu	(ual
Aluminum	1,040	10.0	1,000	0	104	90	110			

Original Page 12 of 19





CLIENT: Friedman & Bruya

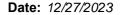
Project: 312301

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

512301								-		
Sample ID: CCB-42526B	SampType: CCB			Units: µg/L		Prep Date:	12/22/2023	RunNo: 885	68	
Client ID: CCB	Batch ID: 42426					Analysis Date:	12/22/2023	SeqNo: 184 9	9568	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	10.0								
Sample ID: 2312427-001CMS	SampType: MS			Units: µg/L		Prep Date:	12/22/2023	RunNo: 885	68	
Client ID: BATCH	Batch ID: 42426					Analysis Date:	12/22/2023	SeqNo: 184 9	9578	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	1,010	10.0	1,000	0	101	50	150			
Sample ID: CCV-42526C	SampType: CCV			Units: µg/L		Prep Date:	12/22/2023	RunNo: 885	68	
Client ID: CCV	Batch ID: 42426					Analysis Date:	12/22/2023	SeqNo: 184 9	9579	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD	RPDLimit	Qua
Aluminum	1,010	10.0	1,000	0	101	90	110			
Sample ID: CCB-42526C	SampType: CCB			Units: µg/L		Prep Date:	12/22/2023	RunNo: 885	68	
Client ID: CCB	Batch ID: 42426					Analysis Date:	12/22/2023	SeqNo: 184 9	9580	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD	RPDLimit	Qua
Aluminum	ND	10.0								
Sample ID: CCV-42526D	SampType: CCV			Units: µg/L		Prep Date:	12/22/2023	RunNo: 885	68	
Client ID: CCV	Batch ID: 42426					Analysis Date:	12/22/2023	SeqNo: 184 9	9694	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD	RPDLimit	Qua
Aluminum	1,010	10.0	1,000	0	101	90	110			

Original Page 13 of 19





QC SUMMARY REPORT

CLIENT: Friedman & Bruya

Dissolved Metals by EPA Method 200.8

Project: 312301

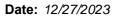
Sample ID: CCB-42526C SampType: CCB Units: μg/L Prep Date: 12/22/2023 RunNo: 88568

Client ID: CCB Batch ID: 42426 Analysis Date: 12/22/2023 SeqNo: 1849695

Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Aluminum ND 10.0

Original Page 14 of 19





CLIENT: Friedman & Bruya

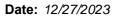
Project: 312301

QC SUMMARY REPORT

Total Metals by EPA Method 200.8

Project : 312301					Total Metals by El A Metalou 200
Sample ID: ICB	SampType: ICB			Units: μg/L	Prep Date: 12/22/2023 RunNo: 88561
Client ID: ICB	Batch ID: 42425				Analysis Date: 12/22/2023 SeqNo: 1849410
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	ND	10.0			
Sample ID: ICV	SampType: ICV			Units: µg/L	Prep Date: 12/22/2023 RunNo: 88561
Client ID: ICV	Batch ID: 42425				Analysis Date: 12/22/2023 SeqNo: 1849411
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	1,510	10.0	1,500	0	101 90 110
Sample ID: MB-42425	SampType: MBLK			Units: µg/L	Prep Date: 12/22/2023 RunNo: 88561
Client ID: MBLKW	Batch ID: 42425				Analysis Date: 12/22/2023 SeqNo: 1849412
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	ND	10.0			
Sample ID: LCS-42425	SampType: LCS			Units: µg/L	Prep Date: 12/22/2023 RunNo: 88561
Client ID: LCSW	Batch ID: 42425				Analysis Date: 12/22/2023 SeqNo: 1849413
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	1,040	10.0	1,000	0	104 85 115
Sample ID: 2312443-001ADUP	SampType: DUP			Units: µg/L	Prep Date: 12/22/2023 RunNo: 88561
Client ID: BATCH	Batch ID: 42425				Analysis Date: 12/22/2023 SeqNo: 1849415
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	644	10.0			599.3 7.21 30

Original Page 15 of 19





CLIENT: Friedman & Bruya

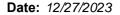
Project: 312301

QC SUMMARY REPORT

Total Metals by EPA Method 200.8

110,000									
Sample ID: 2312443-001AMS	SampType: MS			Units: μg/L		Prep Date:	12/22/2023	RunNo: 88561	
Client ID: BATCH	Batch ID: 42425				,	Analysis Date:	12/22/2023	SeqNo: 1849416	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	1,680	10.0	1,000	599.3	108	70	130		
Sample ID: CCV-42425A	SampType: CCV			Units: µg/L		Prep Date:	12/22/2023	RunNo: 88561	
Client ID: CCV	Batch ID: 42425				,	Analysis Date:	12/22/2023	SeqNo: 1849421	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	1,020	10.0	1,000	0	102	90	110		
Sample ID: CCB-42425A	SampType: CCB			Units: µg/L		Prep Date:	12/22/2023	RunNo: 88561	
Client ID: CCB	Batch ID: 42425				,	Analysis Date:	12/22/2023	SeqNo: 1849422	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	ND	10.0							
Sample ID: 2312391-001CMS	SampType: MS			Units: µg/L		Prep Date:	12/22/2023	RunNo: 88561	
Client ID: BATCH	Batch ID: 42425				,	Analysis Date:	12/22/2023	SeqNo: 1849463	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	1,090	10.0	1,000	39.95	105	70	130		
Sample ID: CCV-42425B	SampType: CCV			Units: µg/L		Prep Date:	12/22/2023	RunNo: 88561	
Client ID: CCV	Batch ID: 42425				,	Analysis Date:	12/22/2023	SeqNo: 1849464	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD RPDLimit	Qua
Aluminum	1,010	10.0	1,000	0	101	90	110		

Original Page 16 of 19





CLIENT: Friedman & Bruya

Project: 312301

QC SUMMARY REPORT

Total Metals by EPA Method 200.8

Sample ID: CCB-42425B SampType: CCB Units: μg/L Prep Date: 12/22/2023 RunNo: 88561

Client ID: **CCB** Batch ID: **42425** Analysis Date: **12/22/2023** SeqNo: **1849465**

Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Aluminum ND 10.0

Sample ID: CCV-42425C SampType: CCV Units: µg/L Prep Date: 12/22/2023 RunNo: 88561

Client ID: CCV Batch ID: 42425 Analysis Date: 12/22/2023 SeqNo: 1849476

Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Aluminum 1,020 10.0 1,000 0 102 90 110

Sample ID: CCB-42425C SampType: CCB Units: µg/L Prep Date: 12/22/2023 RunNo: 88561

Client ID: CCB Batch ID: 42425 Analysis Date: 12/22/2023 SeqNo: 1849477

Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Aluminum ND 10.0

Original Page 17 of 19



Sample Log-In Check List

Clie	ent Name:	FB				Work O	rder Numb	er: 2312392	2	
Lo	gged by:	Morgan Wils	on			Date Re	eceived:	12/15/20	023 4:20:00 PM	
Chai	in of Custo	od <u>v</u>								
		ustody comple	te?			Yes	✓	No 🗌	Not Present	
2. I	How was the	sample deliver	red?			Cou	<u>rier</u>			
<u>Log</u>	<u>In</u>									
			nipping container tody Seals not in			Yes		No 🗌	Not Present ✓	
4. V	Nas an attem	pt made to co	ol the samples?			Yes	✓	No 🗌	NA \square	
5. V	Were all items	s received at a	temperature of	>2°C to 6°C	*	Yes	•	No 🗌	na 🗆	
6. S	Sample(s) in	proper containe	er(s)?			Yes	✓	No 🗌		
7. 5	Sufficient sam	ple volume for	r indicated test(s)?		Yes	✓	No \square		
8. <i>P</i>	re samples ہ	properly preser	ved?			Yes	✓	No \square		
9. V	Was preserva	tive added to b	oottles?			Yes	✓	No \square	NA 🗆	
10 ls	s there heads	space in the V0	OA vials?			Yes		No 🗌	HCL NA ⊻	
-			rrive in good cor	ndition(unbro	ken)?	Yes	✓	No \square		
		ork match bottle		•	,	Yes	✓	No 🗌		
12 /	Are matrices	correctly identif	fied on Chain of	Custody2		Yes	✓	No 🗆		
-		t analyses wer		ouotody:		Yes	✓	No \square		
15. V			field parameters	, pH e.g.) ab	le to	Yes	✓	No \square		
		ing (if appl	icable)							
-			screpancies with	this order?		Yes	s 🗌	No 🗌	NA 🗸	
	Person	Notified:			Date:					
	By Who	om:			Via:	eM	ail 🗌 Ph	one 🗌 Fax	In Person	
	Regard	ing:								
	Client I	nstructions:								
17.	Additional re	marks:								
Item	<u>Information</u>									
		Item #		Temp °C						
	Sample			4.9						

^{*} Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

REMARKS	Address 5500 4th Ave S City, State, ZIP Seattle, WA 98108 Phone # (206) 285-8282 merdahl@friedmanandbruya.com
PROJECT N	Common and Burns Inc
Ta,	Send Report To Michael Erdahl

REMARKS	312301	PROJECT NAME/NO.	SUBCONTRACTER Fremont	
	D-599	PO#		

Matrix # of water 10 water 2 % x total aluminum dissolved aluminum dissolved aluminum x x ferrous iron ferrous iron dissolved gases TOC Michael Erdahl Friedman & Bruya 2/8/33 1830	Received by:	Fax (206) 283-5044 Rec
PRINT NAME PRINT NAME PRINT NAME PRINT NAME Priedman & Bruya Z/8/3 Note Note Note	Relinquished by:	
# of	Received by:	Seattle, WA 98119-2029 Rec
PRINT NAME Note Note	1	3012 16th Avenue West Rel
The state of the s	GNATURE	
The state of the s		
P		
P F Of To		
P F F Of X X X total aluminum X X X ferrous iron X X X ferrous iron X X X ferrous iron X X TOC		
V S S S S S S S S S S S S S S S S S S S		
V S S S S S S S S S S S S S S S S S S S		
P	×	CTMW-11R2-1223
total aluminum total aluminum total aluminum ferrous iron dissolved gases TOC	200	Field Blank#1-1223
total aluminum dissolved aluminum ferrous iron dissolved gases TOC	þŧ	CTMW-23R2-1223
	Ji. # g of of total aluminum dissolved	Sample ID Lab
ANALYSES REQUESTED		

Page # 1 of 1

TURNAROUND TIME

X Standard TAT

RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

Dispose after 30 days

Return samples

Will call with instructions

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Vineta Mills, M.S. Eric Young, B.S.

5500 4th Avenue South Seattle, WA 98108 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

December 29, 2023

Trevor Louviere, Project Manager Dalton Olmsted Fuglevand 1001 SW Klickitat Way, Suite 200B Seattle, WA 98134

Dear Mr Louviere:

Included are the results from the testing of material submitted on December 15, 2023 from the TWAAFA-001, F&BI 312311 project. There are 18 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures

c: Anthony Cerruti, Tasya Gray

DOF1229R.DOC

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on December 15, 2023 by Friedman & Bruya, Inc. from the Dalton Olmsted Fuglevand TWAAFA-001, F&BI 312311 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Dalton Olmsted Fuglevand</u>
312311 -01	CTMW-12-1223
312311 -02	CTMW-17-1223
312311 -03	CTMW-17D-1223

The samples were sent to Fremont Analytical for ferrous iron, total aluminum, and dissolved aluminum analyses. The report is enclosed.

All quality control requirements were acceptable.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	CTMW-12-1223	Client:	Dalton Olmsted Fuglevand
Date Received:	12/15/23	Project:	TWAAFA-001, F&BI 312311

 Date Extracted:
 12/19/23
 Lab ID:
 312311-01 x5

 Date Analyzed:
 12/21/23
 Data File:
 312311-01 x5.209

 $\begin{array}{c} & Concentration \\ Analyte: & ug/L\ (ppb) \end{array}$

 Arsenic
 <5</td>

 Copper
 <2</td>

 Iron
 9,720

 Manganese
 1,180

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	CTMW-17-1223	Client:	Dalton Olmsted Fuglevand
Date Received:	12/15/23	Project:	TWAAFA-001, F&BI 312311
Date Extracted:	12/19/23	Lab ID:	312311-02 x5
Date Analyzed:	12/21/23	Data File:	312311-02 x5.210

Analyte:	Concentration ug/L (ppb)
Arsenic	194
Chromium	9.01
Copper	65.6
Iron	571
Manganese	316

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: CTMW-17D-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/15/23 Project: TWAAFA-001, F&BI 312311

 Date Extracted:
 12/19/23
 Lab ID:
 312311-03 x5

 Date Analyzed:
 12/21/23
 Data File:
 312311-03 x5.211

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Analyte: Concentration ug/L (ppb)

 Arsenic
 <5</td>

 Copper
 <2</td>

 Iron
 9,280

 Manganese
 337

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID: Method Blank Client: Dalton Olmsted Fuglevand Date Received: Not Applicable Project: TWAAFA-001, F&BI 312311

 Date Extracted:
 12/19/23
 Lab ID:
 I3-1001 mb2

 Date Analyzed:
 12/20/23
 Data File:
 I3-1001 mb2.152

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

 $\begin{array}{c} & Concentration \\ Analyte: & ug/L\ (ppb) \end{array}$

 Arsenic
 <1</td>

 Chromium
 <1</td>

 Copper
 <0.4</td>

 Iron
 <50</td>

 Manganese
 <1</td>

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: CTMW-12-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/15/23 Project: TWAAFA-001, F&BI 312311

Lab ID: Date Extracted: 12/19/23 312311-01Date Analyzed: 12/22/23 Data File: 312311 - 01.245Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) SPOperator:

Concentration
Analyte: ug/L (ppb)

Arsenic 2.51 Copper 0.502 Manganese 844

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: CTMW-12-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/15/23 Project: TWAAFA-001, F&BI 312311

Date Extracted: 12/19/23 Lab ID: 312311-01 x20
Date Analyzed: 12/22/23 Data File: 312311-01 x20.133

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Iron 8,270

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CTMW-17-1223	Client:	Dalton Olmsted Fuglevand
Date Received:	12/15/23	Project:	TWAAFA-001, F&BI 312311
D + D + + 1	10/10/00	T 1 TD	010011 00 #

 Date Extracted:
 12/19/23
 Lab ID:
 312311-02 x5

 Date Analyzed:
 12/22/23
 Data File:
 312311-02 x5.134

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Analyte:	Concentration ug/L (ppb)
Arsenic	230
Chromium	36.3
Copper	382
Iron	768
Manganese	300

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CTMW-17D-1223	Client:	Dalton Olmsted Fuglevand
Date Received:	12/15/23	Project:	TWAAFA-001, F&BI 312311
Data E-t-sastad.	10/10/09	Lak ID.	210211 02

Date Extracted: 12/19/23Lab ID: 312311-03Date Analyzed: 12/22/23 Data File: 312311-03.247 Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) SPOperator:

 $\begin{array}{c} & Concentration \\ Analyte: & ug/L\ (ppb) \end{array}$

Arsenic 2.29 Copper 2.25 Manganese 318

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: CTMW-17D-1223 Client: Dalton Olmsted Fuglevand Date Received: 12/15/23 Project: TWAAFA-001, F&BI 312311

 Date Extracted:
 12/19/23
 Lab ID:
 312311-03 x20

 Date Analyzed:
 12/22/23
 Data File:
 312311-03 x20.135

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Iron 9,160

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID: Method Blank Client: Dalton Olmsted Fuglevand Date Received: Not Applicable Project: TWAAFA-001, F&BI 312311

 Date Extracted:
 12/19/23
 Lab ID:
 I3-999 mb2

 Date Analyzed:
 12/26/23
 Data File:
 I3-999 mb2.075

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

 $\begin{array}{c} & Concentration \\ Analyte: & ug/L\ (ppb) \end{array}$

 Arsenic
 <1</td>

 Chromium
 <1</td>

 Copper
 <0.48</td>

 Iron
 <50</td>

 Manganese
 <1</td>

ENVIRONMENTAL CHEMISTS

Date of Report: 12/29/23 Date Received: 12/15/23

Project: TWAAFA-001, F&BI 312311

Date Extracted: 12/26/23 Date Analyzed: 12/27/23

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED MERCURY USING EPA METHOD 1631E

Results Reported as ug/L (ppb)

Sample ID
Laboratory ID

Dissolved Mercury

CTMW-17-1223 <0.02

312311-02 x10

Method Blank <0.02

i3-1021 MB

ENVIRONMENTAL CHEMISTS

Date of Report: 12/29/23 Date Received: 12/15/23

Project: TWAAFA-001, F&BI 312311

Date Extracted: 12/26/23 Date Analyzed: 12/27/23

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	<u>Total Mercury</u>
CTMW-17-1223 312311-02 x10	0.13
Method Blank	< 0.02

ENVIRONMENTAL CHEMISTS

Date of Report: 12/29/23 Date Received: 12/15/23

Project: TWAAFA-001, F&BI 312311

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 6020B

Laboratory Code: 312273-02 x10 (Matrix Spike)

				Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Arsenic	ug/L (ppb)	10	1,110	304 b	625 b	75-125	69 b
Chromium	ug/L (ppb)	20	<10	86	84	75 - 125	2
Copper	ug/L (ppb)	20	< 50	89	87	75 - 125	2
Iron	ug/L (ppb)	100	4,770	133 b	210 b	75 - 125	45 b
Manganese	ug/L (ppb)	20	188	103 b	110 b	75 - 125	7 b

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	ug/L (ppb)	10	87	80-120
Chromium	ug/L (ppb)	20	90	80-120
Copper	ug/L (ppb)	20	91	80-120
Iron	ug/L (ppb)	100	87	80-120
Manganese	ug/L (ppb)	20	83	80-120

ENVIRONMENTAL CHEMISTS

Date of Report: 12/29/23 Date Received: 12/15/23

Project: TWAAFA-001, F&BI 312311

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 312273-02 x10 (Matrix Spike)

				Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Arsenic	ug/L (ppb)	10	1,200	0 b	0 b	75-125	nm
Chromium	ug/L (ppb)	20	<10	90	89	75 - 125	1
Copper	ug/L (ppb)	20	< 50	91	90	75 - 125	1
Iron	ug/L (ppb)	100	5,320	0 b	0 b	75 - 125	nm
Manganese	ug/L (ppb)	20	205	13 b	37 b	75 - 125	96 b

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	ug/L (ppb)	10	87	80-120
Chromium	ug/L (ppb)	20	95	80-120
Copper	ug/L (ppb)	20	91	80-120
Iron	ug/L (ppb)	100	89	80-120
Manganese	ug/L (ppb)	20	88	80-120

ENVIRONMENTAL CHEMISTS

Date of Report: 12/29/23 Date Received: 12/15/23

Project: TWAAFA-001, F&BI 312311

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED MERCURY USING EPA METHOD 1631E

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Mercury	ug/L (ppb)	0.01	99	107	66-126	8

ENVIRONMENTAL CHEMISTS

Date of Report: 12/29/23 Date Received: 12/15/23

Project: TWAAFA-001, F&BI 312311

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Mercury	ug/L (ppb)	0.01	99	107	66-126	8

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.
- c The presence of the analyte may be due to carryover from previous sample injections.
- cf The sample was centrifuged prior to analysis.
- d The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv Insufficient sample volume was available to achieve normal reporting limits.
- f The sample was laboratory filtered prior to analysis.
- fb The analyte was detected in the method blank.
- fc The analyte is a common laboratory and field contaminant.
- hr The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs Headspace was present in the container used for analysis.
- ht The analysis was performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of control limits due to sample matrix effects.
- j The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- k The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.
- lc The presence of the analyte is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029 Ph. (206) 285-8282 SIGNATURE Retriquished by: Received by: Received by:	208	CTHW-17D-1723 03 V 12/15/23 14/25	CTMW-17-1223 O1 A-C 121/5/123 1245	Sample ID Lab ID Date Time Sampled Sampled	3 1 2 3 11 Report To: Anthony Cerruti / Trevor Louviere CC: Tasya Gray Company DOF Address 1001 SW Klickitat Way City, State, ZIP Seattle, WA 98134 Phone 215-767-7749 Email acerruti@dofnw.com
		ک س	2 2	Sample # of Matrix Bottles	SAMPLE CHAIN OF CUST SAMPLERS (signature) PROJECT NAME TWAAFA REMARKS Dissolved inetals samples field filtered micron before analysis Project Specific RLs (Yes)/ N
PRINT NAME Chael Wage				Total Metals 6020B (As, Cr, Cu, Mn, Ni, Pb, Zn) Dissolved Metals 6020R (As, Cr, Cu, Mn, Ni, Pb, Zn) Total Mercury 1631E Dissolved Mercury 1631E	CUSTOD 100 A A Ces)/ No
COMP T Clean F8	Samples received	X		Total Metals (Al, Fe) Dissolved Metals (Al, Fe) Ferrous	PO# TWAAFA-001 INVOICE TO DOF
COMPANY AN Enth	ve da at				Page # of of of
DATE TIME 19/15/23/16:12	Ĉ	Al, M, Cu, Fe, K	All As Cr. Cr. F		Page # of TURNAROUND TIME Indard Turnaround ISH charges authorized by: SAMPLE DISPOSAL pose after 30 days hive Samples her ALYSES REQUESTED



3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya Michael Erdahl 5500 4th Ave S Seattle, WA 98108

RE: 312311

Work Order Number: 2312396

December 27, 2023

Attention Michael Erdahl:

Fremont Analytical, Inc. received 3 sample(s) on 12/18/2023 for the analyses presented in the following report.

Dissolved Metals by EPA Method 200.8 Ferrous Iron by SM3500-Fe B Total Metals by EPA Method 200.8

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Date: 12/27/2023



CLIENT: Friedman & Bruya Work Order Sample Summary

Project: 312311 **Work Order:** 2312396

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2312396-001	CTMW-12-1223	12/15/2023 12:05 PM	12/18/2023 10:15 AM
2312396-002	CTMW-17-1223	12/15/2023 1:45 PM	12/18/2023 10:15 AM
2312396-003	CTMW-17D-1223	12/15/2023 2:25 PM	12/18/2023 10:15 AM



Case Narrative

WO#: **2312396**Date: **12/27/2023**

CLIENT: Friedman & Bruya

Project: 312311

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.



Qualifiers & Acronyms

WO#: **2312396**

Date Reported: 12/27/2023

Qualifiers:

- * Flagged value is not within established control limits
- B Analyte detected in the associated Method Blank
- D Dilution was required
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- I Analyte with an internal standard that does not meet established acceptance criteria
- J Analyte detected below Reporting Limit
- N Tentatively Identified Compound (TIC)
- Q Analyte with an initial or continuing calibration that does not meet established acceptance criteria
- S Spike recovery outside accepted recovery limits
- ND Not detected at the Reporting Limit
- R High relative percent difference observed

Acronyms:

%Rec - Percent Recovery

CCB - Continued Calibration Blank

CCV - Continued Calibration Verification

DF - Dilution Factor

DUP - Sample Duplicate

HEM - Hexane Extractable Material

ICV - Initial Calibration Verification

LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate

MCL - Maximum Contaminant Level

MB or MBLANK - Method Blank

MDL - Method Detection Limit

MS/MSD - Matrix Spike / Matrix Spike Duplicate

PDS - Post Digestion Spike

Ref Val - Reference Value

REP - Sample Replicate

RL - Reporting Limit

RPD - Relative Percent Difference

SD - Serial Dilution

SGT - Silica Gel Treatment

SPK - Spike

Surr - Surrogate



Analytical Report

Work Order: 2312396
Date Reported: 12/27/2023

Client: Friedman & Bruya Collection Date: 12/15/2023 12:05:00 PM

Project: 312311

Lab ID: 2312396-001 **Matrix:** Water

Client Sample ID: CTMW-12-1223

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Metals by EPA Meth	nod 200.8			Batc	h ID: 4	42426 Analyst: SS
Aluminum	ND	10.0		μg/L	1	12/22/2023 7:47:00 PM
Total Metals by EPA Method 2	200.8			Batc	h ID: 4	42425 Analyst: SLL
Aluminum	20.7	10.0		μg/L	1	12/22/2023 6:31:00 PM
Ferrous Iron by SM3500-Fe B				Batc	h ID: i	R88521 Analyst: AM
Ferrous Iron	1.41	0.150	Н	mg/L	1	12/18/2023 4:00:00 PM

Original



Analytical Report

Work Order: **2312396**Date Reported: **12/27/2023**

Client: Friedman & Bruya Collection Date: 12/15/2023 1:45:00 PM

Project: 312311

Lab ID: 2312396-002 **Matrix:** Water

Client Sample ID: CTMW-17-1223

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Metals by EPA Method	1 200.8			Batc	h ID: 4	42426 Analyst: SS
Aluminum	44.8	10.0		μg/L	1	12/22/2023 7:50:00 PM
Total Metals by EPA Method 200	<u>).8</u>			Batc	h ID: 4	42425 Analyst: SLL
Aluminum	169	10.0		μg/L	1	12/22/2023 6:34:00 PM
Ferrous Iron by SM3500-Fe B				Batc	h ID: F	R88521 Analyst: AM
Ferrous Iron	0.372	0.150	Н	mg/L	1	12/18/2023 4:00:00 PM



Analytical Report

Work Order: 2312396
Date Reported: 12/27/2023

Client: Friedman & Bruya Collection Date: 12/15/2023 2:25:00 PM

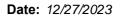
Project: 312311

Lab ID: 2312396-003 **Matrix:** Water

Client Sample ID: CTMW-17D-1223

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Metals by EPA Method	200.8			Batcl	n ID:	42426 Analyst: SS
Aluminum	ND	10.0		μg/L	1	12/22/2023 7:52:00 PM
Total Metals by EPA Method 200	<u>.8</u>			Batcl	n ID:	42425 Analyst: SLL
Aluminum	27.4	10.0		μg/L	1	12/22/2023 6:36:00 PM
Ferrous Iron by SM3500-Fe B				Batcl	n ID:	R88521 Analyst: AM
Ferrous Iron	0.886	0.150	Н	mg/L	1	12/18/2023 4:00:00 PM

Original





CLIENT: Friedman & Bruya

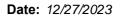
Project: 312311

QC SUMMARY REPORT

Ferrous Iron by SM3500-Fe B

110ject. 012011										
Sample ID: CCV-R88521	SampType: CCV			Units: mg/L		Prep Date:	12/18/2023	RunNo: 885	521	
Client ID: CCV	Batch ID: R88521				Ar	nalysis Date:	12/18/2023	SeqNo: 18 4	48523	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC I	LowLimit H	ighLimit RPD Ref Val	%RPD	RPDLimit	Qual
Ferrous Iron	0.417	0.150	0.4000	0	104	85	115			
Sample ID: CCB-R88521	SampType: CCB			Units: mg/L		Prep Date:	12/18/2023	RunNo: 885	521	
Client ID: CCB	Batch ID: R88521				Ar	nalysis Date:	12/18/2023	SeqNo: 184	48524	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC I	LowLimit H	ighLimit RPD Ref Val	%RPD	RPDLimit	Qual
Ferrous Iron	ND	0.150								
Sample ID: LCS-R88521	SampType: LCS			Units: mg/L		Prep Date:	12/18/2023	RunNo: 885	521	
Client ID: LCSW	Batch ID: R88521				Ar	nalysis Date:	12/18/2023	SeqNo: 18 4	48525	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC I	LowLimit H	ighLimit RPD Ref Val	%RPD	RPDLimit	Qual
Ferrous Iron	0.448	0.150	0.4000	0	112	85	115			
Sample ID: MB-R88521	SampType: MBLK			Units: mg/L		Prep Date:	12/18/2023	RunNo: 885	521	
Client ID: MBLKW	Batch ID: R88521				Ar	nalysis Date:	12/18/2023	SeqNo: 18 4	48526	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC I	LowLimit H	ighLimit RPD Ref Val	%RPD	RPDLimit	Qual
Ferrous Iron	ND	0.150								
Sample ID: 2312396-002ADUP	SampType: DUP			Units: mg/L		Prep Date:	12/18/2023	RunNo: 885	521	
Client ID: CTMW-17-1223	Batch ID: R88521				Ar	nalysis Date:	12/18/2023	SeqNo: 184	48529	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC I	LowLimit H	ighLimit RPD Ref Val	%RPD	RPDLimit	Qual
Ferrous Iron	0.363	0.150					0.3721	2.47	20	Н

Original Page 8 of 19





CLIENT: Friedman & Bruya

Project: 312311

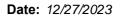
QC SUMMARY REPORT

Ferrous Iron by SM3500-Fe B

Sample ID: 2312396-002AMS	SampType: MS			Units: mg/L		Prep Date:	12/18/2023	RunNo: 88521	
Client ID: CTMW-17-1223	Batch ID: R88521					Analysis Date:	12/18/2023	SeqNo: 1848530	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	HighLimit RPD Ref Va	8 WRPD RPDLimit	Qual
Ferrous Iron	0.798	0.150	0.4000	0.3721	107	70	130		Н
Sample ID: 2312396-002AMSD	SampType: MSD			Units: mg/L		Prep Date:	12/18/2023	RunNo: 88521	
Client ID: CTMW-17-1223	Batch ID: R88521					Analysis Date:	12/18/2023	SeqNo: 1848531	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	HighLimit RPD Ref Va	8 WRPD RPDLimit	Qual
Ferrous Iron	0.777	0.150	0.4000	0.3721	101	70	130 0.7982	2.69 30	Н
Sample ID: CCV-R88521	SampType: CCV			Units: mg/L		Prep Date:	12/18/2023	RunNo: 88521	
Client ID: CCV	Batch ID: R88521					Analysis Date:	12/18/2023	SeqNo: 1848533	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	HighLimit RPD Ref Va	8 WRPD RPDLimit	Qual
Ferrous Iron	0.457	0.150	0.4000	0	114	85	115		
Sample ID: CCB-R88521	SampType: CCB			Units: mg/L		Prep Date:	12/18/2023	RunNo: 88521	
Client ID: CCB	Batch ID: R88521					Analysis Date:	12/18/2023	SeqNo: 1848534	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	HighLimit RPD Ref Va	8 WRPD RPDLimit	Qual
Ferrous Iron	ND	0.150							
Sample ID: 2312365-002CMS	SampType: MS			Units: mg/L		Prep Date:	12/18/2023	RunNo: 88521	
Client ID: BATCH	Batch ID: R88521					Analysis Date:	12/18/2023	SeqNo: 1848536	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	HighLimit RPD Ref Va	8 WRPD RPDLimit	Qual
Ferrous Iron NOTES:	0.647	0.150	0.4000	0.5262	30.2	70	130		SH

S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Original Page 9 of 19





CLIENT: Friedman & Bruya

Project: 312311

QC SUMMARY REPORT

Ferrous Iron by SM3500-Fe B

Sample ID: 2312365-002CMSD	SampType: MSD			Units: mg/L		•	te: 12/18/2		RunNo: 88		
Client ID: BATCH	Batch ID: R88521					Analysis Da	te: 12/18/2	023	SeqNo: 184	18537	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ferrous Iron NOTES:	0.659	0.150	0.4000	0.5262	33.2	70	130	0.6471	1.85	30	SH

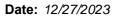
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Sample ID: CCV-R88521	SampType: CCV			Units: mg/L		Prep Da	te: 12/18/2	2023	RunNo: 885	521	
Client ID: CCV	Batch ID: R88521					Analysis Da	te: 12/18/2	2023	SeqNo: 184	18538	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ferrous Iron	0.439	0.150	0.4000	0	110	85	115				

Sample ID: CCB-R88521	SampType: CCB	Units: mg/L	Prep Date: 12/18/2023	RunNo: 88521
Client ID: CCB	Batch ID: R88521		Analysis Date: 12/18/2023	SeqNo: 1848539
Analyte	Result	RL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual

Ferrous Iron ND 0.150

Original Page 10 of 19





Aluminum

QC SUMMARY REPORT

CLIENT: Friedman & Bruya

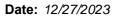
Dissolved Metals by EPA Method 200.8

Project: 312311					Dissolved Metals by EPA Method 200.
Sample ID: ICB	SampType: ICB			Units: µg/L	Prep Date: 12/22/2023 RunNo: 88568
Client ID: ICB	Batch ID: 42426				Analysis Date: 12/22/2023 SeqNo: 1849551
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	ND	10.0			
Sample ID: ICV	SampType: ICV			Units: µg/L	Prep Date: 12/22/2023 RunNo: 88568
Client ID: ICV	Batch ID: 42426				Analysis Date: 12/22/2023 SeqNo: 1849552
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	1,510	10.0	1,500	0	101 90 110
Sample ID: CCV-42526A	SampType: CCV			Units: µg/L	Prep Date: 12/22/2023 RunNo: 88568
Client ID: CCV	Batch ID: 42426				Analysis Date: 12/22/2023 SeqNo: 1849555
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	996	10.0	1,000	0	99.6 90 110
Sample ID: CCB-42526A	SampType: CCB			Units: µg/L	Prep Date: 12/22/2023 RunNo: 88568
Client ID: CCB	Batch ID: 42426				Analysis Date: 12/22/2023 SeqNo: 1849556
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	ND	10.0			
Sample ID: MB-42426	SampType: MBLK			Units: µg/L	Prep Date: 12/22/2023 RunNo: 88568
Client ID: MBLKW	Batch ID: 42426				Analysis Date: 12/22/2023 SeqNo: 1849557
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Original Page 11 of 19

ND

10.0





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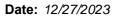
Project: 312311

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: LCS-42426	SampType: LCS			Units: µg/L		Prep Date:	12/22/2023	RunNo: 8856		
Client ID: LCSW	Batch ID: 42426					Analysis Date:	12/22/2023	SeqNo: 1849	558	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD	RPDLimit Qu	(ual
Aluminum	1,020	10.0	1,000	0	102	85	115			
Sample ID: 2312365-002BDUP	SampType: DUP			Units: µg/L		Prep Date:	12/22/2023	RunNo: 8856		
Client ID: BATCH	Batch ID: 42426					Analysis Date:	12/22/2023	SeqNo: 1849	560	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD	RPDLimit Qu	(ual
Aluminum	ND	10.0					0		30	
Sample ID: 2312365-002BMS	SampType: MS			Units: µg/L		Prep Date:	12/22/2023	RunNo: 8856	 88	
Client ID: BATCH	Batch ID: 42426					Analysis Date:	12/22/2023	SeqNo: 1849)561	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD	RPDLimit Qu	(ual
Aluminum	1,030	10.0	1,000	0	103	50	150			
Sample ID: 2312365-002BMSD	SampType: MSD			Units: μg/L		Prep Date:	12/22/2023	RunNo: 8856		
Client ID: BATCH	Batch ID: 42426					Analysis Date:	12/22/2023	SeqNo: 1849	562	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD	RPDLimit Qu	(ual
Aluminum	1,040	10.0	1,000	0	104	50	150 1,032	0.643	30	
Sample ID: CCV-42526B	SampType: CCV			Units: μg/L		Prep Date:	12/22/2023	RunNo: 8856	 88	
Client ID: CCV	Batch ID: 42426					Analysis Date:	12/22/2023	SeqNo: 1849)567	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD	RPDLimit Qu	(ual
Aluminum	1,040	10.0	1,000	0	104	90	110			

Original Page 12 of 19





CLIENT: Friedman & Bruya

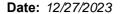
Project: 312311

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Project. 312311						•
Sample ID: CCB-42526B	SampType: CCB			Units: µg/L	Prep Date: 12/22/2023	RunNo: 88568
Client ID: CCB	Batch ID: 42426				Analysis Date: 12/22/2023	SeqNo: 1849568
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum	ND	10.0				
Sample ID: 2312427-001CMS	SampType: MS			Units: µg/L	Prep Date: 12/22/2023	RunNo: 88568
Client ID: BATCH	Batch ID: 42426				Analysis Date: 12/22/2023	SeqNo: 1849578
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum	1,010	10.0	1,000	0	101 50 150	
Sample ID: CCV-42526C	SampType: CCV			Units: µg/L	Prep Date: 12/22/2023	RunNo: 88568
Client ID: CCV	Batch ID: 42426				Analysis Date: 12/22/2023	SeqNo: 1849579
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum	1,010	10.0	1,000	0	101 90 110	
Sample ID: CCB-42526C	SampType: CCB			Units: µg/L	Prep Date: 12/22/2023	RunNo: 88568
Client ID: CCB	Batch ID: 42426				Analysis Date: 12/22/2023	SeqNo: 1849580
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum	ND	10.0				
Sample ID: CCV-42526D	SampType: CCV			Units: µg/L	Prep Date: 12/22/2023	RunNo: 88568
Client ID: CCV	Batch ID: 42426				Analysis Date: 12/22/2023	SeqNo: 1849694
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum	1,010	10.0	1,000	0	101 90 110	

Original Page 13 of 19





QC SUMMARY REPORT

CLIENT: Friedman & Bruya

Dissolved Metals by EPA Method 200.8

Project: 312311

Client ID: CCB

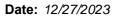
Sample ID: CCB-42526C SampType: CCB Units: µg/L Prep Date: 12/22/2023 RunNo: 88568

Batch ID: 42426 Analysis Date: 12/22/2023 SeqNo: 1849695

Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Aluminum ND 10.0

Original Page 14 of 19





CLIENT: Friedman & Bruya

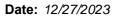
Project: 312311

QC SUMMARY REPORT

Total Metals by EPA Method 200.8

Project : 312311					Total Metals by El A Metalou 200.
Sample ID: ICB	SampType: ICB			Units: µg/L	Prep Date: 12/22/2023 RunNo: 88561
Client ID: ICB	Batch ID: 42425				Analysis Date: 12/22/2023 SeqNo: 1849410
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	ND	10.0			
Sample ID: ICV	SampType: ICV			Units: µg/L	Prep Date: 12/22/2023 RunNo: 88561
Client ID: ICV	Batch ID: 42425				Analysis Date: 12/22/2023 SeqNo: 1849411
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	1,510	10.0	1,500	0	101 90 110
Sample ID: MB-42425	SampType: MBLK			Units: µg/L	Prep Date: 12/22/2023 RunNo: 88561
Client ID: MBLKW	Batch ID: 42425				Analysis Date: 12/22/2023 SeqNo: 1849412
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	ND	10.0			
Sample ID: LCS-42425	SampType: LCS			Units: µg/L	Prep Date: 12/22/2023 RunNo: 88561
Client ID: LCSW	Batch ID: 42425				Analysis Date: 12/22/2023 SeqNo: 1849413
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	1,040	10.0	1,000	0	104 85 115
Sample ID: 2312443-001ADUP	SampType: DUP			Units: µg/L	Prep Date: 12/22/2023 RunNo: 88561
Client ID: BATCH	Batch ID: 42425				Analysis Date: 12/22/2023 SeqNo: 1849415
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	644	10.0			599.3 7.21 30

Original Page 15 of 19





CLIENT: Friedman & Bruya

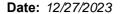
Project: 312311

QC SUMMARY REPORT

Total Metals by EPA Method 200.8

Sample ID: 2312443-001AN	SampType: MS			Units: µg/L	Prep Date: 12/22/2023 RunNo: 88561
Client ID: BATCH	Batch ID: 42425				Analysis Date: 12/22/2023 SeqNo: 1849416
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	1,680	10.0	1,000	599.3	108 70 130
Sample ID: CCV-42425A	SampType: CCV			Units: µg/L	Prep Date: 12/22/2023 RunNo: 88561
Client ID: CCV	Batch ID: 42425				Analysis Date: 12/22/2023 SeqNo: 1849421
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	1,020	10.0	1,000	0	102 90 110
Sample ID: CCB-42425A	SampType: CCB			Units: µg/L	Prep Date: 12/22/2023 RunNo: 88561
Client ID: CCB	Batch ID: 42425				Analysis Date: 12/22/2023 SeqNo: 1849422
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	ND	10.0			
Sample ID: 2312391-001CM	AS SampType: MS			Units: μg/L	Prep Date: 12/22/2023 RunNo: 88561
Client ID: BATCH	Batch ID: 42425				Analysis Date: 12/22/2023 SeqNo: 1849463
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	1,090	10.0	1,000	39.95	105 70 130
Sample ID: CCV-42425B	SampType: CCV			Units: μg/L	Prep Date: 12/22/2023 RunNo: 88561
Client ID: CCV	Batch ID: 42425				Analysis Date: 12/22/2023 SeqNo: 1849464
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	1,010	10.0	1,000	0	101 90 110

Original Page 16 of 19





Friedman & Bruya

Project: 312311

CLIENT:

Client ID: CCB

QC SUMMARY REPORT

Total Metals by EPA Method 200.8

Sample ID: CCB-42425B SampType: CCB Units: μg/L Prep Date: 12/22/2023 RunNo: 88561

Batch ID: 42425 Analysis Date: 12/22/2023 SeqNo: 1849465

Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Aluminum ND 10.0

Sample ID: CCV-42425C SampType: CCV Units: µg/L Prep Date: 12/22/2023 RunNo: 88561

Client ID: CCV Batch ID: 42425 Analysis Date: 12/22/2023 SeqNo: 1849476

Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Aluminum 1,020 10.0 1,000 0 102 90 110

Sample ID: CCB-42425C SampType: CCB Units: µg/L Prep Date: 12/22/2023 RunNo: 88561

| Client ID: CCB | Batch ID: 42425 | Analysis Date: 12/22/2023 | SeqNo: 1849477

Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Aluminum ND 10.0

Original Page 17 of 19



Sample Log-In Check List

Clien	nt Name:	FB				Work O	rder Numb	er: 2312396	3	
Logge	ed by:	Morgan Wil	son			Date Re	eceived:	12/18/20	23 10:15:00 AM	
Chain	of Custo	ody								-
		ustody compl	ete?			Yes	✓	No 🗌	Not Present	
2. Ho	ow was the	sample delive	ered?			Cou	<u>rier</u>			
Log In	<u>1</u>									
			shipping contained stody Seals not in			Yes		No 🗌	Not Present ✓	
4. Wa	as an attem	pt made to co	ool the samples?			Yes	✓	No \square	NA \square	
5. We	ere all items	received at a	a temperature of	>2°C to 6°C	*	Yes	✓	No 🗌	NA 🗆	
6. Sar	mple(s) in p	oroper contair	ner(s)?			Yes	✓	No \square		
7. Suf	fficient sam	ple volume fo	or indicated test(s)?		Yes	✓	No 🗌		
8. Are	e samples p	properly prese	erved?			Yes	✓	No \square		
9. Wa	as preserva	tive added to	bottles?			Yes	✓	No 🗌	NA \square	
									HCL, HNO3	
-		pace in the V				Yes		No 🗌	NA 🗹	
			arrive in good cor	ndition(unbro	oken)?	Yes	✓	No 🗀		
12. Do	es paperwo	ork match bot	tle labels?			Yes	✓	No 🗀		
13. Are	e matrices o	correctly ident	tified on Chain of	Custody?		Yes	✓	No \square		
14. Is it	t clear wha	t analyses we	ere requested?			Yes	✓	No 🗌		
	ere all hold met?	times (except	field parameters	, pH e.g.) ab	le to	Yes	✓	No 🗌		
<u>Specia</u>	ial Handl	ing (if app	<u>licable)</u>							
16. W	/as client no	otified of all d	iscrepancies with	this order?		Yes	; <u> </u>	No 🗆	NA 🗸	
	Person	Notified:			Date					
	By Who	om:			Via:	eM	ail 🗌 Ph	one 🗌 Fax	☐ In Person	
	Regard	ing:								
	Client Ir	nstructions:								
17. Ad	dditional re	marks:								_
Item Inf	<u>formation</u>									
		Item #		Temp °C						
S	ample			2.8						

^{*} Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

end Report To	Send Report To Michael Erdahl
Company	Friedman and Bruya, Inc.
Address	5500 4th Ave S
ity, State, ZIP_	Sity, State, ZIP_Seattle, WA 98108

Phone #(206) 285-8282_merdahl@friedmanandbruya.com	City, State, ZIP Seattle, WA 98108	Address 5500 4th Ave S	Company Friedman and Bruya, Inc.	Send Report To Michael Erdahl
EIM and Tier IV reprot	REMARKS	312311	PROJECT NAME/NO.	SUBCONTRACTER Fremont
		D-599	PO#	

	Seat. Ph. (3012	Fried						CTM	CTM	CTM	Sec. 1	
Fax (206) 283-5044	Seattle, WA 98119-2029 Ph. (206) 285-8282	3012 16th Avenue West	Friedman & Bruya, Inc.						CTMW-17D-1223	CTMW-17-1223	CTMW-12-1223	Sample ID	
												Lab ID	
Received by:	Received by:	Relinguished by:	SI						12/15/2023	12/15/2023	12/15/2023	Date Sampled	
	1	Cal	SIGNATURE						1425	1345	1205	Time Sampled	
	7	\							1425 water	1345 water	1205 water	Matrix	
	NN	Michael Erdahl							3	3	3	# of jars	
		Erdal	PRI						х	×	x	ferrous iron	Γ
		2	PRINT NAME						×	×	х	dissolved aluminum	
			AME						×	×	×	total aluminum	
												ferrous iron	ANAL
												dissolved gases	YSES
	17	Fried										TOC	NALYSES REQUESTED
		Friedman & Bruya	COM										UEST
		k Bru	COMPANY										ŒD
		7a											
+	121	12	ם										
	18/23	16/25	DATE										
	10:15	0730	TIME									Notes	

SAMPLE DISPOSAL Dispose after 30 days Return samples Will call with instructions	Rush charges authorized by:	⊠ Standard TAT	TURNAROUND TIME	Page #1 of1_	((()
Pa	nge 19	of	19		

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ANALYTICAL REPORT

PREPARED FOR

Attn: Trevor Louviere Dalton, Olmsted & Fuglevand, Inc 1001 SW Klickitat Way Suite 200B Seattle, Washington 98134 Generated 1/31/2024 4:58:23 PM

JOB DESCRIPTION

PFAS, Tacoma WA

JOB NUMBER

320-108687-1

Eurofins Sacramento 880 Riverside Parkway West Sacramento CA 95605



Eurofins Sacramento

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.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northern California, LLC Project Manager.

Authorization

Generated 1/31/2024 4:58:23 PM

Nathaniel Horner, Project Management Assistant I Nathaniel.Horner@et.eurofinsus.com (916)374-4306

Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Detection Summary	6
Client Sample Results	8
Isotope Dilution Summary	25
QC Sample Results	28
QC Association Summary	40
Lab Chronicle	42
Certification Summary	44
Method Summary	45
Sample Summary	46
Chain of Custody	47
Receipt Checklists	49

3

4

6

8

46

11

13

14

15

Definitions/Glossary

Client: Dalton, Olmsted & Fuglevand, Inc

Job ID: 320-108687-1 Project/Site: PFAS, Tacoma WA

Qualifiers

	\sim	N/	c
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Qualifier **Qualifier Description** F5 Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL, and the absolute difference between results is < the upper reporting limits for both.

Value is EMPC (estimated maximum possible concentration).

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 (Redischemistry)

DLC Decision Level Concentration (Radiochemistry) **EDL** Estimated Detection Limit (Dioxin)

Limit of Detection (DoD/DOE) LOD Limit of Quantitation (DoD/DOE) LOQ

MCL EPA recommended "Maximum Contaminant Level" Minimum Detectable Activity (Radiochemistry) MDA Minimum Detectable Concentration (Radiochemistry) MDC

MDL Method Detection Limit MLMinimum 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)

Negative / Absent NEG POS Positive / Present

PQL Practical Quantitation Limit

PRES Presumptive **Quality Control** QC

RER Relative Error Ratio (Radiochemistry)

Reporting Limit or Requested Limit (Radiochemistry) RL

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

Eurofins Sacramento

Page 4 of 49 1/31/2024

Case Narrative

Client: Dalton, Olmsted & Fuglevand, Inc

Project: PFAS, Tacoma WA

Job ID: 320-108687-1 Eurofins Sacramento

Receipt

The samples were received on 1/13/2024 8:05 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 4.7° C and 4.9° C.

LCMS

Method 1633: The following continuing calibration blank (CCB) was flagged for Isotope Dilution Analyte (IDA) recovery above the method recommended limit: CCB 320-735099/5. The purpose of the CCB is to test for instrument contamination. As the CCB was non-detect for all native analytes, the bracketing continuing calibration verification (CCV) was in control, and the IDA of the associated samples recovered within limits, there is no adverse impact on data quality; therefore, the data have been reported.

Method 1633: The "I" qualifier means the transition mass ratio for the indicated analyte for Perfluoropentanesulfonic acid (PFPeS) was outside the established ratio limits. The qualitative identification of the analyte has some degree of uncertainty, and the reported value may have some high bias. However, analyst judgment was used to positively identify the analyte: CCW-9-3A-0124 (320-108687-2). The sample was reanalyzed with concurring result, therefore, the best set of data was reported.

Method 1633: The sample duplicate (DUP) precision for preparation batch 320-734182 and analytical batch 320-735099 was outside control limits. Sample matrix interference is suspected.

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

Organic Prep

Method 1633: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-734182.

Method 1633: The following samples were diluted due to low isotope recoveries: CCW-3A-0124 (320-108687-1), CCW-9-3A-0124 (320-108687-2) and CTMW-17-0124 (320-108687-8). Elevated reporting limits (RL) are provided.

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

Eurofins Sacramento

Job ID: 320-108687-1

Page 5 of 49 1/31/2024

Client: Dalton, Olmsted & Fuglevand, Inc

Project/Site: PFAS, Tacoma WA

Lab Sample ID: 320-108687-1 Client Sample ID: CCW-3A-0124

Analyte	Result Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	31	7.5		ng/L		_	1633	Total/NA
Perfluoroheptanoic acid (PFHpA)	10	1.9		ng/L	1		1633	Total/NA
Perfluorooctanoic acid (PFOA)	96	1.9		ng/L	1		1633	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	9.4	1.9		ng/L	1		1633	Total/NA
Perfluorooctanesulfonic acid (PFOS)	19	1.9		ng/L	1		1633	Total/NA
NEtFOSAA	10	1.9		ng/L	1		1633	Total/NA
Perfluorobutanesulfonic acid (PFBS) - RA	3.5	1.9		ng/L	1		1633	Total/NA

Client Sample ID: CCW-9-3A-0124

Analyte	Result (Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	35		7.3		ng/L		_	1633	Total/NA
Perfluoroheptanoic acid (PFHpA)	9.1		1.8		ng/L	1		1633	Total/NA
Perfluorooctanoic acid (PFOA)	93		1.8		ng/L	1		1633	Total/NA
Perfluoropentanesulfonic acid (PFPeS)	15 I		1.8		ng/L	1		1633	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	9.5		1.8		ng/L	1		1633	Total/NA
Perfluorooctanesulfonic acid (PFOS)	22		1.8		ng/L	1		1633	Total/NA
NEtFOSAA	9.6		1.8		ng/L	1		1633	Total/NA
Perfluorobutanesulfonic acid (PFBS) - RA	2.9		1.8		ng/L	1		1633	Total/NA

Client Sample ID: CCW-3B-0124

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	70		7.3		ng/L		_	1633	Total/NA
Perfluoropentanoic acid (PFPeA)	44		3.6		ng/L	1		1633	Total/NA
Perfluorohexanoic acid (PFHxA)	32		1.8		ng/L	1		1633	Total/NA
Perfluoroheptanoic acid (PFHpA)	15		1.8		ng/L	1		1633	Total/NA
Perfluorooctanoic acid (PFOA)	61		1.8		ng/L	1		1633	Total/NA
Perfluorononanoic acid (PFNA)	4.1		1.8		ng/L	1		1633	Total/NA
Perfluorobutanesulfonic acid (PFBS)	6.5		1.8		ng/L	1		1633	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	23		1.8		ng/L	1		1633	Total/NA
Perfluorooctanesulfonic acid (PFOS)	20		1.8		ng/L	1		1633	Total/NA
NEtFOSAA	2.4		1.8		ng/L	1		1633	Total/NA
Perfluoropentanesulfonic acid (PFPeS) - RA	4.2		1.8		ng/L	1		1633	Total/NA

Client Sample ID: FIELD BLANK #1-0124

No Detections.

Client Sample ID: CCW-2C-0124

Analyte	Result Qualifier	RL	MDL Unit	Dil Fac D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	5.2	1.8	ng/L		1633	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.1	1.8	ng/L	1	1633	Total/NA
Perfluorooctanoic acid (PFOA)	12	1.8	ng/L	1	1633	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	5.7	1.8	ng/L	1	1633	Total/NA

Client Sample ID: CCW-2B-0124

Analyte	Result Qualifier	RL	MDL Unit	Dil Fac D Method	Prep Type
Perfluorobutanoic acid (PFBA)	35	7.2	ng/L	1 1633	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Sacramento

Job ID: 320-108687-1

Lab Sample ID: 320-108687-2

Lab Sample ID: 320-108687-3

Lab Sample ID: 320-108687-4

Lab Sample ID: 320-108687-5

Lab Sample ID: 320-108687-6

Client: Dalton, Olmsted & Fuglevand, Inc

Project/Site: PFAS, Tacoma WA

Lab Sample ID: 320-108687-6

Lab Sample ID: 320-108687-7

Lab Sample ID: 320-108687-8

Lab Sample ID: 320-108687-9

Lab Sample ID: 320-108687-10

Client Sample ID: CCW-2B-0124 (Continued)

Analyte	Result Qualifier	RL	MDL Unit	Dil Fac D	Method	Prep Type
Perfluoroheptanoic acid (PFHpA)	2.5	1.8	ng/L		1633	Total/NA
Perfluorooctanoic acid (PFOA)	17	1.8	ng/L	1	1633	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	7.0	1.8	ng/L	1	1633	Total/NA
Perfluorooctanesulfonic acid (PFOS)	27	1.8	ng/L	1	1633	Total/NA
Perfluorooctanesulfonamide (FOSA)	1.8	1.8	ng/L	1	1633	Total/NA
NEtFOSAA	2.2	1.8	ng/L	1	1633	Total/NA
Perfluorohexanoic acid (PFHxA) - RA	4.0	1.8	ng/L	1	1633	Total/NA

Client Sample ID: CCW-2A-0124

Analyte	Result Qualifie	r RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	13	7.7		ng/L	1	_	1633	Total/NA
Perfluorohexanoic acid (PFHxA)	6.6	1.9		ng/L	1		1633	Total/NA
Perfluoroheptanoic acid (PFHpA)	3.6	1.9		ng/L	1		1633	Total/NA
Perfluorooctanoic acid (PFOA)	6.4	1.9		ng/L	1		1633	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.9	1.9		ng/L	1		1633	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	5.3	1.9		ng/L	1		1633	Total/NA
Perfluorooctanesulfonic acid (PFOS)	12	1.9		ng/L	1		1633	Total/NA
Perfluoropentanoic acid (PFPeA) - RA	7.1	3.8		ng/L	1		1633	Total/NA

Client Sample ID: CTMW-17-0124

	<u> </u>							.p.c .z. czc	
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	1500		7.6		ng/L	1	_	1633	Total/NA
Perfluoroundecanoic acid (PFUnA)	11		1.9		ng/L	1		1633	Total/NA
6:2 FTS	86		7.6		ng/L	1		1633	Total/NA
Perfluorohexanoic acid (PFHxA) - RE	39		20		ng/L	1		1633	Total/NA
Perfluoroheptanoic acid (PFHpA) - RE	20		20		ng/L	1		1633	Total/NA
Perfluorooctanoic acid (PFOA) - RE	54		20		ng/L	1		1633	Total/NA
Perfluorononanoic acid (PFNA) - RE	44		20		ng/L	1		1633	Total/NA
Perfluorobutanesulfonic acid (PFBS) - RE	2100		20		ng/L	1		1633	Total/NA
Perfluorohexanesulfonic acid (PFHxS) - RE	38		20		ng/L	1		1633	Total/NA
Perfluorooctanesulfonic acid (PFOS) - RE	110		20		ng/L	1		1633	Total/NA

Client Sample ID: RINSATE BLANK #1-0124

No Detections.

Client Sample ID: TRIP SOURCE WATER BLANK #1-0124

No Detections.

This Detection Summary does not include radiochemical test results.

Job ID: 320-108687-1

Client: Dalton, Olmsted & Fuglevand, Inc

Project/Site: PFAS, Tacoma WA

Client Sample ID: CCW-3A-0124

Date Collected: 01/11/24 10:35
Date Received: 01/13/24 08:05

Lab Sample ID: 320-108687-1

Matrix: Water

Job ID: 320-108687-1

l Analyzed	Dil
:51 01/18/24 23:42	
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Page 8 of 49

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1/31/2024

Client: Dalton, Olmsted & Fuglevand, Inc

Project/Site: PFAS, Tacoma WA

Client Sample ID: CCW-3A-0124

Date Collected: 01/11/24 10:35 Date Received: 01/13/24 08:05

M2-4:2 FTS

Lab Sample ID: 320-108687-1

Matrix: Water

Job ID: 320-108687-1

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24 (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d7-N-MeFOSE-M	21		10 - 130	01/17/24 11:51	01/18/24 23:42	1
d9-N-EtFOSE-M	26		10 - 130	01/17/24 11:51	01/18/24 23:42	1
d5-NEtPFOSA	38		10 - 130	01/17/24 11:51	01/18/24 23:42	1
d3-NMePFOSA	34		10 - 130	01/17/24 11:51	01/18/24 23:42	1

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24 - RA

Analyte	Result C	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	ND ND		1.9		ng/L		01/17/24 11:51	01/19/24 17:47	1
Perfluorobutanesulfonic acid (PFBS)	3.5		1.9		ng/L		01/17/24 11:51	01/19/24 17:47	1
Perfluoropentanesulfonic acid (PFPeS)	ND		1.9		ng/L		01/17/24 11:51	01/19/24 17:47	1
Isotope Dilution	%Recovery G	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4000 DENIA			10 100				04/47/04 44 54	04/40/04 47 47	

Isotope Dilution	%Recovery	Qualitier	Limits	Prepared	Anaiyzea	DII Fac
13C9 PFNA	66		40 - 130	01/17/24 11:51	01/19/24 17:47	1
13C3 PFBS	61		40 - 135	01/17/24 11:51	01/19/24 17:47	1
13C3 PFHxS	100		40 - 130	01/17/24 11:51	01/19/24 17:47	1

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24 - RE

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropentanoic acid (PFPeA)	ND		40		ng/L		01/22/24 04:23	01/26/24 16:51	1
Perfluorohexanoic acid (PFHxA)	ND		20		ng/L		01/22/24 04:23	01/26/24 16:51	1
4:2 FTS	ND		80		ng/L		01/22/24 04:23	01/26/24 16:51	1
PFMBA	ND		40		ng/L		01/22/24 04:23	01/26/24 16:51	1
NFDHA	ND		40		ng/L		01/22/24 04:23	01/26/24 16:51	1
PFMPA	ND		40		ng/L		01/22/24 04:23	01/26/24 16:51	1
PFEESA	ND		40		ng/L		01/22/24 04:23	01/26/24 16:51	1
3:3 FTCA	ND		100		ng/L		01/22/24 04:23	01/26/24 16:51	1
5:3 FTCA	ND		500		ng/L		01/22/24 04:23	01/26/24 16:51	1
7:3 FTCA	ND		500		ng/L		01/22/24 04:23	01/26/24 16:51	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C5 PFPeA	79		40 - 130				01/22/24 04:23	01/26/24 16:51	1
13C5 PFHxA	83		40 - 130				01/22/24 04:23	01/26/24 16:51	1

Client Sample ID: CCW-9-3A-0124 Lab Sample ID: 320-108687-2

40 - 200

Date Collected: 01/11/24 10:40 **Matrix: Water** Date Received: 01/13/24 08:05

Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	35	7.3	ng/L		01/17/24 11:51	01/19/24 00:00	1
Perfluorohexanoic acid (PFHxA)	ND	1.8	ng/L		01/17/24 11:51	01/19/24 00:00	1
Perfluoroheptanoic acid (PFHpA)	9.1	1.8	ng/L		01/17/24 11:51	01/19/24 00:00	1
Perfluorooctanoic acid (PFOA)	93	1.8	ng/L		01/17/24 11:51	01/19/24 00:00	1
Perfluorononanoic acid (PFNA)	ND	1.8	ng/L		01/17/24 11:51	01/19/24 00:00	1
Perfluorodecanoic acid (PFDA)	ND	1.8	ng/L		01/17/24 11:51	01/19/24 00:00	1
Perfluoroundecanoic acid (PFUnA)	ND	1.8	ng/L		01/17/24 11:51	01/19/24 00:00	1
Perfluorododecanoic acid (PFDoA)	ND	1.8	ng/L		01/17/24 11:51	01/19/24 00:00	1
Perfluorotridecanoic acid (PFTrDA)	ND	1.8	ng/L		01/17/24 11:51	01/19/24 00:00	1
Perfluorotetradecanoic acid (PFTeA)	ND	1.8	na/L		01/17/24 11:51	01/19/24 00:00	1

Eurofins Sacramento

01/22/24 04:23 01/26/24 16:51

Page 9 of 49 1/31/2024

Client: Dalton, Olmsted & Fuglevand, Inc Project/Site: PFAS, Tacoma WA

Date Collected: 01/11/24 10:40 Matrix: Water Date Received: 01/13/24 08:05

PFHAS Perfluoroloctanesulfonic acid ND 1.8 ng/L 01/17/24 11:51 01/19/24 00:00 PFHOS Perfluoroctanesulfonic acid PFNS ND 1.8 ng/L 01/17/24 11:51 01/19/24 00:00 Perfluoroctanesulfonic acid PFNS ND 1.8 ng/L 01/17/24 11:51 01/19/24 00:00 Perfluoroctanesulfonic acid PFNS ND 1.8 ng/L 01/17/24 11:51 01/19/24 00:00 Perfluoroctanesulfonic acid PFNS ND 1.8 ng/L 01/17/24 11:51 01/19/24 00:00 Perfluoroctanesulfonic acid PFNS ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 Perfluoroctanesulfonic acid PFNS ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 Perfluoroctanesulfonic acid PFNS ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 Perfluoroctanesulfonamide PFNS ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 NBEFOSA ND 1.8 ng/L 01/17/24 11:51 01/19/24 00:00 NBEFOSA ND 7.3 ng/L 01/17/24 11:51 01/19/24	Method: EPA 1633 - Per- and I Analyte	Result Qualifi	•	MDL Unit	D Prepared	Analyzed	Dil Fac
Perfluorochexanesulfonic acid PSS		15 I	1.8	ng/L	01/17/24 11:51	01/19/24 00:00	
PFHSS							
PFHoS Perfluoroctanosulfonic acid 22 1.8 ng L 0.1171724 11:51 0.119124 00:00 Perfluoroctanosulfonic acid (PFNS) ND 1.8 ng L 0.1171724 11:51 0.119124 00:00 Perfluoroctanosulfonic acid (PFDS) ND 1.8 ng L 0.1171724 11:51 0.119124 00:00 Perfluoroctanosulfonic acid (PFDS) ND 1.8 ng L 0.1171724 11:51 0.119124 00:00 Perfluoroctanosulfonic acid (PFDS) ND 1.8 ng L 0.1171724 11:51 0.119124 00:00 Perfluoroctanosulfonic acid (PFDS) ND 7.3 ng L 0.1171724 11:51 0.119124 00:00 Perfluoroctanosulfonic acid (PFDS) ND 7.3 ng L 0.1171724 11:51 0.119124 00:00 Perfluoroctanosulfonic acid (PFDS) ND 7.3 ng L 0.1171724 11:51 0.119124 00:00 Perfluoroctanosulfonic acid (PFDS) ND 1.8 ng L 0.1171724 11:51 0.119124 00:00 Perfluoroctanosulfonic acid (PFDS) ND 1.8 ng L 0.1171724 11:51 0.119124 00:00 NEIFOSA ND 1.8 ng L 0.1171724 11:51 0.119124 00:00 NEIFOSA ND 1.8 ng L 0.1171724 11:51 0.119124 00:00 NEIFOSE ND 1.8 ng L 0.1171724 11:51 0.119124 00:00 NEIFOSE ND 1.8 ng L 0.1171724 11:51 0.119124 00:00 NEIFOSE ND 1.8 ng L 0.1171724 11:51 0.119124 00:00 NEIFOSE ND 1.8 ng L 0.1171724 11:51 0.119124 00:00 NEIFOSE ND 7.3 ng L 0.1171724 11:51 0.119124 00:00 NEIFOSE ND 7.3 ng L 0.1171724 11:51 0.119124 00:00 NEIFOSE ND 7.3 ng L 0.1171724 11:51 0.119124 00:00 NEIFOSE ND 7.3 ng L 0.1171724 11:51 0.119124 00:00 NEIFOSE ND 7.3 ng L 0.1171724 11:51 0.119124 00:00 NEIFOSE ND 7.3 ng L 0.1171724 11:51 0.119124 00:00 NEIFOSE ND 7.3 ng L 0.1171724 11:51 0.119124 00:00 NEIFOSE ND 7.3 ng L 0.1171724 11:51 0.119124 00:00 NEIFOSE ND 7.3 ng L 0.1171724 11:51 0.119124 00:00 NEIFOSE ND 7.3 ng L 0.1171724 11:51 0.119124 00:00 NINGHOSE ND 7.3 ng L 0.1171724 11:51 0.119124 00:00 NINGHOSE ND		9.5	1.8	ng/L	01/17/24 11:51	01/19/24 00:00	1
Perfluorocotanesulfonic acid 22	Perfluoroheptanesulfonic acid	ND	1.8	ng/L	01/17/24 11:51	01/19/24 00:00	1
Perfluorononanesulfonia acid (PFNS) ND 1.8 ng/L 01/17/24 11:51 01/19/24 00:00 Perfluorododocanesulfonia acid (PFDS) ND 1.8 ng/L 01/17/24 11:51 01/19/24 00:00 PFDOS) Perfluorododocanesulfonia acid (PFDS) ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 PFDOS) PERFLOS) PERFLOS PERFLOS PERFLOS PERFLOS PERFLOS PERFLOS ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 01/17/24 11:51	Perfluorooctanesulfonic acid	22	1.8	ng/L	01/17/24 11:51	01/19/24 00:00	1
Perfluorodocanesulfonic acid (PFDS) ND 1.8 ng.L 01/17/24 11:51 01/19/24 00:00 Perfluorodocanesulfonic acid (PFDS) ND 1.8 ng.L 01/17/24 11:51 01/19/24 00:00 Perfluorodocanesulfonic acid (PFDS) ND 7.3 ng.L 01/17/24 11:51 01/19/24 00:00 ND 1.8	•	ND	1.8	na/l	01/17/24 11:51	01/19/24 00:00	1
Perfluorododecanesulfonic acid ND 1.8 ng/L 01/17/24 11:51 01/19/24 00:00 7.2 PFDOS) 1.2 FTS ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 0.52 PFTDOS) 1.2 FTS ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 0.52 PFTDOS 1.3 ng/L 01/17/24 11:51 01/19/24 00:00 0.52 PFTDOS ND 1.8 ng/L 01/17/24 11:51 01/19/24 00:00 0.52 PFTDOS ND 1.8 ng/L 01/17/24 11:51 01/19/24 00:00 0.52 PFTDOS NBEFOSA ND 1.8 ng/L 01/17/24 11:51 01/19/24 00:00 0.52 PFTDOS NBEFOSA ND 1.8 ng/L 01/17/24 11:51 01/19/24 00:00 0.52 PFTDOS NBEFOSA ND 1.8 ng/L 01/17/24 11:51 01/19/24 00:00 0.52 PFTDOS NBEFOSA ND 1.8 ng/L 01/17/24 11:51 01/19/24 00:00 0.52 PFTDOS NBEFOSA ND 1.8 ng/L 01/17/24 11:51 01/19/24 00:00 0.52 PFTDOS NBEFOSE ND 1.8 ng/L 01/17/24 11:51 01/19/24 00:00 0.52 PFTDOS NBEFOSE ND 1.8 ng/L 01/17/24 11:51 01/19/24 00:00 0.52 PFTDOS NBEFOSE ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 0.52 PFTDOS NBEFOSE ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 0.52 PFTDOS NBEFOSA ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 0.52 PFTDOS ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 0.52 PFTDOS ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 0.52 PFTDOS ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 0.52 PFTDOS ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 0.52 PFTDOS ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 0.52 PFTDOS ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 0.52 PFTDOS ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 0.52 PFTDOS ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 0.52 PFTDOS ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 0.52 PFTDOS ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 0.52 PFTDOS ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 0.52 PFTDOS ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 0.52 PFTDOS ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 0.52 PFTDOS ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 0.52 PFTDOS ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 0.52 PFTDOS ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 0.52 PFTDOS ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 0.52 PFTDOS ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 0.52 PFTDOS ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 0.52 PFTDO							
PEDOS 22:FTS	· · ·			-			
1.2 FTS	PFDoS)						
Perfluorocotanesulfonamide (FOSA) ND							
NMEFOSA ND 1.8 ng/L 01/17/24 11:51 01/19/24 00:00 NEIFOSA ND 1.8 ng/L 01/17/24 11:51 01/19/24 00:00 NEIFOSA ND 1.8 ng/L 01/17/24 11:51 01/19/24 00:00 NEIFOSAA ND 1.8 ng/L 01/17/24 11:51 01/19/24 00:00 NEIFOSAA ND 1.8 ng/L 01/17/24 11:51 01/19/24 00:00 NOINDEFOSAA 9.6 1.8 ng/L 01/17/24 11:51 01/19/24 00:00 NOINDEFOSA ND 1.8 ng/L 01/17/24 11:51 01/19/24 00:00 NOINDEFOSE ND 7.3 ng/L 01/17/24 11:51 01/19				•			1
NEIFOSA ND 1.8 ng/L 01/17/24 11:51 01/19/24 00:00 NMeFOSAA ND 1.8 ng/L 01/17/24 11:51 01/19/24 00:00 NMeFOSAA ND 1.8 ng/L 01/17/24 11:51 01/19/24 00:00 NMeFOSE ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 NMeFOSE ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 NMeFOSA ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 NMeFOSA ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 NMeFOSE ND 7.3 ng/L 01/17/24 11:51 01/19/24	Perfluorooctanesulfonamide (FOSA)	ND		ng/L	01/17/24 11:51	01/19/24 00:00	1
NMEFOSAA ND 1.8 ng/L 01/17/24 11:51 01/19/24 00:00 NEIFOSAA 9.6 1.8 ng/L 01/17/24 11:51 01/19/24 00:00 NEIFOSA 9.6 1.8 ng/L 01/17/24 11:51 01/19/24 00:00 NEIFOSE ND 18 ng/L 01/17/24 11:51 01/19/24 00:00 NEIFOSE ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 NEIFOSE ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 NEIFOSA ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 NEIFOSE ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:		ND		ng/L	01/17/24 11:51	01/19/24 00:00	1
NEFFOSE ND	NEtFOSA			ng/L	01/17/24 11:51	01/19/24 00:00	1
NMEFOSE ND 18 ng/L 01/17/24 11:51 01/19/24 00:00 PEFOSE ND 18 ng/L 01/17/24 11:51 01/19/24 00:00 PEFOSE ND 18 ng/L 01/17/24 11:51 01/19/24 00:00 PEFO-DA (GenX) ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 PEFO-DA (GenX) ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 PEFOSEA ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 PEFESA ND 7.3 ng/L 01/	NMeFOSAA	ND	1.8	ng/L	01/17/24 11:51	01/19/24 00:00	1
NEIFOSE ND 18 ng/L 01/17/24 11:51 01/19/24 00:00 14FPO-DA (GenX) ND 7.3 ng	NEtFOSAA	9.6	1.8	ng/L	01/17/24 11:51	01/19/24 00:00	1
HEPO-DA (GenX)	NMeFOSE	ND	18	ng/L	01/17/24 11:51	01/19/24 00:00	1
1,8-Dioxa-3H-perfluorononanoic acid ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 ADONA)	NEtFOSE	ND	18	ng/L	01/17/24 11:51	01/19/24 00:00	1
ADONA) ADONA A	HFPO-DA (GenX)	ND	7.3	ng/L	01/17/24 11:51	01/19/24 00:00	1
NFDHA ND 3.6 ng/L 01/17/24 11:51 01/19/24 00:00 11/17/24 11:51 01/		ND	7.3	ng/L	01/17/24 11:51	01/19/24 00:00	1
ND 7.3 ng/L 01/17/24 11:51 01/19/24 00:00 17.52 17.53 ng/L 01/17/24 11:51 01/19/24 00:00 17.53 17.54 17.54 17.54 17.55 17.54 17.55 17.54 17.55	•	ND	3.6	ng/L	01/17/24 11:51	01/19/24 00:00	1
	OCI-PF3ONS	ND		-	01/17/24 11:51	01/19/24 00:00	1
PEESA ND 3.6 ng/L 01/17/24 11:51 01/19/24 00:00 16:3 FTCA ND 46 ng/L 01/17/24 11:51 01/19/24 00:00 17:3 FTCA ND 46 ng/L 01/17/24 11:51 01/19/24 00:00 17:3 FTCA ND 46 ng/L 01/17/24 11:51 01/19/24 00:00 17:3 FTCA ND 46 ng/L 01/17/24 11:51 01/19/24 00:00 17:3 FTCA ND 46 ng/L 01/17/24 11:51 01/19/24 00:00 17:3 FTCA ND 46 ng/L 01/17/24 11:51 01/19/24 00:00 17:3 FTCA ND 01	I1CI-PF3OUdS	ND	7.3		01/17/24 11:51	01/19/24 00:00	1
63.3 FTCA ND 46 ng/L 01/17/24 11:51 01/19/24 00:00 7.3 FTCA ND 46 ng/L 01/17/24 11:51 01/19/24 00:00 7.3 FTCA ND 46 ng/L 01/17/24 11:51 01/19/24 00:00 7.4 FTCA 11 5. 130 01/17/24 11:51 01/19/24 00:00 7.5 FTCA 7.	PFEESA	ND		-	01/17/24 11:51	01/19/24 00:00	
RESTCA ND 46 ng/L 01/17/24 11:51 01/19/24 00:00 18 13C4 PFBA 11 5-130 01/17/24 11:51 01/19/24 00:00 13C5 PFHXA 43 40-130 01/17/24 11:51 01/19/24 00:00 13C5 PFHXA 56 40-130 01/17/24 11:51 01/19/24 00:00 13C5 PFDA 57 30-130 01/17/24 11:51 01/19/24 00:00 13C5 PFDA 57 30-130 01/17/24 11:51 01/19/24 00:00 13C5 PFDA 57 30-130 01/17/24 11:51 01/19/24 00:00 13C5 PFDA 50 10-130 01/17/24 11:51 01/19/24 00:00 13C5 PFDA 50 10-130 01/17/24 11:51 01/19/24 00:00 13C5 PFDA 50 10-130 01/17/24 11:51 01/19/24 00:00 13C5 PFDA 45 10-130 01/17/24 11:51 01/19/24 00:00 13C5 PFDA 44 40-130 01/17/24 11:51 01/19/24 00:00 13C5 PFDA 44 40-130 01/17/24 11:51 01/19/24 00:00 13C5 PFDA 45 40-130 01/17/24 11:51 01/19/24 00:00 13C5 PFDA 46 40-130 01/17/24 11:51 01/19/24 00:00 13C5 PFDA 40-130 01/17/24 11:51 01/19/2				•			1
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13C5 PFHxA 43 40 - 130 01/17/24 11:51 01/19/24 00:00 13C4 PFHpA 76 40 - 130 01/17/24 11:51 01/19/24 00:00 13C8 PFOA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 13C9 PFNA 64 40 - 130 01/17/24 11:51 01/19/24 00:00 13C6 PFDA 53 40 - 130 01/17/24 11:51 01/19/24 00:00 13C6 PFDA 53 40 - 130 01/17/24 11:51 01/19/24 00:00 13C7 PFUnA 57 30 - 130 01/17/24 11:51 01/19/24 00:00 13C2 PFDOA 50 10 - 130 01/17/24 11:51 01/19/24 00:00 13C2 PFDOA 45 10 - 130 01/17/24 11:51 01/19/24 00:00 13C3 PFHxS 59 40 - 130 01/17/24 11:51 01/19/24 00:00 13C8 PFOS 54 40 - 130 01/17/24 11:51 01/19/24 00:00 13C8 PFOS 54 40 - 130 01/17/24 11:51 01/19/24 00:00 13C8 POSA 44 40 - 130 01/17/24 11:51 01/19/24 00:00 13C8 POSA 44 40 - 130 01/17/24 11:51 01/19/24 00:00 13C8 POSA 56 40 - 170 01/17/24 11:51 01/19/24 00:00 13C8 POSA 56 40 - 170 01/17/24 11:51 01/19/24 00:00 13C8 POSA 56 40 - 170 01/17/24 11:51 01/19/24 00:00 13C8 POSA 56 40 - 170 01/17/24 11:51 01/19/24 00:00 13C8 POSA 56 40 - 170 01/17/24 11:51 01/19/24 00:00 13C8 POSA 56 40 - 170 01/17/24 11:51 01/19/24 00:00 13C8 POSA 56 40 - 170 01/17/24 11:51 01/19/24 00:00 13C8 POSA 56 40 - 170 01/17/24 11:51 01/19/24 00:00 13C8 POSA 56 40 - 170 01/17/24 11:51 01/19/24 00:00 13C8 POSA 56 40 - 170 01/17/24 11:51 01/19/24 00:00 13C8 POSA 56 40 - 170 01/17/24 11:51 01/19/24 00:00 13C8 POSA 56 40 - 170 01/17/24 11:51 01/19/24 00:00 13C8 POSA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 13C8 POSA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 13C8 POSA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 13C8 POSA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 13C8 POSA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 13C8 POSA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 13C8 POSA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 13C8 POSA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 13C8 POSA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 13C8 POSA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 13C8 POSA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 13C8 POSA 56 50 POSA 56 POSA	sotope Dilution	%Recovery Qualifi	er Limits		Prepared	Analyzed	Dil Fac
13C4 PFHpA 76 40 - 130 01/17/24 11:51 01/19/24 00:00 13C8 PFOA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 13C9 PFNA 64 40 - 130 01/17/24 11:51 01/19/24 00:00 13C6 PFDA 53 40 - 130 01/17/24 11:51 01/19/24 00:00 13C7 PFUnA 57 30 - 130 01/17/24 11:51 01/19/24 00:00 13C2 PFDOA 50 10 - 130 01/17/24 11:51 01/19/24 00:00 13C2 PFDOA 50 10 - 130 01/17/24 11:51 01/19/24 00:00 13C3 PFHDA 45 10 - 130 01/17/24 11:51 01/19/24 00:00 13C3 PFHXS 59 40 - 130 01/17/24 11:51 01/19/24 00:00 13C8 PFOS 54 40 - 130 01/17/24 11:51 01/19/24 00:00 13C8 PFOS 54 40 - 130 01/17/24 11:51 01/19/24 00:00 13C8 POS 60 40 - 170 01/17/24 11:51 01/19/24 00:00 13C8 POSA 63 25 - 135 01/17/24 11:51 01/19/24 00:00 13C8 PTS 79 40 - 200 01/17/24 11:51 01/19/24 00:00 13C3 HFPO-DA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 13C3 HFPO-DA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 13C3 HFPO-DA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 13C3 HFPO-DA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 13C3 HFPO-DA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 13C3 HFPO-DA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 13C3 HFPO-DA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 13C3 HFPO-DA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 13C3 HFPO-DA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 13C3 HFPO-DA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 13C3 HFPO-DA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 13C3 HFPO-DA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 13C3 HFPO-DA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 13C3 HFPO-DA 10 - 130 01/17/24 11:51 01/19/24 00:00 13C3 HFPO-DA 10 - 130 01/17/24 11:51 01/19/24 00:00 13C3 HFPO-DA 10 - 130 01/17/24 11:51 01/19/24 00:00 13C3 HFPO-DA 10 - 130 01/17/24 11:51 01/19/24 00:00 13C3 HFPO-DA 10 - 130 01/17/24 11:51 01/19/24 00:00 13C3 HFPO-DA 10 - 130 01/17/24 11:51 01/19/24 00:00 13C3 HFPO-DA 10 - 130 01/17/24 11:51 01/19/24 00:00 13C3 HFPO-DA 10 - 130 01/17/24 11:51 01/19/24 00:00 13C3 HFPO-DA 10 - 130 01/17/24 11:51 01/19/24 00:00 13C3 HFPO-DA 10 - 130 01/17/24 11:51 01/19/24 00:00 13C3 HFPO-DA 10 - 130 01/17/24 11:51 01/19/24 00:00 13C3 HFPO-DA 10 - 130 01/17	13C4 PFBA	11	5 - 130		01/17/24 11:51	01/19/24 00:00	
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13C9 PFNA 64 40 - 130 01/17/24 11:51 01/19/24 00:00 13C6 PFDA 53 40 - 130 01/17/24 11:51 01/19/24 00:00 13C7 PFUnA 57 30 - 130 01/17/24 11:51 01/19/24 00:00 13C2 PFDoA 50 10 - 130 01/17/24 11:51 01/19/24 00:00 13C2 PFDDA 45 10 - 130 01/17/24 11:51 01/19/24 00:00 13C3 PFHxS 59 40 - 130 01/17/24 11:51 01/19/24 00:00 13C8 PFOS 54 40 - 130 01/17/24 11:51 01/19/24 00:00 13C8 FOSA 44 40 - 130 01/17/24 11:51 01/19/24 00:00 13C8 FOSA 44 40 - 130 01/17/24 11:51 01/19/24 00:00 13C8 FOSA 44 40 - 130 01/17/24 11:51 01/19/24 00:00 13C8 FOSA 56 40 - 170 01/17/24 11:51 01/19/24 00:00 13C8 FOSA 63 25 - 135 01/17/24 11:51 01/19/24 00:00 13C8 FOSA 63 25 - 135 01/17/24 11:51 01/19/24 00:00 13C8 FOSA 63 25 - 135 01/17/24 11:51 01/19/24 00:00 13C8 FOSA 63 25 - 135 01/17/24 11:51 01/19/24 00:00 13C8 FOSA 63 25 - 135 01/17/24 11:51 01/19/24 00:00 13C8 FOSA 63 25 - 135 01/17/24 11:51 01/19/24 00:00 13C8 FOSA 63 25 - 135 01/17/24 11:51 01/19/24 00:00 13C8 FOSA 63 25 - 135 01/17/24 11:51 01/19/24 00:00 13C8 FOSA 63 25 - 135 01/17/24 11:51 01/19/24 00:00 13C8 FOSA 63 25 - 135 01/17/24 11:51 01/19/24 00:00 13C8 FOSA 63 25 - 135 01/17/24 11:51 01/19/24 00:00 13C8 FOSA 63 25 - 135 01/17/24 11:51 01/19/24 00:00 13C8 FOSA 63 25 - 135 01/17/24 11:51 01/19/24 00:00 13C8 FOSA 64 0 - 130 01/17/24 11:51 01/19/24 00:00 13C8 FOSA 64 0 - 130 01/17/24 11:51 01/19/24 00:00 13C8 FOSA 64 0 - 130 01/17/24 11:51 01/19/24 00:00 13C8 FOSA 64 0 - 130 01/17/24 11:51 01/19/24 00:00 13C8 FOSA 64 0 - 130 01/17/24 11:51 01/19/24 00:00 13C8 FOSA 64 0 - 130 01/17/24 11:51 01/19/24 00:00 13C8 FOSA 64 0 - 130 01/17/24 11:51 01/19/24 00:00 13C8 FOSA 64 0 - 130 01/17/24 11:51 01/19/24 00:00 13C8 FOSA 64 0 - 130 01/17/24 11:51 01/19/24 00:00 13C8 FOSA 64 0 - 130 01/17/24 11:51 01/19/24 00:00 13C8 FOSA 64 0 - 130 01/17/24 11:51 01/19/24 00:00 13C8 FOSA 64 0 - 130 01/17/24 11:51 01/19/24 00:00 13C8 FOSA 64 0 - 130 01/17/24 11:51 01/19/24 00:00 13C8 FOSA 64 0 - 130 01/17/24 11:51 01/19/24 00:00 13C8 FOSA 64 0 - 130 01/17/24 11:51 01/19/24 00:00 13C8 FOSA 64 0 - 130 01/17/24	13C4 PFHpA	76	40 - 130		01/17/24 11:51	01/19/24 00:00	1
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13C7 PFUnA 57 30 - 130 01/17/24 11:51 01/19/24 00:00 13C2 PFDoA 50 10 - 130 01/17/24 11:51 01/19/24 00:00 13C2 PFTeDA 45 10 - 130 01/17/24 11:51 01/19/24 00:00 13C3 PFHxS 59 40 - 130 01/17/24 11:51 01/19/24 00:00 13C8 PFOS 54 40 - 130 01/17/24 11:51 01/19/24 00:00 13C8 FOSA 44 40 - 130 01/17/24 11:51 01/19/24 00:00 13C8-NMEFOSAA 56 40 - 170 01/17/24 11:51 01/19/24 00:00 13C5-NEtFOSAA 63 25 - 135 01/17/24 11:51 01/19/24 00:00 12C5-RTS 79 40 - 200 01/17/24 11:51 01/19/24 00:00 13C3 HFPO-DA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 13C3 HFPO-DA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 13C3 HFPO-DA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 13C3 HFPO-DA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 13C3 HFPO-DA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 13C3 HFPO-DA 17 10 - 130 01/17/24 11:51 01/19/24 00:00 13C3 HFPO-SE-M 17 10 - 130 01/17/24 11:51 01/19/24 00:00 13C3 HS-N-EtFOSE-M 21 10 - 130 01/17/24 11:51 01/19/24 00:00	13C9 PFNA	64	40 - 130		01/17/24 11:51	01/19/24 00:00	1
13C2 PFDoA 50 10 - 130 01/17/24 11:51 01/19/24 00:00 13C2 PFTeDA 45 10 - 130 01/17/24 11:51 01/19/24 00:00 13C3 PFHxS 59 40 - 130 01/17/24 11:51 01/19/24 00:00 13C8 PFOS 54 40 - 130 01/17/24 11:51 01/19/24 00:00 13C8 FOSA 44 40 - 130 01/17/24 11:51 01/19/24 00:00 13C8 FOSA 56 40 - 170 01/17/24 11:51 01/19/24 00:00 13C5 NEtFOSAA 63 25 - 135 01/17/24 11:51 01/19/24 00:00 13C6 PTS 79 40 - 200 01/17/24 11:51 01/19/24 00:00 13C8 PTS 87 40 - 300 01/17/24 11:51 01/19/24 00:00 13C3 HFPO-DA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 13C5 NEFOSE-M 17 10 - 130 01/17/24 11:51 01/19/24 00:00 13C5 NEtFOSE-M 21 10 - 130 01/17/24 11:51 01/19/24 00:00 13C5 NETFOSE-M 21 10 - 130 01/17/24	13C6 PFDA	53	40 - 130		01/17/24 11:51	01/19/24 00:00	1
13C2 PFTeDA 45 10 - 130 01/17/24 11:51 01/19/24 00:00 13C3 PFHxS 59 40 - 130 01/17/24 11:51 01/19/24 00:00 13C8 PFOS 54 40 - 130 01/17/24 11:51 01/19/24 00:00 13C8 FOSA 44 40 - 130 01/17/24 11:51 01/19/24 00:00 13S-NMEFOSAA 56 40 - 170 01/17/24 11:51 01/19/24 00:00 13C5 PFTS 79 40 - 200 01/17/24 11:51 01/19/24 00:00 13C3 HFPO-DA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 13C3 HFPO-DA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 13C9-N-EtFOSE-M 17 10 - 130 01/17/24 11:51 01/19/24 00:00 13C9-N-EtFOSE-M 21 10 - 130 01/17/24 11:51 01/19/24 00:00	13C7 PFUnA	57	30 - 130		01/17/24 11:51	01/19/24 00:00	
13C2 PFTeDA 45 10 - 130 01/17/24 11:51 01/19/24 00:00 13C3 PFHxS 59 40 - 130 01/17/24 11:51 01/19/24 00:00 13C8 PFOS 54 40 - 130 01/17/24 11:51 01/19/24 00:00 13C8 FOSA 44 40 - 130 01/17/24 11:51 01/19/24 00:00 13S-NMEFOSAA 56 40 - 170 01/17/24 11:51 01/19/24 00:00 13C5 PFTS 79 40 - 200 01/17/24 11:51 01/19/24 00:00 13C3 HFPO-DA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 13C3 HFPO-DA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 13C9-N-EtFOSE-M 17 10 - 130 01/17/24 11:51 01/19/24 00:00 13C9-N-EtFOSE-M 21 10 - 130 01/17/24 11:51 01/19/24 00:00	13C2 PFDoA	50	10 - 130		01/17/24 11:51	01/19/24 00:00	1
13C3 PFHxS 59 40 - 130 01/17/24 11:51 01/19/24 00:00 01/17/24 11:51 <		45	10 - 130		01/17/24 11:51	01/19/24 00:00	1
13C8 PFOS 54 40 - 130 01/17/24 11:51 01/19/24 00:00 13C8 FOSA 01/17/24 11:51 01/19/24 00:00 13C8 FOSA 01/17/24 11:51 01/19/24 00:00 13C8 FOSAA 01/17/24 11:51 01/19/24 00:00 13C8 FOSAAA 01/17/24 11:51 01/19/24 00:00 13C8 FOSAAAA 01/17/24 11:51 01/19/24 00:00 13C8 FOSAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	13C3 PFHxS				01/17/24 11:51	01/19/24 00:00	
13C8 FOSA 44 40 - 130 01/17/24 11:51 01/19/24 00:00 63 13-NMeFOSAA 56 40 - 170 01/17/24 11:51 01/19/24 00:00 63 15-NEtFOSAA 63 25 - 135 01/17/24 11:51 01/19/24 00:00 62 16-2 FTS 79 40 - 200 01/17/24 11:51 01/19/24 00:00 63 16-8:2 FTS 87 40 - 300 01/17/24 11:51 01/19/24 00:00 63 13C3 HFPO-DA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 64 17-N-MeFOSE-M 17 10 - 130 01/17/24 11:51 01/19/24 00:00 64 19-N-EtFOSE-M 21 10 - 130 01/17/24 11:51 01/19/24 00:00 64					01/17/24 11:51	01/19/24 00:00	
d3-NMeFOSAA 56 40 - 170 01/17/24 11:51 01/19/24 00:00 65 d5-NEtFOSAA 63 25 - 135 01/17/24 11:51 01/19/24 00:00 67 M2-6:2 FTS 79 40 - 200 01/17/24 11:51 01/19/24 00:00 67 M2-8:2 FTS 87 40 - 300 01/17/24 11:51 01/19/24 00:00 67 M3C3 HFPO-DA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 67 M3-N-EtFOSE-M 17 10 - 130 01/17/24 11:51 01/19/24 00:00 67 M3-N-EtFOSE-M 21 10 - 130 01/17/24 11:51 01/19/24 00:00 67							
d5-NEtFOSAA 63 25 - 135 01/17/24 11:51 01/19/24 00:00 1 M2-6:2 FTS 79 40 - 200 01/17/24 11:51 01/19/24 00:00 1 M2-8:2 FTS 87 40 - 300 01/17/24 11:51 01/19/24 00:00 1 M3C3 HFPO-DA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 1 M7-N-MeFOSE-M 17 10 - 130 01/17/24 11:51 01/19/24 00:00 1 M9-N-EtFOSE-M 21 10 - 130 01/17/24 11:51 01/19/24 00:00 1							
M2-6:2 FTS 79 40 - 200 01/17/24 11:51 01/19/24 00:00 6 M2-8:2 FTS 87 40 - 300 01/17/24 11:51 01/19/24 00:00 6 13C3 HFPO-DA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 6 17-N-MeFOSE-M 17 10 - 130 01/17/24 11:51 01/19/24 00:00 6 19-N-EtFOSE-M 21 10 - 130 01/17/24 11:51 01/19/24 00:00 6							
M2-8:2 FTS 87 40 - 300 01/17/24 11:51 01/19/24 00:00 13C3 HFPO-DA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 17-N-MeFOSE-M 17 10 - 130 01/17/24 11:51 01/19/24 00:00 19-N-EtFOSE-M 21 10 - 130 01/17/24 11:51 01/19/24 00:00							
13C3 HFPO-DA 56 40 - 130 01/17/24 11:51 01/19/24 00:00 17-N-MeFOSE-M 17 10 - 130 01/17/24 11:51 01/19/24 00:00 17-N-EtFOSE-M 21 10 - 130 01/17/24 11:51 01/19/24 00:00 17-N-EtFOSE-M 21 10 - 130 01/17/24 11:51 01/19/24 00:00							
17-N-MeFOSE-M 17 10 - 130 01/17/24 11:51 01/19/24 00:00 19-N-EtFOSE-M 21 10 - 130 01/17/24 11:51 01/19/24 00:00							
d9-N-EtFOSE-M 21 10 - 130 01/17/24 11:51 01/19/24 00:00							1
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Eurofins Sacramento

1/31/2024

Page 10 of 49

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Job ID: 320-108687-1

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Client: Dalton, Olmsted & Fuglevand, Inc

Project/Site: PFAS, Tacoma WA

Client Sample ID: CCW-9-3A-0124

Date Collected: 01/11/24 10:40 Date Received: 01/13/24 08:05 Lab Sample ID: 320-108687-2

Matrix: Water

Job ID: 320-108687-1

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24 (Continued)

Isotope Dilution Limits Prepared %Recovery Qualifier Analyzed Dil Fac d3-NMePFOSA 31 10 - 130 01/17/24 11:51 01/19/24 00:00

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24 - RA

Result Qualifier MDL Unit Prepared RLAnalyzed Dil Fac 01/17/24 11:51 01/19/24 18:04 Perfluorobutanesulfonic acid 1.8 2.9 ng/L (PFBS)

Isotope Dilution %Recovery Qualifier Limits Prepared Analyzed Dil Fac 13C3 PFBS 81 40 - 135 01/17/24 11:51 01/19/24 18:04

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24 - RE

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Analyte	Result Qu	ualifier RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropentanoic acid (PFPeA)	ND ND	40	ng/L		01/22/24 04:23	01/26/24 17:09	1
4:2 FTS	ND	80	ng/L		01/22/24 04:23	01/26/24 17:09	1
PFMBA	ND	40	ng/L		01/22/24 04:23	01/26/24 17:09	1
PFMPA	ND	40	ng/L		01/22/24 04:23	01/26/24 17:09	1
3:3 FTCA	ND	100	ng/L		01/22/24 04:23	01/26/24 17:09	1
Isotope Dilution	%Recovery Qu	ualifier Limits			Prepared	Analyzed	Dil Fac
13C5 PFPeA	73	40 - 130			01/22/24 04:23	01/26/24 17:09	1
M2-4:2 FTS	99	40 - 200			01/22/24 04:23	01/26/24 17:09	1

Client Sample ID: CCW-3B-0124 Lab Sample ID: 320-108687-3

Date Collected: 01/11/24 12:00 **Matrix: Water**

Date Received: 01/13/24 08:05

Method: EPA 1633 -	· Per- and Polyndoroalkyi Substances	S Dy L	.C/IVI3/IVI3, Q3IVI	Table D-24
Analyte	Result Qualifier	RL	MDL Unit	D P

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	70		7.3		ng/L		01/17/24 11:51	01/19/24 00:17	1
Perfluoropentanoic acid (PFPeA)	44		3.6		ng/L		01/17/24 11:51	01/19/24 00:17	1
Perfluorohexanoic acid (PFHxA)	32		1.8		ng/L		01/17/24 11:51	01/19/24 00:17	1
Perfluoroheptanoic acid (PFHpA)	15		1.8		ng/L		01/17/24 11:51	01/19/24 00:17	1
Perfluorooctanoic acid (PFOA)	61		1.8		ng/L		01/17/24 11:51	01/19/24 00:17	1
Perfluorononanoic acid (PFNA)	4.1		1.8		ng/L		01/17/24 11:51	01/19/24 00:17	1
Perfluorodecanoic acid (PFDA)	ND		1.8		ng/L		01/17/24 11:51	01/19/24 00:17	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8		ng/L		01/17/24 11:51	01/19/24 00:17	1
Perfluorododecanoic acid (PFDoA)	ND		1.8		ng/L		01/17/24 11:51	01/19/24 00:17	1
Perfluorotridecanoic acid (PFTrDA)	ND		1.8		ng/L		01/17/24 11:51	01/19/24 00:17	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8		ng/L		01/17/24 11:51	01/19/24 00:17	1
Perfluorobutanesulfonic acid (PFBS)	6.5		1.8		ng/L		01/17/24 11:51	01/19/24 00:17	1
Perfluorohexanesulfonic acid (PFHxS)	23		1.8		ng/L		01/17/24 11:51	01/19/24 00:17	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		1.8		ng/L		01/17/24 11:51	01/19/24 00:17	1
Perfluorooctanesulfonic acid (PFOS)	20		1.8		ng/L		01/17/24 11:51	01/19/24 00:17	1
Perfluorononanesulfonic acid (PFNS)	ND		1.8		ng/L		01/17/24 11:51	01/19/24 00:17	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.8		ng/L		01/17/24 11:51	01/19/24 00:17	1
Perfluorododecanesulfonic acid (PFDoS)	ND		1.8		ng/L		01/17/24 11:51	01/19/24 00:17	1
4:2 FTS	ND		7.3		ng/L		01/17/24 11:51	01/19/24 00:17	1
6:2 FTS	ND		7.3		ng/L		01/17/24 11:51	01/19/24 00:17	1

Eurofins Sacramento

Page 11 of 49

Client: Dalton, Olmsted & Fuglevand, Inc
Project/Site: PFAS, Tacoma WA

Job ID: 320-108687-1

Trojocycho. Trito, Taocina Wit

Client Sample ID: CCW-3B-0124 Lab Sample ID: 320-108687-3

. Matrix: Water

Date Collected: 01/11/24 12:00

Date Received: 01/13/24 08:05

Analyte	Result Qu	ualifier RL	MDL Unit	D Prepared	Analyzed	Dil Fac
8:2 FTS	ND	7.3	ng/L	01/17/24 11:5	01/19/24 00:17	1
Perfluorooctanesulfonamide (FOSA)	ND	1.8	ng/L	01/17/24 11:5	1 01/19/24 00:17	1
NMeFOSA	ND	1.8	ng/L	01/17/24 11:5	1 01/19/24 00:17	1
NEtFOSA	ND	1.8	ng/L	01/17/24 11:5	1 01/19/24 00:17	1
NMeFOSAA	ND	1.8	ng/L	01/17/24 11:5	1 01/19/24 00:17	1
NEtFOSAA	2.4	1.8	ng/L	01/17/24 11:5	1 01/19/24 00:17	1
NMeFOSE	ND	18	ng/L	01/17/24 11:5	1 01/19/24 00:17	1
NEtFOSE	ND	18	ng/L	01/17/24 11:5	1 01/19/24 00:17	1
HFPO-DA (GenX)	ND	7.3	ng/L	01/17/24 11:5	1 01/19/24 00:17	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	7.3	ng/L	01/17/24 11:5	1 01/19/24 00:17	1
PFMBA	ND	3.6	ng/L	01/17/24 11:5	1 01/19/24 00:17	1
NFDHA	ND	3.6	ng/L	01/17/24 11:5	1 01/19/24 00:17	1
PFMPA	ND	3.6	ng/L	01/17/24 11:5	1 01/19/24 00:17	1
9CI-PF3ONS	ND	7.3	ng/L	01/17/24 11:5	1 01/19/24 00:17	1
11CI-PF3OUdS	ND	7.3	ng/L	01/17/24 11:5	1 01/19/24 00:17	1
PFEESA	ND	3.6	ng/L	01/17/24 11:5	1 01/19/24 00:17	1
3:3 FTCA	ND	9.1	ng/L	01/17/24 11:5	1 01/19/24 00:17	1
5:3 FTCA	ND	46	ng/L	01/17/24 11:5	1 01/19/24 00:17	1
7:3 FTCA	ND	46	ng/L	01/17/24 11:5	1 01/19/24 00:17	1
Isotope Dilution	%Recovery Qu	ualifier Limits		Prepared	Analyzed	Dil Fac
13C4 PFBA	27	5 - 130		01/17/24 11:5	01/19/24 00:17	1
13C5 PFPeA	65	40 - 130		01/17/24 11:5	1 01/19/24 00:17	1
13C5 PFHxA	71	40 - 130		01/17/24 11:5	1 01/19/24 00:17	1
13C4 PFHpA	89	40 - 130		01/17/24 11:5	1 01/19/24 00:17	1
13C8 PFOA	75	40 - 130		01/17/24 11:5	1 01/19/24 00:17	1
13C9 PFNA	76	40 - 130		01/17/24 11:5	1 01/19/24 00:17	1
13C6 PFDA	74	40 - 130		01/17/24 11:5	1 01/19/24 00:17	1
13C7 PFUnA	71	30 - 130		01/17/24 11:5	1 01/19/24 00:17	1
13C2 PFDoA	58	10 - 130		01/17/24 11:5	1 01/19/24 00:17	1
13C2 PFTeDA	50	10 - 130		01/17/24 11:5	1 01/19/24 00:17	1
13C3 PFBS	73	40 - 135		01/17/24 11:5	1 01/19/24 00:17	1
13C3 PFHxS	82	40 - 130		01/17/24 11:5	1 01/19/24 00:17	1
13C8 PFOS	78	40 - 130		01/17/24 11:5	1 01/19/24 00:17	1
13C8 FOSA	84	40 - 130		01/17/24 11:5	1 01/19/24 00:17	1
d3-NMeFOSAA	96	40 - 170		01/17/24 11:5	1 01/19/24 00:17	1
d5-NEtFOSAA	93	25 - 135		01/17/24 11:5	1 01/19/24 00:17	1
M2-4:2 FTS	101	40 - 200		01/17/24 11:5	1 01/19/24 00:17	1
M2-6:2 FTS	123	40 - 200		01/17/24 11:5	1 01/19/24 00:17	1
M2-8:2 FTS	118	40 - 300		01/17/24 11:5	1 01/19/24 00:17	1
13C3 HFPO-DA	78	40 - 130		01/17/24 11:5	1 01/19/24 00:17	1
d7-N-MeFOSE-M	44	10 - 130		01/17/24 11:5	1 01/19/24 00:17	1
d9-N-EtFOSE-M	37	10 - 130			1 01/19/24 00:17	1
d5-NEtPFOSA	47	10 - 130			1 01/19/24 00:17	1

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24 - RA									
Analyte	Result (Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropentanesulfonic acid (PFPeS)	4.2		1.8		ng/L		01/17/24 11:51	01/19/24 18:20	1

Eurofins Sacramento

Page 12 of 49

2

3

5

7

9

11

12

14

15

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Client: Dalton, Olmsted & Fuglevand, Inc Project/Site: PFAS, Tacoma WA

Client Sample ID: CCW-3B-0124 Lab Sample ID: 320-108687-3 Date Collected: 01/11/24 12:00

Matrix: Water

Job ID: 320-108687-1

Date Received: 01/13/24 08:05

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 PFHxS	86		40 - 130	01/17/24 11:51	01/19/24 18:20	1

Client Sample ID: FIELD BLANK #1-0124 Lab Sample ID: 320-108687-4

Date Collected: 01/11/24 11:15 **Matrix: Water**

Date Received: 01/13/24 08:05

Analyte	Result Quali	fier RL	MDL Unit	D	Prepared	Analyzed	Dil Fa
Perfluorobutanoic acid (PFBA)	ND	8.4	ng/L		01/17/24 11:51	01/19/24 00:52	
Perfluoropentanoic acid (PFPeA)	ND	4.2	ng/L		01/17/24 11:51	01/19/24 00:52	
Perfluorohexanoic acid (PFHxA)	ND	2.1	ng/L		01/17/24 11:51	01/19/24 00:52	
Perfluoroheptanoic acid (PFHpA)	ND	2.1	ng/L		01/17/24 11:51	01/19/24 00:52	
Perfluorooctanoic acid (PFOA)	ND	2.1	ng/L		01/17/24 11:51	01/19/24 00:52	
Perfluorononanoic acid (PFNA)	ND	2.1	ng/L		01/17/24 11:51	01/19/24 00:52	
Perfluorodecanoic acid (PFDA)	ND	2.1	ng/L		01/17/24 11:51	01/19/24 00:52	
Perfluoroundecanoic acid (PFUnA)	ND	2.1	ng/L		01/17/24 11:51	01/19/24 00:52	
Perfluorododecanoic acid (PFDoA)	ND	2.1	ng/L		01/17/24 11:51	01/19/24 00:52	
Perfluorotridecanoic acid (PFTrDA)	ND	2.1	ng/L		01/17/24 11:51	01/19/24 00:52	
Perfluorotetradecanoic acid (PFTeA)	ND	2.1	ng/L		01/17/24 11:51	01/19/24 00:52	
Perfluorobutanesulfonic acid (PFBS)	ND	2.1	ng/L		01/17/24 11:51	01/19/24 00:52	
Perfluoropentanesulfonic acid (PFPeS)	ND	2.1	ng/L		01/17/24 11:51	01/19/24 00:52	
Perfluorohexanesulfonic acid (PFHxS)	ND	2.1	ng/L		01/17/24 11:51	01/19/24 00:52	
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.1	ng/L		01/17/24 11:51	01/19/24 00:52	
Perfluorooctanesulfonic acid (PFOS)	ND	2.1	ng/L		01/17/24 11:51	01/19/24 00:52	
Perfluorononanesulfonic acid (PFNS)	ND	2.1	ng/L		01/17/24 11:51	01/19/24 00:52	
Perfluorodecanesulfonic acid (PFDS)	ND	2.1	ng/L		01/17/24 11:51	01/19/24 00:52	
Perfluorododecanesulfonic acid (PFDoS)	ND	2.1	ng/L		01/17/24 11:51	01/19/24 00:52	
4:2 FTS	ND	8.4	ng/L		01/17/24 11:51	01/19/24 00:52	
6:2 FTS	ND	8.4	ng/L		01/17/24 11:51	01/19/24 00:52	
8:2 FTS	ND	8.4	ng/L		01/17/24 11:51	01/19/24 00:52	
Perfluorooctanesulfonamide (FOSA)	ND	2.1	ng/L		01/17/24 11:51	01/19/24 00:52	
NMeFOSA	ND	2.1	ng/L		01/17/24 11:51	01/19/24 00:52	
NEtFOSA	ND	2.1	ng/L		01/17/24 11:51	01/19/24 00:52	
NMeFOSAA	ND	2.1	ng/L		01/17/24 11:51	01/19/24 00:52	
NEtFOSAA	ND	2.1	ng/L		01/17/24 11:51	01/19/24 00:52	
NMeFOSE	ND	21	ng/L		01/17/24 11:51	01/19/24 00:52	
NEtFOSE	ND	21	ng/L		01/17/24 11:51	01/19/24 00:52	
HFPO-DA (GenX)	ND	8.4	ng/L		01/17/24 11:51	01/19/24 00:52	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	8.4	ng/L		01/17/24 11:51	01/19/24 00:52	
PFMBA	ND	4.2	ng/L		01/17/24 11:51	01/19/24 00:52	
NFDHA	ND	4.2	ng/L		01/17/24 11:51	01/19/24 00:52	
PFMPA	ND	4.2	ng/L		01/17/24 11:51	01/19/24 00:52	
9CI-PF3ONS	ND	8.4	ng/L		01/17/24 11:51	01/19/24 00:52	
11CI-PF3OUdS	ND	8.4	ng/L		01/17/24 11:51	01/19/24 00:52	
PFEESA	ND	4.2	ng/L		01/17/24 11:51	01/19/24 00:52	
3:3 FTCA	ND	11	ng/L		01/17/24 11:51	01/19/24 00:52	
5:3 FTCA	ND	53	ng/L		01/17/24 11:51	01/19/24 00:52	
7:3 FTCA	ND	53	ng/L		01/17/24 11:51	01/19/24 00:52	

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Page 13 of 49

Client: Dalton, Olmsted & Fuglevand, Inc Project/Site: PFAS, Tacoma WA

Client Sample ID: FIELD BLANK #1-0124 Lab Sample ID: 320-108687-4 **Matrix: Water**

Date Collected: 01/11/24 11:15 Date Received: 01/13/24 08:05

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	74		5 - 130	01/17/24 11:51	01/19/24 00:52	1
13C5 PFPeA	73		40 - 130	01/17/24 11:51	01/19/24 00:52	1
13C5 PFHxA	73		40 - 130	01/17/24 11:51	01/19/24 00:52	1
13C4 PFHpA	79		40 - 130	01/17/24 11:51	01/19/24 00:52	1
13C8 PFOA	78		40 - 130	01/17/24 11:51	01/19/24 00:52	1
13C9 PFNA	73		40 - 130	01/17/24 11:51	01/19/24 00:52	1
13C6 PFDA	73		40 - 130	01/17/24 11:51	01/19/24 00:52	1
13C7 PFUnA	73		30 - 130	01/17/24 11:51	01/19/24 00:52	1
13C2 PFDoA	72		10 - 130	01/17/24 11:51	01/19/24 00:52	1
13C2 PFTeDA	77		10 - 130	01/17/24 11:51	01/19/24 00:52	1
13C3 PFBS	76		40 - 135	01/17/24 11:51	01/19/24 00:52	1
13C3 PFHxS	75		40 - 130	01/17/24 11:51	01/19/24 00:52	1
13C8 PFOS	79		40 - 130	01/17/24 11:51	01/19/24 00:52	1
13C8 FOSA	74		40 - 130	01/17/24 11:51	01/19/24 00:52	1
d3-NMeFOSAA	87		40 - 170	01/17/24 11:51	01/19/24 00:52	1
d5-NEtFOSAA	81		25 - 135	01/17/24 11:51	01/19/24 00:52	1
M2-4:2 FTS	94		40 - 200	01/17/24 11:51	01/19/24 00:52	1
M2-6:2 FTS	93		40 - 200	01/17/24 11:51	01/19/24 00:52	1
M2-8:2 FTS	92		40 - 300	01/17/24 11:51	01/19/24 00:52	1
13C3 HFPO-DA	63		40 - 130	01/17/24 11:51	01/19/24 00:52	1
d7-N-MeFOSE-M	72		10 - 130	01/17/24 11:51	01/19/24 00:52	1
d9-N-EtFOSE-M	68		10 - 130	01/17/24 11:51	01/19/24 00:52	1
d5-NEtPFOSA	67		10 - 130	01/17/24 11:51	01/19/24 00:52	1
d3-NMePFOSA	59		10 - 130	01/17/24 11:51	01/19/24 00:52	1

Client Sample ID: CCW-2C-0124 Lab Sample ID: 320-108687-5 Date Collected: 01/11/24 13:00 **Matrix: Water**

Date Received: 01/13/24 08:05

Analyte	Result Qualifi	er RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND	7.2	ng/L		01/17/24 11:51	01/19/24 01:10	1
Perfluoropentanoic acid (PFPeA)	ND	3.6	ng/L		01/17/24 11:51	01/19/24 01:10	1
Perfluorohexanoic acid (PFHxA)	5.2	1.8	ng/L		01/17/24 11:51	01/19/24 01:10	1
Perfluoroheptanoic acid (PFHpA)	2.1	1.8	ng/L		01/17/24 11:51	01/19/24 01:10	1
Perfluorooctanoic acid (PFOA)	12	1.8	ng/L		01/17/24 11:51	01/19/24 01:10	1
Perfluorononanoic acid (PFNA)	ND	1.8	ng/L		01/17/24 11:51	01/19/24 01:10	1
Perfluorodecanoic acid (PFDA)	ND	1.8	ng/L		01/17/24 11:51	01/19/24 01:10	1
Perfluoroundecanoic acid (PFUnA)	ND	1.8	ng/L		01/17/24 11:51	01/19/24 01:10	1
Perfluorododecanoic acid (PFDoA)	ND	1.8	ng/L		01/17/24 11:51	01/19/24 01:10	1
Perfluorotridecanoic acid (PFTrDA)	ND	1.8	ng/L		01/17/24 11:51	01/19/24 01:10	1
Perfluorotetradecanoic acid (PFTeA)	ND	1.8	ng/L		01/17/24 11:51	01/19/24 01:10	1
Perfluorobutanesulfonic acid (PFBS)	ND	1.8	ng/L		01/17/24 11:51	01/19/24 01:10	1
Perfluorohexanesulfonic acid (PFHxS)	5.7	1.8	ng/L		01/17/24 11:51	01/19/24 01:10	1
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.8	ng/L		01/17/24 11:51	01/19/24 01:10	1
Perfluorooctanesulfonic acid (PFOS)	ND	1.8	ng/L		01/17/24 11:51	01/19/24 01:10	1
Perfluorononanesulfonic acid (PFNS)	ND	1.8	ng/L		01/17/24 11:51	01/19/24 01:10	1
Perfluorodecanesulfonic acid (PFDS)	ND	1.8	ng/L		01/17/24 11:51	01/19/24 01:10	1
Perfluorododecanesulfonic acid (PFDoS)	ND	1.8	ng/L		01/17/24 11:51	01/19/24 01:10	1

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Page 14 of 49

Job ID: 320-108687-1

Client: Dalton, Olmsted & Fuglevand, Inc Project/Site: PFAS, Tacoma WA

Date Received: 01/13/24 08:05

Client Sample ID: CCW-2C-0124 Lab Sample ID: 320-108687-5 Date Collected: 01/11/24 13:00

Matrix: Water

Job ID: 320-108687-1

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24 (Continued)

Analyte	Result	Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
4:2 FTS	ND		7.2	ng/L		01/17/24 11:51	01/19/24 01:10	1
6:2 FTS	ND		7.2	ng/L		01/17/24 11:51	01/19/24 01:10	1
8:2 FTS	ND		7.2	ng/L		01/17/24 11:51	01/19/24 01:10	1
Perfluorooctanesulfonamide (FOSA)	ND		1.8	ng/L		01/17/24 11:51	01/19/24 01:10	1
NMeFOSA	ND		1.8	ng/L		01/17/24 11:51	01/19/24 01:10	1
NEtFOSA	ND		1.8	ng/L		01/17/24 11:51	01/19/24 01:10	1
NMeFOSAA	ND		1.8	ng/L		01/17/24 11:51	01/19/24 01:10	1
NEtFOSAA	ND		1.8	ng/L		01/17/24 11:51	01/19/24 01:10	1
NMeFOSE	ND		18	ng/L		01/17/24 11:51	01/19/24 01:10	1
NEtFOSE	ND		18	ng/L		01/17/24 11:51	01/19/24 01:10	1
HFPO-DA (GenX)	ND		7.2	ng/L		01/17/24 11:51	01/19/24 01:10	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		7.2	ng/L		01/17/24 11:51	01/19/24 01:10	1
PFMBA	ND		3.6	ng/L		01/17/24 11:51	01/19/24 01:10	1
NFDHA	ND		3.6	ng/L		01/17/24 11:51	01/19/24 01:10	1
PFMPA	ND		3.6	ng/L		01/17/24 11:51	01/19/24 01:10	1
9CI-PF3ONS	ND		7.2	ng/L		01/17/24 11:51	01/19/24 01:10	1
11CI-PF3OUdS	ND		7.2	ng/L		01/17/24 11:51	01/19/24 01:10	1
PFEESA	ND		3.6	ng/L		01/17/24 11:51	01/19/24 01:10	1
3:3 FTCA	ND		9.0	ng/L		01/17/24 11:51	01/19/24 01:10	1
5:3 FTCA	ND		45	ng/L		01/17/24 11:51	01/19/24 01:10	1
7:3 FTCA	ND		45	ng/L		01/17/24 11:51	01/19/24 01:10	1

7:3 FTCA ND		45	ng/L	01/17/24 11:51	01/19/24 01:10	1
Isotope Dilution %Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
13C4 PFBA 55		5 - 130		01/17/24 11:51	01/19/24 01:10	1
13C5 PFPeA 62	<u>!</u>	40 - 130		01/17/24 11:51	01/19/24 01:10	1
13C5 PFHxA 70)	40 - 130		01/17/24 11:51	01/19/24 01:10	1
13C4 PFHpA 78		40 - 130		01/17/24 11:51	01/19/24 01:10	1
13C8 PFOA 80)	40 - 130		01/17/24 11:51	01/19/24 01:10	1
13C9 PFNA 78	•	40 - 130		01/17/24 11:51	01/19/24 01:10	1
13C6 PFDA 74		40 - 130		01/17/24 11:51	01/19/24 01:10	1
13C7 PFUnA 67	•	30 - 130		01/17/24 11:51	01/19/24 01:10	1
13C2 PFDoA 57	•	10 - 130		01/17/24 11:51	01/19/24 01:10	1
13C2 PFTeDA 49		10 - 130		01/17/24 11:51	01/19/24 01:10	1
13C3 PFBS 78	1	40 - 135		01/17/24 11:51	01/19/24 01:10	1
13C3 PFHxS 77	•	40 - 130		01/17/24 11:51	01/19/24 01:10	1
13C8 PFOS 77		40 - 130		01/17/24 11:51	01/19/24 01:10	1
13C8 FOSA 75	i	40 - 130		01/17/24 11:51	01/19/24 01:10	1
d3-NMeFOSAA 82	!	40 - 170		01/17/24 11:51	01/19/24 01:10	1
d5-NEtFOSAA 73		25 - 135		01/17/24 11:51	01/19/24 01:10	1
M2-4:2 FTS 90)	40 - 200		01/17/24 11:51	01/19/24 01:10	1
M2-6:2 FTS 83	1	40 - 200		01/17/24 11:51	01/19/24 01:10	1
M2-8:2 FTS 85		40 - 300		01/17/24 11:51	01/19/24 01:10	1
13C3 HFPO-DA 62	!	40 - 130		01/17/24 11:51	01/19/24 01:10	1
d7-N-MeFOSE-M 47	•	10 - 130		01/17/24 11:51	01/19/24 01:10	1
d9-N-EtFOSE-M 37		10 - 130		01/17/24 11:51	01/19/24 01:10	1
d5-NEtPFOSA 53	1	10 - 130		01/17/24 11:51	01/19/24 01:10	1
d3-NMePFOSA 54	!	10 - 130		01/17/24 11:51	01/19/24 01:10	1

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Client: Dalton, Olmsted & Fuglevand, Inc

Project/Site: PFAS, Tacoma WA

Client Sample ID: CCW-2C-0124

Date Collected: 01/11/24 13:00 Date Received: 01/13/24 08:05 Lab Sample ID: 320-108687-5

Matrix: Water

Job ID: 320-108687-1

motiod: 2171 1000 1 of and folyhadroamyr oabotanood by 20111071110, Qoin fable b 24 101									
	Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Perfluoropentanesulfonic acid (PFPeS)	ND	1.8		ng/L		01/17/24 11:51	01/19/24 18:53	1
	Isotope Dilution	%Recovery Qualifier	Limits				Prepared	Analyzed	Dil Fac
	13C3 PFHxS	79	40 - 130				01/17/24 11:51	01/19/24 18:53	1

Client Sample ID: CCW-2B-0124

Date Collected: 01/11/24 13:55 Date Received: 01/13/24 08:05 Lab Sample ID: 320-108687-6

Matrix: Water

Analyte	Result Qualifier	RL	MDL Unit	D Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	35	7.2	ng/L	01/17/24 11:51	01/19/24 01:28	1
Perfluoropentanoic acid (PFPeA)	ND	3.6	ng/L	01/17/24 11:51	01/19/24 01:28	1
Perfluoroheptanoic acid (PFHpA)	2.5	1.8	ng/L	01/17/24 11:51	01/19/24 01:28	1
Perfluorooctanoic acid (PFOA)	17	1.8	ng/L	01/17/24 11:51	01/19/24 01:28	1
Perfluorodecanoic acid (PFDA)	ND	1.8	ng/L	01/17/24 11:51	01/19/24 01:28	1
Perfluoroundecanoic acid (PFUnA)	ND	1.8	ng/L	01/17/24 11:51	01/19/24 01:28	1
Perfluorododecanoic acid (PFDoA)	ND	1.8	ng/L	01/17/24 11:51	01/19/24 01:28	1
Perfluorotridecanoic acid (PFTrDA)	ND	1.8	ng/L	01/17/24 11:51	01/19/24 01:28	1
Perfluorotetradecanoic acid (PFTeA)	ND	1.8	ng/L	01/17/24 11:51	01/19/24 01:28	1
Perfluorobutanesulfonic acid (PFBS)	ND	1.8	ng/L	01/17/24 11:51	01/19/24 01:28	1
Perfluorohexanesulfonic acid (PFHxS)	7.0	1.8	ng/L	01/17/24 11:51	01/19/24 01:28	1
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.8	ng/L	01/17/24 11:51	01/19/24 01:28	1
Perfluorooctanesulfonic acid (PFOS)	27	1.8	ng/L	01/17/24 11:51	01/19/24 01:28	1
Perfluorononanesulfonic acid (PFNS)	ND	1.8	ng/L	01/17/24 11:51	01/19/24 01:28	1
Perfluorodecanesulfonic acid (PFDS)	ND	1.8	ng/L	01/17/24 11:51	01/19/24 01:28	1
Perfluorododecanesulfonic acid (PFDoS)	ND	1.8	ng/L	01/17/24 11:51	01/19/24 01:28	1
4:2 FTS	ND	7.2	ng/L	01/17/24 11:51	01/19/24 01:28	1
6:2 FTS	ND	7.2	ng/L	01/17/24 11:51	01/19/24 01:28	1
8:2 FTS	ND	7.2	ng/L	01/17/24 11:51	01/19/24 01:28	1
Perfluorooctanesulfonamide (FOSA)	1.8	1.8	ng/L	01/17/24 11:51	01/19/24 01:28	1
NMeFOSA	ND	1.8	ng/L	01/17/24 11:51	01/19/24 01:28	1
NEtFOSA	ND	1.8	ng/L	01/17/24 11:51	01/19/24 01:28	1
NMeFOSAA	ND	1.8	ng/L	01/17/24 11:51	01/19/24 01:28	1
NEtFOSAA	2.2	1.8	ng/L	01/17/24 11:51	01/19/24 01:28	1
NMeFOSE	ND	18	ng/L	01/17/24 11:51	01/19/24 01:28	1
NEtFOSE	ND	18	ng/L	01/17/24 11:51	01/19/24 01:28	1
HFPO-DA (GenX)	ND	7.2	ng/L	01/17/24 11:51	01/19/24 01:28	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	7.2	ng/L	01/17/24 11:51	01/19/24 01:28	1
PFMBA ´	ND	3.6	ng/L	01/17/24 11:51	01/19/24 01:28	1
NFDHA	ND	3.6	ng/L	01/17/24 11:51	01/19/24 01:28	1
PFMPA	ND	3.6	ng/L	01/17/24 11:51	01/19/24 01:28	1
9CI-PF3ONS	ND	7.2	ng/L	01/17/24 11:51	01/19/24 01:28	1
11CI-PF3OUdS	ND	7.2	ng/L	01/17/24 11:51	01/19/24 01:28	1
PFEESA	ND	3.6	ng/L	01/17/24 11:51	01/19/24 01:28	1

Eurofins Sacramento

Job ID: 320-108687-1

Client: Dalton, Olmsted & Fuglevand, Inc

Project/Site: PFAS, Tacoma WA

Client Sample ID: CCW-2B-0124

Date Collected: 01/11/24 13:55 Date Received: 01/13/24 08:05 Lab Sample ID: 320-108687-6

Matrix: Water

Method: EPA 1633 - Per-	- and Polyfluoroalky	I Substances b	y LC/MS/MS,	QSM Table E	3-24 (Continued	i)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3:3 FTCA	ND		9.0		ng/L		01/17/24 11:51	01/19/24 01:28	1
5:3 FTCA	ND		45		ng/L		01/17/24 11:51	01/19/24 01:28	1
7:3 FTCA	ND		45		ng/L		01/17/24 11:51	01/19/24 01:28	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA			5 - 130				01/17/24 11:51	01/19/24 01:28	1
13C5 PFPeA	61		40 - 130				01/17/24 11:51	01/19/24 01:28	1
13C5 PFHxA	73		40 - 130				01/17/24 11:51	01/19/24 01:28	1
13C4 PFHpA	94		40 - 130				01/17/24 11:51	01/19/24 01:28	1
13C8 PFOA	77		40 - 130				01/17/24 11:51	01/19/24 01:28	1
13C9 PFNA	86		40 - 130				01/17/24 11:51	01/19/24 01:28	1
13C6 PFDA	81		40 - 130				01/17/24 11:51	01/19/24 01:28	1
13C7 PFUnA	82		30 - 130				01/17/24 11:51	01/19/24 01:28	1
13C2 PFDoA	66		10 - 130				01/17/24 11:51	01/19/24 01:28	1
13C2 PFTeDA	50		10 - 130				01/17/24 11:51	01/19/24 01:28	1
13C3 PFBS	72		40 - 135				01/17/24 11:51	01/19/24 01:28	1
13C3 PFHxS	76		40 - 130				01/17/24 11:51	01/19/24 01:28	1
13C8 PFOS	81		40 - 130				01/17/24 11:51	01/19/24 01:28	1
13C8 FOSA	97		40 - 130				01/17/24 11:51	01/19/24 01:28	1
d3-NMeFOSAA	107		40 - 170				01/17/24 11:51	01/19/24 01:28	1
d5-NEtFOSAA	106		25 - 135				01/17/24 11:51	01/19/24 01:28	1
M2-4:2 FTS	99		40 - 200				01/17/24 11:51	01/19/24 01:28	1
M2-6:2 FTS	138		40 - 200				01/17/24 11:51	01/19/24 01:28	1
M2-8:2 FTS	134		40 - 300				01/17/24 11:51	01/19/24 01:28	1
13C3 HFPO-DA	73		40 - 130				01/17/24 11:51	01/19/24 01:28	1
d7-N-MeFOSE-M	33		10 - 130				01/17/24 11:51	01/19/24 01:28	1
d9-N-EtFOSE-M	24		10 - 130				01/17/24 11:51	01/19/24 01:28	1
d5-NEtPFOSA	58		10 - 130				01/17/24 11:51	01/19/24 01:28	1
d3-NMePFOSA	58		10 - 130				01/17/24 11:51	01/19/24 01:28	1

Mathadi EDA 1622 Dai	e and Dalufluaraallud Cubatanaaa	by LC/MS/MS, QSM Table B-24 - RA
- Weinoo: EPA 1655 - Per	r- and Polylluoroalkyi Substances	DV EC/IVIS/IVIS. USIVI TADIR B-24 - KA

Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	4.0	1.8	ng/L		01/17/24 11:51	01/19/24 19:10	1
Perfluorononanoic acid (PFNA)	ND	1.8	ng/L		01/17/24 11:51	01/19/24 19:10	1
Perfluoropentanesulfonic acid (PFPeS)	ND	1.8	ng/L		01/17/24 11:51	01/19/24 19:10	1
Isotope Dilution	%Recovery Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C5 PFHxA	77	40 - 130			01/17/24 11:51	01/19/24 19:10	1
13C9 PFNA	87	40 - 130			01/17/24 11:51	01/19/24 19:10	1
13C3 PFHxS	93	40 - 130			01/17/24 11:51	01/19/24 19:10	1

Client Sample ID: CCW-2A-0124

Date Collected: 01/11/24 14:40

Date Received: 01/13/24 08:05

Lab Sample ID: 320-108687-7

Matrix: Water

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, Q			
	OSM Table R-24	Dolyfluoroalbyl Substances by LC/MS/MS	Mothod: EDA 1633 - Dor- and

Wethou. E	PA 1633 - Pei- allu Pu	nynuoroaikyi Substan	ices by LC/	IVIO/IVIO, QOIVI TA	nie D-	24		
Analyte		Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobu	itanoic acid (PFBA)	13	7.7	ng/L		01/17/24 11:51	01/19/24 02:21	1
Perfluorohe	exanoic acid (PFHxA)	6.6	1.9	ng/L		01/17/24 11:51	01/19/24 02:21	1
Perfluorohe	ptanoic acid (PFHpA)	3.6	1.9	ng/L		01/17/24 11:51	01/19/24 02:21	1
Perfluorooc	tanoic acid (PFOA)	6.4	1.9	ng/L		01/17/24 11:51	01/19/24 02:21	1

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Page 17 of 49

Client: Dalton, Olmsted & Fuglevand, Inc Project/Site: PFAS, Tacoma WA

Client Sample ID: CCW-2A-0124

Lab Sample ID: 320-108687-7

Date Collected: 01/11/24 14:40 **Matrix: Water** Date Received: 01/13/24 08:05

		yl Substances by LC/N		· · · · · · · · · · · · · · · · · · ·	B.: =
Analyte	Result C		MDL Unit	D Prepared Analyzed	_ Dil Fac
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L	01/17/24 11:51 01/19/24 02:2	
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L	01/17/24 11:51 01/19/24 02:2	
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L	01/17/24 11:51 01/19/24 02:2	21 1
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L	01/17/24 11:51 01/19/24 02:2	21 1
Perfluorotridecanoic acid (PFTrDA)	ND	1.9	ng/L	01/17/24 11:51 01/19/24 02:2	21 1
Perfluorotetradecanoic acid (PFTeA)	ND	1.9	ng/L	01/17/24 11:51 01/19/24 02:2	21 1
Perfluorobutanesulfonic acid PFBS)	1.9	1.9	ng/L	01/17/24 11:51 01/19/24 02:2	21 1
Perfluoropentanesulfonic acid PFPeS)	ND	1.9	ng/L	01/17/24 11:51 01/19/24 02:2	21 1
Perfluorohexanesulfonic acid (PFHxS)	5.3	1.9	ng/L	01/17/24 11:51 01/19/24 02:2	21 1
Perfluoroheptanesulfonic acid PFHpS)	ND	1.9	ng/L	01/17/24 11:51 01/19/24 02:2	21 1
Perfluorooctanesulfonic acid	12	1.9	ng/L	01/17/24 11:51 01/19/24 02:2	21 1
Perfluorononanesulfonic acid (PFNS)	ND	1.9	ng/L	01/17/24 11:51 01/19/24 02:2	21 1
Perfluorodecanesulfonic acid (PFDS)	ND	1.9	ng/L	01/17/24 11:51 01/19/24 02:2	21 1
Perfluorododecanesulfonic acid	ND	1.9	ng/L	01/17/24 11:51 01/19/24 02:2	21 1
PFDoS) 1:2 FTS	ND	7.7	ng/L	01/17/24 11:51 01/19/24 02:2	21 1
3:2 FTS	ND	7.7	ng/L	01/17/24 11:51 01/19/24 02:2	21 1
3:2 FTS	ND	7.7	ng/L	01/17/24 11:51 01/19/24 02:2	
Perfluorooctanesulfonamide (FOSA)	ND	1.9	ng/L	01/17/24 11:51 01/19/24 02:2	
NMeFOSA	ND	1.9	ng/L	01/17/24 11:51 01/19/24 02:2	
NEtFOSA	ND	1.9	ng/L	01/17/24 11:51 01/19/24 02:2	
IMeFOSAA	ND	1.9	ng/L	01/17/24 11:51 01/19/24 02:2	
IEtFOSAA	ND	1.9	ng/L	01/17/24 11:51 01/19/24 02:2	
IMeFOSE	ND	19	ng/L	01/17/24 11:51 01/19/24 02:2	
NEtFOSE	ND	19	ng/L	01/17/24 11:51 01/19/24 02:2	
HFPO-DA (GenX)	ND	7.7	ng/L	01/17/24 11:51 01/19/24 02:2	
I,8-Dioxa-3H-perfluorononanoic acid ADONA)	ND	7.7	ng/L	01/17/24 11:51 01/19/24 02:2	
PFMBA	ND	3.8	ng/L	01/17/24 11:51 01/19/24 02:2	21 1
NFDHA	ND	3.8	ng/L	01/17/24 11:51 01/19/24 02:2	21 1
PFMPA	ND	3.8	ng/L	01/17/24 11:51 01/19/24 02:2	21 1
OCI-PF3ONS	ND	7.7	ng/L	01/17/24 11:51 01/19/24 02:2	
I1CI-PF3OUdS	ND	7.7	ng/L	01/17/24 11:51 01/19/24 02:2	
PFEESA	ND	3.8	ng/L	01/17/24 11:51 01/19/24 02:2	
3:3 FTCA	ND	9.6	ng/L	01/17/24 11:51 01/19/24 02:2	
5:3 FTCA	ND	48	ng/L	01/17/24 11:51 01/19/24 02:2	
7:3 FTCA	ND	48	ng/L	01/17/24 11:51 01/19/24 02:2	
sotope Dilution	%Recovery G		iig/L	Prepared Analyzed	Dil Fac
13C4 PFBA	50	5 - 130		$\frac{11694164}{01/17/24 \ 11:51} \frac{Allary 264}{01/19/24 \ 02:2}$	_
13C5 PFPeA	47	40 - 130		01/17/24 11:51 01/19/24 02:2	
13C5 PFHxA	49	40 - 130 40 - 130		01/17/24 11:51 01/19/24 02:2	
13C4 PFHpA	56	40 - 130		01/17/24 11:51 01/19/24 02:2	
13C8 PFOA	55	40 - 130 40 - 130		01/17/24 11:51 01/19/24 02:2	
13C9 PFNA	56	40 - 130		01/17/24 11:51 01/19/24 02:2	
13C6 PFDA	51	40 - 130		01/17/24 11:51 01/19/24 02:2	21 1

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Page 18 of 49

Job ID: 320-108687-1

Client: Dalton, Olmsted & Fuglevand, Inc

Project/Site: PFAS, Tacoma WA

Client Sample ID: CCW-2A-0124

Lab Sample ID: 320-108687-7 Date Collected: 01/11/24 14:40 **Matrix: Water**

Date Received: 01/13/24 08:05

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24 (Continued)

		,		- /	
Isotope Dilution	%Recovery	Qualifier Limits	Prepared	Analyzed	Dil Fac
13C2 PFDoA	38	10 - 130	01/17/24 11:51	01/19/24 02:21	1
13C2 PFTeDA	40	10 - 130	01/17/24 11:51	01/19/24 02:21	1
13C3 PFBS	49	40 - 135	01/17/24 11:51	01/19/24 02:21	1
13C3 PFHxS	57	40 - 130	01/17/24 11:51	01/19/24 02:21	1
13C8 PFOS	54	40 - 130	01/17/24 11:51	01/19/24 02:21	1
13C8 FOSA	52	40 - 130	01/17/24 11:51	01/19/24 02:21	1
d3-NMeFOSAA	64	40 - 170	01/17/24 11:51	01/19/24 02:21	1
d5-NEtFOSAA	58	25 - 135	01/17/24 11:51	01/19/24 02:21	1
M2-4:2 FTS	76	40 - 200	01/17/24 11:51	01/19/24 02:21	1
M2-6:2 FTS	79	40 - 200	01/17/24 11:51	01/19/24 02:21	1
M2-8:2 FTS	80	40 - 300	01/17/24 11:51	01/19/24 02:21	1
13C3 HFPO-DA	42	40 - 130	01/17/24 11:51	01/19/24 02:21	1
d7-N-MeFOSE-M	36	10 - 130	01/17/24 11:51	01/19/24 02:21	1
d9-N-EtFOSE-M	31	10 - 130	01/17/24 11:51	01/19/24 02:21	1
d5-NEtPFOSA	35	10 - 130	01/17/24 11:51	01/19/24 02:21	1
d3-NMePFOSA	35	10 - 130	01/17/24 11:51	01/19/24 02:21	1
_					

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24 - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropentanoic acid (PFPeA)	7.1		3.8		ng/L		01/17/24 11:51	01/19/24 19:27	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac

Client Sample ID: CTMW-17-0124

Date Collected: 01/11/24 16:00

Date Received: 01/13/24 08:05

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	1500		7.6		ng/L		01/17/24 11:51	01/19/24 02:38	1
Perfluoroundecanoic acid (PFUnA)	11		1.9		ng/L		01/17/24 11:51	01/19/24 02:38	1
Perfluorododecanoic acid (PFDoA)	ND		1.9		ng/L		01/17/24 11:51	01/19/24 02:38	1
Perfluorotridecanoic acid (PFTrDA)	ND		1.9		ng/L		01/17/24 11:51	01/19/24 02:38	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9		ng/L		01/17/24 11:51	01/19/24 02:38	1
4:2 FTS	ND		7.6		ng/L		01/17/24 11:51	01/19/24 02:38	1
6:2 FTS	86		7.6		ng/L		01/17/24 11:51	01/19/24 02:38	1
8:2 FTS	ND		7.6		ng/L		01/17/24 11:51	01/19/24 02:38	1
NMeFOSA	ND		1.9		ng/L		01/17/24 11:51	01/19/24 02:38	1
NEtFOSA	ND		1.9		ng/L		01/17/24 11:51	01/19/24 02:38	1
NEtFOSAA	ND		1.9		ng/L		01/17/24 11:51	01/19/24 02:38	1
NMeFOSE	ND		19		ng/L		01/17/24 11:51	01/19/24 02:38	1
NEtFOSE	ND		19		ng/L		01/17/24 11:51	01/19/24 02:38	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
12CA DEDA	26		5 120				01/17/24 11:51	01/10/24 02:28	1

isotope Dilution	%Recovery	Qualitier Limits	Prepared	Anaiyzea	DII Fac
13C4 PFBA	36	5 - 130	01/17/24 11:51	01/19/24 02:38	1
13C7 PFUnA	31	30 - 130	01/17/24 11:51	01/19/24 02:38	1
13C2 PFDoA	21	10 - 130	01/17/24 11:51	01/19/24 02:38	1
13C2 PFTeDA	18	10 - 130	01/17/24 11:51	01/19/24 02:38	1
d5-NEtFOSAA	40	25 - 135	01/17/24 11:51	01/19/24 02:38	1
M2-4:2 FTS	59	40 - 200	01/17/24 11:51	01/19/24 02:38	1

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Lab Sample ID: 320-108687-8

Matrix: Water

Job ID: 320-108687-1

Client: Dalton, Olmsted & Fuglevand, Inc

Project/Site: PFAS, Tacoma WA

Client Sample ID: CTMW-17-0124

Date Collected: 01/11/24 16:00 Date Received: 01/13/24 08:05

13C3 PFBS

Lab Sample ID: 320-108687-8

Matrix: Water

Job ID: 320-108687-1

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24 (Continued)

Isotope Dilution	%Recovery (Qualifier	Limits	Prepared	Analyzed	Dil Fac
M2-6:2 FTS	68		40 - 200	01/17/24 11:51	01/19/24 02:38	1
M2-8:2 FTS	62		40 - 300	01/17/24 11:51	01/19/24 02:38	1
d7-N-MeFOSE-M	23		10 - 130	01/17/24 11:51	01/19/24 02:38	1
d9-N-EtFOSE-M	20		10 - 130	01/17/24 11:51	01/19/24 02:38	1
d5-NEtPFOSA	22		10 - 130	01/17/24 11:51	01/19/24 02:38	1
d3-NMePFOSA	23		10 - 130	01/17/24 11:51	01/19/24 02:38	1

Analyte	Result	Qualifier	RL	MDL Unit	D Prepared	Analyzed	Dil Fac
Perfluoropentanoic acid (PFPeA)	ND		40	ng/L	01/22/24 04:23	01/26/24 17:26	1
Perfluorohexanoic acid (PFHxA)	39		20	ng/L	01/22/24 04:23	3 01/26/24 17:26	1
Perfluoroheptanoic acid (PFHpA)	20		20	ng/L	01/22/24 04:23	3 01/26/24 17:26	1
Perfluorooctanoic acid (PFOA)	54		20	ng/L	01/22/24 04:23	3 01/26/24 17:26	1
Perfluorononanoic acid (PFNA)	44		20	ng/L	01/22/24 04:23	3 01/26/24 17:26	1
Perfluorodecanoic acid (PFDA)	ND		20	ng/L	01/22/24 04:23	01/26/24 17:26	1
Perfluorobutanesulfonic acid (PFBS)	2100		20	ng/L	01/22/24 04:23	3 01/26/24 17:26	1
Perfluoropentanesulfonic acid (PFPeS)	ND		20	ng/L	01/22/24 04:23	3 01/26/24 17:26	1
Perfluorohexanesulfonic acid (PFHxS)	38		20	ng/L	01/22/24 04:23	3 01/26/24 17:26	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		20	ng/L	01/22/24 04:23	3 01/26/24 17:26	1
Perfluorooctanesulfonic acid (PFOS)	110		20	ng/L	01/22/24 04:23	3 01/26/24 17:26	1
Perfluorononanesulfonic acid (PFNS)	ND		20	ng/L	01/22/24 04:23	3 01/26/24 17:26	1
Perfluorodecanesulfonic acid (PFDS)	ND		20	ng/L	01/22/24 04:23	3 01/26/24 17:26	1
Perfluorododecanesulfonic acid (PFDoS)	ND		20	ng/L	01/22/24 04:23	3 01/26/24 17:26	1
Perfluorooctanesulfonamide (FOSA)	ND		20	ng/L	01/22/24 04:23	3 01/26/24 17:26	1
NMeFOSAA	ND		20	ng/L	01/22/24 04:23	3 01/26/24 17:26	1
HFPO-DA (GenX)	ND		80	ng/L	01/22/24 04:23	3 01/26/24 17:26	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		80	ng/L	01/22/24 04:23	3 01/26/24 17:26	1
PFMBA	ND		40	ng/L	01/22/24 04:23	3 01/26/24 17:26	1
NFDHA	ND		40	ng/L	01/22/24 04:23	3 01/26/24 17:26	1
PFMPA	ND		40	ng/L	01/22/24 04:23	3 01/26/24 17:26	1
9CI-PF3ONS	ND		80	ng/L	01/22/24 04:23	3 01/26/24 17:26	1
11CI-PF3OUdS	ND		80	ng/L	01/22/24 04:23	01/26/24 17:26	1
PFEESA	ND		40	ng/L	01/22/24 04:23	01/26/24 17:26	1
3:3 FTCA	ND		100	ng/L	01/22/24 04:23	3 01/26/24 17:26	1
5:3 FTCA	ND		500	ng/L	01/22/24 04:23	3 01/26/24 17:26	1
7:3 FTCA	ND		500	ng/L	01/22/24 04:23	3 01/26/24 17:26	1
Isotope Dilution	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
13C5 PFPeA	72		40 - 130		01/22/24 04:23	01/26/24 17:26	1
13C5 PFHxA	72		40 - 130		01/22/24 04:23	3 01/26/24 17:26	1
13C4 PFHpA	76		40 - 130		01/22/24 04:23	3 01/26/24 17:26	1
13C8 PFOA	75		40 - 130		01/22/24 04:23	3 01/26/24 17:26	1
13C9 PFNA	78		40 - 130		01/22/24 04:23	3 01/26/24 17:26	1
13C6 PFDA	70		40 - 130		01/22/24 04:23	3 01/26/24 17:26	1

Eurofins Sacramento

01/22/24 04:23 01/26/24 17:26

Page 20 of 49

40 - 135

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Client: Dalton, Olmsted & Fuglevand, Inc Project/Site: PFAS, Tacoma WA

Client Sample ID: CTMW-17-0124 Lab Sample ID: 320-108687-8

Date Collected: 01/11/24 16:00 **Matrix: Water**

Date Received: 01/13/24 08:05

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24 - RE (Continued)									
Isotope Dilution	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac				
13C3 PFHxS	75	40 - 130	01/22/24 04:23	01/26/24 17:26	1				
13C8 PFOS	78	40 - 130	01/22/24 04:23	01/26/24 17:26	1				
13C8 FOSA	71	40 - 130	01/22/24 04:23	01/26/24 17:26	1				
d3-NMeFOSAA	79	40 - 170	01/22/24 04:23	01/26/24 17:26	1				
13C3 HFPO-DA	69	40 - 130	01/22/24 04:23	01/26/24 17:26	1				

Client Sample ID: RINSATE BLANK #1-0124

Lab Sample ID: 320-108687-9 Date Collected: 01/11/24 16:30 **Matrix: Water**

Date Received: 01/13/24 08:05

Analyte	Result Qualifier	RL	MDL Unit	D Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND	8.2	ng/L	01/17/24 11:51	01/19/24 02:56	1
Perfluoropentanoic acid (PFPeA)	ND	4.1	ng/L	01/17/24 11:51	01/19/24 02:56	1
Perfluorohexanoic acid (PFHxA)	ND	2.1	ng/L	01/17/24 11:51	01/19/24 02:56	1
Perfluoroheptanoic acid (PFHpA)	ND	2.1	ng/L	01/17/24 11:51	01/19/24 02:56	1
Perfluorooctanoic acid (PFOA)	ND	2.1	ng/L	01/17/24 11:51	01/19/24 02:56	1
Perfluorononanoic acid (PFNA)	ND	2.1	ng/L	01/17/24 11:51	01/19/24 02:56	1
Perfluorodecanoic acid (PFDA)	ND	2.1	ng/L	01/17/24 11:51	01/19/24 02:56	1
Perfluoroundecanoic acid (PFUnA)	ND	2.1	ng/L	01/17/24 11:51	01/19/24 02:56	1
Perfluorododecanoic acid (PFDoA)	ND	2.1	ng/L	01/17/24 11:51	01/19/24 02:56	1
Perfluorotridecanoic acid (PFTrDA)	ND	2.1	ng/L	01/17/24 11:51	01/19/24 02:56	1
Perfluorotetradecanoic acid (PFTeA)	ND	2.1	ng/L	01/17/24 11:51	01/19/24 02:56	1
Perfluorobutanesulfonic acid (PFBS)	ND	2.1	ng/L	01/17/24 11:51	01/19/24 02:56	1
Perfluoropentanesulfonic acid (PFPeS)	ND	2.1	ng/L	01/17/24 11:51	01/19/24 02:56	1
Perfluorohexanesulfonic acid (PFHxS)	ND	2.1	ng/L	01/17/24 11:51	01/19/24 02:56	1
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.1	ng/L		01/19/24 02:56	
Perfluorooctanesulfonic acid (PFOS)	ND	2.1	ng/L	01/17/24 11:51	01/19/24 02:56	1
Perfluorononanesulfonic acid (PFNS)	ND	2.1	ng/L	01/17/24 11:51	01/19/24 02:56	1
Perfluorodecanesulfonic acid (PFDS)	ND	2.1	ng/L	01/17/24 11:51	01/19/24 02:56	1
Perfluorododecanesulfonic acid (PFDoS)	ND	2.1	ng/L		01/19/24 02:56	1
4:2 FTS	ND	8.2	ng/L		01/19/24 02:56	1
6:2 FTS	ND	8.2	ng/L		01/19/24 02:56	1
8:2 FTS	ND	8.2	ng/L		01/19/24 02:56	1
Perfluorooctanesulfonamide (FOSA)	ND	2.1	ng/L		01/19/24 02:56	1
NMeFOSA	ND	2.1	ng/L	01/17/24 11:51	01/19/24 02:56	1
NEtFOSA	ND	2.1	ng/L		01/19/24 02:56	1
NMeFOSAA	ND	2.1	ng/L	01/17/24 11:51	01/19/24 02:56	1
NEtFOSAA	ND	2.1	ng/L		01/19/24 02:56	1
NMeFOSE	ND	21	ng/L	01/17/24 11:51	01/19/24 02:56	1
NEtFOSE	ND	21	ng/L	01/17/24 11:51	01/19/24 02:56	1
HFPO-DA (GenX)	ND	8.2	ng/L	01/17/24 11:51	01/19/24 02:56	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	8.2	ng/L	01/17/24 11:51	01/19/24 02:56	1
PFMBA	ND	4.1	ng/L	01/17/24 11:51	01/19/24 02:56	1
NFDHA	ND	4.1	ng/L	01/17/24 11:51	01/19/24 02:56	1
PFMPA	ND	4.1	ng/L		01/19/24 02:56	1
9CI-PF3ONS	ND	8.2	ng/L	01/17/24 11:51	01/19/24 02:56	1

Eurofins Sacramento

Page 21 of 49

Job ID: 320-108687-1

Client: Dalton, Olmsted & Fuglevand, Inc

Project/Site: PFAS, Tacoma WA

Client Sample ID: RINSATE BLANK #1-0124

Date Collected: 01/11/24 16:30 Date Received: 01/13/24 08:05 Lab Sample ID: 320-108687-9

01/17/24 11:51 01/19/24 02:56

Lab Sample ID: 320-108687-10

Matrix: Water

Matrix: Water

Job ID: 320-108687-1

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24 (Continued)

Analyte	Result	Qualifier	RL	MDL (Jnit	D	Prepared	Analyzed	Dil Fac
11CI-PF3OUdS	ND		8.2	r	ng/L		01/17/24 11:51	01/19/24 02:56	1
PFEESA	ND		4.1	r	ng/L		01/17/24 11:51	01/19/24 02:56	1
3:3 FTCA	ND		10	r	ng/L		01/17/24 11:51	01/19/24 02:56	1
5:3 FTCA	ND		52	r	ng/L		01/17/24 11:51	01/19/24 02:56	1
7:3 FTCA	ND		52	r	ng/L		01/17/24 11:51	01/19/24 02:56	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	86		5 - 130				01/17/24 11:51	01/19/24 02:56	1
13C5 PFPeA	87		40 - 130				01/17/24 11:51	01/19/24 02:56	1
13C5 PFHxA	86		40 - 130				01/17/24 11:51	01/19/24 02:56	1
13C4 PFHpA	92		40 - 130				01/17/24 11:51	01/19/24 02:56	1
13C8 PFOA	85		40 - 130				01/17/24 11:51	01/19/24 02:56	1
13C9 PFNA	81		40 - 130				01/17/24 11:51	01/19/24 02:56	1
13C6 PFDA	86		40 - 130				01/17/24 11:51	01/19/24 02:56	1
13C7 PFUnA	78		30 - 130				01/17/24 11:51	01/19/24 02:56	1
13C2 PFDoA	75		10 - 130				01/17/24 11:51	01/19/24 02:56	1
13C2 PFTeDA	81		10 - 130				01/17/24 11:51	01/19/24 02:56	1
13C3 PFBS	93		40 - 135				01/17/24 11:51	01/19/24 02:56	1
13C3 PFHxS	89		40 - 130				01/17/24 11:51	01/19/24 02:56	1
13C8 PFOS	92		40 - 130				01/17/24 11:51	01/19/24 02:56	1
13C8 FOSA	88		40 - 130				01/17/24 11:51	01/19/24 02:56	1
d3-NMeFOSAA	91		40 - 170				01/17/24 11:51	01/19/24 02:56	1
d5-NEtFOSAA	82		25 - 135				01/17/24 11:51	01/19/24 02:56	1
M2-4:2 FTS	111		40 - 200				01/17/24 11:51	01/19/24 02:56	1
M2-6:2 FTS	106		40 - 200				01/17/24 11:51	01/19/24 02:56	1
M2-8:2 FTS	111		40 - 300				01/17/24 11:51	01/19/24 02:56	1
13C3 HFPO-DA	78		40 - 130				01/17/24 11:51	01/19/24 02:56	1
d7-N-MeFOSE-M	85		10 - 130				01/17/24 11:51	01/19/24 02:56	1
d9-N-EtFOSE-M	82		10 - 130				01/17/24 11:51	01/19/24 02:56	1
d5-NEtPFOSA	76		10 - 130				01/17/24 11:51	01/19/24 02:56	1

Client Sample ID: TRIP SOURCE WATER BLANK #1-0124

Date Collected: 01/11/24 09:00

70

Date Received: 01/13/24 08:05

d3-NMePFOSA

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24

Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND	6.9	ng/L		01/17/24 11:51	01/19/24 03:13	1
Perfluoropentanoic acid (PFPeA)	ND	3.5	ng/L		01/17/24 11:51	01/19/24 03:13	1
Perfluorohexanoic acid (PFHxA)	ND	1.7	ng/L		01/17/24 11:51	01/19/24 03:13	1
Perfluoroheptanoic acid (PFHpA)	ND	1.7	ng/L		01/17/24 11:51	01/19/24 03:13	1
Perfluorooctanoic acid (PFOA)	ND	1.7	ng/L		01/17/24 11:51	01/19/24 03:13	1
Perfluorononanoic acid (PFNA)	ND	1.7	ng/L		01/17/24 11:51	01/19/24 03:13	1
Perfluorodecanoic acid (PFDA)	ND	1.7	ng/L		01/17/24 11:51	01/19/24 03:13	1
Perfluoroundecanoic acid (PFUnA)	ND	1.7	ng/L		01/17/24 11:51	01/19/24 03:13	1
Perfluorododecanoic acid (PFDoA)	ND	1.7	ng/L		01/17/24 11:51	01/19/24 03:13	1
Perfluorotridecanoic acid (PFTrDA)	ND	1.7	ng/L		01/17/24 11:51	01/19/24 03:13	1
Perfluorotetradecanoic acid (PFTeA)	ND	1.7	ng/L		01/17/24 11:51	01/19/24 03:13	1
Perfluorobutanesulfonic acid (PFBS)	ND	1.7	ng/L		01/17/24 11:51	01/19/24 03:13	1

10 - 130

Eurofins Sacramento

Page 22 of 49

Client: Dalton, Olmsted & Fuglevand, Inc Project/Site: PFAS, Tacoma WA

Client Sample ID: TRIP SOURCE WATER BLANK #1-0124

Lab Sample ID: 320-108687-10

Matrix: Water

Job ID: 320-108687-1

Date Collected: 01/11/24 09:00 Date Received: 01/13/24 08:05

Analyte	Result Qualifier	RL	MDL Unit	D Prepared	Analyzed	Dil Fac
Perfluoropentanesulfonic acid (PFPeS)	ND	1.7	ng/L	01/17/24 11:51	01/19/24 03:13	•
Perfluorohexanesulfonic acid (PFHxS)	ND	1.7	ng/L	01/17/24 11:51	01/19/24 03:13	
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.7	ng/L	01/17/24 11:51	01/19/24 03:13	•
Perfluorooctanesulfonic acid (PFOS)	ND	1.7	ng/L	01/17/24 11:51	01/19/24 03:13	
Perfluorononanesulfonic acid (PFNS)	ND	1.7	ng/L	01/17/24 11:51	01/19/24 03:13	
Perfluorodecanesulfonic acid (PFDS)	ND	1.7	ng/L	01/17/24 11:51	01/19/24 03:13	
Perfluorododecanesulfonic acid (PFDoS)	ND	1.7	ng/L	01/17/24 11:51	01/19/24 03:13	
4:2 FTS	ND	6.9	ng/L	01/17/24 11:51	01/19/24 03:13	
6:2 FTS	ND	6.9	ng/L	01/17/24 11:51	01/19/24 03:13	•
8:2 FTS	ND	6.9	ng/L	01/17/24 11:51	01/19/24 03:13	
Perfluorooctanesulfonamide (FOSA)	ND	1.7	ng/L	01/17/24 11:51	01/19/24 03:13	
NMeFOSA	ND	1.7	ng/L	01/17/24 11:51	01/19/24 03:13	
NEtFOSA	ND	1.7	ng/L	01/17/24 11:51	01/19/24 03:13	
NMeFOSAA	ND	1.7	ng/L	01/17/24 11:51	01/19/24 03:13	
NEtFOSAA	ND	1.7	ng/L	01/17/24 11:51	01/19/24 03:13	
NMeFOSE	ND	17	ng/L	01/17/24 11:51	01/19/24 03:13	,
NEtFOSE	ND	17	ng/L	01/17/24 11:51	01/19/24 03:13	
HFPO-DA (GenX)	ND	6.9	ng/L		01/19/24 03:13	
4,8-Dioxa-3H-perfluorononanoic acid	ND	6.9	ng/L		01/19/24 03:13	
(ADONA)	2	0.0	9/=	0.7.1.72.1.1.01	0 1, 10,2 1 00110	
PFMBA	ND	3.5	ng/L	01/17/24 11:51	01/19/24 03:13	
NFDHA	ND	3.5	ng/L	01/17/24 11:51	01/19/24 03:13	
PFMPA	ND	3.5	ng/L	01/17/24 11:51	01/19/24 03:13	
9CI-PF3ONS	ND	6.9	ng/L	01/17/24 11:51	01/19/24 03:13	
11CI-PF3OUdS	ND	6.9	ng/L	01/17/24 11:51	01/19/24 03:13	
PFEESA	ND	3.5	ng/L	01/17/24 11:51	01/19/24 03:13	
3:3 FTCA	ND	8.7	ng/L	01/17/24 11:51	01/19/24 03:13	
5:3 FTCA	ND	43	ng/L		01/19/24 03:13	
7:3 FTCA	ND	43	ng/L		01/19/24 03:13	
Isotope Dilution	%Recovery Qualifier		9.=	Prepared	Analyzed	Dil Fa
13C4 PFBA	93 Qualifier	5 - 130			01/19/24 03:13	Dil Fai
13C5 PFPeA	92	40 - 130			01/19/24 03:13	
13C5 PFHxA	92 89	40 - 130 40 - 130			01/19/24 03:13	
		40 - 130 40 - 130			01/19/24 03:13	
13C4 PFHpA	102					
13C8 PFOA	92	40 - 130			01/19/24 03:13	
13C9 PFNA	95	40 - 130			01/19/24 03:13	
13C6 PFDA	92	40 - 130			01/19/24 03:13	
13C7 PFUnA	87	30 - 130			01/19/24 03:13	
13C2 PFDoA	86	10 - 130			01/19/24 03:13	
13C2 PFTeDA	94	10 - 130			01/19/24 03:13	
13C3 PFBS	102	40 - 135			01/19/24 03:13	
13C3 PFHxS	102	40 - 130			01/19/24 03:13	
13C8 PFOS	101	40 - 130		01/17/24 11:51	01/19/24 03:13	
13C8 FOSA	94	40 - 130			01/19/24 03:13	
d3-NMeFOSAA	109	40 - 170		01/17/24 11:51	01/19/24 03:13	
d5-NEtFOSAA	99	25 - 135		01/17/24 11:51	01/19/24 03:13	
M2-4:2 FTS	121	40 - 200		04/47/04 44:54	01/19/24 03:13	

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1/31/2024

Page 23 of 49

Client: Dalton, Olmsted & Fuglevand, Inc Job ID: 320-108687-1

Project/Site: PFAS, Tacoma WA

Client Sample ID: TRIP SOURCE WATER BLANK #1-0124 Lab Sample ID: 320-108687-10

Date Collected: 01/11/24 09:00 Matrix: Water

Date Received: 01/13/24 08:05

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24 (Continued)

Isotope Dilution	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
M2-6:2 FTS	116	40 - 200	01/17/24 11:51	01/19/24 03:13	1
M2-8:2 FTS	129	40 - 300	01/17/24 11:51	01/19/24 03:13	1
13C3 HFPO-DA	99	40 - 130	01/17/24 11:51	01/19/24 03:13	1
d7-N-MeFOSE-M	91	10 - 130	01/17/24 11:51	01/19/24 03:13	1
d9-N-EtFOSE-M	91	10 - 130	01/17/24 11:51	01/19/24 03:13	1
d5-NEtPFOSA	93	10 - 130	01/17/24 11:51	01/19/24 03:13	1
d3-NMePFOSA	81	10 - 130	01/17/24 11:51	01/19/24 03:13	1

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Isotope Dilution Summary

Client: Dalton, Olmsted & Fuglevand, Inc

Project/Site: PFAS, Tacoma WA

Job ID: 320-108687-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24

Matrix: Water Prep Type: Total/NA

				ent Isotope			ceptance L	imits)	
		PFBA	PFPeA	13C5PHA	C4PFHA	C8PFOA	C9PFNA	C6PFDA	13C7PU
Lab Sample ID	Client Sample ID	(5-130)	(40-130)	(40-130)	(40-130)	(40-130)	(40-130)	(40-130)	(30-130)
320-108687-1	CCW-3A-0124	8			77	61	64	61	68
320-108687-1 - RA	CCW-3A-0124						66		
320-108687-1 - RE	CCW-3A-0124		79	83					
320-108687-2	CCW-9-3A-0124	11		43	76	56	64	53	57
320-108687-2 - RA	CCW-9-3A-0124								
320-108687-2 - RE	CCW-9-3A-0124		73						
320-108687-3	CCW-3B-0124	27	65	71	89	75	76	74	71
320-108687-3 - RA	CCW-3B-0124								
320-108687-3 DU	CCW-3B-0124	29	67	74	92	75	89	79	81
320-108687-3 DU - RA	CCW-3B-0124								
320-108687-4	FIELD BLANK #1-0124	74	73	73	79	78	73	73	73
320-108687-5	CCW-2C-0124	55	62	70	78	80	78	74	67
320-108687-5 - RA	CCW-2C-0124								
320-108687-6	CCW-2B-0124	13	61	73	94	77	86	81	82
320-108687-6 - RA	CCW-2B-0124	.0	٠.	77	0.		87	٠.	0_
320-108687-7	CCW-2A-0124	50	47	49	56	55	56	51	46
320-108687-7 - RA	CCW-2A-0124	30	55	73	30	33	30	31	40
320-108687-8	CTMW-17-0124	36	33						31
320-108687-8 - RE	CTMW-17-0124		72	72	76	75	78	70	
320-108687-9	RINSATE BLANK #1-0124	86	87	86	92	7.5 85	76 81	86	78
320-108687-10	TRIP SOURCE WATER BLANK		92			92	95	92	76 87
	#1-0124	93		89	102				
LCS 320-734182/3-A	Lab Control Sample	75	74	70	76	77	72	77	80
LCS 320-735177/3-A	Lab Control Sample	83	76	76	76	80	74	74	77
LLCS 320-734182/2-A	Lab Control Sample	73	74	73	76	73	72	78	74
LLCS 320-735177/2-A	Lab Control Sample	84	80	83	81	86	78	75	84
MB 320-734182/1-A	Method Blank	77	77	80	85	75	84	74	68
MB 320-735177/1-A	Method Blank	82	75	76	73	82	78	75	79
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	imits)	
		PFDoA	PFTDA	C3PFBS	C3PFHS	C8PFOS	PFOSA	d3NMFOS	d5NEFOS
Lab Sample ID	Client Sample ID	(10-130)	(10-130)	(40-135)	(40-130)	(40-130)	(40-130)	(40-170)	(25-135)
320-108687-1	CCW-3A-0124	56	57	52	67	68	53	63	73
320-108687-1 - RA	CCW-3A-0124			61	100				
320-108687-1 - RE	CCW-3A-0124								
320-108687-2	CCW-9-3A-0124	50	45		59	54	44	56	63
320-108687-2 - RA	CCW-9-3A-0124	00	10	81	00	01		00	00
320-108687-2 - RE	CCW-9-3A-0124			01					
320-108687-3	CCW-3B-0124	58	50	73	82	78	84	96	93
		50	30	73		70	04	90	93
320-108687-3 - RA	CCW-3B-0124	00	50	70	86	0.4	00	00	400
320-108687-3 DU	CCW-3B-0124	68	52	73	78	84	98	99	108
320-108687-3 DU - RA	CCW-3B-0124				106				
320-108687-4	FIELD BLANK #1-0124	72	77	76	75 	79	74	87	81
320-108687-5	CCW-2C-0124	57	49	78	77	77	75	82	73
320-108687-5 - RA	CCW-2C-0124				79				
320-108687-6	CCW-2B-0124	66	50	72	76	81	97	107	106
320-108687-6 - RA	CCW-2B-0124				93				
320-108687-7	CCW-2A-0124	38	40	49	57	54	52	64	58
000 400007 7 DA	CCM/ 24 0424								
320-108687-7 - RA	CCW-2A-0124								

Eurofins Sacramento

1/31/2024

Page 25 of 49

4

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Isotope Dilution Summary

Client: Dalton, Olmsted & Fuglevand, Inc

Project/Site: PFAS, Tacoma WA

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24 (Continued)

Matrix: Water

Prep Type: Total/NA

			Perc	ent Isotope	Dilution Re	ecovery (Ac	ceptance I	_imits)	
		PFDoA	PFTDA	C3PFBS	C3PFHS	C8PFOS	PFOSA		d5NEFOS
Lab Sample ID	Client Sample ID	(10-130)	(10-130)	(40-135)	(40-130)	(40-130)	(40-130)	(40-170)	(25-135)
320-108687-8 - RE	CTMW-17-0124			79	75	78	71	79	
320-108687-9	RINSATE BLANK #1-0124	75	81	93	89	92	88	91	82
320-108687-10	TRIP SOURCE WATER BLANK #1-0124	86	94	102	102	101	94	109	99
LCS 320-734182/3-A	Lab Control Sample	73	76	80	79	78	76	91	81
LCS 320-735177/3-A	Lab Control Sample	59	66	83	80	82	73	73	73
LLCS 320-734182/2-A	Lab Control Sample	67	74	79	78	79	70	78	73
LLCS 320-735177/2-A	Lab Control Sample	67	74	86	81	84	76	72	71
MB 320-734182/1-A	Method Blank	60	66	83	83	84	74	84	75
MB 320-735177/1-A	Method Blank	66	71	83	76	80	73	70	70
			Perc	ent Isotope	Dilution Re	ecovery (Ac	ceptance L	_imits)	
		M242FTS	M262FTS	M282FTS	HFPODA	NMFM	NEFM	d5NPFSA	d3NMFSA
Lab Sample ID	Client Sample ID	(40-200)	(40-200)	(40-300)	(40-130)	(10-130)	(10-130)	(10-130)	(10-130)
320-108687-1	CCW-3A-0124		69	104	40	21	26	38	34
320-108687-1 - RA	CCW-3A-0124								
320-108687-1 - RE	CCW-3A-0124	111							
320-108687-2	CCW-9-3A-0124		79	87	56	17	21	32	31
320-108687-2 - RA	CCW-9-3A-0124								
320-108687-2 - RE	CCW-9-3A-0124	99							
320-108687-3	CCW-3B-0124	101	123	118	78	44	37	47	49
320-108687-3 - RA	CCW-3B-0124								
320-108687-3 DU	CCW-3B-0124	97	122	120	80	58	54	60	59
320-108687-3 DU - RA	CCW-3B-0124								
320-108687-4	FIELD BLANK #1-0124	94	93	92	63	72	68	67	59
320-108687-5	CCW-2C-0124	90	83	85	62	47	37	53	54
320-108687-5 - RA	CCW-2C-0124								
320-108687-6	CCW-2B-0124	99	138	134	73	33	24	58	58
320-108687-6 - RA	CCW-2B-0124								
320-108687-7	CCW-2A-0124	76	79	80	42	36	31	35	35
320-108687-7 - RA	CCW-2A-0124								
320-108687-8	CTMW-17-0124	59	68	62		23	20	22	23
320-108687-8 - RE	CTMW-17-0124				69				
320-108687-9	RINSATE BLANK #1-0124	111	106	111	78	85	82	76	70
320-108687-10	TRIP SOURCE WATER BLANK	121	116	129	99	91	91	93	81
LCS 320-734182/3-A	#1-0124 Lab Control Sample	89	85	92	66	72	69	66	59
LCS 320-735177/3-A	Lab Control Sample	68	70	69	70	65	69	61	61
LLCS 320-734182/2-A	Lab Control Sample	92	92	98	66	68	68	59	54
LLCS 320-735177/2-A	Lab Control Sample	71	73	68	73	71	73	67	68
MB 320-734182/1-A	Method Blank	102	99	104	73 76	66	62	59	54
MB 320-735177/1-A	Method Blank	68	99 71	67	76 73	65	68	62	62
WID 320-13311111-M	METHOR DIGHT	00	7 1	01	13	00	00	UZ	UZ

Surrogate	Legend
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PFBA = 13C4 PFBA

PFPeA = 13C5 PFPeA

13C5PHA = 13C5 PFHxA

C4PFHA = 13C4 PFHpA

C8PFOA = 13C8 PFOA

C9PFNA = 13C9 PFNA

C6PFDA = 13C6 PFDA

13C7PUA = 13C7 PFUnA

Eurofins Sacramento

1/31/2024

Page 26 of 49

2

Job ID: 320-108687-1

3

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15

Isotope Dilution Summary

Client: Dalton, Olmsted & Fuglevand, Inc Project/Site: PFAS, Tacoma WA

PFDoA = 13C2 PFDoA

PFTDA = 13C2 PFTeDA

C3PFBS = 13C3 PFBS

C3PFHS = 13C3 PFHxS

C8PFOS = 13C8 PFOS

PFOSA = 13C8 FOSA

d3NMFOS = d3-NMeFOSAA

d5NEFOS = d5-NEtFOSAA

M242FTS = M2-4:2 FTS

M262FTS = M2-6:2 FTS

M282FTS = M2-8:2 FTS

HFPODA = 13C3 HFPO-DA

NMFM = d7-N-MeFOSE-M

NEFM = d9-N-EtFOSE-M d5NPFSA = d5-NEtPFOSA

d3NMFSA = d3-NMePFOSA

Job ID: 320-108687-1

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QC Sample Results

Client: Dalton, Olmsted & Fuglevand, Inc

Lab Sample ID: MB 320-734182/1-A

Project/Site: PFAS, Tacoma WA

Job ID: 320-108687-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24

Client Sample I	D: Met	hod B	lank
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Matrix: Water							Prep Type: To	
Analysis Batch: 734653	MD	мо					Prep Batch:	734182
Analyte		MB Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND	- Guuiiiici	8.0	ng/L			01/18/24 22:49	1
Perfluoropentanoic acid (PFPeA)	ND		4.0	ng/L			01/18/24 22:49	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	ng/L			01/18/24 22:49	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	ng/L			01/18/24 22:49	· · · · · · · · 1
Perfluorooctanoic acid (PFOA)	ND		2.0	ng/L			01/18/24 22:49	1
Perfluorononanoic acid (PFNA)	ND		2.0	ng/L			01/18/24 22:49	1
Perfluorodecanoic acid (PFDA)	ND		2.0	ng/L			01/18/24 22:49	
Perfluoroundecanoic acid (PFUnA)	ND		2.0	ng/L			01/18/24 22:49	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	ng/L			01/18/24 22:49	1
Perfluorotridecanoic acid (PFTrDA)	ND		2.0	ng/L			01/18/24 22:49	1
,				•				
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	ng/L			01/18/24 22:49	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	ng/L			01/18/24 22:49	
Perfluoropentanesulfonic acid (PFPeS)	ND		2.0	ng/L			01/18/24 22:49	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	ng/L			01/18/24 22:49	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		2.0	ng/L		01/17/24 11:51	01/18/24 22:49	
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	ng/L		01/17/24 11:51	01/18/24 22:49	1
Perfluorononanesulfonic acid (PFNS)	ND		2.0	ng/L		01/17/24 11:51	01/18/24 22:49	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	ng/L		01/17/24 11:51	01/18/24 22:49	1
Perfluorododecanesulfonic acid (PFDoS)	ND		2.0	ng/L		01/17/24 11:51	01/18/24 22:49	1
4:2 FTS	ND		8.0	ng/L		01/17/24 11:51	01/18/24 22:49	1
6:2 FTS	ND		8.0	ng/L		01/17/24 11:51	01/18/24 22:49	1
8:2 FTS	ND		8.0	ng/L		01/17/24 11:51	01/18/24 22:49	1
Perfluorooctanesulfonamide (FOSA)	ND		2.0	ng/L		01/17/24 11:51	01/18/24 22:49	1
NMeFOSA	ND		2.0	ng/L		01/17/24 11:51	01/18/24 22:49	1
NEtFOSA	ND		2.0	ng/L		01/17/24 11:51	01/18/24 22:49	1
NMeFOSAA	ND		2.0	ng/L		01/17/24 11:51	01/18/24 22:49	1
NEtFOSAA	ND		2.0	ng/L		01/17/24 11:51	01/18/24 22:49	1
NMeFOSE	ND		20	ng/L		01/17/24 11:51	01/18/24 22:49	1
NEtFOSE	ND		20	ng/L		01/17/24 11:51	01/18/24 22:49	1
HFPO-DA (GenX)	ND		8.0	ng/L		01/17/24 11:51	01/18/24 22:49	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		8.0	ng/L		01/17/24 11:51	01/18/24 22:49	1
PFMBA	ND		4.0	ng/L		01/17/24 11:51	01/18/24 22:49	1
NFDHA	ND		4.0	ng/L		01/17/24 11:51	01/18/24 22:49	1
PFMPA	ND		4.0	ng/L		01/17/24 11:51	01/18/24 22:49	1
9CI-PF3ONS	ND		8.0	ng/L		01/17/24 11:51	01/18/24 22:49	1
11CI-PF3OUdS	ND		8.0	ng/L		01/17/24 11:51	01/18/24 22:49	1
PFEESA	ND		4.0	ng/L		01/17/24 11:51	01/18/24 22:49	1
3:3 FTCA	ND		10	ng/L		01/17/24 11:51	01/18/24 22:49	1
5:3 FTCA	ND		50	ng/L		01/17/24 11:51	01/18/24 22:49	1
7:3 FTCA	ND		50	ng/L			01/18/24 22:49	1
	MB	MB		ŭ				
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C4 PFBA	77		5 - 130				01/18/24 22:49	1
13C5 PFPeA	77		40 - 130				01/18/24 22:49	1
13C5 PFHxA	80		40 - 130			01/17/24 11:51	01/18/24 22:49	1

Eurofins Sacramento

Page 28 of 49

1/31/2024

Client: Dalton, Olmsted & Fuglevand, Inc

MB MB

85

75

84

74

68

60

66

83

83

84

74

84

75

102

99

104

76

66

62

59

54

Qualifier

%Recovery

Project/Site: PFAS, Tacoma WA

Job ID: 320-108687-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24 (Continued)

Limits

40 - 130

40 - 130

40 - 130

40 - 130

30 - 130

10 - 130

10 - 130

40 - 135

40 - 130

40 - 130

40 - 130

40 - 170

25 - 135

40 - 200

40 - 200

40 - 300

40 - 130

10 - 130

10 - 130

10 - 130

10 - 130

Lab Sample ID: MB 320-734182/1-A

Matrix: Water

Isotope Dilution

13C4 PFHpA

13C8 PFOA

13C9 PFNA

13C6 PFDA

13C7 PFUnA

13C2 PFDoA

13C3 PFBS

13C3 PFHxS

13C8 PFOS

13C8 FOSA

d3-NMeFOSAA

d5-NEtFOSAA

M2-4:2 FTS

M2-6:2 FTS

M2-8:2 FTS

13C3 HFPO-DA

d7-N-MeFOSE-M

d9-N-EtFOSE-M

d5-NEtPFOSA

d3-NMePFOSA

13C2 PFTeDA

Analysis Batch: 734653

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

Prep Batch: 734182 Prepared Analyzed Dil Fac 01/17/24 11:51 01/18/24 22:49 01/17/24 11:51 01/18/24 22:49 01/17/24 11:51 01/18/24 22:49 01/17/24 11:51 01/18/24 22:49 01/17/24 11:51 01/18/24 22:49 01/17/24 11:51 01/18/24 22:49 01/17/24 11:51 01/18/24 22:49 01/17/24 11:51 01/18/24 22:49

01/17/24 11:51 01/18/24 22:49

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01/17/24 11:51 01/18/24 22:49 01/17/24 11:51 01/18/24 22:49

01/17/24 11:51 01/18/24 22:49

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01/17/24 11:51 01/18/24 22:49

01/17/24 11:51 01/18/24 22:49

01/17/24 11:51 01/18/24 22:49

01/17/24 11:51 01/18/24 22:49

01/17/24 11:51 01/18/24 22:49

Lab Sample ID: LCS 320-734182/3-A

Matrix: Water

Analysis Batch: 734653

Client Sample ID: Lab Control Sample Prep Type: Total/NA **Prep Batch: 734182**

•	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorobutanoic acid (PFBA)	128	124		ng/L		97	70 - 140	
Perfluoropentanoic acid (PFPeA)	64.0	64.1		ng/L		100	65 - 135	
Perfluorohexanoic acid (PFHxA)	32.0	34.1		ng/L		107	70 - 145	
Perfluoroheptanoic acid (PFHpA)	32.0	31.8		ng/L		99	70 - 150	
Perfluorooctanoic acid (PFOA)	32.0	30.7		ng/L		96	70 - 150	
Perfluorononanoic acid (PFNA)	32.0	28.8		ng/L		90	70 - 150	
Perfluorodecanoic acid (PFDA)	32.0	30.6		ng/L		96	70 - 140	
Perfluoroundecanoic acid (PFUnA)	32.0	27.8		ng/L		87	70 - 145	
Perfluorododecanoic acid (PFDoA)	32.0	30.8		ng/L		96	70 - 140	
Perfluorotridecanoic acid (PFTrDA)	32.0	28.1		ng/L		88	65 - 140	
Perfluorotetradecanoic acid (PFTeA)	32.0	26.0		ng/L		81	60 - 140	
Perfluorobutanesulfonic acid (PFBS)	28.4	25.0		ng/L		88	60 - 145	
Perfluoropentanesulfonic acid (PFPeS)	30.1	28.5		ng/L		95	65 - 140	
Perfluorohexanesulfonic acid (PFHxS)	29.2	25.1		ng/L		86	65 - 145	
Perfluoroheptanesulfonic acid (PFHpS)	30.5	27.6		ng/L		90	70 - 150	

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Client: Dalton, Olmsted & Fuglevand, Inc

Project/Site: PFAS, Tacoma WA

Job ID: 320-108687-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24 (Continued)

Lab Sample ID: LCS 320-734182/3-A

Matrix: Water

Analysis Batch: 734653

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

Prep Batch: 734182

Analysis Batch. 104000	Spike	LCS	LCS				%Rec
Analyte	Added		Qualifier	Unit	D	%Rec	Limits
Perfluorooctanesulfonic acid	29.8	27.4		ng/L		92	55 - 150
(PFOS)							
Perfluorononanesulfonic acid	30.7	26.2		ng/L		85	65 - 145
(PFNS)							
Perfluorodecanesulfonic acid	30.8	27.6		ng/L		89	60 - 145
(PFDS) Perfluorododecanesulfonic acid	31.0	24.6		ng/L		79	50 - 145
(PFDoS)	31.0	24.0		Hg/L		19	30 - 143
4:2 FTS	120	116		ng/L		97	70 - 145
6:2 FTS	122	126		ng/L		103	65 - 155
8:2 FTS	123	129		ng/L		105	60 - 150
Perfluorooctanesulfonamide	32.0	30.5		ng/L		95	70 - 145
(FOSA)				•			
NMeFOSA	32.0	31.3		ng/L		98	60 - 150
NEtFOSA	32.0	29.1		ng/L		91	65 - 145
NMeFOSAA	32.0	29.5		ng/L		92	50 - 140
NEtFOSAA	32.0	30.6		ng/L		96	70 - 145
NMeFOSE	320	310		ng/L		97	70 - 145
NEtFOSE	320	312		ng/L		98	70 - 135
HFPO-DA (GenX)	128	120		ng/L		94	70 - 140
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	121	127		ng/L		105	65 - 145
PFMBA	64.0	64.1		ng/L		100	60 - 150
NFDHA	64.0	69.5		ng/L		109	50 - 150
PFMPA	64.0	60.2		ng/L		94	55 - 140
9CI-PF3ONS	120	128		ng/L		107	70 - 155
11CI-PF3OUdS	121	132		ng/L		109	55 - 160
PFEESA	57.1	58.9		ng/L		103	70 - 140
3:3 FTCA	160	140		ng/L		88	65 - 130
5:3 FTCA	799	786		ng/L		98	70 - 135
7:3 FTCA	799	789		ng/L		99	50 - 145

LCS	LCS

	LCS	LCS	
Isotope Dilution	%Recovery	Qualifier	Limits
13C4 PFBA	75		5 - 130
13C5 PFPeA	74		40 - 130
13C5 PFHxA	70		40 - 130
13C4 PFHpA	76		40 - 130
13C8 PFOA	77		40 - 130
13C9 PFNA	72		40 - 130
13C6 PFDA	77		40 - 130
13C7 PFUnA	80		30 - 130
13C2 PFDoA	73		10 - 130
13C2 PFTeDA	76		10 - 130
13C3 PFBS	80		40 - 135
13C3 PFHxS	79		40 - 130
13C8 PFOS	78		40 - 130
13C8 FOSA	76		40 - 130
d3-NMeFOSAA	91		40 - 170
d5-NEtFOSAA	81		25 - 135
M2-4:2 FTS	89		40 - 200

Eurofins Sacramento

Page 30 of 49

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QC Sample Results

Client: Dalton, Olmsted & Fuglevand, Inc

Project/Site: PFAS, Tacoma WA

Job ID: 320-108687-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24 (Continued)

Lab Sample ID: LCS 320-734182/3-A

Lab Sample ID: LLCS 320-734182/2-A

Matrix: Water

Matrix: Water

Analysis Batch: 734653

Analysis Batch: 734653

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

Prep Batch: 734182

LCS LCS

Isotope Dilution	%Recovery	Qualifier	Limits
M2-6:2 FTS	85		40 - 200
M2-8:2 FTS	92		40 - 300
13C3 HFPO-DA	66		40 - 130
d7-N-MeFOSE-M	72		10 - 130
d9-N-EtFOSE-M	69		10 - 130
d5-NEtPFOSA	66		10 - 130
d3-NMePFOSA	59		10 - 130

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 734182

	Spike	LLCS	LLCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorobutanoic acid (PFBA)	12.8	12.7		ng/L		99	70 - 140	
Perfluoropentanoic acid (PFPeA)	6.40	6.49		ng/L		101	65 - 135	
Perfluorohexanoic acid (PFHxA)	3.20	3.15		ng/L		98	70 - 145	
Perfluoroheptanoic acid (PFHpA)	3.20	3.28		ng/L		102	70 - 150	
Porfluorecetonois asid (PEOA)	2.20	2 20		na/l		102	70 150	

Perfluorooctanoic acid (PFOA) 3.20 3.29 ng/L 103 70 - 150Perfluorononanoic acid (PFNA) 3.20 2.94 ng/L 92 70 - 150 Perfluorodecanoic acid (PFDA) 3.20 3.15 ng/L 99 70 - 140 3.20 70 - 145 Perfluoroundecanoic acid 3.03 ng/L 95 (PFUnA) Perfluorododecanoic acid 3.20 3.21 ng/L 100 70 - 140

(PFDoA) 3.20 2.62 82 65 - 140 Perfluorotridecanoic acid ng/L (PFTrDA) Perfluorotetradecanoic acid 3.20 2.68 60 - 140 ng/L (PFTeA) Perfluorobutanesulfonic acid 2.84 2.57 90 60 - 145 ng/L (PFBS) Perfluoropentanesulfonic acid 3.01 2.91 ng/L 97 65 - 140(PFPeS) 2.92 2.76 94 65 - 145 Perfluorohexanesulfonic acid ng/L (PFHxS) 3.05 2.70 89 70 - 150 Perfluoroheptanesulfonic acid ng/L

(PFHpS) Perfluorooctanesulfonic acid 2.98 2.91 ng/L 55 - 150 (PFOS) Perfluorononanesulfonic acid 3.07 2.68 ng/L 87 65 - 145(PFNS) 3.08 2.66 60 - 145 Perfluorodecanesulfonic acid ng/L 86 (PFDS)

2.28 73 Perfluorododecanesulfonic acid 3.10 50 - 145 ng/L (PFDoS) 4:2 FTS 12.0 12.3 ng/L 103 70 - 145 65 - 155 6:2 FTS 12.2 12.1 ng/L 99 8:2 FTS 12.3 12.5 ng/L 101 60 - 150 3.20 3.09 97 70 - 145 Perfluorooctanesulfonamide ng/L

(FOSA) **NMeFOSA** 3.20 3.03 ng/L 95 60 - 150 **NEtFOSA** 3.20 3.14 98 65 - 145 ng/L **NMeFOSAA** 3.20 100 50 - 140 3 19 ng/L

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1/31/2024

Client: Dalton, Olmsted & Fuglevand, Inc Job ID: 320-108687-1

Project/Site: PFAS, Tacoma WA

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24 (Continued)

Lab Sample ID: LLCS 320-734182/2-A

Matrix: Water

7:3 FTCA

Analysis Batch: 734653

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

50 - 145

Prep Batch: 734182

	Spike	LLCS LLCS			%Rec	
Analyte	Added	Result Qualit	fier Unit	D %Rec	Limits	
NEtFOSAA	3.20	3.37	ng/L	105	70 - 145	
NMeFOSE	32.0	30.7	ng/L	96	70 - 145	
NEtFOSE	32.0	29.1	ng/L	91	70 - 135	
HFPO-DA (GenX)	12.8	12.1	ng/L	95	70 - 140	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	12.1	13.4	ng/L	110	65 - 145	
PFMBA	6.40	6.57	ng/L	103	60 - 150	
NFDHA	6.40	6.60	ng/L	103	50 - 150	
PFMPA	6.40	6.21	ng/L	97	55 - 140	
9CI-PF3ONS	12.0	13.1	ng/L	110	70 - 155	
11CI-PF3OUdS	12.1	12.4	ng/L	102	55 - 160	
PFEESA	5.71	5.76	ng/L	101	70 - 140	
3:3 FTCA	16.0	14.0	ng/L	88	65 - 130	
5:3 FTCA	79.9	77.1	ng/L	97	70 - 135	

79.9

75.0

ng/L

	LLCS	LLCS	
Isotope Dilution	%Recovery	Qualifier	Limits
13C4 PFBA	73		5 - 130
13C5 PFPeA	74		40 - 130
13C5 PFHxA	73		40 - 130
13C4 PFHpA	76		40 - 130
13C8 PFOA	73		40 - 130
13C9 PFNA	72		40 - 130
13C6 PFDA	78		40 - 130
13C7 PFUnA	74		30 - 130
13C2 PFDoA	67		10 - 130
13C2 PFTeDA	74		10 - 130
13C3 PFBS	79		40 - 135
13C3 PFHxS	78		40 - 130
13C8 PFOS	79		40 - 130
13C8 FOSA	70		40 - 130
d3-NMeFOSAA	78		40 - 170
d5-NEtFOSAA	73		25 - 135
M2-4:2 FTS	92		40 - 200
M2-6:2 FTS	92		40 - 200
M2-8:2 FTS	98		40 - 300
13C3 HFPO-DA	66		40 - 130
d7-N-MeFOSE-M	68		10 - 130
d9-N-EtFOSE-M	68		10 - 130
d5-NEtPFOSA	59		10 - 130
d3-NMePFOSA	54		10 - 130

Lab Sample ID: 320-108687-3 DU

Matrix: Water

Client Sample ID: CCW-3B-0124

Prep Type: Total/NA

Analysis Batch: 734653							Prep Batch:	734182
	Sample	Sample	DU	DU				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPI) Limit
Perfluorobutanoic acid (PFBA)	70		 69.8		ng/L		0.9	5 30
Perfluoropentanoic acid (PFPeA)	44		44.5		ng/L		0.	1 30

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Page 32 of 49

QC Sample Results

Client: Dalton, Olmsted & Fuglevand, Inc

Project/Site: PFAS, Tacoma WA

Job ID: 320-108687-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24 (Continued)

Lab Sample ID: 320-108687-3 DU

Matrix: Water

Analysis Batch: 734653

Client Sample ID: CCW-3B-0124

Prep Type: Total/NA

Prep Batch: 734182

Analysis Batch: 734653							Prep Batch: 734182		
Analyte	Sample Sample		DU				RPD		
		Qualifier		Qualifier	Unit	D		Limit	
Perfluorohexanoic acid (PFHxA)	32		31.6		ng/L		2	30	
Perfluoroheptanoic acid (PFHpA)	15		14.6		ng/L		1	30	
Perfluorooctanoic acid (PFOA)	61		59.6		ng/L		2	30	
Perfluorononanoic acid (PFNA)	4.1		3.90		ng/L		6	30	
Perfluorodecanoic acid (PFDA)	ND		ND		ng/L		NC	30	
Perfluoroundecanoic acid (PFUnA)	ND		ND		ng/L		NC	30	
Perfluorododecanoic acid (PFDoA)	ND		ND		ng/L		NC	30	
Perfluorotridecanoic acid (PFTrDA)	ND		ND		ng/L		NC	30	
Perfluorotetradecanoic acid (PFTeA)	ND		ND		ng/L		NC	30	
Perfluorobutanesulfonic acid (PFBS)	6.5		6.83		ng/L		5	30	
Perfluorohexanesulfonic acid (PFHxS)	23		24.6		ng/L		5	30	
Perfluoroheptanesulfonic acid (PFHpS)	ND		ND		ng/L		NC	30	
Perfluorooctanesulfonic acid (PFOS)	20		19.8		ng/L		2	30	
Perfluorononanesulfonic acid (PFNS)	ND		ND		ng/L		NC	30	
Perfluorodecanesulfonic acid (PFDS)	ND		ND		ng/L		NC	30	
Perfluorododecanesulfonic acid (PFDoS)	ND		ND		ng/L		NC	30	
4:2 FTS	ND		ND		ng/L		NC	30	
6:2 FTS	ND		ND		ng/L		NC	30	
8:2 FTS	ND		ND		ng/L		NC	30	
Perfluorooctanesulfonamide (FOSA)	ND		ND		ng/L		NC	30	
NMeFOSA	ND		ND		ng/L		NC	30	
NEtFOSA	ND		ND		ng/L		NC	30	
NMeFOSAA	ND		ND		ng/L		NC	30	
NEtFOSAA	2.4		2.58		ng/L		8	30	
NMeFOSE	ND		ND		ng/L		NC	30	
NEtFOSE	ND		ND		ng/L		NC	30	
HFPO-DA (GenX)	ND		ND		ng/L		NC	30	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		ND		ng/L		NC	30	
PFMBA	ND		ND		ng/L		NC	30	
NFDHA	ND		ND		ng/L		NC	30	
PFMPA	ND		ND		ng/L		NC	30	
9CI-PF3ONS	ND		ND		ng/L		NC	30	
11CI-PF3OUdS	ND		ND		ng/L		NC	30	
PFEESA	ND		ND ND		ng/L		NC NC	30	
3:3 FTCA	ND		ND		ng/L		NC	30	
5:3 FTCA	ND		ND		ng/L		NC	30	
7:3 FTCA	ND		ND		ng/L		NC	30	

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1/31/2024

Page 33 of 49

Job ID: 320-108687-1

Client: Dalton, Olmsted & Fuglevand, Inc Project/Site: PFAS, Tacoma WA

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24 (Continued)

	DU	DU	
Isotope Dilution	%Recovery	Qualifier	Limits
13C4 PFBA	29		5 - 130
13C5 PFPeA	67		40 - 130
13C5 PFHxA	74		40 - 130
13C4 PFHpA	92		40 - 130
13C8 PFOA	75		40 - 130
13C9 PFNA	89		40 - 130
13C6 PFDA	79		40 - 130
13C7 PFUnA	81		30 - 130
13C2 PFDoA	68		10 - 130
13C2 PFTeDA	52		10 - 130
13C3 PFBS	73		40 - 135
13C3 PFHxS	78		40 - 130
13C8 PFOS	84		40 - 130
13C8 FOSA	98		40 - 130
d3-NMeFOSAA	99		40 - 170
d5-NEtFOSAA	108		25 - 135
M2-4:2 FTS	97		40 - 200
M2-6:2 FTS	122		40 - 200
M2-8:2 FTS	120		40 - 300
13C3 HFPO-DA	80		40 - 130
d7-N-MeFOSE-M	58		10 - 130
d9-N-EtFOSE-M	54		10 - 130
d5-NEtPFOSA	60		10 - 130
d3-NMePFOSA	59		10 - 130

Lab Sample ID: MB 320-735177/1-A

Matrix: Water

Analysis Batch: 736673

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 735177

Allalysis Datoll. 100010								i Tep Dateil.	100111
	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		8.0		ng/L		01/22/24 04:23	01/26/24 09:49	1
Perfluoropentanoic acid (PFPeA)	ND		4.0		ng/L		01/22/24 04:23	01/26/24 09:49	1
Perfluorohexanoic acid (PFHxA)	ND		2.0		ng/L		01/22/24 04:23	01/26/24 09:49	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0		ng/L		01/22/24 04:23	01/26/24 09:49	1
Perfluorooctanoic acid (PFOA)	ND		2.0		ng/L		01/22/24 04:23	01/26/24 09:49	1
Perfluorononanoic acid (PFNA)	ND		2.0		ng/L		01/22/24 04:23	01/26/24 09:49	1
Perfluorodecanoic acid (PFDA)	ND		2.0		ng/L		01/22/24 04:23	01/26/24 09:49	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0		ng/L		01/22/24 04:23	01/26/24 09:49	1
Perfluorododecanoic acid (PFDoA)	ND		2.0		ng/L		01/22/24 04:23	01/26/24 09:49	1
Perfluorotridecanoic acid (PFTrDA)	ND		2.0		ng/L		01/22/24 04:23	01/26/24 09:49	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0		ng/L		01/22/24 04:23	01/26/24 09:49	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0		ng/L		01/22/24 04:23	01/26/24 09:49	1
Perfluoropentanesulfonic acid (PFPeS)	ND		2.0		ng/L		01/22/24 04:23	01/26/24 09:49	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0		ng/L		01/22/24 04:23	01/26/24 09:49	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		2.0		ng/L		01/22/24 04:23	01/26/24 09:49	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0		ng/L		01/22/24 04:23	01/26/24 09:49	1
Perfluorononanesulfonic acid (PFNS)	ND		2.0		ng/L		01/22/24 04:23	01/26/24 09:49	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0		ng/L		01/22/24 04:23	01/26/24 09:49	1
Perfluorododecanesulfonic acid (PFDoS)	ND		2.0		ng/L		01/22/24 04:23	01/26/24 09:49	1
4:2 FTS	ND		8.0		ng/L		01/22/24 04:23	01/26/24 09:49	1

Eurofins Sacramento

Page 34 of 49 1/31/2024

2

5

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9

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12

QC Sample Results

Client: Dalton, Olmsted & Fuglevand, Inc

Project/Site: PFAS, Tacoma WA

Job ID: 320-108687-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24 (Continued)

Lab Sample ID: MB 320-735177/1-A

Matrix: Water

Analysis Batch: 736673

Client Sample ID: Method Blank

Prep Type: Total/NA Prep Batch: 735177

7 mm, 500 = attorn 1 0 0 0 1 0										
		MB								
Analyte	Result	Qualifier	RL _	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
6:2 FTS	ND		8.0		ng/L		01/22/24 04:23	01/26/24 09:49	1	
8:2 FTS	ND		8.0		ng/L		01/22/24 04:23	01/26/24 09:49	•	
Perfluorooctanesulfonamide (FOSA)	ND		2.0		ng/L		01/22/24 04:23	01/26/24 09:49	•	
NMeFOSA	ND		2.0		ng/L		01/22/24 04:23	01/26/24 09:49	1	
NEtFOSA	ND		2.0		ng/L		01/22/24 04:23	01/26/24 09:49	1	
NMeFOSAA	ND		2.0		ng/L		01/22/24 04:23	01/26/24 09:49	1	
NEtFOSAA	ND		2.0		ng/L		01/22/24 04:23	01/26/24 09:49	1	
NMeFOSE	ND		20		ng/L		01/22/24 04:23	01/26/24 09:49	1	
NEtFOSE	ND		20		ng/L		01/22/24 04:23	01/26/24 09:49	1	
HFPO-DA (GenX)	ND		8.0		ng/L		01/22/24 04:23	01/26/24 09:49	1	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		8.0		ng/L		01/22/24 04:23	01/26/24 09:49	1	
PFMBA	ND		4.0		ng/L		01/22/24 04:23	01/26/24 09:49	1	
NFDHA	ND		4.0		ng/L		01/22/24 04:23	01/26/24 09:49	1	
PFMPA	ND		4.0		ng/L		01/22/24 04:23	01/26/24 09:49	1	
9CI-PF3ONS	ND		8.0		ng/L		01/22/24 04:23	01/26/24 09:49	1	
11CI-PF3OUdS	ND		8.0		ng/L		01/22/24 04:23	01/26/24 09:49	1	
PFEESA	ND		4.0		ng/L		01/22/24 04:23	01/26/24 09:49	1	
3:3 FTCA	ND		10		ng/L		01/22/24 04:23	01/26/24 09:49	1	
5:3 FTCA	ND		50		ng/L		01/22/24 04:23	01/26/24 09:49	1	
7:3 FTCA	ND		50		ng/L		01/22/24 04:23	01/26/24 09:49	1	

	MB	MB				
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	82		5 - 130	01/22/24 04:23	01/26/24 09:49	1
13C5 PFPeA	75		40 - 130	01/22/24 04:23	01/26/24 09:49	1
13C5 PFHxA	76		40 - 130	01/22/24 04:23	01/26/24 09:49	1
13C4 PFHpA	73		40 - 130	01/22/24 04:23	01/26/24 09:49	1
13C8 PFOA	82		40 - 130	01/22/24 04:23	01/26/24 09:49	1
13C9 PFNA	78		40 - 130	01/22/24 04:23	01/26/24 09:49	1
13C6 PFDA	75		40 - 130	01/22/24 04:23	01/26/24 09:49	1
13C7 PFUnA	79		30 - 130	01/22/24 04:23	01/26/24 09:49	1
13C2 PFDoA	66		10 - 130	01/22/24 04:23	01/26/24 09:49	1
13C2 PFTeDA	71		10 - 130	01/22/24 04:23	01/26/24 09:49	1
13C3 PFBS	83		40 - 135	01/22/24 04:23	01/26/24 09:49	1
13C3 PFHxS	76		40 - 130	01/22/24 04:23	01/26/24 09:49	1
13C8 PFOS	80		40 - 130	01/22/24 04:23	01/26/24 09:49	1
13C8 FOSA	73		40 - 130	01/22/24 04:23	01/26/24 09:49	1
d3-NMeFOSAA	70		40 - 170	01/22/24 04:23	01/26/24 09:49	1
d5-NEtFOSAA	70		25 - 135	01/22/24 04:23	01/26/24 09:49	1
M2-4:2 FTS	68		40 - 200	01/22/24 04:23	01/26/24 09:49	1
M2-6:2 FTS	71		40 - 200	01/22/24 04:23	01/26/24 09:49	1
M2-8:2 FTS	67		40 - 300	01/22/24 04:23	01/26/24 09:49	1
13C3 HFPO-DA	73		40 - 130	01/22/24 04:23	01/26/24 09:49	1
d7-N-MeFOSE-M	65		10 - 130	01/22/24 04:23	01/26/24 09:49	1
d9-N-EtFOSE-M	68		10 - 130	01/22/24 04:23	01/26/24 09:49	1
d5-NEtPFOSA	62		10 - 130	01/22/24 04:23	01/26/24 09:49	1
d3-NMePFOSA	62		10 - 130	01/22/24 04:23	01/26/24 09:49	1

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Page 35 of 49

QC Sample Results

Client: Dalton, Olmsted & Fuglevand, Inc

Project/Site: PFAS, Tacoma WA

Job ID: 320-108687-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24 (Continued)

Lab Sample ID: LCS 320-735177/3-A

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

Matrix: Water Analysis Batch: 736673							Prep Type: Total/NA Prep Batch: 735177
Analysis	Spike		LCS	1114	_	0/ 🗖	%Rec
Analyte Participation and (PERA)	Added		Qualifier	Unit	<u>D</u>	%Rec	Limits
Perfluorobutanoic acid (PFBA)	128	130		ng/L		102	70 - 140
Perfluoropentanoic acid (PFPeA)	64.0	72.5		ng/L		113	65 ₋ 135
Perfluorohexanoic acid (PFHxA)	32.0	35.3		ng/L		110	70 - 145
Perfluoroheptanoic acid (PFHpA)	32.0	32.7		ng/L		102	70 - 150
Perfluorooctanoic acid (PFOA)	32.0	32.0		ng/L		100	70 - 150
Perfluorononanoic acid (PFNA)	32.0	33.9		ng/L		106	70 - 150
Perfluorodecanoic acid (PFDA)	32.0	32.4		ng/L		101	70 - 140
Perfluoroundecanoic acid	32.0	31.6		ng/L		99	70 - 145
(PFUnA) Perfluorododecanoic acid	32.0	39.2		ng/L		122	70 - 140
(PFDoA)	32.0	39.2		rig/L		122	70 - 140
Perfluorotridecanoic acid	32.0	35.5		ng/L		111	65 - 140
(PFTrDA)							
Perfluorotetradecanoic acid	32.0	34.4		ng/L		107	60 - 140
(PFTeA)							
Perfluorobutanesulfonic acid	28.4	28.2		ng/L		99	60 - 145
(PFBS)							05 440
Perfluoropentanesulfonic acid	30.1	31.8		ng/L		106	65 - 140
(PFPeS) Perfluorohexanesulfonic acid	29.2	28.7		ng/L		98	65 - 145
(PFHxS)	20.2	20.7		iig/L		30	00-140
Perfluoroheptanesulfonic acid	30.5	30.1		ng/L		99	70 - 150
(PFHpS)				J			
Perfluorooctanesulfonic acid	29.8	29.4		ng/L		99	55 - 150
(PFOS)							
Perfluorononanesulfonic acid (PFNS)	30.7	29.7		ng/L		97	65 - 145
Perfluorodecanesulfonic acid	30.8	28.7		ng/L		93	60 - 145
(PFDS)							
Perfluorododecanesulfonic acid	31.0	25.9		ng/L		83	50 - 145
(PFDoS) 4:2 FTS	120	120		ng/L		100	70 - 145
6:2 FTS	122	124		ng/L		101	65 ₋ 155
8:2 FTS	123	124				103	60 - 150
				ng/L			
Perfluorooctanesulfonamide (FOSA)	32.0	34.8		ng/L		109	70 - 145
NMeFOSA	32.0	33.4		ng/L		104	60 - 150
NEtFOSA	32.0	34.0		ng/L		106	65 - 145
NMeFOSAA	32.0	32.6		ng/L		102	50 - 140
NEtFOSAA	32.0	31.7		ng/L		99	70 ₋ 145
NMeFOSE	320	352		ng/L		110	70 - 145
NEtFOSE	320	322		ng/L		101	70 - 135
HFPO-DA (GenX)	128	127		ng/L		99	70 - 133 70 - 140
4,8-Dioxa-3H-perfluorononanoic	121	148		ng/L		122	65 - 145
acid (ADONA)	121	140		rig/L		122	03 - 143
PFMBA	64.0	69.8		ng/L		109	60 - 150
NFDHA	64.0	65.5		ng/L		102	50 - 150
PFMPA	64.0	76.4		ng/L		119	55 - 140
9CI-PF3ONS	120	137		ng/L		115	70 - 155
11CI-PF3OUdS	121	127		ng/L		105	55 - 160
PFEESA	57.1	67.0		ng/L		117	70 - 140
3:3 FTCA	160	174		ng/L		109	65 - 130
0.01 TOA	100	174		⊓g/∟		109	00 - 100

Eurofins Sacramento

Page 36 of 49

Client: Dalton, Olmsted & Fuglevand, Inc

Project/Site: PFAS, Tacoma WA

Job ID: 320-108687-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24 (Continued)

Lab Sample ID: LCS 320-735177/3-A

Matrix: Water

Analyte

5:3 FTCA

Analysis Batch: 736673

Client Sample ID: Lab Control Sample Prep Type: Total/NA Prep Batch: 735177

LCS LCS %Rec Spike D %Rec Added Result Qualifier Unit Limits 799 883 ng/L 111 70 - 135 799 817 ng/L 102 50 - 145

7:3 FTCA			799
	LCS	LCS	
Isotope Dilution	%Recovery	Qualifier	Limits
13C4 PFBA	83		5 - 130
13C5 PFPeA	76		40 - 130
13C5 PFHxA	76		40 - 130
13C4 PFHpA	76		40 - 130
13C8 PFOA	80		40 - 130
13C9 PFNA	74		40 - 130
13C6 PFDA	74		40 - 130
13C7 PFUnA	77		30 - 130
13C2 PFDoA	59		10 - 130
13C2 PFTeDA	66		10 - 130
13C3 PFBS	83		40 - 135
13C3 PFHxS	80		40 - 130
13C8 PFOS	82		40 - 130
13C8 FOSA	73		40 - 130
d3-NMeFOSAA	73		40 - 170
d5-NEtFOSAA	73		25 - 135
M2-4:2 FTS	68		40 - 200
M2-6:2 FTS	70		40 - 200
M2-8:2 FTS	69		40 - 300
13C3 HFPO-DA	70		40 - 130
d7-N-MeFOSE-M	65		10 - 130
d9-N-EtFOSE-M	69		10 - 130
d5-NEtPFOSA	61		10 - 130
d3-NMePFOSA	61		10 - 130

Lab Sample ID: LLCS 320-735177/2-A

Matrix: Water

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

Analysis Batch: 736673							Prep Batch: 735177
	Spike	LLCS	LLCS				%Rec
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	12.8	12.6		ng/L		98	70 - 140
Perfluoropentanoic acid (PFPeA)	6.40	6.89		ng/L		108	65 - 135
Perfluorohexanoic acid (PFHxA)	3.20	3.26		ng/L		102	70 - 145
Perfluoroheptanoic acid (PFHpA)	3.20	3.05		ng/L		95	70 - 150
Perfluorooctanoic acid (PFOA)	3.20	3.22		ng/L		101	70 - 150
Perfluorononanoic acid (PFNA)	3.20	3.63		ng/L		113	70 - 150
Perfluorodecanoic acid (PFDA)	3.20	2.99		ng/L		93	70 - 140
Perfluoroundecanoic acid	3.20	3.11		ng/L		97	70 - 145
(PFUnA)							
Perfluorododecanoic acid	3.20	3.75		ng/L		117	70 - 140
(PFDoA)							
Perfluorotridecanoic acid	3.20	3.51		ng/L		110	65 - 140
(PFTrDA)							
Perfluorotetradecanoic acid	3.20	3.41		ng/L		107	60 - 140
(PFTeA)							

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Client: Dalton, Olmsted & Fuglevand, Inc

Project/Site: PFAS, Tacoma WA

Job ID: 320-108687-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24 (Continued)

Spike

LLCS LLCS

Lab Sample ID: LLCS 320-735177/2-A

Matrix: Water

Analysis Batch: 736673

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 735177 %Rec

	эріке	LLCS	LLCS		%Rec	
Analyte	Added	Result	Qualifier Unit	D %Rec	Limits	
Perfluorobutanesulfonic acid (PFBS)	2.84	2.69	ng/L	95	60 - 145	
Perfluoropentanesulfonic acid	3.01	3.06	ng/L	102	65 - 140	
(PFPeS)						
Perfluorohexanesulfonic acid	2.92	2.97	ng/L	102	65 - 145	
(PFHxS)						
Perfluoroheptanesulfonic acid	3.05	3.26	ng/L	107	70 - 150	
(PFHpS)	0.00					
Perfluorooctanesulfonic acid (PFOS)	2.98	2.88	ng/L	97	55 - 150	
Perfluorononanesulfonic acid	3.07	2.97	ng/L	97	65 - 145	
(PFNS)						
Perfluorodecanesulfonic acid	3.08	2.89	ng/L	94	60 - 145	
(PFDS)						
Perfluorododecanesulfonic acid (PFDoS)	3.10	2.68	ng/L	86	50 - 145	
4:2 FTS	12.0	12.5	ng/L	105	70 - 145	
6:2 FTS	12.2	13.4	ng/L	110	65 ₋ 155	
8:2 FTS	12.3	12.7	ng/L	103	60 - 150	
Perfluorooctanesulfonamide	3.20	3.41	· ·	107	70 - 145	
(FOSA)	3.20	3.41	ng/L	107	70 - 145	
NMeFOSA	3.20	2.89	ng/L	90	60 - 150	
NEtFOSA	3.20	3.07	ng/L	96	65 - 145	
NMeFOSAA	3.20	3.27	ng/L	102	50 - 140	
NEtFOSAA	3.20	3.13	ng/L	98	70 - 145	
NMeFOSE	32.0	33.6	ng/L	105	70 - 145	
NEtFOSE	32.0	33.6	ng/L	105	70 - 135	
HFPO-DA (GenX)	12.8	12.5	ng/L	98	70 - 140	
4,8-Dioxa-3H-perfluorononanoic	12.1	14.5	ng/L	119	65 - 145	
acid (ADONA)	12.1	11.0	rig/L	110	00-110	
PFMBA	6.40	6.61	ng/L	103	60 - 150	
NFDHA	6.40	6.35	ng/L	99	50 - 150	
PFMPA	6.40	6.43	ng/L	100	55 - 140	
9CI-PF3ONS	12.0	13.3	ng/L	112	70 - 155	
11CI-PF3OUdS	12.1	13.3	ng/L	110	55 - 160	
PFEESA	5.71	6.18	ng/L	108	70 - 140	
3:3 FTCA	16.0	16.2	ng/L	102	65 - 130	
5:3 FTCA	79.9	81.0	ng/L	101	70 - 135	
7:3 FTCA	79.9	72.0	ng/L	90	50 - 145	
	, 0.0	0		00	50 - 110	

LLCS LLCS	3
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Isotope Dilution	%Recovery C	Qualifier	Limits
13C4 PFBA	84		5 - 130
13C5 PFPeA	80		40 - 130
13C5 PFHxA	83		40 - 130
13C4 PFHpA	81		40 - 130
13C8 PFOA	86		40 - 130
13C9 PFNA	78		40 - 130
13C6 PFDA	75		40 - 130
13C7 PFUnA	84		30 - 130
13C2 PFDoA	67		10 - 130
13C2 PFTeDA	74		10 - 130

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Page 38 of 49

QC Sample Results

Client: Dalton, Olmsted & Fuglevand, Inc

Project/Site: PFAS, Tacoma WA

Job ID: 320-108687-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24 (Continued)

Lab Sample ID: LLCS 320-735177/2-A **Matrix: Water**

Analysis Batch: 736673

ilent Sample iD:	Lab Control Sample
	Prep Type: Total/NA
	Prep Batch: 735177

•	LLCS	LLCS		
Isotope Dilution	%Recovery	Qualifier	Limits	
13C3 PFBS	86		40 - 135	
13C3 PFHxS	81		40 - 130	
13C8 PFOS	84		40 - 130	
13C8 FOSA	76		40 - 130	
d3-NMeFOSAA	72		40 - 170	
d5-NEtFOSAA	71		25 - 135	
M2-4:2 FTS	71		40 - 200	
M2-6:2 FTS	73		40 - 200	
M2-8:2 FTS	68		40 - 300	
13C3 HFPO-DA	73		40 - 130	
d7-N-MeFOSE-M	71		10 - 130	
d9-N-EtFOSE-M	73		10 - 130	
d5-NEtPFOSA	67		10 - 130	
d3-NMePFOSA	68		10 - 130	

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24 - RA

Lab Sample ID: 320-108687-3 DU Client Sample ID: CCW-3B-0124

Matrix: Water

Analysis Batch: 735099

Prep Type: Total/NA **Prep Batch: 734182** DU DU **RPD** Sample Sample

Result Qualifier Result Qualifier Unit RPD Limit 4.2 2.83 F5 38 30 Perfluoropentanesulfonic acid ng/L

(PFPeS) - RA

DU DU Isotope Dilution %Recovery Qualifier 13C3 PFHxS - RA 106 40 - 130

Limits

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Page 39 of 49

1/31/2024

QC Association Summary

Client: Dalton, Olmsted & Fuglevand, Inc Project/Site: PFAS, Tacoma WA

Job ID: 320-108687-1

LCMS

Prep Batch: 734182

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-108687-1	CCW-3A-0124	Total/NA	Water	1633	
320-108687-1 - RA	CCW-3A-0124	Total/NA	Water	1633	
320-108687-2	CCW-9-3A-0124	Total/NA	Water	1633	
320-108687-2 - RA	CCW-9-3A-0124	Total/NA	Water	1633	
320-108687-3	CCW-3B-0124	Total/NA	Water	1633	
320-108687-3 - RA	CCW-3B-0124	Total/NA	Water	1633	
320-108687-4	FIELD BLANK #1-0124	Total/NA	Water	1633	
320-108687-5	CCW-2C-0124	Total/NA	Water	1633	
320-108687-5 - RA	CCW-2C-0124	Total/NA	Water	1633	
320-108687-6	CCW-2B-0124	Total/NA	Water	1633	
320-108687-6 - RA	CCW-2B-0124	Total/NA	Water	1633	
320-108687-7	CCW-2A-0124	Total/NA	Water	1633	
320-108687-7 - RA	CCW-2A-0124	Total/NA	Water	1633	
320-108687-8	CTMW-17-0124	Total/NA	Water	1633	
320-108687-9	RINSATE BLANK #1-0124	Total/NA	Water	1633	
320-108687-10	TRIP SOURCE WATER BLANK #1-0124	Total/NA	Water	1633	
MB 320-734182/1-A	Method Blank	Total/NA	Water	1633	
LCS 320-734182/3-A	Lab Control Sample	Total/NA	Water	1633	
LLCS 320-734182/2-A	Lab Control Sample	Total/NA	Water	1633	
320-108687-3 DU	CCW-3B-0124	Total/NA	Water	1633	
320-108687-3 DU - RA	CCW-3B-0124	Total/NA	Water	1633	

Analysis Batch: 734653

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-108687-1	CCW-3A-0124	Total/NA	Water	1633	734182
320-108687-2	CCW-9-3A-0124	Total/NA	Water	1633	734182
320-108687-3	CCW-3B-0124	Total/NA	Water	1633	734182
320-108687-4	FIELD BLANK #1-0124	Total/NA	Water	1633	734182
320-108687-5	CCW-2C-0124	Total/NA	Water	1633	734182
320-108687-6	CCW-2B-0124	Total/NA	Water	1633	734182
320-108687-7	CCW-2A-0124	Total/NA	Water	1633	734182
320-108687-8	CTMW-17-0124	Total/NA	Water	1633	734182
320-108687-9	RINSATE BLANK #1-0124	Total/NA	Water	1633	734182
320-108687-10	TRIP SOURCE WATER BLANK #1-0124	Total/NA	Water	1633	734182
MB 320-734182/1-A	Method Blank	Total/NA	Water	1633	734182
LCS 320-734182/3-A	Lab Control Sample	Total/NA	Water	1633	734182
LLCS 320-734182/2-A	Lab Control Sample	Total/NA	Water	1633	734182
320-108687-3 DU	CCW-3B-0124	Total/NA	Water	1633	734182

Analysis Batch: 735099

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-108687-1 - RA	CCW-3A-0124	Total/NA	Water	1633	734182
320-108687-2 - RA	CCW-9-3A-0124	Total/NA	Water	1633	734182
320-108687-3 - RA	CCW-3B-0124	Total/NA	Water	1633	734182
320-108687-5 - RA	CCW-2C-0124	Total/NA	Water	1633	734182
320-108687-6 - RA	CCW-2B-0124	Total/NA	Water	1633	734182
320-108687-7 - RA	CCW-2A-0124	Total/NA	Water	1633	734182
320-108687-3 DU - RA	CCW-3B-0124	Total/NA	Water	1633	734182

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Page 40 of 49

QC Association Summary

Client: Dalton, Olmsted & Fuglevand, Inc Project/Site: PFAS, Tacoma WA Job ID: 320-108687-1

LCMS

Prep Batch: 735177

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-108687-1 - RE	CCW-3A-0124	Total/NA	Water	1633	
320-108687-2 - RE	CCW-9-3A-0124	Total/NA	Water	1633	
320-108687-8 - RE	CTMW-17-0124	Total/NA	Water	1633	
MB 320-735177/1-A	Method Blank	Total/NA	Water	1633	
LCS 320-735177/3-A	Lab Control Sample	Total/NA	Water	1633	
LLCS 320-735177/2-A	Lab Control Sample	Total/NA	Water	1633	

Analysis Batch: 736673

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-108687-1 - RE	CCW-3A-0124	Total/NA	Water	1633	735177
320-108687-2 - RE	CCW-9-3A-0124	Total/NA	Water	1633	735177
320-108687-8 - RE	CTMW-17-0124	Total/NA	Water	1633	735177
MB 320-735177/1-A	Method Blank	Total/NA	Water	1633	735177
LCS 320-735177/3-A	Lab Control Sample	Total/NA	Water	1633	735177
LLCS 320-735177/2-A	Lab Control Sample	Total/NA	Water	1633	735177

Job ID: 320-108687-1

Client: Dalton, Olmsted & Fuglevand, Inc Project/Site: PFAS, Tacoma WA

Client Sample ID: CCW-3A-0124

Date Collected: 01/11/24 10:35 Date Received: 01/13/24 08:05 Lab Sample ID: 320-108687-1

Matrix: Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	1633			534.3 mL	5.0 mL	734182	01/17/24 11:51	JS	EET SAC
Total/NA	Analysis	1633		1			734653	01/18/24 23:42	EMF	EET SAC
Total/NA	Prep	1633	RE		50.0 mL	5.0 mL	735177	01/22/24 04:23	HJA	EET SAC
Total/NA	Analysis	1633	RE	1			736673	01/26/24 16:51	S1M	EET SAC
Total/NA	Prep	1633	RA		534.3 mL	5.0 mL	734182	01/17/24 11:51	JS	EET SAC
Total/NA	Analysis	1633	RA	1	1 mL	1 mL	735099	01/19/24 17:47	S1M	EET SAC

Client Sample ID: CCW-9-3A-0124

Date Collected: 01/11/24 10:40 Date Received: 01/13/24 08:05 Lab Sample ID: 320-108687-2

Matrix: Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	1633			548.1 mL	5.0 mL	734182	01/17/24 11:51	JS	EET SAC
Total/NA	Analysis	1633		1			734653	01/19/24 00:00	EMF	EET SAC
Total/NA	Prep	1633	RE		50.0 mL	5.0 mL	735177	01/22/24 04:23	HJA	EET SAC
Total/NA	Analysis	1633	RE	1			736673	01/26/24 17:09	S1M	EET SAC
Total/NA	Prep	1633	RA		548.1 mL	5.0 mL	734182	01/17/24 11:51	JS	EET SAC
Total/NA	Analysis	1633	RA	1	1 mL	1 mL	735099	01/19/24 18:04	S1M	EET SAC

Client Sample ID: CCW-3B-0124

Date Collected: 01/11/24 12:00 Date Received: 01/13/24 08:05 Lab Sample ID: 320-108687-3

Lab Sample ID: 320-108687-4

Lab Sample ID: 320-108687-5

Matrix: Water

Matrix: Water

Matrix: Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	1633			548.5 mL	5.0 mL	734182	01/17/24 11:51	JS	EET SAC
Total/NA	Analysis	1633		1			734653	01/19/24 00:17	EMF	EET SAC
Total/NA	Prep	1633	RA		548.5 mL	5.0 mL	734182	01/17/24 11:51	JS	EET SAC
Total/NA	Analysis	1633	RA	1	1 mL	1 mL	735099	01/19/24 18:20	S1M	EET SAC

Client Sample ID: FIELD BLANK #1-0124

Date Collected: 01/11/24 11:15

Date Received: 01/13/24 08:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1633			474.7 mL	5.0 mL	734182	01/17/24 11:51	JS	EET SAC
Total/NA	Analysis	1633		1			734653	01/19/24 00:52	EMF	EET SAC

Client Sample ID: CCW-2C-0124

Date Collected: 01/11/24 13:00

Date Received: 01/13/24 08:05

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	1633			554.1 mL	5.0 mL	734182	01/17/24 11:51	JS	EET SAC
Total/NA	Analysis	1633		1			734653	01/19/24 01:10	EMF	EET SAC
Total/NA	Prep	1633	RA		554.1 mL	5.0 mL	734182	01/17/24 11:51	JS	EET SAC
Total/NA	Analysis	1633	RA	1	1 mL	1 mL	735099	01/19/24 18:53	S1M	EET SAC

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Page 42 of 49

10

1/31/2024

Job ID: 320-108687-1

Client: Dalton, Olmsted & Fuglevand, Inc Project/Site: PFAS, Tacoma WA

Client Sample ID: CCW-2B-0124

Date Collected: 01/11/24 13:55 Date Received: 01/13/24 08:05 Lab Sample ID: 320-108687-6

Matrix: Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	1633			555.3 mL	5.0 mL	734182	01/17/24 11:51	JS	EET SAC
Total/NA	Analysis	1633		1			734653	01/19/24 01:28	EMF	EET SAC
Total/NA	Prep	1633	RA		555.3 mL	5.0 mL	734182	01/17/24 11:51	JS	EET SAC
Total/NA	Analysis	1633	RA	1	1 mL	1 mL	735099	01/19/24 19:10	S1M	EET SAC

Client Sample ID: CCW-2A-0124

Date Collected: 01/11/24 14:40 Date Received: 01/13/24 08:05 Lab Sample ID: 320-108687-7

Matrix: Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	1633			519.6 mL	5.0 mL	734182	01/17/24 11:51	JS	EET SAC
Total/NA	Analysis	1633		1			734653	01/19/24 02:21	EMF	EET SAC
Total/NA	Prep	1633	RA		519.6 mL	5.0 mL	734182	01/17/24 11:51	JS	EET SAC
_Total/NA	Analysis	1633	RA	1	1 mL	1 mL	735099	01/19/24 19:27	S1M	EET SAC

Client Sample ID: CTMW-17-0124

Date Collected: 01/11/24 16:00

Date Received: 01/13/24 08:05

Lab Sample ID: 320-108687-8 **Matrix: Water**

Lab Sample ID: 320-108687-9

Lab Sample ID: 320-108687-10

Matrix: Water

Matrix: Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	1633			523.7 mL	5.0 mL	734182	01/17/24 11:51	JS	EET SAC
Total/NA	Analysis	1633		1			734653	01/19/24 02:38	EMF	EET SAC
Total/NA	Prep	1633	RE		50.0 mL	5.0 mL	735177	01/22/24 04:23	HJA	EET SAC
Total/NA	Analysis	1633	RE	1			736673	01/26/24 17:26	S1M	EET SAC

Client Sample ID: RINSATE BLANK #1-0124

Date Collected: 01/11/24 16:30

Date Received: 01/13/24 08:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1633			484.9 mL	5.0 mL	734182	01/17/24 11:51	JS	EET SAC
Total/NA	Analysis	1633		1			734653	01/19/24 02:56	EMF	EET SAC

Client Sample ID: TRIP SOURCE WATER BLANK #1-0124

Date Collected: 01/11/24 09:00

Date Received: 01/13/24 08:05

_										
	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	1633			576.3 mL	5.0 mL	734182	01/17/24 11:51	JS	EET SAC
Total/NA	Analysis	1633		1			734653	01/19/24 03:13	FMF	FFT SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: Dalton, Olmsted & Fuglevand, Inc Job ID: 320-108687-1

Project/Site: PFAS, Tacoma WA

Laboratory: Eurofins Sacramento

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C581	05-05-24

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Method Summary

Client: Dalton, Olmsted & Fuglevand, Inc

Project/Site: PFAS, Tacoma WA

MethodMethod DescriptionProtocolLaboratory1633Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24EPAEET SAC1633Solid-Phase Extraction (SPE)EPAEET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

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

Job ID: 320-108687-1

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Sample Summary

Client: Dalton, Olmsted & Fuglevand, Inc Project/Site: PFAS, Tacoma WA

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-108687-1	CCW-3A-0124	Water	01/11/24 10:35	01/13/24 08:05
320-108687-2	CCW-9-3A-0124	Water	01/11/24 10:40	01/13/24 08:05
320-108687-3	CCW-3B-0124	Water	01/11/24 12:00	01/13/24 08:05
320-108687-4	FIELD BLANK #1-0124	Water	01/11/24 11:15	01/13/24 08:05
320-108687-5	CCW-2C-0124	Water	01/11/24 13:00	01/13/24 08:05
320-108687-6	CCW-2B-0124	Water	01/11/24 13:55	01/13/24 08:05
320-108687-7	CCW-2A-0124	Water	01/11/24 14:40	01/13/24 08:05
320-108687-8	CTMW-17-0124	Water	01/11/24 16:00	01/13/24 08:05
320-108687-9	RINSATE BLANK #1-0124	Water	01/11/24 16:30	01/13/24 08:05
320-108687-10	TRIP SOURCE WATER BLANK #1-0124	Water	01/11/24 09:00	01/13/24 08:05

Job ID: 320-108687-1

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880 Riverside Parkway West Sacramento, CA 95805	Chain	Chain of Custody Record	Record	A A	このこれに	🔨 🕏 eurofins	 Env. rooment Testing
		7		2			
Client Information	Sampler A, CECLUT /	C, D MATERS	Lab PM: Horner Nathaniel A		Carrier Tracking No(s):	COC No: 320-58154-15829.1	9.1
Trevor Louviere / THS 4AGLAY / ANTHONY CELEVATI. Phone: (215) 767	Phone: (215) 747 749		E-Mail Nathaniel. Homer@et. eurofinsus. com	et.eurofinsus.com	State of Origin:	6 2 -	\$5 lofi
Company: Daiton, Olmsted & Fuglevand, Inc		PWSID:		Analysis Requested	nested	Job #;	
Address: 1001 SW Klickitat Way Suite 200B	Due Date Requested:						SS: M Hexane
City: Seattle	TAT Requested (days):					A HCL B NaOH C Zn Acetate	N None O AsNaOZ
State, Zip: WA, 98134	iance Project: A Yes	Δ No					P Na204S Q Na2SO3 R Na2S2O3
	Po#. Purchase Order Requested		(F MeOH G Amchlor H Assorbit Acid	S H2SO4 T TSP Dodecahydrate
Johnw.com/ Agiry @ DoFN John Com	WO#.		(0)			_ ¬	U Acetone V MCAA W nH 4-5
	Project #: 32023663		170 81	Andrew Control and Andrew Control		Teiner T D EDA A	
	SSOW#:		A) ds			nco lo	
	<u> </u>	Sample Matrix Type (w-water, s-solid, C=Comp, o-waste/oil.	× Fig		<u> </u>	Sed muly lan	
Sample Identification	Sample Date Time	G=grab) BT=T15510. \(\text{VAIr}\) Preservation Code:	14 X				Special Instructions/Note:
CCN-34-0124	111174 1637	ر Water					
VCW-9-3A+0124	+~	6, Water	'×				
		ر Water	 				
FIELD BLANK #1-0124	1111/24 1115	ر Water	X				
Cew-22-0124	1/11/24 1300	Ĝ Water	تر \				
dew-28-0124	SSE1 12/11/1	ر Water	X				
CCW - 2A - 6124	My Kaluli	Water	×				
1217-13-13111日)	199 K. 11	4 Water	ار ک				
RINSATE BLANK #1-012%	1/11/24 1630	م Water	<u>-</u>	320-108687 C	Chain of Custody		
TRIP SOURCE WATER BLANK#1-0124	1 11 24 Oyou	6 Water	X		-		
		' Mater					
Possible Hazard Identification Non-Hazard Flammable Skin Intiant Pois	Poison B	Asdiological	Sample Dis	le Disposal (A fee may be a	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) Return To Client Disposal By Lab Archive For Mon	etained longer than 1 Archive For	month) Months
Deliverable Requested: I, II, III, IV Other (specify)			Special Inst	Special Instructions/QC Requirements:			
Empty Kit Relinquished by	Date:		Time:		Method of Shipment		
Relinquished by Throwy (Callet)	Date/Time: //2/24 / 1200		Received by:	FEDER 1	UNDER COC Date/Time:	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Company
Relinquished by:	Date/Time:	Сотрапу	Received			27 0805	Company of
	Date/Time:	Сотрапу	Received by	by: ()	Date/Time:		Сопрапу
Custody Seals Intact Custody Seal No. 2106976	-(63917 Jobs		Cooler Te	Cooler Temperature(s) °C and Other Remarks:	smarks: η , γ		
ğ							Ver 06/08/2021

Chain of Custody Record A 2 COULEAS & curofins | Environment Testing

Eurofins Sacramento

Environment Testing

Sacramento Sample Receiving Notes (SSRN)

Loc 320 108687 Job			S	cking # 7892 7181 4304 D / PO / FO / AT /2-Day / Ground / UPS / CDO / Cour SL / OnTrac / Goldstreak / USPS / Other	rier
Use this form to record Sample Custody Seal C File in the job folder with the COC	Cooler C	ustody	Seal Ten	nperature & corrected Temperature & other observations.	
Therm ID VIL Corr Factor Ice Wet Gel Cooler Custody Seal 2106927 Cooler ID 2 of 2 Temp Observed 4.7 °C Correct From Temp Blank D Sam	_ Othe	·		Notes	
Opening/Processing The Shipment Cooler compromised/tampered with? Cooler Temperature is acceptable? Frozen samples show signs of thaw? Initials Date	Yes D D	<u>No</u>	NA D D		
Unpacking/Labeling The Samples Containers are not broken or leaking? Samples compromised/tampered with? COC is complete w/o discrepancies Sample custody seal?	Yes	No 0 0	NA OOO	Trizma Lot #(s)	
Sample containers have legible labels? Sample date/times are provided? Appropriate containers are used? Sample bottles are completely filled? Sample preservatives verified?	A A A	0000	رمممہ	Ammonium Acetate Lot #(s)	_
Is the Field Sampler's name on COC? Samples w/o discrepancies? Zero headspace?*		0000			-
Alkalinity has no headspace? Perchlorate has headspace? (Methods 314 331 6850)		ם	pr ev	Login Completion Yes No	NA D
Multiphasic samples are not present?	Ø	D		Samples received within hold time?	
*Containers requiring zero headspace have no headspace Initials Date	e, or bubbl	e < 6 mr	n (1/4")	Initials. M Date. 13 M	

1/31/2024

Login Sample Receipt Checklist

Client: Dalton, Olmsted & Fuglevand, Inc Job Number: 320-108687-1

Login Number: 108687 List Source: Eurofins Sacramento

List Number: 1

Creator: Medeiros, Ryan M

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

2

4

7

9

11

12

1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Vineta Mills, M.S. Eric Young, B.S. 5500 4th Avenue South Seattle, WA 98108 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

February 5, 2024

Carolyn Wise, Project Manager Maul Foster Alongi 1329 N State St, Suite 301 Bellingham, WA 98225

Dear Ms Wise:

Included is the amended report from the testing of material submitted on December 13, 2023 from the TWAAFA-Additional GW Sampling M0615.20.012, F&BI 312247 project. Per your request, sample ID TWA-9-1223 has been amended to TWA-9-3-1223.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures c: Fiona Bellows MFA1229R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Vineta Mills, M.S. Eric Young, B.S. 5500 4th Avenue South Seattle, WA 98108 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

December 29, 2023

Carolyn Wise, Project Manager Maul Foster Alongi 1329 N State St, Suite 301 Bellingham, WA 98225

Dear Ms Wise:

Included are the results from the testing of material submitted on December 13, 2023 from the TWAAFA-Additional GW Sampling M0615.20.012, F&BI 312247 project. There are 50 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures MFA1229R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on December 13, 2023 by Friedman & Bruya, Inc. from the Maul Foster Alongi TWAAFA-Additional GW Sampling M0615.20.012, F&BI 312247 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Maul Foster Alongi
312247 -01	TWA-3-1223
312247 -02	TWA-9-3-1223
312247 -03	TWA-10D-1223
312247 -04	TWA-1-1223
312247 -05	TWA-2-1223
312247 -06	Field Blank1-1223
312247 -07	SB-1A-1223
312247 -08	SB-2A-1223
312247 -09	Filter Blank1-1223
312247 -10	TWA-5D-1223
312247 -11	TWA-6D-1223
312247 -12	SB-3A-1223
312247 -13	CTMW-25D-1223
312247 -14	CTMW-20-1223
312247 -15	MW-1-1223
312247 -16	CTMW-15-1223

All quality control requirements were acceptable.

Client ID: TWA-3-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

Lab ID: 312247-01 Date Extracted: 12/18/23 Date Analyzed: 12/21/23Data File: $312247 \hbox{-} 01.220$ ICPMS2Matrix: Water Instrument: Units: ug/L (ppb) SPOperator:

Concentration ug/L (ppb)

 Analyte:
 ug/L (ppb)

 Arsenic
 2.26

 Copper
 4.21

 Iron
 691

 Manganese
 465

 Nickel
 10.1

Client ID: TWA-9-3-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

Lab ID: 312247-02 Date Extracted: 12/18/23 Date Analyzed: 12/21/23Data File: $312247 \hbox{-} 02.221$ ICPMS2Matrix: Water Instrument: Units: ug/L (ppb) SPOperator:

Concentration ug/L (ppb)

 Analyte:
 ug/L (ppb)

 Arsenic
 2.26

 Copper
 3.76

 Iron
 681

 Manganese
 452

 Nickel
 9.66

Client ID: TWA-10D-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

 Copper
 <2.4</td>

 Iron
 1,030

 Manganese
 42.2

Client ID: TWA-10D-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

 Date Extracted:
 12/18/23
 Lab ID:
 312247-03 x5

 Date Analyzed:
 12/22/23
 Data File:
 312247-03 x5.147

 $\begin{array}{cccc} \text{Matrix:} & \text{Water} & \text{Instrument:} & \text{ICPMS2} \\ \text{Units:} & \text{ug/L (ppb)} & \text{Operator:} & \text{SP} \end{array}$

Concentration

Analyte: ug/L (ppb)

Arsenic 10.2

Client ID: TWA-1-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

Lab ID: 312247-04Date Extracted: 12/18/23 Date Analyzed: 12/21/23Data File: $312247 \hbox{-} 04.223$ ICPMS2Matrix: Water Instrument: Units: ug/L (ppb) SPOperator:

Concentration

Analyte: ug/L (ppb)

 Arsenic
 <1</td>

 Copper
 3.57

 Iron
 568

 Manganese
 3.57

Client ID: TWA-2-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

Lab ID: 312247-05Date Extracted: 12/18/23 Date Analyzed: 12/21/23Data File: $312247 \hbox{-} 05.224$ ICPMS2Matrix: Water Instrument: Units: ug/L (ppb) SPOperator:

Concentration

Analyte: ug/L (ppb)

 Arsenic
 28.6

 Copper
 10.2

 Iron
 413

 Manganese
 347

Client ID: SB-1A-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

Lab ID: 312247-07 Date Extracted: 12/18/23 Date Analyzed: 12/19/23Data File: $312247 \hbox{-} 07.273$ ICPMS2Matrix: Water Instrument: Units: ug/L (ppb) SPOperator:

Concentration

Analyte: ug/L (ppb)

Arsenic 2.13 Copper <2.4 Manganese 141

Client ID: SB-1A-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

 $\begin{array}{cccc} \text{Matrix:} & \text{Water} & \text{Instrument:} & \text{ICPMS2} \\ \text{Units:} & \text{ug/L (ppb)} & \text{Operator:} & \text{SP} \end{array}$

Concentration

Analyte: ug/L (ppb)

Iron 2,220

Client ID: SB-2A-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

Lab ID: 312247-08 Date Extracted: 12/18/23 Date Analyzed: 12/21/23Data File: $312247 \hbox{-} 08.225$ ICPMS2Matrix: Water Instrument: Units: ug/L (ppb) SPOperator:

Concentration

Analyte: ug/L (ppb)

 Arsenic
 2.61

 Copper
 <2.4</td>

 Iron
 1,770

 Manganese
 510

Client ID: Filter Blank1-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

Lab ID: 312247-09 Date Extracted: 12/18/23 Date Analyzed: 12/21/23Data File: $312247 \hbox{-} 09.226$ ICPMS2Matrix: Water Instrument: Units: SPug/L (ppb) Operator:

Concentration ug/L (ppb)

 Arsenic
 <1</td>

 Chromium
 1.71

 Copper
 <2.4</td>

 Iron
 <50</td>

 Manganese
 1.87

 Nickel
 <1</td>

Analyte:

Client ID: TWA-5D-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

Lab ID: 312247-10 Date Extracted: 12/18/23 Date Analyzed: 12/21/23Data File: $312247 \hbox{-} 10.227$ ICPMS2Matrix: Water Instrument: Units: ug/L (ppb) SPOperator:

Concentration

Analyte: ug/L (ppb)

 Copper
 <2.4</td>

 Iron
 1,780

 Manganese
 181

Client ID: TWA-5D-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

 Date Extracted:
 12/18/23
 Lab ID:
 312247-10 x5

 Date Analyzed:
 12/22/23
 Data File:
 312247-10 x5.148

 $\begin{array}{cccc} \text{Matrix:} & \text{Water} & \text{Instrument:} & \text{ICPMS2} \\ \text{Units:} & \text{ug/L (ppb)} & \text{Operator:} & \text{SP} \end{array}$

Concentration

Analyte: ug/L (ppb)

Arsenic 5.26

Client ID: TWA-6D-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

Lab ID: 312247-11Date Extracted: 12/18/23 Date Analyzed: 12/21/23Data File: 312247 - 11.231ICPMS2Matrix: Water Instrument: Units: SPug/L (ppb) Operator:

Concentration ug/L (ppb)

 Chromium
 21.0

 Copper
 <2.4</td>

 Iron
 2,950

 Manganese
 753

Analyte:

Client ID: TWA-6D-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

 Date Extracted:
 12/18/23
 Lab ID:
 312247-11 x5

 Date Analyzed:
 12/22/23
 Data File:
 312247-11 x5.149

 $\begin{array}{cccc} \text{Matrix:} & \text{Water} & \text{Instrument:} & \text{ICPMS2} \\ \text{Units:} & \text{ug/L (ppb)} & \text{Operator:} & \text{SP} \end{array}$

Concentration

Analyte: ug/L (ppb)

Arsenic 6.68

Client ID: SB-3A-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

Lab ID: 312247-12Date Extracted: 12/18/23 Date Analyzed: 12/21/23Data File: 312247 - 12.233ICPMS2Matrix: Water Instrument: Units: ug/L (ppb) SPOperator:

Concentration

Analyte: ug/L (ppb)

 Arsenic
 1.89

 Copper
 <2.4</td>

 Iron
 2,600

 Manganese
 118

Client ID: CTMW-25D-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

Lab ID: 312247-13 Date Extracted: 12/18/23 Date Analyzed: 12/21/23Data File: $312247 \hbox{-} 13.234$ ICPMS2Matrix: Water Instrument: Units: SPug/L (ppb) Operator:

Concentration ug/L (ppb)

 Arsenic
 5.71

 Chromium
 12.6

 Copper
 <2.4</td>

 Manganese
 263

Analyte:

Client ID: CTMW-25D-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

 $\begin{array}{cccc} \text{Matrix:} & \text{Water} & \text{Instrument:} & \text{ICPMS2} \\ \text{Units:} & \text{ug/L (ppb)} & \text{Operator:} & \text{SP} \end{array}$

Concentration

Analyte: ug/L (ppb)

Iron 7,560

Client ID: CTMW-20-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

SP

Operator:

Concentration

Analyte: ug/L (ppb)

ug/L (ppb)

Arsenic 6.00 Copper <2.4

Units:

Client ID: CTMW-20-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

 $\begin{array}{cccc} \text{Matrix:} & \text{Water} & \text{Instrument:} & \text{ICPMS2} \\ \text{Units:} & \text{ug/L (ppb)} & \text{Operator:} & \text{SP} \end{array}$

Concentration

Analyte: ug/L (ppb)

Iron 19,100 Manganese 1,280

Client ID: MW-1-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

Lab ID: 312247 - 15Date Extracted: 12/18/23 Date Analyzed: 12/21/23Data File: 312247 - 15.236ICPMS2Matrix: Water Instrument: Units: ug/L (ppb) SPOperator:

Concentration

Analyte: ug/L (ppb)

Arsenic 3.88
Copper <2.4
Manganese 69.4

Client ID: MW-1-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

 $\begin{array}{cccc} \text{Matrix:} & \text{Water} & \text{Instrument:} & \text{ICPMS2} \\ \text{Units:} & \text{ug/L (ppb)} & \text{Operator:} & \text{SP} \end{array}$

Concentration

Analyte: ug/L (ppb)

Iron 6,960

Client ID: CTMW-15-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

Lab ID: 312247-16 Date Extracted: 12/18/23 Date Analyzed: 12/21/23Data File: $312247 \hbox{-} 16.237$ ICPMS2Matrix: Water Instrument: Units: ug/L (ppb) SPOperator:

Concentration

Analyte: ug/L (ppb)

Arsenic 1.82 Copper <2.4 Manganese 246

Client ID: CTMW-15-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

 $\begin{array}{cccc} \text{Matrix:} & \text{Water} & \text{Instrument:} & \text{ICPMS2} \\ \text{Units:} & \text{ug/L (ppb)} & \text{Operator:} & \text{SP} \end{array}$

Concentration

Analyte: ug/L (ppb)

Iron 8,230

Client ID: Method Blank Client: Maul Foster Alongi

Date Received: Not Applicable Project: M0615.20.012, F&BI 312247

Date Extracted:12/18/23Lab ID:I3-1003 mbDate Analyzed:12/18/23Data File:I3-1003 mb.143Matrix:WaterInstrument:ICPMS2

Units: water instrument: ICFMS
Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Arsenic <1
Chromium <1

 Copper
 <2.4</td>

 Iron
 <50</td>

 Manganese
 <1</td>

 Nickel
 <1</td>

Client ID: TWA-3-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

Lab ID: 312247-01 Date Extracted: 12/18/23 Date Analyzed: 12/21/23 Data File: $312247 \hbox{-} 01.275$ Water ICPMS2Matrix: Instrument: Units: ug/L (ppb) Operator: SP

	Concentration
Analyte:	ug/L (ppb)
A	9.79

 Arsenic
 2.72

 Copper
 4.50

 Iron
 786

 Manganese
 445

 Nickel
 10.7

Client ID: TWA-9-3-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

Operator:

SP

Concentration

Analyte:	ug/L (ppb)
Arsenic Copper Iron Manganese Nickel	3.04 4.66 832 467 10.2

ug/L (ppb)

Units:

Client ID: TWA-10D-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

Lab ID: 312247-03 Date Extracted: 12/18/23 Date Analyzed: 12/21/23Data File: 312247 - 03.277ICPMS2Matrix: Water Instrument: Units: ug/L (ppb) SPOperator:

Concentration

Analyte: ug/L (ppb)

 Copper
 4.11

 Iron
 1,240

 Manganese
 45.7

Client ID: TWA-10D-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

 Date Extracted:
 12/18/23
 Lab ID:
 312247-03 x5

 Date Analyzed:
 12/26/23
 Data File:
 312247-03 x5.053

 $\begin{array}{cccc} \text{Matrix:} & \text{Water} & \text{Instrument:} & \text{ICPMS2} \\ \text{Units:} & \text{ug/L (ppb)} & \text{Operator:} & \text{SP} \end{array}$

Concentration

Analyte: ug/L (ppb)

Arsenic 9.03

Client ID: TWA-1-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

Lab ID: 312247-04Date Extracted: 12/18/23 Date Analyzed: 12/21/23Data File: $312247 \hbox{-} 04.278$ ICPMS2Matrix: Water Instrument: Units: ug/L (ppb) SPOperator:

 $\begin{array}{c} & Concentration \\ Analyte: & ug/L\ (ppb) \end{array}$

 Arsenic
 1.37

 Copper
 3.88

 Iron
 1,850

 Manganese
 11.2

Client ID: TWA-2-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

Lab ID: 312247-05Date Extracted: 12/18/23 Date Analyzed: 12/21/23Data File: $312247 \hbox{-} 05.279$ ICPMS2Matrix: Water Instrument: Units: ug/L (ppb) SPOperator:

Concentration

Analyte: ug/L (ppb)

 Arsenic
 26.3

 Copper
 10.4

 Iron
 530

 Manganese
 338

Client ID: Field Blank1-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

Lab ID: 312247-06 Date Extracted: 12/18/23 Date Analyzed: 12/21/23Data File: $312247 \hbox{-} 06.280$ ICPMS2Matrix: Water Instrument: Units: ug/L (ppb) SPOperator:

Concentration ug/L (ppb)

 Arsenic
 <1</td>

 Chromium
 1.72

 Copper
 3.07

 Iron
 <50</td>

 Manganese
 1.44

 Nickel
 <1</td>

Analyte:

Client ID: SB-1A-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

 Date Extracted:
 12/18/23
 Lab ID:
 312247-07

 Date Analyzed:
 12/19/23
 Data File:
 312247-07.276

 Matrix:
 Water
 Instrument:
 ICPMS2

Units: ug/L (ppb) Operator: SP

 $\begin{array}{c} & Concentration \\ Analyte: & ug/L\ (ppb) \end{array}$

Arsenic 2.41 Copper 2.57 Manganese 147

Client ID: SB-1A-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

 Date Extracted:
 12/18/23
 Lab ID:
 312247-07 x25

 Date Analyzed:
 12/20/23
 Data File:
 312247-07 x25.166

 $\begin{array}{cccc} \text{Matrix:} & \text{Water} & \text{Instrument:} & \text{ICPMS2} \\ \text{Units:} & \text{ug/L (ppb)} & \text{Operator:} & \text{SP} \end{array}$

Concentration

Analyte: ug/L (ppb)

Iron 2,720

Client ID: SB-2A-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

Lab ID: 312247-08 Date Extracted: 12/18/23 Date Analyzed: 12/21/23Data File: $312247 \hbox{-} 08.281$ ICPMS2Matrix: Water Instrument: Units: ug/L (ppb) SPOperator:

Concentration

Analyte: ug/L (ppb)

 Arsenic
 2.47

 Copper
 <2.4</td>

 Iron
 2,060

 Manganese
 528

Client ID: TWA-5D-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

Lab ID: 312247-10 Date Extracted: 12/18/23 Date Analyzed: 12/21/23Data File: 312247 - 10.282ICPMS2Matrix: Water Instrument: Units: ug/L (ppb) SPOperator:

 $\begin{array}{c} & Concentration \\ Analyte: & ug/L\ (ppb) \end{array}$

 Arsenic
 5.16

 Copper
 <2.4</td>

 Iron
 2,010

 Manganese
 182

Client ID: TWA-6D-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

Lab ID: 312247-11 Date Extracted: 12/18/23 Date Analyzed: 12/21/23 Data File: 312247 - 11.287Water ICPMS2Matrix: Instrument: Units: ug/L (ppb) Operator: SP

	Concentration
Analyte:	ug/L (ppb)

Arsenic	7.26
Chromium	24.4
Copper	2.97
Iron	3,030
Manganese	749

Client ID: SB-3A-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

Lab ID: 312247-12Date Extracted: 12/18/23 Date Analyzed: 12/21/23Data File: $312247 \hbox{-} 12.289$ ICPMS2Matrix: Water Instrument: Units: ug/L (ppb) SPOperator:

Concentration ug/L (ppb)

 Arsenic
 1.80

 Copper
 <2.4</td>

 Iron
 2,940

 Manganese
 121

Analyte:

Client ID: CTMW-25D-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

Lab ID: 312247-13 Date Extracted: 12/18/23 Date Analyzed: 12/21/23Data File: 312247 - 13.290ICPMS2Matrix: Water Instrument: Units: ug/L (ppb) SPOperator:

 $\begin{array}{c} \text{Concentration} \\ \text{Analyte:} \\ \text{ug/L (ppb)} \end{array}$

 Arsenic
 6.33

 Chromium
 15.9

 Copper
 2.74

 Manganese
 299

Client ID: CTMW-25D-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

 $\begin{array}{cccc} \text{Matrix:} & \text{Water} & \text{Instrument:} & \text{ICPMS2} \\ \text{Units:} & \text{ug/L (ppb)} & \text{Operator:} & \text{SP} \end{array}$

Concentration

Analyte: ug/L (ppb)

Iron 8,210

Client ID: CTMW-20-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

Lab ID: 312247 - 14Date Extracted: 12/18/23 Date Analyzed: 12/21/23Data File: $312247 \hbox{-} 14.291$ ICPMS2 Matrix: Water Instrument: Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Arsenic 5.86 Copper <2.4

Client ID: CTMW-20-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

 $\begin{array}{cccc} \text{Matrix:} & \text{Water} & \text{Instrument:} & \text{ICPMS2} \\ \text{Units:} & \text{ug/L (ppb)} & \text{Operator:} & \text{SP} \end{array}$

Concentration

Analyte: ug/L (ppb)

 Iron
 17,700

 Manganese
 1,130

Client ID: MW-1-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

Lab ID: 312247 - 15Date Extracted: 12/18/23 Date Analyzed: 12/21/23Data File: 312247 - 15.292ICPMS2Matrix: Water Instrument: Units: ug/L (ppb) SPOperator:

Concentration

Analyte: ug/L (ppb)

Arsenic 4.22 Copper 6.59 Manganese 70.1

Client ID: MW-1-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

 $\begin{array}{cccc} \text{Matrix:} & \text{Water} & \text{Instrument:} & \text{ICPMS2} \\ \text{Units:} & \text{ug/L (ppb)} & \text{Operator:} & \text{SP} \end{array}$

Concentration

Analyte: ug/L (ppb)

Iron 6,840

Client ID: CTMW-15-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

Lab ID: 312247-16 Date Extracted: 12/18/23 Date Analyzed: 12/21/23Data File: 312247 - 16.293ICPMS2Matrix: Water Instrument: Units: ug/L (ppb) SPOperator:

Concentration

Analyte: ug/L (ppb)

Arsenic 1.79 Copper <2.4 Manganese 272

Analysis For Total Metals By EPA Method 6020B

Client ID: CTMW-15-1223 Client: Maul Foster Alongi

Date Received: 12/13/23 Project: M0615.20.012, F&BI 312247

 $\begin{array}{cccc} \text{Matrix:} & \text{Water} & \text{Instrument:} & \text{ICPMS2} \\ \text{Units:} & \text{ug/L (ppb)} & \text{Operator:} & \text{SP} \end{array}$

Concentration

Analyte: ug/L (ppb)

Iron 7,710

Analysis For Total Metals By EPA Method 6020B

Client ID: Method Blank Client: Maul Foster Alongi

Date Received: Not Applicable Project: M0615.20.012, F&BI 312247

Date Extracted: 12/18/23 Lab ID: I3-1004 mb
Date Analyzed: 12/18/23 Data File: I3-1004 mb.145
Matrix: Water Instrument: ICPMS2

Matrix: Water Instrument: ICPMS: Units: ug/L (ppb) Operator: SP

Concentration ug/L (ppb)

 Arsenic
 <1</td>

 Chromium
 <1</td>

 Copper
 <2.4</td>

 Iron
 <50</td>

 Manganese
 <1</td>

 Nickel
 <1</td>

Analyte:

Date of Report: 12/29/23 Date Received: 12/13/23

Project: TWAAFA-Additional GW Sampling M0615.20.012, F&BI 312247

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 6020B

Laboratory Code: 312247-07 (Matrix Spike)

Laboratory Cot	16. 312241-01	(manix of	ike)				
Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	2.13	105 b	104 b	75-125	1 b
Chromium	ug/L (ppb)	20	<1	87	86	75 - 125	1
Copper	ug/L (ppb)	20	<5	85	85	75 - 125	0
Iron	ug/L (ppb)	100	2,320	84 b	125 b	75 - 125	39 b
Manganese	ug/L (ppb)	20	141	84 b	99 b	75 - 125	16 b
Nickel	ug/L (ppb)	20	3.29	89	88	75 - 125	1

Laboratory Code: Laboratory Control Sample

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	ug/L (ppb)	10	94	80-120
Chromium	ug/L (ppb)	20	85	80-120
Copper	ug/L (ppb)	20	94	80-120
Iron	ug/L (ppb)	100	100	80-120
Manganese	ug/L (ppb)	20	87	80-120
Nickel	ug/L (ppb)	20	94	80-120

Date of Report: 12/29/23 Date Received: 12/13/23

Project: TWAAFA-Additional GW Sampling M0615.20.012, F&BI 312247

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 312247-07 (Matrix Spike)

				Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Arsenic	ug/L (ppb)	10	2.41	105 b	103 b	75-125	2 b
Chromium	ug/L (ppb)	20	<1	86	83	75 - 125	4
Copper	ug/L (ppb)	20	<5	83	81	75 - 125	2
Iron	ug/L (ppb)	100	2,950	88 b	0 b	75 - 125	200 b
Manganese	ug/L (ppb)	20	147	89 b	78 b	75 - 125	13 b
Nickel	ug/L (ppb)	20	3.28	88	84	75 - 125	5

Laboratory Code: Laboratory Control Sample

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	ug/L (ppb)	10	95	80-120
Chromium	ug/L (ppb)	20	89	80-120
Copper	ug/L (ppb)	20	95	80-120
Iron	ug/L (ppb)	100	96	80-120
Manganese	ug/L (ppb)	20	89	80-120
Nickel	ug/L (ppb)	20	97	80-120

Data Qualifiers & Definitions

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.
- c The presence of the analyte may be due to carryover from previous sample injections.
- cf The sample was centrifuged prior to analysis.
- d The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv Insufficient sample volume was available to achieve normal reporting limits.
- f The sample was laboratory filtered prior to analysis.
- fb The analyte was detected in the method blank.
- fc The analyte is a common laboratory and field contaminant.
- hr The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs Headspace was present in the container used for analysis.
- ht The analysis was performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of control limits due to sample matrix effects.
- j The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- k The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.
- lc The presence of the analyte is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

512247

Report To:_Carolyn Wise.

Company:_Maul Foster Alongi, Inc

Address:_1329 North State Street, Suite 301

REMARKS

Project Specific RLs - (Yes) / No

All samples field filtered

City, State, ZIP:_Bellingham, WA 98225

Phone: 360-594-6225 Email: cwise@maulfoster.com

SAMPLE CHAIN OF CUSTODY SAMPLERS (signature)

PROJECT NAME

TWAAFA - Additional GW Sampling

M0615.20.012

PO#

Page #__

of

TURNAROUND TIME

Rush charges authorized by: X:Standard Turnaround :RUSH

Dispose after 30 days SAMPLE DISPOSAL

X Archive Samples

C. Wise, MFA

INVOICE TO

ID updated per FB 02/02/24 ME S TWA-9-3-1223 TWA-3 SB-1A-1223 TWA - 1 -TWA - 100 - 1223 TWA-5D- 1223 - XX Filter Blank 1-1223 Field Blank 1-1223 N -2A-1223 Sample ID 12 -1223 - 1223 1223 20 08 06 7- A to 204 2 0 202 0 Lab ID A.B AB A B 12/12/23 16:00 12/12/23 12/12/23 12/12/23 12/12/13 12/12/23 16:15 12/12/23 14:15 12/12/23 15:50 12/13/23 12/13/23 Sampled Date 12:40 9:35 SH:8 12:40 14:25 12:53 Sampled Time Nates Sample # of Jars 2 6 مر 2 7 N N Total As, Cu, EPA 6020 Mn, Al, Fe D/Diss Cu, As, EPA 6020 Mn, Al, Fe Total/Diss Mn × × × \times \times × × × X × × \times EPA 6020 Total/Diss Al EPA 6020 ANALYSES REQUESTED Total/Diss Fe EPA 6020 Total Cr EPA 6020 Total Ni EPA 6020 × × × Dissolved Cr EPA 6020 Dissolved Ni EPA 6020 × × × Samples received MS/M50 Notes 53

Ph. (206) 285-8282 Seattle, WA 98108 5500 4th Avenue S Friedman & Bruya,

FORMS\COC\COC.DOC

			a, Inc.	
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		12/17/27 (5:45	12/13/23 15:45	DATE
		(5:45	15:45	TIME

3122 47

Report To:_Carolyn Wise_

Company:_Maul Foster Alongi, Inc.____

Address:_1329 North State Street, Suite 301____

City, State, ZIP:_Bellingham, WA 98225____

Phone: 360-594-6225 Email: cwise@maulfoster.com

SAMPLE CHAIN OF CUSTODY

SAMPLERS (signature)

PROJECT NAME

PO#

TWAAFA - Additional GW Sampling M0615.20.012

INVOICE TO

REMARKS

Project Specific RLs - (Yes) / No

All samples field filtered

Page # 2

TURNAROUND TIME
X:Standard Turnaround:RUSH_

Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
X Archive Samples
Other

C. Wise, MFA X Archive Samples
Other_____

CTMW-15-1223 CTMW-20-1223 SB-3A-1223 TWA-60-1223 CTMW-25D-1223 MW-1-1223 Sample ID 2 $\overline{\omega}$ 6 21 12 11 A-B Lab ID 1413/23 12/13/23 12/13/23 12/13/23 12/13/23 2/13/23 Sampled 12:10 12:05 13:20 13:15 Sh:b 10:30 Sampled Time WATER Sample Type # of Jars 12 ۲ 2 2 2 2 Total/ As, Cv, EPA 6020 Mn, Al, Fe
Total/Diss Cu. As, EPA 6020 Mn Al, Fe
Total/Diss Mn
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Total/Diss Al
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Friedman & Bruya, In 5500 4th Avenue S
Seattle, WA 98108
Ph. (206) 285-8282

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		F&BI	MFA	COMPANY
		[2/13/23	12/13/23 15:45	DATE
		15:5	15:45	TIME



3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya Michael Erdahl 5500 4th Ave S Seattle, WA 98108

RE: 312247

Work Order Number: 2312341

December 21, 2023

Attention Michael Erdahl:

Fremont Analytical, Inc. received 16 sample(s) on 12/14/2023 for the analyses presented in the following report.

Dissolved Metals by EPA Method 200.8 Total Metals by EPA Method 200.8

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910



Date: 02/05/2024

CLIENT: Friedman & Bruya Work Order Sample Summary

Project: 312247 **Work Order:** 2312341

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2312341-001	TWA-3-1223	12/12/2023 12:40 PM	12/14/2023 10:20 AM
2312341-002	TWA-9-3-1223	12/12/2023 12:40 PM	12/14/2023 10:20 AM
2312341-003	TWA-10D-1223	12/12/2023 12:53 PM	12/14/2023 10:20 AM
2312341-004	TWA-1-1223	12/12/2023 2:15 PM	12/14/2023 10:20 AM
2312341-005	TWA-2-1223	12/12/2023 2:25 PM	12/14/2023 10:20 AM
2312341-006	Field Blank1-1223	12/12/2023 3:50 PM	12/14/2023 10:20 AM
2312341-007	SB-1A-1223	12/12/2023 4:00 PM	12/14/2023 10:20 AM
2312341-008	SB-2A-1223	12/12/2023 4:15 PM	12/14/2023 10:20 AM
2312341-009	Filter Blank1-1223	12/13/2023 8:45 AM	12/14/2023 10:20 AM
2312341-010	TWA-5D-1223	12/13/2023 9:35 AM	12/14/2023 10:20 AM
2312341-011	TWA-6D-1223	12/13/2023 9:45 AM	12/14/2023 10:20 AM
2312341-012	SB-3A-1223	12/13/2023 10:30 AM	12/14/2023 10:20 AM
2312341-013	CTMW-25D-1223	12/13/2023 12:05 PM	12/14/2023 10:20 AM
2312341-014	CTMW-20-1223	12/13/2023 12:10 PM	12/14/2023 10:20 AM
2312341-015	MW-1-1223	12/13/2023 1:15 PM	12/14/2023 10:20 AM
2312341-016	CTMW-15-1223	12/13/2023 1:20 PM	12/14/2023 10:20 AM



Case Narrative

WO#: **2312341**Date: **12/21/2023**

CLIENT: Friedman & Bruya

Project: 312247

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

2/5/24- Revised report includes an updated Sample ID for 2312341-002 per client request.

Revision v1 Page 3 of 18



Qualifiers & Acronyms

WO#: **231234**

Date Reported: 12/21/2023

Qualifiers:

- * Flagged value is not within established control limits
- B Analyte detected in the associated Method Blank
- D Dilution was required
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- I Analyte with an internal standard that does not meet established acceptance criteria
- J Analyte detected below Reporting Limit
- N Tentatively Identified Compound (TIC)
- Q Analyte with an initial or continuing calibration that does not meet established acceptance criteria
- S Spike recovery outside accepted recovery limits
- ND Not detected at the Reporting Limit
- R High relative percent difference observed

Acronyms:

%Rec - Percent Recovery

CCB - Continued Calibration Blank

CCV - Continued Calibration Verification

DF - Dilution Factor

DUP - Sample Duplicate

HEM - Hexane Extractable Material

ICV - Initial Calibration Verification

LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate

MCL - Maximum Contaminant Level

MB or MBLANK - Method Blank

MDL - Method Detection Limit

MS/MSD - Matrix Spike / Matrix Spike Duplicate

PDS - Post Digestion Spike

Ref Val - Reference Value

REP - Sample Replicate

RL - Reporting Limit

RPD - Relative Percent Difference

SD - Serial Dilution

SGT - Silica Gel Treatment

SPK - Spike

Surr - Surrogate



Work Order: **2312341**Date Reported: **12/21/2023**

CLIENT: Friedman & Bruya

Project: 312247

Lab ID: 2312341-001 **Collection Date:** 12/12/2023 12:40:00 PM

Client Sample ID: TWA-3-1223 Matrix: Water

Result **RL Qual** Units DF **Analyses Date Analyzed** Batch ID: 42413 Analyst: SLL **Dissolved Metals by EPA Method 200.8** 10.0 Aluminum ND μg/L 12/21/2023 11:07:00 AM Batch ID: 42396 Analyst: SLL Total Metals by EPA Method 200.8 Aluminum ND 10.0 µg/L 12/21/2023 1:09:00 PM

Lab ID: 2312341-002 **Collection Date:** 12/12/2023 12:40:00 PM

Client Sample ID: TWA-9-3-1223 Matrix: Water

RL Qual Units DF **Analyses** Result **Date Analyzed** Batch ID: 42413 Analyst: SLL **Dissolved Metals by EPA Method 200.8** Aluminum ND 10.0 μq/L 12/21/2023 11:09:00 AM Batch ID: 42396 Analyst: SLL Total Metals by EPA Method 200.8 12/21/2023 1:11:00 PM ND 10.0 Aluminum μg/L

Lab ID: 2312341-003 **Collection Date:** 12/12/2023 12:53:00 PM

Client Sample ID: TWA-10D-1223 Matrix: Water

Result **RL Qual** Units DF **Date Analyzed Analyses** Batch ID: 42413 Analyst: SLL Dissolved Metals by EPA Method 200.8 Aluminum 14.3 10.0 μg/L 12/21/2023 11:11:00 AM Batch ID: 42396 Analyst: SLL Total Metals by EPA Method 200.8 Aluminum 46.4 10.0 µg/L 12/21/2023 1:14:00 PM

Revision v1 Page 5 of 18



Work Order: 2312341

Date Reported: 12/21/2023

CLIENT: Friedman & Bruya

Project: 312247

Lab ID: 2312341-004 **Collection Date:** 12/12/2023 2:15:00 PM

Client Sample ID: TWA-1-1223 Matrix: Water

Result **RL Qual** Units DF **Analyses Date Analyzed** Batch ID: 42413 Analyst: SLL **Dissolved Metals by EPA Method 200.8** 10.0 Aluminum ND μg/L 12/21/2023 11:14:00 AM Batch ID: 42396 Analyst: SLL Total Metals by EPA Method 200.8 Aluminum 14.8 10.0 μg/L 12/21/2023 1:16:00 PM

Lab ID: 2312341-005 **Collection Date:** 12/12/2023 2:25:00 PM

Client Sample ID: TWA-2-1223 Matrix: Water

RL Qual Units DF **Date Analyzed Analyses** Result Batch ID: 42413 Analyst: SLL **Dissolved Metals by EPA Method 200.8** Aluminum ND 10.0 μq/L 12/21/2023 11:16:00 AM Batch ID: 42396 Analyst: SLL Total Metals by EPA Method 200.8 10.0 12/21/2023 1:19:00 PM Aluminum 34.1 μg/L

Lab ID: 2312341-006 Collection Date: 12/12/2023 3:50:00 PM

Client Sample ID: Field Blank1-1223 Matrix: Water

 Analyses
 Result
 RL Qual
 Units
 DF
 Date Analyzed

 Total Metals by EPA Method 200.8
 Batch ID: 42396
 Analyst: SLL

 Aluminum
 19.4
 10.0
 μg/L
 1
 12/21/2023 1:26:00 PM

Revision v1 Page 6 of 18



Work Order: 2312341

Date Reported: 12/21/2023

CLIENT: Friedman & Bruya

Project: 312247

Lab ID: 2312341-007 **Collection Date:** 12/12/2023 4:00:00 PM

Client Sample ID: SB-1A-1223 Matrix: Water

Result **RL Qual** Units DF **Analyses Date Analyzed** Batch ID: 42413 Analyst: SLL **Dissolved Metals by EPA Method 200.8** 10.0 Aluminum ND μg/L 12/21/2023 10:50:00 AM Batch ID: 42396 Analyst: SLL Total Metals by EPA Method 200.8 Aluminum ND 10.0 μg/L 12/21/2023 1:02:00 PM

Client Sample ID: SB-2A-1223 Matrix: Water

RL Qual Units DF **Date Analyzed Analyses** Result Batch ID: 42413 Analyst: SLL **Dissolved Metals by EPA Method 200.8** Aluminum 11.1 10.0 μq/L 12/21/2023 11:19:00 AM Batch ID: 42396 Analyst: SLL **Total Metals by EPA Method 200.8** 49.9 10.0 12/21/2023 1:28:00 PM Aluminum μg/L

Lab ID: 2312341-009 **Collection Date:** 12/13/2023 8:45:00 AM

Client Sample ID: Filter Blank1-1223 Matrix: Water

Analyses Result RL Qual Units DF Date Analyzed

Dissolved Metals by EPA Method 200.8

Batch ID: 42413 Analyst: SLL

Aluminum 17.5 10.0 µg/L 1 12/21/2023 11:21:00 AM

Revision v1 Page 7 of 18



Work Order: 2312341

Date Reported: 12/21/2023

CLIENT: Friedman & Bruya

Project: 312247

Lab ID: 2312341-010 **Collection Date:** 12/13/2023 9:35:00 AM

Client Sample ID: TWA-5D-1223 Matrix: Water

Result **RL Qual** Units DF **Analyses Date Analyzed** Batch ID: 42413 Analyst: SLL **Dissolved Metals by EPA Method 200.8** 10.0 Aluminum 11.4 μg/L 12/21/2023 11:24:00 AM Batch ID: 42396 Analyst: SLL Total Metals by EPA Method 200.8 Aluminum 19.7 10.0 µg/L 12/21/2023 1:31:00 PM

Lab ID: 2312341-011 **Collection Date:** 12/13/2023 9:45:00 AM

Client Sample ID: TWA-6D-1223 Matrix: Water

RL Qual Units Analyses Result DF **Date Analyzed** Batch ID: 42413 Analyst: SLL **Dissolved Metals by EPA Method 200.8** Aluminum 49.9 10.0 μq/L 12/21/2023 11:26:00 AM Batch ID: 42396 Analyst: SLL **Total Metals by EPA Method 200.8** 12/21/2023 1:34:00 PM 75.6 10.0 Aluminum μg/L

Lab ID: 2312341-012 Collection Date: 12/13/2023 10:30:00 AM

Client Sample ID: SB-3A-1223 Matrix: Water

Result **RL Qual** Units DF **Date Analyzed Analyses** Batch ID: 42413 Analyst: SLL Dissolved Metals by EPA Method 200.8 Aluminum ND 10.0 μg/L 12/21/2023 11:29:00 AM Batch ID: 42396 Analyst: SLL Total Metals by EPA Method 200.8 Aluminum ND 10.0 µg/L 12/21/2023 1:36:00 PM

Revision v1 Page 8 of 18



Work Order: **2312341**Date Reported: **12/21/2023**

CLIENT: Friedman & Bruya

Project: 312247

Lab ID: 2312341-013 **Collection Date:** 12/13/2023 12:05:00 PM

Client Sample ID: CTMW-25D-1223 Matrix: Water

Result Units DF **Analyses RL Qual Date Analyzed** Batch ID: 42413 Analyst: SLL **Dissolved Metals by EPA Method 200.8** 10.0 Aluminum 59.2 μg/L 12/21/2023 11:36:00 AM Batch ID: 42396 Analyst: SLL Total Metals by EPA Method 200.8 Aluminum 88.0 10.0 µg/L 12/21/2023 1:38:00 PM

Lab ID: 2312341-014 **Collection Date:** 12/13/2023 12:10:00 PM

Client Sample ID: CTMW-20-1223 Matrix: Water

RL Qual Units Date Analyzed Analyses Result DF Batch ID: 42413 Analyst: SLL **Dissolved Metals by EPA Method 200.8** Aluminum ND 10.0 μq/L 12/21/2023 11:38:00 AM Batch ID: 42396 Analyst: SLL **Total Metals by EPA Method 200.8** 12/21/2023 1:41:00 PM ND 10.0 Aluminum μg/L

Lab ID: 2312341-015 Collection Date: 12/13/2023 1:15:00 PM

Client Sample ID: MW-1-1223 Matrix: Water

Result **RL Qual** Units DF **Date Analyzed Analyses** Batch ID: 42413 Analyst: SLL Dissolved Metals by EPA Method 200.8 Aluminum 16.6 10.0 μg/L 12/21/2023 11:41:00 AM Batch ID: 42396 Analyst: SLL Total Metals by EPA Method 200.8 Aluminum 71.1 10.0 µg/L 12/21/2023 1:43:00 PM

Revision v1 Page 9 of 18



Work Order: **2312341**Date Reported: **12/21/2023**

CLIENT: Friedman & Bruya

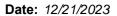
Project: 312247

Lab ID: 2312341-016 **Collection Date:** 12/13/2023 1:20:00 PM

Client Sample ID: CTMW-15-1223 Matrix: Water

Cheff Sample ID. CTWW-15-	1223		Maurix. V	valei	
Analyses Dissolved Metals by EPA Metho Aluminum Total Metals by EPA Method 20	Result	RL Qual	Units	DF	Date Analyzed
Dissolved Metals by EPA Meth	od 200.8		Batcl	h ID: 42	413 Analyst: SLL
Aluminum	ND	10.0	μg/L	1	12/21/2023 11:43:00 AM
Total Metals by EPA Method 2	00.8		Batcl	h ID: 42	396 Analyst: SLL
Aluminum	ND	10.0	μg/L	1	12/21/2023 1:46:00 PM

Revision v1 Page 10 of 18





CLIENT: Friedman & Bruya

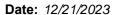
Project: 312247

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Project: 312247							•
Sample ID: ICB	SampType: ICB			Units: µg/L		Prep Date: 12/21/2023	RunNo: 88496
Client ID: ICB	Batch ID: R88496					Analysis Date: 12/21/2023	SeqNo: 1848083
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum	ND	10.0					
Sample ID: ICV	SampType: ICV			Units: µg/L		Prep Date: 12/21/2023	RunNo: 88496
Client ID: ICV	Batch ID: R88496					Analysis Date: 12/21/2023	SeqNo: 1848084
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum	1,450	10.0	1,500	0	96.8	90 110	
Sample ID: MB-42413	SampType: MBLK			Units: µg/L		Prep Date: 12/21/2023	RunNo: 88496
Client ID: MBLKW	Batch ID: 42413					Analysis Date: 12/21/2023	SeqNo: 1848085
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum	ND	10.0					
Sample ID: LCS-42413	SampType: LCS			Units: µg/L		Prep Date: 12/21/2023	RunNo: 88496
Client ID: LCSW	Batch ID: 42413					Analysis Date: 12/21/2023	SeqNo: 1848086
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum	906	10.0	1,000	0	90.6	85 115	
Sample ID: 2312341-007BDUP	SampType: DUP			Units: µg/L		Prep Date: 12/21/2023	RunNo: 88496
Client ID: SB-1A-1223	Batch ID: 42413					Analysis Date: 12/21/2023	SeqNo: 1848088
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum	ND	10.0				0	30

Revision v1 Page 11 of 18





CLIENT: Friedman & Bruya

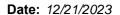
Project: 312247

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: 2312341-007BMS	SampType: MS			Units: µg/L		Prep Date:	12/21/2023	RunNo: 88496	
Client ID: SB-1A-1223	Batch ID: 42413					Analysis Date:	12/21/2023	SeqNo: 1848089	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	1,020	10.0	1,000	0	102	50	150		
Sample ID: 2312341-007BMSD	SampType: MSD			Units: μg/L		Prep Date:	12/21/2023	RunNo: 88496	
Client ID: SB-1A-1223	Batch ID: 42413					Analysis Date:	12/21/2023	SeqNo: 1848090	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	1,170	10.0	1,000	0	117	50	150 1,022	13.2 30	
Sample ID: CCV-42413A	SampType: CCV			Units: µg/L		Prep Date:	12/21/2023	RunNo: 88496	
Client ID: CCV	Batch ID: 42413					Analysis Date:	12/21/2023	SeqNo: 1848092	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	993	10.0	1,000	0	99.3	90	110		
Sample ID: CCB-42413A	SampType: CCB			Units: µg/L		Prep Date:	12/21/2023	RunNo: 88496	
Client ID: CCB	Batch ID: 42413					Analysis Date:	12/21/2023	SeqNo: 1848093	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	ND	10.0							
Sample ID: CCV-42413B	SampType: CCV			Units: μg/L		Prep Date:	12/21/2023	RunNo: 88496	
Client ID: CCV	Batch ID: 42413					Analysis Date:	12/21/2023	SeqNo: 1848104	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	1,020	10.0	1,000	0	102	90	110		

Revision v1 Page 12 of 18





Friedman & Bruya CLIENT:

242247

Aluminum

QC SUMMARY REPORT

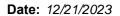
Dissolved Metals by EPA Method 200.8

Project : 312247					Dissolved Metals by El A Method 200.
Sample ID: CCB-42413B	SampType: CCB			Units: μg/L	Prep Date: 12/21/2023 RunNo: 88496
Client ID: CCB	Batch ID: 42413				Analysis Date: 12/21/2023 SeqNo: 1848105
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	ND	10.0			
Sample ID: 2312350-004BMS	SampType: MS			Units: µg/L	Prep Date: 12/21/2023 RunNo: 88496
Client ID: BATCH	Batch ID: 42413				Analysis Date: 12/21/2023 SeqNo: 1848114
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	1,050	10.0	1,000	8.025	105 50 150
Sample ID: CCV-42413C	SampType: CCV			Units: µg/L	Prep Date: 12/21/2023 RunNo: 88496
Client ID: CCV	Batch ID: 42413				Analysis Date: 12/21/2023 SeqNo: 1848115
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	1,010	10.0	1,000	0	101 90 110
Sample ID: CCB-42413C	SampType: CCB			Units: μg/L	Prep Date: 12/21/2023 RunNo: 88496
Client ID: CCB	Batch ID: 42413				Analysis Date: 12/21/2023 SeqNo: 1848116
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Page 13 of 18 Revision v1

ND

10.0





CLIENT: Friedman & Bruya

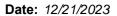
Project: 312247

QC SUMMARY REPORT

Total Metals by EPA Method 200.8

512241								_		
Sample ID: ICB	SampType: ICB			Units: μg/L		Prep Date:	12/21/2023	RunNo: 885	507	
Client ID: ICB	Batch ID: 42396					Analysis Date:	12/21/2023	SeqNo: 184	48307	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	10.0								
Sample ID: ICV	SampType: ICV			Units: µg/L		Prep Date:	12/21/2023	RunNo: 885	507	
Client ID: ICV	Batch ID: 42396					Analysis Date:	12/21/2023	SeqNo: 184	48308	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	1,450	10.0	1,500	0	96.8	90	110			
Sample ID: CCV-42396A	SampType: CCV			Units: µg/L	Prep Date: 12/21/2023		RunNo: 88507			
Client ID: CCV	Batch ID: 42396					Analysis Date:	12/21/2023	SeqNo: 184	48309	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD	RPDLimit	Qua
Aluminum	1,010	10.0	1,000	0	101	90	110			
Sample ID: CCB-42396A	SampType: CCB			Units: µg/L		Prep Date:	12/21/2023	RunNo: 885	507	
Client ID: CCB	Batch ID: 42396					Analysis Date:	12/21/2023	SeqNo: 184	48310	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD	RPDLimit	Qua
Aluminum	ND	10.0								
Sample ID: MB-42396	SampType: MBLK			Units: µg/L		Prep Date:	12/19/2023	RunNo: 885	507	
Client ID: MBLKW	Batch ID: 42396					Analysis Date:	12/21/2023	SeqNo: 184	48311	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD	RPDLimit	Qua
Aluminum	ND	10.0								

Revision v1 Page 14 of 18





CLIENT: Friedman & Bruya

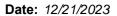
Project: 312247

QC SUMMARY REPORT

Total Metals by EPA Method 200.8

110ject. 012247									
Sample ID: LCS-42396	SampType: LCS			Units: µg/L		Prep Date	12/19/2023	RunNo: 88507	
Client ID: LCSW	Batch ID: 42396					Analysis Date	12/21/2023	SeqNo: 1848274	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	1,020	10.0	1,000	0	102	85	115		
Sample ID: 2312341-007AMS	SampType: MS			Units: µg/L		Prep Date	12/19/2023	RunNo: 88507	
Client ID: SB-1A-1223	Batch ID: 42396					Analysis Date	12/21/2023	SeqNo: 1848276	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	993	10.0	1,000	7.668	98.6	70	130		
Sample ID: 2312341-007AMSD	SampType: MSD			Units: µg/L		Prep Date	12/19/2023	RunNo: 88507	
Client ID: SB-1A-1223	Batch ID: 42396					Analysis Date	12/21/2023	SeqNo: 1848277	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum	1,010	10.0	1,000	7.668	101	70	130 993.2	2.04 30	
Sample ID: CCV-42396B	SampType: CCV			Units: µg/L		Prep Date	12/21/2023	RunNo: 88507	
Client ID: CCV	Batch ID: 42396					Analysis Date	12/21/2023	SeqNo: 1848283	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit RPD Ref Val	%RPD RPDLimit	Qua
Aluminum	1,020	10.0	1,000	0	102	90	110		
Sample ID: CCB-42396B	SampType: CCB			Units: µg/L		Prep Date	12/21/2023	RunNo: 88507	
Client ID: CCB	Batch ID: 42396					Analysis Date	12/21/2023	SeqNo: 1848284	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit RPD Ref Val	%RPD RPDLimit	Qua
Aluminum	ND	10.0							

Revision v1 Page 15 of 18





CLIENT: Friedman & Bruya

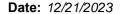
Project: 312247

QC SUMMARY REPORT

Total Metals by EPA Method 200.8

Sample ID: CCV-42396C	SampType: CCV			Units: µg/L	Prep Date: 12/21/2023 RunNo: 88507
Client ID: CCV	Batch ID: 42396				Analysis Date: 12/21/2023 SeqNo: 1848295
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	990	10.0	1,000	0	99.0 90 110
Sample ID: CCB-42396C	SampType: CCB			Units: µg/L	Prep Date: 12/21/2023 RunNo: 88507
Client ID: CCB	Batch ID: 42396				Analysis Date: 12/21/2023 SeqNo: 1848296
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	ND	10.0			
Sample ID: 2312338-007CMS	SampType: MS			Units: µg/L	Prep Date: 12/19/2023 RunNo: 88507
Client ID: BATCH	Batch ID: 42396				Analysis Date: 12/21/2023 SeqNo: 1848297
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	1,820	10.0	1,000	553.3	126 70 130
Sample ID: 2312338-007CDUP	SampType: DUP			Units: µg/L	Prep Date: 12/19/2023 RunNo: 88507
Client ID: BATCH	Batch ID: 42396				Analysis Date: 12/21/2023 SeqNo: 1848315
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	2,090	10.0			553.3 116 30
Sample ID: CCV-42396D	SampType: CCV			Units: µg/L	Prep Date: 12/21/2023 RunNo: 88507
Client ID: CCV	Batch ID: 42396				Analysis Date: 12/21/2023 SeqNo: 1848316
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Revision v1 Page 16 of 18





QC SUMMARY REPORT

CLIENT: Friedman & Bruya

Total Metals by EPA Method 200.8

Project: 312247

Sample ID: CCB-42396D SampType: CCB Units: μg/L Prep Date: 12/21/2023 RunNo: 88507

Client ID: CCB Batch ID: 42396 Analysis Date: 12/21/2023 SeqNo: 1848317

Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Aluminum ND 10.0

Revision v1 Page 17 of 18



Sample Log-In Check List

Clie	ent Name:	FB			Work Order Num	ber: 2312341		
Log	gged by:	Morgan Wilson			Date Received:	12/14/2023	3 10:20:00 AM	
Chai	n of Custo	ody						
		ustody complete?			Yes 🗸	No 🗌	Not Present	
2. l	How was the	sample delivered?			Client			
Log .	<u>In</u>							
		s present on shipping containe ments for Custody Seals not in			Yes	No 🗌	Not Present ✓	
4. V	Vas an attem	pt made to cool the samples?			Yes 🗸	No \square	NA \square	
5. V	Vere all items	s received at a temperature of	>2°C to 6°C	*	Yes 🗸	No 🗌	NA 🗌	
6. S	Sample(s) in բ	proper container(s)?			Yes 🗸	No 🗌		
7. S	Sufficient sam	ple volume for indicated test(s)?		Yes 🗸	No \square		
8. A	Are samples p	properly preserved?			Yes 🗸	No \square		
9. V	Vas preserva	tive added to bottles?			Yes	No 🗹	NA 🗆	
10 ls	s there heads	space in the VOA vials?			Yes	No 🗌	NA 🗹	
-		· es containers arrive in good cor	ndition(unbro	ken)?	Yes 🗸	No 🗌		
		ork match bottle labels?			Yes 🗸	No \square		
13 A	Are matrices o	correctly identified on Chain of	Custody?		Yes 🗹	No 🗌		
-		t analyses were requested?	,		Yes 🗸	No \square		
15. V		times (except field parameters	, pH e.g.) ab	le to	Yes 🗸	No 🗌		
		ing (if applicable)						
=		otified of all discrepancies with	this order?		Yes	No \square	NA 🗹	
	Person	Notified:		Date				
	By Who	om:		Via:	eMail Pl	hone Fax [In Person	
	Regard	ing:						
	Client In	nstructions:						
17.	Additional re	marks:						•
<u>Item</u>	<u>Information</u>							
		Item #	Temp °C					
	Sample		5.2					

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Revision v1 Page 18 of 18

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 5500 4th Ave S

City, State, ZIP Seattle, WA 98108

Phone #_ (206) 285-8282 merdahl@friedmanandbruya.com

W 0.1	40 w		1	/a.com			TAT
40 water	40 water	Matrix		REMARKS TIE	PROJ	SUBC	MINACI SAMI LE CHAIN OF COSTODI
2	2	# of jars		TIER	PROJECT NAME/NO 312247	SUBCONTRACTER Fremont	TATATO
x	×	total aluminum		IV, E	312247	RACTEI Fremont	TE
X	×	dissolved aluminum		RKS TIER IV, EQuIS 4	NO.	TR	CHAI
		ferrous iron					3
		ferrous iron	ANAL				0
		dissolved gases	YSES		D		OIC
		TOC	ANALYSES REQUESTED		PO# D-594		1
			JESTI				
			GD.	Disp Retu Will	RUSH_ Rush charges aut		
				SAMPLE I Dispose after 30 Return samples Will call with in	harges	Page #	2
		Notes		SAMPLE DISPOSAL Dispose after 30 days Return samples Will call with instructions	X Standard TAT RUSH Rush charges authorized by:	Page # 1 of 2. TURNAROUND TIME	2312341

		V. V. 15.10.53					1			Received by:		Fax (206) 283-5044
		FA 17			Willer		1		1 miller	Relinquished by:		Ph. (206) 285-8282
1020	12/14/20	PAI		The second	2	2	Vi.		•	Received by		Seattle, WA 98119-2029
0000	12/14/28	Friedman & Bruya			lahl	el Erc	Michael Erdahl	0	Out	Relinguisted by:		3012 16th Avenue West
TIME	DATE	COMPANY		AME	PRINT NAME	P			SIGNATURE	SI		Friedman & Bruya, Inc.
					×	×	2	water	1205	12/13/2023		CTMW-25D-1223
					×	×	12	1030 water	1030	12/13/2023		SB-3A-1223
					×	×	2	water	945	12/13/2023		TWA-6D-1223
					×	×	2	935 water	935	12/13/2023		TWA-5D-1223
					×		1	water	845	12/13/2023		Filter Blank1-1223
					×	×	2	1615 water	1615	12/12/2023		SB-2A-1223
	MS/MD				×	×	(4) P	1600 water	1600	12/12/2023		SB-1A-1223
						×	1	1550 water	1550	12/12/2023		Field Blank1-1223
					×	×	2	1425 water	1425	12/12/2023		TWA-2-1223
					×	×	2	1415 water	1415	12/12/2023		TWA-1-1223
					×	×	2	1253 water	1253	12/12/2023		TWA-10D-1223
					×	×	2	1240 water	1240	12/12/2023		TWA-9-1223
					×	×	2	1240 water	1240	12/12/2023		TWA-3-1223
es	Notes	TOC	ferrous iron dissolved gases	ferrous iron	dissolved aluminum	total aluminum	# of jars	Matrix	Time Sampled	Date Sampled	Lab ID	Sample ID
		NALYSES REQUESTED	NALYSES	A								

Send Report To	Send Report To Michael Erdahl
Company	Friedman and Bruya, Inc.
Address	5500 4th Ave S
City, State, ZIP_	City, State, ZIP Seattle, WA 98108

Phone # (206) 285-8282 merdahl@friedmanandbruya.com	City, State, ZIP Seattle, WA 98108	Address 5500 4th Ave S	Company Friedman and Bruya, Inc.	Send Report To Michael Erdahl
TIER IV, EQuIS 4	REMARKS	312247	PROJECT NAME/NO.	SUBCONTRACTER Fremont
		D-594	PO#	

SAMPLE DISPOSAL /Dispose after 30 days Return samples Will call with instructions	Rush charges authorized by:	⊠ Standard TAT RUSH	TURNAROUND TIME	Page # 2 of 2
--	-----------------------------	------------------------	-----------------	---------------

Fax (206) 283-5044	Ph. (206) 285-8282	Seattle, WA 98119-2029	3012 16th Avenue West	Friedman & Bruya, Inc.					CTMW-15-1223	MW-1-1223	CTMW-20-1223	Sample ID	
	_		-									Lab ID	
Received by:	Relinquished by:	Received by:	Returduished by:	SI					12/13/2023	12/13/2023	12/13/2023	Date Sampled	
		man	2	SIGNATURE					1320	1315	1210	Time Sampled	
			0	7					1320 water	1315 water	1210 water	Matrix	
		A	Michael Erdahl						2	2	2	# of jars	
		Alli Milla	el Erd	P	П				х	х	х	total aluminum	
		1, (10	ahl	PRINT NAME					x	х	x	dissolved aluminum	
				NAMI								ferrous iron	
				3								ferrous iron	ANALYSES REQUESTED
												dissolved gases	YSES
		7	Frie									TOC	REQ
		7	Friedman & Bruya	COI									UEST
			& Br	COMPANY									ED
			uya	Y									
		1											
		12.14.23	12/14/25	DATE								Notes	
		1027	0600	TIME								tes	

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 5500 4th Ave S

Phone #_ (206) 285-8282_merdahl@friedmanandbruya.com

City, State, ZIP Seattle, WA 98108

er ME. 2/5/24 KL	REMARKS Updated Client Sample ID per ME. 2/5/24 KL
D-594	312247
PO#	PROJECT NAME/NO.
	SUBCONTRACTER Fremont

TURNAROUND TIME

TURNAROUND TIME

Standard TAT

RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

Dispose after 30 days

Return samples

Will call with instructions

									ANAL	YSES	NALYSES REQUESTED	JEST	ED			
Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	total aluminum	dissolved aluminum	ferrous iron	ferrous iron	dissolved gases	TOC				No	Notes
TWA-3-1223		12/12/2023	1240	water	2	×	×									
TWA-9-3-1223 KL 2/5/24		12/12/2023	1240	1240 water	2	x	Х									
TWA-10D-1223		12/12/2023	1253	water	2	x	×									
TWA-1-1223		12/12/2023	1415	1415 water	2	×	х									
TWA-2-1223		12/12/2023	1425	1425 water	2	×	x									
Field Blank1-1223		12/12/2023	1550	1550 water	1	×										
SB-1A-1223		12/12/2023	1600	1600 water	4) p	x	×								MS/MD	
SB-2A-1223		12/12/2023	1615	water	2	×	×									
Filter Blank1-1223		12/13/2023	845	water	1		х									
TWA-5D-1223		12/13/2023	935	water	2	x	x									
TWA-6D-1223		12/13/2023	945	water	2	x	x									
SB-3A-1223		12/13/2023	1030	water	2	х	х									
CTMW-25D-1223		12/13/2023	1205	1205 water	2	×	×									
Friedman & Bruya, Inc. 3012 16th Avenue West		SI Retinguished by:	SIGNATURE		PRIN Michael Erdahl	P) el Erd	PRINT NAME	VAME			Fried	COMPANY Friedman & Bruya	COMPANY nan & Bruy	Y ya	DATE 12/14/21	TIME
Seattle, WA 98119-2029	-	Received by:			1	12	2	P				7			2/2/2	(070)
Ph. (206) 285-8282		Relinquished by:	Wille.		A	11	Willer	7			-	A A	22 111.21 20	4.23		
Fax (206) 283-5044		Received by:														

Send Report To	Send Report To Michael Erdahl
Company	Friedman and Bruya, Inc.
Address	5500 4th Ave S
City, State, ZIP_	City, State, ZIP Seattle, WA 98108

Phone # (206) 285-8282 merdahl@friedmanandbruya.com	City, State, ZIP Seattle, WA 98108	Address 5500 4th Ave S	Company Friedman and Bruya, Inc.	Send Report To Michael Erdahl
TIER IV, EQuIS 4	REMARKS	312247	PROJECT NAME/NO.	SUBCONTRACTER Fremont
		D-594	PO#	

SAMPLE DISPOSAL /Dispose after 30 days Return samples Will call with instructions	Rush charges authorized by:	⊠ Standard TAT RUSH	TURNAROUND TIME	Page # 2 of 2
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Fax (206) 283-5044	Ph. (206) 285-8282	Seattle, WA 98119-2029	3012 16th Avenue West	Friedman & Bruya, Inc.					CTMW-15-1223	MW-1-1223	CTMW-20-1223	Sample ID	
	-		-									Lab ID	
Received by:	Relinquished by:	Received by:	Petinguisted by:	SI					12/13/2023	12/13/2023	12/13/2023	Date Sampled	
		my m	3	SIGNATURE					1320	1315	1210	Time Sampled	
			0	,					1320 water	1315 water	1210 water	Matrix	
		A	Michael Erdahl						2	2	2	# of jars	
		All: Mille.	el Erd	P	П				х	х	х	total aluminum	
		1,(10	ahl	PRINT NAME					х	х	x	dissolved aluminum	
				NAMI								ferrous iron	
				3								ferrous iron	ANAL
												dissolved gases	ANALYSES REQUESTED
		7	Frie									TOC	REQ
		7	Friedman & Bruya	CON		\perp							UEST
			& Bru	COMPANY									ED
			ıya	Y		\perp							
-		.1	7.7	Н	Ш	\perp							Ц
		12-14-23	12/14/25	DATE								Notes	
		1027	0600	TIME								tes	

PREPARED FOR

Attn: Christian Sifford Maul Foster & Alongi Inc 1329 North State Street Suite 301 Bellingham, Washington 98225

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JOB DESCRIPTION

TWAAFA, M0615.20.012

JOB NUMBER

320-108065-1

Eurofins Sacramento 880 Riverside Parkway West Sacramento CA 95605

Eurofins Sacramento

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.

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Authorized for release by Micah Smith, Project Manager II Micah.Smith@et.eurofinsus.com Designee for Justinn Gonzales, Project Manager I Justinn.Gonzales@et.eurofinsus.com

Minit

(916)374-4344

RJ Smi

Client: Maul Foster & Alongi Inc Project/Site: TWAAFA, M0615.20.012 Laboratory Job ID: 320-108065-1

Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Detection Summary	6
Client Sample Results	7
Isotope Dilution Summary	18
QC Sample Results	20
QC Association Summary	29
Lab Chronicle	30
Certification Summary	32
Method Summary	33
Sample Summary	34
Chain of Custody	35
Receipt Checklists	37

2

4

5

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10

12

4

11

Definitions/Glossary

Client: Maul Foster & Alongi Inc Job ID: 320-108065-1
Project/Site: TWAAFA, M0615.20.012

Qualifiers

LCMS

Qualifier Qualifier Description

F1 MS and/or MSD recovery exceeds control limits.

I Value is EMPC (estimated maximum possible concentration).

Glossary

Abbreviation These commonly used abbreviations may or may not be present in this report.

Example 2 Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery
CFL Contains Free Liquid
CFU Colony Forming Unit
CNF Contains No Free Liquid

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL Detection Limit (DoD/DOE)

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision Level Concentration (Radiochemistry)

EDL Estimated Detection Limit (Dioxin)

LOD Limit of Detection (DoD/DOE)

LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level"

MDA Minimum Detectable Activity (Radiochemistry)

MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit
ML Minimum Level (Dioxin)
MPN Most Probable Number
MQL Method Quantitation Limit

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent POS Positive / Present

PQL Practical Quantitation Limit

PRES Presumptive QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

TNTC Too Numerous To Count

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Case Narrative

Client: Maul Foster & Alongi Inc Job ID: 320-108065-1
Project: TWAAFA, M0615.20.012

Job ID: 320-108065-1 Eurofins Sacramento

Job Narrative 320-108065-1

Receipt

The samples were received on 12/14/2023 9:15 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 was 0.5° C.

LCMS

Method 1633: The matrix spike duplicate (MSD) recoveries for preparation batch 320-732202 and analytical batch 320-733325 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 1633: The "I" qualifier means the transition mass ratio for Perfluorooctanesulfonic acid (PFOS) was outside the established ratio limits. However, the samples were re-analyzed with concurring result, therefore, the best set of data was reported: TWA-3-1223 and TWA-9-3-1223.

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

Organic Prep

Method 1633: The following samples in preparation batch 320-732202 were observed to have a thin layer of sediment present in the bottom of the bottle prior to extraction. SB-2A-1223.

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

Client: Maul Foster & Alongi Inc Job ID: 320-108065-1 Project/Site: TWAAFA, M0615.20.012

Client Sample ID: TWA-3-1223

Lab Sample ID: 320-108065-1

Analyte	Result Qualifier	RL	Unit	Dil Fac D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	20	8.2	ng/L		1633	Total/NA
Perfluoropentanoic acid (PFPeA)	43	4.1	ng/L	1	1633	Total/NA
Perfluorohexanoic acid (PFHxA)	32	2.0	ng/L	1	1633	Total/NA
Perfluoroheptanoic acid (PFHpA)	10	2.0	ng/L	1	1633	Total/NA
Perfluorooctanoic acid (PFOA)	25	2.0	ng/L	1	1633	Total/NA
Perfluorobutanesulfonic acid (PFBS)	75	2.0	ng/L	1	1633	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	6.3	2.0	ng/L	1	1633	Total/NA
Perfluorooctanesulfonic acid (PFOS)	16 I	2.0	ng/L	1	1633	Total/NA
Perfluorononanoic acid (PFNA) - RA	2.1	2.0	ng/L	1	1633	Total/NA

Client Sample ID: TWA-9-3-1223

Lab Sample ID: 320-108065-2

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	19		8.2	ng/L	1	_	1633	Total/NA
Perfluoropentanoic acid (PFPeA)	43		4.1	ng/L	1		1633	Total/NA
Perfluorohexanoic acid (PFHxA)	29		2.1	ng/L	1		1633	Total/NA
Perfluoroheptanoic acid (PFHpA)	9.7		2.1	ng/L	1		1633	Total/NA
Perfluorooctanoic acid (PFOA)	25		2.1	ng/L	1		1633	Total/NA
Perfluorononanoic acid (PFNA)	2.6		2.1	ng/L	1		1633	Total/NA
Perfluorobutanesulfonic acid (PFBS)	81		2.1	ng/L	1		1633	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	6.3		2.1	ng/L	1		1633	Total/NA
Perfluorooctanesulfonic acid (PFOS)	18	I	2.1	ng/L	1		1633	Total/NA

Client Sample ID: Rinsate Blank1-1223

Lab Sample ID: 320-108065-3

No Detections.

Client Sample ID: Field Blank1-1223

Lab Sample ID: 320-108065-4

No Detections.

Client Sample ID: SB-2A-1223

Lab Sample ID: 320-108065-5

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	23		8.1	ng/L	1	_	1633	Total/NA
Perfluorooctanoic acid (PFOA)	4.1		2.0	ng/L	1		1633	Total/NA

Client Sample ID: Rinsate Blank2-1223

Lab Sample ID: 320-108065-6

No Detections.

Client Sample ID: Trip Blank1-1223

Lab Sample ID: 320-108065-7

No Detections.

This Detection Summary does not include radiochemical test results.

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Page 6 of 37

3

6

8

10

12

14

15

1/23/2024

Client Sample Results

Client: Maul Foster & Alongi Inc Job ID: 320-108065-1 Project/Site: TWAAFA, M0615.20.012

Client Sample ID: TWA-3-1223

Lab Sample ID: 320-108065-1 Date Collected: 12/12/23 12:40

Matrix: Water

Date Received: 12/14/23 09:15

Method: EPA 1633 - Per- and I	Result Qualifier	RL	Unit		Analyzod	Dil Fac
Analyte Perfluerobutancia soid (PERA)		8.2 ———			Analyzed 01/13/24 23:50	DII Fac
Perfluorobutanoic acid (PFBA)	20		ng/L			-
Perfluoropentanoic acid (PFPeA)	43	4.1	ng/L		01/13/24 23:50	1
Perfluorohexanoic acid (PFHxA)	32	2.0	ng/L		01/13/24 23:50	
Perfluoroheptanoic acid (PFHpA)	10	2.0	ng/L		01/13/24 23:50	1
Perfluorooctanoic acid (PFOA)	25	2.0	ng/L		01/13/24 23:50	1
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L		01/13/24 23:50	1
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L		01/13/24 23:50	1
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L		01/13/24 23:50	1
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	ng/L		01/13/24 23:50	1
Perfluorotetradecanoic acid (PFTeA)	ND	2.0	ng/L	01/09/24 11:44	01/13/24 23:50	1
Perfluorobutanesulfonic acid (PFBS)	75	2.0	ng/L	01/09/24 11:44	01/13/24 23:50	1
Perfluoropentanesulfonic acid (PFPeS)	ND	2.0	ng/L	01/09/24 11:44	01/13/24 23:50	1
Perfluorohexanesulfonic acid (PFHxS)	6.3	2.0	ng/L	01/09/24 11:44	01/13/24 23:50	1
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	ng/L	01/09/24 11:44	01/13/24 23:50	1
Perfluorooctanesulfonic acid (PFOS)	16 I	2.0	ng/L	01/09/24 11:44	01/13/24 23:50	1
Perfluorononanesulfonic acid (PFNS)	ND	2.0	ng/L	01/09/24 11:44	01/13/24 23:50	1
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L	01/09/24 11:44	01/13/24 23:50	1
Perfluorododecanesulfonic acid (PFDoS)	ND	2.0	ng/L	01/09/24 11:44	01/13/24 23:50	1
4:2 FTS	ND	8.2	ng/L	01/09/24 11:44	01/13/24 23:50	1
6:2 FTS	ND	8.2	ng/L	01/09/24 11:44	01/13/24 23:50	1
8:2 FTS	ND	8.2	ng/L	01/09/24 11:44	01/13/24 23:50	1
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L	01/09/24 11:44	01/13/24 23:50	1
NMeFOSA	ND	2.0	ng/L	01/09/24 11:44	01/13/24 23:50	1
NEtFOSA	ND	2.0	ng/L	01/09/24 11:44	01/13/24 23:50	1
NMeFOSAA	ND	2.0	ng/L	01/09/24 11:44	01/13/24 23:50	1
NEtFOSAA	ND	2.0	ng/L	01/09/24 11:44	01/13/24 23:50	1
NMeFOSE	ND	20	ng/L	01/09/24 11:44	01/13/24 23:50	1
NEtFOSE	ND	20	ng/L	01/09/24 11:44	01/13/24 23:50	1
HFPO-DA (GenX)	ND	8.2	ng/L	01/09/24 11:44	01/13/24 23:50	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	8.2	ng/L	01/09/24 11:44	01/13/24 23:50	1
PFMBA	ND	4.1	ng/L	01/09/24 11:44	01/13/24 23:50	1
NFDHA	ND	4.1	ng/L		01/13/24 23:50	1
PFMPA	ND	4.1	ng/L		01/13/24 23:50	1
9CI-PF3ONS	ND	8.2	ng/L		01/13/24 23:50	1
11CI-PF3OUdS	ND	8.2	ng/L		01/13/24 23:50	1
PFEESA	ND	4.1	ng/L		01/13/24 23:50	1
3:3 FTCA	ND	10	ng/L		01/13/24 23:50	·
5:3 FTCA	ND	51	ng/L		01/13/24 23:50	1
7:3 FTCA	ND	51	ng/L		01/13/24 23:50	1
Isotope Dilution	%Recovery Qualifier	Limits	-	Prepared	Analyzed	Dil Fac
13C4 PFBA	85	5 - 130		01/09/24 11:44	01/13/24 23:50	1
13C5 PFPeA	84	40 - 130		01/09/24 11:44	01/13/24 23:50	1
13C5 PFHxA	86	40 - 130		01/09/24 11:44	01/13/24 23:50	1
13C4 PFHpA	89	40 - 130		01/09/24 11:44	01/13/24 23:50	1

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Page 7 of 37 1/23/2024 Client: Maul Foster & Alongi Inc Job ID: 320-108065-1

Project/Site: TWAAFA, M0615.20.012

Client Sample ID: TWA-3-1223 Lab Sample ID: 320-108065-1

Date Collected: 12/12/23 12:40 Matrix: Water Date Received: 12/14/23 09:15

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24 (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOA	85		40 - 130	01/09/24 11:44	01/13/24 23:50	1
13C9 PFNA	93		40 - 130	01/09/24 11:44	01/13/24 23:50	1
13C6 PFDA	82		40 - 130	01/09/24 11:44	01/13/24 23:50	1
13C7 PFUnA	73		30 - 130	01/09/24 11:44	01/13/24 23:50	1
13C2 PFDoA	60		10 - 130	01/09/24 11:44	01/13/24 23:50	1
13C2 PFTeDA	43		10 - 130	01/09/24 11:44	01/13/24 23:50	1
13C3 PFBS	98		40 - 135	01/09/24 11:44	01/13/24 23:50	1
13C3 PFHxS	86		40 - 130	01/09/24 11:44	01/13/24 23:50	1
13C8 PFOS	83		40 - 130	01/09/24 11:44	01/13/24 23:50	1
13C8 FOSA	85		40 - 130	01/09/24 11:44	01/13/24 23:50	1
d3-NMeFOSAA	82		40 - 170	01/09/24 11:44	01/13/24 23:50	1
d5-NEtFOSAA	71		25 - 135	01/09/24 11:44	01/13/24 23:50	1
M2-4:2 FTS	107		40 - 200	01/09/24 11:44	01/13/24 23:50	1
M2-6:2 FTS	92		40 - 200	01/09/24 11:44	01/13/24 23:50	1
M2-8:2 FTS	80		40 - 300	01/09/24 11:44	01/13/24 23:50	1
13C3 HFPO-DA	78		40 - 130	01/09/24 11:44	01/13/24 23:50	1
d7-N-MeFOSE-M	43		10 - 130	01/09/24 11:44	01/13/24 23:50	1
d9-N-EtFOSE-M	32		10 - 130	01/09/24 11:44	01/13/24 23:50	1
d5-NEtPFOSA	54		10 - 130	01/09/24 11:44	01/13/24 23:50	1
d3-NMePFOSA	57		10 - 130	01/09/24 11:44	01/13/24 23:50	1

Method: EPA 1633 - Per- and	Polyfluoroal	kyl Subst	ances by LC/M	S/MS, QSM Tal	ble B-	24 - RA		
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	2.1		2.0	ng/L		01/09/24 11:44	01/15/24 16:42	1
	A / =							

 Isotope Dilution
 %Recovery
 Qualifier
 Limits
 Prepared
 Analyzed
 Dil Fac

 13C9 PFNA
 92
 40 - 130
 01/09/24 11:44
 01/15/24 16:42
 1

Client Sample ID: TWA-9-3-1223

Date Collected: 12/12/23 12:40

Date Received: 12/14/23 09:15

Lab Sample ID: 320-108065-2

Matrix: Water

Method: FPA 1633	- Per- and Polyfluoroalky	Substances by	/ LC/MS/MS	OSM Table B-24

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	19		8.2	ng/L		01/09/24 11:44	01/14/24 00:08	1
Perfluoropentanoic acid (PFPeA)	43		4.1	ng/L		01/09/24 11:44	01/14/24 00:08	1
Perfluorohexanoic acid (PFHxA)	29		2.1	ng/L		01/09/24 11:44	01/14/24 00:08	1
Perfluoroheptanoic acid (PFHpA)	9.7		2.1	ng/L		01/09/24 11:44	01/14/24 00:08	1
Perfluorooctanoic acid (PFOA)	25		2.1	ng/L		01/09/24 11:44	01/14/24 00:08	1
Perfluorononanoic acid (PFNA)	2.6		2.1	ng/L		01/09/24 11:44	01/14/24 00:08	1
Perfluorodecanoic acid (PFDA)	ND		2.1	ng/L		01/09/24 11:44	01/14/24 00:08	1
Perfluoroundecanoic acid (PFUnA)	ND		2.1	ng/L		01/09/24 11:44	01/14/24 00:08	1
Perfluorododecanoic acid (PFDoA)	ND		2.1	ng/L		01/09/24 11:44	01/14/24 00:08	1
Perfluorotridecanoic acid (PFTrDA)	ND		2.1	ng/L		01/09/24 11:44	01/14/24 00:08	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.1	ng/L		01/09/24 11:44	01/14/24 00:08	1
Perfluorobutanesulfonic acid (PFBS)	81		2.1	ng/L		01/09/24 11:44	01/14/24 00:08	1
Perfluoropentanesulfonic acid (PFPeS)	ND		2.1	ng/L		01/09/24 11:44	01/14/24 00:08	1
Perfluorohexanesulfonic acid (PFHxS)	6.3		2.1	ng/L		01/09/24 11:44	01/14/24 00:08	1

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Page 8 of 37 1/23/2024

Client: Maul Foster & Alongi Inc Job ID: 320-108065-1 Project/Site: TWAAFA, M0615.20.012

Client Sample ID: TWA-9-3-1223

Lab Sample ID: 320-108065-2

Matrix: Water

Date Collected: 12/12/23 12:40 Date Received: 12/14/23 09:15

Analyte	Result Qualifier	RL	Unit	D Prepared	Analyzed	Dil Fa
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.1	ng/L	01/09/24 11:44	01/14/24 00:08	
Perfluorooctanesulfonic acid (PFOS)	18 I	2.1	ng/L	01/09/24 11:44	01/14/24 00:08	
Perfluorononanesulfonic acid (PFNS)	ND	2.1	ng/L	01/09/24 11:44	01/14/24 00:08	
Perfluorodecanesulfonic acid (PFDS)	ND	2.1	ng/L		01/14/24 00:08	
Perfluorododecanesulfonic acid (PFDoS)	ND	2.1	ng/L		01/14/24 00:08	
4:2 FTS	ND	8.2	ng/L	01/09/24 11:44	01/14/24 00:08	
6:2 FTS	ND	8.2	ng/L	01/09/24 11:44	01/14/24 00:08	
8:2 FTS	ND	8.2	ng/L	01/09/24 11:44	01/14/24 00:08	
Perfluorooctanesulfonamide (FOSA)	ND	2.1	ng/L	01/09/24 11:44	01/14/24 00:08	
NMeFOSA	ND	2.1	ng/L		01/14/24 00:08	
NEtFOSA	ND	2.1	ng/L		01/14/24 00:08	
NMeFOSAA	ND	2.1	ng/L		01/14/24 00:08	
NEtFOSAA	ND	2.1	ng/L		01/14/24 00:08	
NMeFOSE	ND	21	ng/L		01/14/24 00:08	
NEtFOSE	ND	21	ng/L		01/14/24 00:08	
HFPO-DA (GenX)	ND ND	8.2	ng/L		01/14/24 00:08	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	8.2	ng/L	01/09/24 11:44	01/14/24 00:08	
PFMBA	ND	4.1	ng/L	01/09/24 11:44	01/14/24 00:08	
NFDHA	ND	4.1	ng/L		01/14/24 00:08	
PFMPA	ND	4.1	ng/L		01/14/24 00:08	
9CI-PF3ONS	ND	8.2	ng/L		01/14/24 00:08	
11CI-PF3OUdS	ND	8.2	ng/L		01/14/24 00:08	
PFEESA	ND	4.1			01/14/24 00:08	
3:3 FTCA	ND ND	10	ng/L		01/14/24 00:08	
		51	ng/L			
5:3 FTCA	ND ND		ng/L		01/14/24 00:08	
7:3 FTCA		51	ng/L	01/09/24 11:44	01/14/24 00:08	
Isotope Dilution	%Recovery Qualifier	Limits		Prepared	Analyzed	Dil Fa
13C4 PFBA	85	5 - 130		• • •	01/14/24 00:08	
13C5 PFPeA	81	40 - 130		01/09/24 11:44	01/14/24 00:08	
13C5 PFHxA	84	40 - 130		01/09/24 11:44	01/14/24 00:08	
13C4 PFHpA	86	40 - 130		01/09/24 11:44	01/14/24 00:08	
13C8 PFOA	83	40 - 130		01/09/24 11:44	01/14/24 00:08	
13C9 PFNA	89	40 - 130		01/09/24 11:44	01/14/24 00:08	
13C6 PFDA	78	40 - 130		01/09/24 11:44	01/14/24 00:08	
13C7 PFUnA	67	30 - 130		01/09/24 11:44	01/14/24 00:08	
13C2 PFDoA	52	10 - 130		01/09/24 11:44	01/14/24 00:08	
13C2 PFTeDA	32	10 - 130		01/09/24 11:44	01/14/24 00:08	
13C3 PFBS	91	40 - 135		01/09/24 11:44	01/14/24 00:08	
13C3 PFHxS	78	40 - 130		01/09/24 11:44	01/14/24 00:08	
13C8 PFOS	73	40 - 130		01/09/24 11:44	01/14/24 00:08	
13C8 FOSA	84	40 - 130			01/14/24 00:08	
d3-NMeFOSAA	79	40 - 170			01/14/24 00:08	
d5-NEtFOSAA	66	25 ₋ 135			01/14/24 00:08	
M2-4:2 FTS	109	40 - 200			01/14/24 00:08	
	709 91				01/14/24 00:08	
M2-6:2 FTS	91	40 - 200		01/09/24 11.44	01/14/24 00.08	

Eurofins Sacramento

Page 9 of 37 1/23/2024

Client: Maul Foster & Alongi Inc Job ID: 320-108065-1 Project/Site: TWAAFA, M0615.20.012

Lab Sample ID: 320-108065-2 **Client Sample ID: TWA-9-3-1223**

Matrix: Water

Date Collected: 12/12/23 12:40 Date Received: 12/14/23 09:15

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24 (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	75		40 - 130	01/09/24 11:44	01/14/24 00:08	1
d7-N-MeFOSE-M	30		10 - 130	01/09/24 11:44	01/14/24 00:08	1
d9-N-EtFOSE-M	18		10 - 130	01/09/24 11:44	01/14/24 00:08	1
d5-NEtPFOSA	50		10 - 130	01/09/24 11:44	01/14/24 00:08	1
d3-NMePFOSA	52		10 - 130	01/09/24 11:44	01/14/24 00:08	1

Client Sample ID: Rinsate Blank1-1223

Lab Sample ID: 320-108065-3 Date Collected: 12/12/23 13:15 **Matrix: Water**

Date Received: 12/14/23 09:15

Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND	7.5	ng/L		01/09/24 11:44	01/14/24 00:26	1
Perfluoropentanoic acid (PFPeA)	ND	3.7	ng/L		01/09/24 11:44	01/14/24 00:26	1
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L		01/09/24 11:44	01/14/24 00:26	1
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L		01/09/24 11:44	01/14/24 00:26	1
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L		01/09/24 11:44	01/14/24 00:26	1
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L		01/09/24 11:44	01/14/24 00:26	1
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L		01/09/24 11:44	01/14/24 00:26	1
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L		01/09/24 11:44	01/14/24 00:26	1
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L		01/09/24 11:44	01/14/24 00:26	1
Perfluorotridecanoic acid (PFTrDA)	ND	1.9	ng/L		01/09/24 11:44	01/14/24 00:26	1
Perfluorotetradecanoic acid (PFTeA)	ND	1.9	ng/L		01/09/24 11:44	01/14/24 00:26	1
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L		01/09/24 11:44	01/14/24 00:26	1
Perfluoropentanesulfonic acid (PFPeS)	ND	1.9	ng/L		01/09/24 11:44	01/14/24 00:26	1
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L		01/09/24 11:44	01/14/24 00:26	1
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9	ng/L		01/09/24 11:44	01/14/24 00:26	1
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L		01/09/24 11:44	01/14/24 00:26	1
Perfluorononanesulfonic acid (PFNS)	ND	1.9	ng/L		01/09/24 11:44	01/14/24 00:26	1
Perfluorodecanesulfonic acid (PFDS)	ND	1.9	ng/L		01/09/24 11:44	01/14/24 00:26	1
Perfluorododecanesulfonic acid (PFDoS)	ND	1.9	ng/L		01/09/24 11:44	01/14/24 00:26	1
4:2 FTS	ND	7.5	ng/L		01/09/24 11:44	01/14/24 00:26	1
6:2 FTS	ND	7.5	ng/L		01/09/24 11:44	01/14/24 00:26	1
8:2 FTS	ND	7.5	ng/L		01/09/24 11:44	01/14/24 00:26	1
Perfluorooctanesulfonamide (FOSA)	ND	1.9	ng/L		01/09/24 11:44	01/14/24 00:26	1
NMeFOSA	ND	1.9	ng/L		01/09/24 11:44	01/14/24 00:26	1
NEtFOSA	ND	1.9	ng/L		01/09/24 11:44	01/14/24 00:26	1
NMeFOSAA	ND	1.9	ng/L		01/09/24 11:44	01/14/24 00:26	1
NEtFOSAA	ND	1.9	ng/L		01/09/24 11:44	01/14/24 00:26	1
NMeFOSE	ND	19	ng/L		01/09/24 11:44	01/14/24 00:26	1
NEtFOSE	ND	19	ng/L		01/09/24 11:44	01/14/24 00:26	1
HFPO-DA (GenX)	ND	7.5	ng/L		01/09/24 11:44	01/14/24 00:26	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	7.5	ng/L		01/09/24 11:44	01/14/24 00:26	1
PFMBA	ND	3.7	ng/L		01/09/24 11:44	01/14/24 00:26	1
NFDHA	ND	3.7	ng/L		01/09/24 11:44	01/14/24 00:26	1
PFMPA	ND	3.7	ng/L		01/09/24 11:44	01/14/24 00:26	1
9CI-PF3ONS	ND	7.5	ng/L		01/09/24 11:44	01/14/24 00:26	1

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Page 10 of 37

Client: Maul Foster & Alongi Inc Job ID: 320-108065-1 Project/Site: TWAAFA, M0615.20.012

Client Sample ID: Rinsate Blank1-1223

Lab Sample ID: 320-108065-3

Date Collected: 12/12/23 13:15 **Matrix: Water** Date Received: 12/14/23 09:15

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24 (Continued)

Method: EPA 1633 - Po	er- and Polyfluoroa	ikyi Substa	ances by LC/M	S/MS, QSM Ta	ble B-	24 (Continue	ed)	
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11CI-PF3OUdS	ND		7.5	ng/L		01/09/24 11:44	01/14/24 00:26	1
PFEESA	ND		3.7	ng/L		01/09/24 11:44	01/14/24 00:26	1
3:3 FTCA	ND		9.4	ng/L		01/09/24 11:44	01/14/24 00:26	1
5:3 FTCA	ND		47	ng/L		01/09/24 11:44	01/14/24 00:26	1
7:3 FTCA	ND		47	ng/L		01/09/24 11:44	01/14/24 00:26	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C4 PFBA	84		5 - 130			01/09/24 11:44	01/14/24 00:26	1
13C5 PFPeA	86		40 - 130			01/09/24 11:44	01/14/24 00:26	1
13C5 PFHxA	80		40 - 130			01/09/24 11:44	01/14/24 00:26	1
13C4 PFHpA	85		40 - 130			01/09/24 11:44	01/14/24 00:26	1
13C8 PFOA	86		40 - 130			01/09/24 11:44	01/14/24 00:26	1
13C9 PFNA	85		40 - 130			01/09/24 11:44	01/14/24 00:26	1
13C6 PFDA	83		40 - 130			01/09/24 11:44	01/14/24 00:26	1
13C7 PFUnA	89		30 - 130			01/09/24 11:44	01/14/24 00:26	1
13C2 PFDoA	77		10 - 130			01/09/24 11:44	01/14/24 00:26	1
13C2 PFTeDA	78		10 - 130			01/09/24 11:44	01/14/24 00:26	1
13C3 PFBS	87		40 - 135			01/09/24 11:44	01/14/24 00:26	1
13C3 PFHxS	87		40 - 130			01/09/24 11:44	01/14/24 00:26	1
13C8 PFOS	85		40 - 130			01/09/24 11:44	01/14/24 00:26	1
13C8 FOSA	85		40 - 130			01/09/24 11:44	01/14/24 00:26	1
d3-NMeFOSAA	93		40 - 170			01/09/24 11:44	01/14/24 00:26	1
d5-NEtFOSAA	81		25 - 135			01/09/24 11:44	01/14/24 00:26	1
M2-4:2 FTS	78		40 - 200			01/09/24 11:44	01/14/24 00:26	1
M2-6:2 FTS	81		40 - 200			01/09/24 11:44	01/14/24 00:26	1
M2-8:2 FTS	80		40 - 300			01/09/24 11:44	01/14/24 00:26	1
13C3 HFPO-DA	77		40 - 130			01/09/24 11:44	01/14/24 00:26	1
d7-N-MeFOSE-M	75		10 - 130			01/09/24 11:44	01/14/24 00:26	1
d9-N-EtFOSE-M	73		10 - 130			01/09/24 11:44	01/14/24 00:26	1
d5-NEtPFOSA	74		10 - 130			01/09/24 11:44	01/14/24 00:26	1

Client Sample ID: Field Blank1-1223 Lab Sample ID: 320-108065-4 Date Collected: 12/12/23 15:50 **Matrix: Water**

10 - 130

Date Received: 12/14/23 09:15

d3-NMePFOSA

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24

66

Analyte	Result Qualifi	er RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND	8.0	ng/L		01/09/24 11:44	01/14/24 00:43	1
Perfluoropentanoic acid (PFPeA)	ND	4.0	ng/L		01/09/24 11:44	01/14/24 00:43	1
Perfluorohexanoic acid (PFHxA)	ND	2.0	ng/L		01/09/24 11:44	01/14/24 00:43	1
Perfluoroheptanoic acid (PFHpA)	ND	2.0	ng/L		01/09/24 11:44	01/14/24 00:43	1
Perfluorooctanoic acid (PFOA)	ND	2.0	ng/L		01/09/24 11:44	01/14/24 00:43	1
Perfluorononanoic acid (PFNA)	ND	2.0	ng/L		01/09/24 11:44	01/14/24 00:43	1
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L		01/09/24 11:44	01/14/24 00:43	1
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L		01/09/24 11:44	01/14/24 00:43	1
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L		01/09/24 11:44	01/14/24 00:43	1
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	ng/L		01/09/24 11:44	01/14/24 00:43	1
Perfluorotetradecanoic acid (PFTeA)	ND	2.0	ng/L		01/09/24 11:44	01/14/24 00:43	1
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	ng/L		01/09/24 11:44	01/14/24 00:43	1

Page 11 of 37

01/09/24 11:44 01/14/24 00:26

Client: Maul Foster & Alongi Inc Job ID: 320-108065-1 Project/Site: TWAAFA, M0615.20.012

Client Sample ID: Field Blank1-1223

Lab Sample ID: 320-108065-4 Date Collected: 12/12/23 15:50

Matrix: Water

Date Received: 12/14/23 09:15

Analyte	Result Qualifier	RL	Unit	D Prepared	Analyzed	Dil Fac
Perfluoropentanesulfonic acid (PFPeS)	ND	2.0	ng/L	01/09/24 11:44	01/14/24 00:43	1
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	ng/L	01/09/24 11:44	01/14/24 00:43	1
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	ng/L	01/09/24 11:44	01/14/24 00:43	1
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	ng/L	01/09/24 11:44	01/14/24 00:43	1
Perfluorononanesulfonic acid (PFNS)	ND	2.0	ng/L	01/09/24 11:44	01/14/24 00:43	
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L	01/09/24 11:44	01/14/24 00:43	
Perfluorododecanesulfonic acid (PFDoS)	ND	2.0	ng/L	01/09/24 11:44	01/14/24 00:43	
4:2 FTS	ND	8.0	ng/L	01/09/24 11:44	01/14/24 00:43	
6:2 FTS	ND	8.0	ng/L	01/09/24 11:44	01/14/24 00:43	
8:2 FTS	ND	8.0	ng/L	01/09/24 11:44	01/14/24 00:43	
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L	01/09/24 11:44	01/14/24 00:43	1
NMeFOSA	ND	2.0	ng/L	01/09/24 11:44	01/14/24 00:43	1
NEtFOSA	ND	2.0	ng/L	01/09/24 11:44	01/14/24 00:43	
NMeFOSAA	ND	2.0	ng/L		01/14/24 00:43	
NEtFOSAA	ND	2.0	ng/L	01/09/24 11:44	01/14/24 00:43	
NMeFOSE	ND	20	ng/L		01/14/24 00:43	· · · · · · .
NEtFOSE	ND	20	ng/L		01/14/24 00:43	
HFPO-DA (GenX)	ND	8.0	ng/L		01/14/24 00:43	
4,8-Dioxa-3H-perfluorononanoic acid	ND	8.0	ng/L		01/14/24 00:43	
PFMBA	ND	4.0	ng/L	01/09/24 11:44	01/14/24 00:43	
NFDHA	ND	4.0	ng/L		01/14/24 00:43	
PFMPA	ND	4.0	ng/L		01/14/24 00:43	
9CI-PF3ONS	ND	8.0	ng/L		01/14/24 00:43	
11CI-PF3OUdS	ND	8.0	ng/L		01/14/24 00:43	
PFEESA	ND	4.0	ng/L		01/14/24 00:43	
3:3 FTCA	ND	9.9	ng/L		01/14/24 00:43	
5:3 FTCA	ND	50	ng/L		01/14/24 00:43	
7:3 FTCA	ND	50	ng/L		01/14/24 00:43	
Isotope Dilution	%Recovery Qualifier	Limits	Hg/L	Prepared	Analyzed	Dil Fa
13C4 PFBA	92 Qualifier	5 - 130			01/14/24 00:43	DII Fa
13C5 PFPeA	91	40 - 130			01/14/24 00:43	
13C5 PFHxA	90	40 - 130 40 - 130		* • • . =	01/14/24 00:43	
		40 - 130 40 - 130			01/14/24 00:43	
13C4 PFHpA	98					
13C8 PFOA	92	40 - 130			01/14/24 00:43	
13C9 PFNA	90	40 - 130			01/14/24 00:43	
13C6 PFDA	94	40 - 130			01/14/24 00:43	
13C7 PFUnA	86	30 - 130			01/14/24 00:43	
13C2 PFDoA	66	10 - 130			01/14/24 00:43	
13C2 PFTeDA	67	10 - 130			01/14/24 00:43	
13C3 PFBS	95	40 - 135			01/14/24 00:43	
13C3 PFHxS	92	40 - 130			01/14/24 00:43	
13C8 PFOS	94	40 - 130		01/09/24 11:44	01/14/24 00:43	
13C8 FOSA	90	40 - 130		01/09/24 11:44	01/14/24 00:43	
d3-NMeFOSAA	95	40 - 170		01/09/24 11:44	01/14/24 00:43	
d5-NEtFOSAA	85	25 - 135		01/09/24 11:44	01/14/24 00:43	
M2-4:2 FTS	92	40 - 200		01/09/24 11:44	01/14/24 00:43	

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1/23/2024

Page 12 of 37

Client: Maul Foster & Alongi Inc Job ID: 320-108065-1 Project/Site: TWAAFA, M0615.20.012

Client Sample ID: Field Blank1-1223

Lab Sample ID: 320-108065-4 Date Collected: 12/12/23 15:50

Matrix: Water

Date Received: 12/14/23 09:15

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24 (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
M2-6:2 FTS	91		40 - 200	01/09/24 11:44	01/14/24 00:43	1
M2-8:2 FTS	84		40 - 300	01/09/24 11:44	01/14/24 00:43	1
13C3 HFPO-DA	82		40 - 130	01/09/24 11:44	01/14/24 00:43	1
d7-N-MeFOSE-M	76		10 - 130	01/09/24 11:44	01/14/24 00:43	1
d9-N-EtFOSE-M	70		10 - 130	01/09/24 11:44	01/14/24 00:43	1
d5-NEtPFOSA	74		10 - 130	01/09/24 11:44	01/14/24 00:43	1
d3-NMePFOSA	69		10 - 130	01/09/24 11:44	01/14/24 00:43	1

Lab Sample ID: 320-108065-5 Client Sample ID: SB-2A-1223

Date Collected: 12/12/23 16:15 **Matrix: Water**

Date Received: 12/14/23 09:15

Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	23	8.1	ng/L		01/09/24 11:44	01/14/24 01:01	•
Perfluoropentanoic acid (PFPeA)	ND	4.1	ng/L		01/09/24 11:44	01/14/24 01:01	1
Perfluorohexanoic acid (PFHxA)	ND F1	2.0	ng/L		01/09/24 11:44	01/14/24 01:01	1
Perfluoroheptanoic acid (PFHpA)	ND	2.0	ng/L		01/09/24 11:44	01/14/24 01:01	1
Perfluorooctanoic acid (PFOA)	4.1	2.0	ng/L		01/09/24 11:44	01/14/24 01:01	1
Perfluorononanoic acid (PFNA)	ND	2.0	ng/L		01/09/24 11:44	01/14/24 01:01	1
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L		01/09/24 11:44	01/14/24 01:01	1
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L		01/09/24 11:44	01/14/24 01:01	1
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L		01/09/24 11:44	01/14/24 01:01	1
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	ng/L		01/09/24 11:44	01/14/24 01:01	1
Perfluorotetradecanoic acid (PFTeA)	ND	2.0	ng/L		01/09/24 11:44	01/14/24 01:01	1
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	ng/L		01/09/24 11:44	01/14/24 01:01	1
Perfluoropentanesulfonic acid (PFPeS)	ND	2.0	ng/L		01/09/24 11:44	01/14/24 01:01	1
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	ng/L		01/09/24 11:44	01/14/24 01:01	1
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	ng/L		01/09/24 11:44	01/14/24 01:01	1
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	ng/L		01/09/24 11:44	01/14/24 01:01	1
Perfluorononanesulfonic acid (PFNS)	ND	2.0	ng/L		01/09/24 11:44	01/14/24 01:01	1
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L		01/09/24 11:44	01/14/24 01:01	1
Perfluorododecanesulfonic acid (PFDoS)	ND F1	2.0	ng/L			01/14/24 01:01	1
4:2 FTS	ND	8.1	ng/L			01/14/24 01:01	1
6:2 FTS	ND	8.1	ng/L			01/14/24 01:01	1
8:2 FTS	ND	8.1	ng/L			01/14/24 01:01	1
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L		01/09/24 11:44	01/14/24 01:01	1
NMeFOSA	ND	2.0	ng/L		01/09/24 11:44	01/14/24 01:01	1
NEtFOSA	ND	2.0	ng/L		01/09/24 11:44	01/14/24 01:01	1
NMeFOSAA	ND	2.0	ng/L		01/09/24 11:44	01/14/24 01:01	1
NEtFOSAA	ND	2.0	ng/L		01/09/24 11:44	01/14/24 01:01	1
NMeFOSE	ND	20	ng/L		01/09/24 11:44	01/14/24 01:01	1
NEtFOSE	ND	20	ng/L		01/09/24 11:44	01/14/24 01:01	1
HFPO-DA (GenX)	ND	8.1	ng/L		01/09/24 11:44	01/14/24 01:01	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	8.1	ng/L		01/09/24 11:44	01/14/24 01:01	1
PFMBA	ND	4.1	ng/L		01/09/24 11:44	01/14/24 01:01	1
NFDHA	ND	4.1	ng/L		01/09/24 11:44	01/14/24 01:01	1

Eurofins Sacramento

Page 13 of 37 1/23/2024

Client: Maul Foster & Alongi Inc Job ID: 320-108065-1 Project/Site: TWAAFA, M0615.20.012

Client Sample ID: SB-2A-1223

Lab Sample ID: 320-108065-5

Date Collected: 12/12/23 16:15 **Matrix: Water** Date Received: 12/14/23 09:15

Analyte	Result Qualifier	RL	Unit	D Prepared	Analyzed	Dil Fac
PFMPA	ND ND	4.1	ng/L	01/09/24 11:44	01/14/24 01:01	1
9CI-PF3ONS	ND	8.1	ng/L	01/09/24 11:44	01/14/24 01:01	1
11CI-PF3OUdS	ND	8.1	ng/L	01/09/24 11:44	01/14/24 01:01	1
PFEESA	ND	4.1	ng/L	01/09/24 11:44	01/14/24 01:01	1
3:3 FTCA	ND	10	ng/L	01/09/24 11:44	01/14/24 01:01	1
5:3 FTCA	ND	51	ng/L	01/09/24 11:44	01/14/24 01:01	1
7:3 FTCA	ND	51	ng/L	01/09/24 11:44	01/14/24 01:01	1
Isotono Dilution	% Pocovery Qualifier	Limite		Propared	Analyzod	Dil Esc

5:3 FTCA	ND	51	ng/L	01/09/24 11:44	01/14/24 01:01	1
7:3 FTCA	ND	51	ng/L	01/09/24 11:44	01/14/24 01:01	1
Isotope Dilution	%Recovery Q	Qualifier Limits		Prepared	Analyzed	Dil Fac
13C4 PFBA	87	5 - 130		01/09/24 11:44	01/14/24 01:01	1
13C5 PFPeA	85	40 - 130		01/09/24 11:44	01/14/24 01:01	1
13C5 PFHxA	87	40 - 130		01/09/24 11:44	01/14/24 01:01	1
13C4 PFHpA	88	40 - 130		01/09/24 11:44	01/14/24 01:01	1
13C8 PFOA	88	40 - 130		01/09/24 11:44	01/14/24 01:01	1
13C9 PFNA	89	40 - 130		01/09/24 11:44	01/14/24 01:01	1
13C6 PFDA	78	40 - 130		01/09/24 11:44	01/14/24 01:01	1
13C7 PFUnA	74	30 - 130		01/09/24 11:44	01/14/24 01:01	1
13C2 PFDoA	60	10 - 130		01/09/24 11:44	01/14/24 01:01	1
13C2 PFTeDA	43	10 - 130		01/09/24 11:44	01/14/24 01:01	1
13C3 PFBS	101	40 - 135		01/09/24 11:44	01/14/24 01:01	1
13C3 PFHxS	83	40 - 130		01/09/24 11:44	01/14/24 01:01	1
13C8 PFOS	79	40 - 130		01/09/24 11:44	01/14/24 01:01	1
13C8 FOSA	80	40 - 130		01/09/24 11:44	01/14/24 01:01	1
d3-NMeFOSAA	85	40 - 170		01/09/24 11:44	01/14/24 01:01	1
d5-NEtFOSAA	70	25 - 135		01/09/24 11:44	01/14/24 01:01	1
M2-4:2 FTS	89	40 - 200		01/09/24 11:44	01/14/24 01:01	1
M2-6:2 FTS	84	40 - 200		01/09/24 11:44	01/14/24 01:01	1
M2-8:2 FTS	80	40 - 300		01/09/24 11:44	01/14/24 01:01	1
13C3 HFPO-DA	77	40 - 130		01/09/24 11:44	01/14/24 01:01	1
d7-N-MeFOSE-M	49	10 - 130		01/09/24 11:44	01/14/24 01:01	1
d9-N-EtFOSE-M	39	10 - 130		01/09/24 11:44	01/14/24 01:01	1
d5-NEtPFOSA	57	10 - 130		01/09/24 11:44	01/14/24 01:01	1
d3-NMePFOSA	55	10 - 130		01/09/24 11:44	01/14/24 01:01	1

Client Sample ID: Rinsate Blank2-1223 Lab Sample ID: 320-108065-6

Date Collected: 12/12/23 16:40 **Matrix: Water** Date Received: 12/14/23 09:15

Method: EPA 1633	 Per- and Pol 	vfluoroalk	vl Substances by	LC/MS/MS	. QSM Table B-24

Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND	7.9	ng/L		01/09/24 11:44	01/14/24 02:29	1
Perfluoropentanoic acid (PFPeA)	ND	3.9	ng/L		01/09/24 11:44	01/14/24 02:29	1
Perfluorohexanoic acid (PFHxA)	ND	2.0	ng/L		01/09/24 11:44	01/14/24 02:29	1
Perfluoroheptanoic acid (PFHpA)	ND	2.0	ng/L		01/09/24 11:44	01/14/24 02:29	1
Perfluorooctanoic acid (PFOA)	ND	2.0	ng/L		01/09/24 11:44	01/14/24 02:29	1
Perfluorononanoic acid (PFNA)	ND	2.0	ng/L		01/09/24 11:44	01/14/24 02:29	1
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L		01/09/24 11:44	01/14/24 02:29	1
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L		01/09/24 11:44	01/14/24 02:29	1
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L		01/09/24 11:44	01/14/24 02:29	1
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	ng/L		01/09/24 11:44	01/14/24 02:29	1
Perfluorotetradecanoic acid (PFTeA)	ND	2.0	ng/L		01/09/24 11:44	01/14/24 02:29	1

Eurofins Sacramento

1/23/2024

Page 14 of 37

Client: Maul Foster & Alongi Inc Job ID: 320-108065-1 Project/Site: TWAAFA, M0615.20.012

Client Sample ID: Rinsate Blank2-1223

d5-NEtFOSAA

Lab Sample ID: 320-108065-6

Date Collected: 12/12/23 16:40 **Matrix: Water** Date Received: 12/14/23 09:15

Method: EPA 1633 - Per- and	Polyfluoroalkyl Subst	ances by LC/MS	S/MS, QSM Tab	ole B-24 (Continued)
Analyte	Result Qualifier	RL	Unit	D Prepared Analyzed Dil Fa
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	ng/L	01/09/24 11:44 01/14/24 02:29
Perfluoropentanesulfonic acid (PFPeS)	ND	2.0	ng/L	01/09/24 11:44 01/14/24 02:29
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	ng/L	01/09/24 11:44 01/14/24 02:29
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	ng/L	01/09/24 11:44
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	ng/L	01/09/24 11:44 01/14/24 02:29
Perfluorononanesulfonic acid (PFNS)	ND	2.0	ng/L	01/09/24 11:44 01/14/24 02:29
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L	01/09/24 11:44 01/14/24 02:29
Perfluorododecanesulfonic acid (PFDoS)	ND	2.0	ng/L	01/09/24 11:44 01/14/24 02:29
4:2 FTS	ND	7.9	ng/L	01/09/24 11:44 01/14/24 02:29
6:2 FTS	ND	7.9	ng/L	01/09/24 11:44 01/14/24 02:29
8:2 FTS	ND	7.9	ng/L	01/09/24 11:44 01/14/24 02:29
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L	01/09/24 11:44 01/14/24 02:29
NMeFOSA	ND	2.0	ng/L	01/09/24 11:44
NEtFOSA	ND	2.0	ng/L	01/09/24 11:44 01/14/24 02:29
NMeFOSAA	ND	2.0	ng/L	01/09/24 11:44 01/14/24 02:29
NEtFOSAA	ND	2.0	ng/L	01/09/24 11:44 01/14/24 02:29
NMeFOSE	ND	20	ng/L	01/09/24 11:44 01/14/24 02:29
NEtFOSE	ND	20	ng/L	01/09/24 11:44 01/14/24 02:29
HFPO-DA (GenX)	ND	7.9	ng/L	01/09/24 11:44 01/14/24 02:29
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	7.9	ng/L	01/09/24 11:44 01/14/24 02:29
PFMBA	ND	3.9	ng/L	01/09/24 11:44 01/14/24 02:29
NFDHA	ND	3.9	ng/L	01/09/24 11:44 01/14/24 02:29
PFMPA	ND	3.9	ng/L	01/09/24 11:44 01/14/24 02:29
9CI-PF3ONS	ND	7.9	ng/L	01/09/24 11:44 01/14/24 02:29
11CI-PF3OUdS	ND	7.9	ng/L	01/09/24 11:44 01/14/24 02:29
PFEESA	ND	3.9	ng/L	01/09/24 11:44 01/14/24 02:29
3:3 FTCA	ND	9.9	ng/L	01/09/24 11:44 01/14/24 02:29
5:3 FTCA	ND	49	ng/L	01/09/24 11:44 01/14/24 02:29
7:3 FTCA	ND	49	ng/L	01/09/24 11:44 01/14/24 02:29
Isotope Dilution	%Recovery Qualifier	Limits		Prepared Analyzed Dil Fa
13C4 PFBA	86	5 - 130		01/09/24 11:44 01/14/24 02:29
13C5 PFPeA	88	40 - 130		01/09/24 11:44 01/14/24 02:29
13C5 PFHxA	84	40 - 130		01/09/24 11:44 01/14/24 02:29
13C4 PFHpA	88	40 - 130		01/09/24 11:44 01/14/24 02:29
13C8 PFOA	89	40 - 130		01/09/24 11:44 01/14/24 02:29
13C9 PFNA		40 - 130		01/09/24 11:44 01/14/24 02:29
13C6 PFDA	85	40 - 130		01/09/24 11:44 01/14/24 02:29
13C7 PFUnA	88	30 - 130		01/09/24 11:44
13C2 PFDoA	78	10 - 130		01/09/24 11:44 01/14/24 02:29
13C2 PFTeDA	78	10 - 130		01/09/24 11:44 01/14/24 02:29
13C3 PFBS	87	40 - 135		01/09/24 11:44 01/14/24 02:29
13C3 PFHxS	86	40 - 130		01/09/24 11:44 01/14/24 02:29
13C8 PFOS	90	40 - 130		01/09/24 11:44 01/14/24 02:29
13C8 FOSA	85	40 - 130		01/09/24 11:44 01/14/24 02:29
d3-NMeFOSAA	91	40 - 170		01/09/24 11:44 01/14/24 02:29

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01/09/24 11:44 01/14/24 02:29

Page 15 of 37

25 - 135

Client: Maul Foster & Alongi Inc Job ID: 320-108065-1 Project/Site: TWAAFA, M0615.20.012

Client Sample ID: Rinsate Blank2-1223

Lab Sample ID: 320-108065-6 Date Collected: 12/12/23 16:40

Matrix: Water

Date Received: 12/14/23 09:15

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24 (Continued)

Isotope Dilution	%Recovery Qualific	er Limits	Prepared	Analyzed	Dil Fac
M2-4:2 FTS	87	40 - 200	01/09/24 11:44	01/14/24 02:29	1
M2-6:2 FTS	86	40 - 200	01/09/24 11:44	01/14/24 02:29	1
M2-8:2 FTS	83	40 - 300	01/09/24 11:44	01/14/24 02:29	1
13C3 HFPO-DA	75	40 - 130	01/09/24 11:44	01/14/24 02:29	1
d7-N-MeFOSE-M	76	10 - 130	01/09/24 11:44	01/14/24 02:29	1
d9-N-EtFOSE-M	71	10 - 130	01/09/24 11:44	01/14/24 02:29	1
d5-NEtPFOSA	78	10 - 130	01/09/24 11:44	01/14/24 02:29	1
d3-NMePFOSA	73	10 - 130	01/09/24 11:44	01/14/24 02:29	1

Client Sample ID: Trip Blank1-1223

Lab Sample ID: 320-108065-7 Date Collected: 12/12/23 12:00 **Matrix: Water**

Date Received: 12/14/23 09:15

Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND	6.9	ng/L		01/09/24 11:44	01/14/24 02:47	1
Perfluoropentanoic acid (PFPeA)	ND	3.4	ng/L		01/09/24 11:44	01/14/24 02:47	1
Perfluorohexanoic acid (PFHxA)	ND	1.7	ng/L		01/09/24 11:44	01/14/24 02:47	1
Perfluoroheptanoic acid (PFHpA)	ND	1.7	ng/L		01/09/24 11:44	01/14/24 02:47	1
Perfluorooctanoic acid (PFOA)	ND	1.7	ng/L		01/09/24 11:44	01/14/24 02:47	1
Perfluorononanoic acid (PFNA)	ND	1.7	ng/L		01/09/24 11:44	01/14/24 02:47	1
Perfluorodecanoic acid (PFDA)	ND	1.7	ng/L		01/09/24 11:44	01/14/24 02:47	1
Perfluoroundecanoic acid (PFUnA)	ND	1.7	ng/L		01/09/24 11:44	01/14/24 02:47	1
Perfluorododecanoic acid (PFDoA)	ND	1.7	ng/L		01/09/24 11:44	01/14/24 02:47	1
Perfluorotridecanoic acid (PFTrDA)	ND	1.7	ng/L		01/09/24 11:44	01/14/24 02:47	1
Perfluorotetradecanoic acid (PFTeA)	ND	1.7	ng/L		01/09/24 11:44	01/14/24 02:47	1
Perfluorobutanesulfonic acid (PFBS)	ND	1.7	ng/L		01/09/24 11:44	01/14/24 02:47	1
Perfluoropentanesulfonic acid (PFPeS)	ND	1.7	ng/L		01/09/24 11:44	01/14/24 02:47	1
Perfluorohexanesulfonic acid (PFHxS)	ND	1.7	ng/L		01/09/24 11:44	01/14/24 02:47	1
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.7	ng/L		01/09/24 11:44	01/14/24 02:47	1
Perfluorooctanesulfonic acid (PFOS)	ND	1.7	ng/L		01/09/24 11:44	01/14/24 02:47	1
Perfluorononanesulfonic acid (PFNS)	ND	1.7	ng/L		01/09/24 11:44	01/14/24 02:47	1
Perfluorodecanesulfonic acid (PFDS)	ND	1.7	ng/L		01/09/24 11:44	01/14/24 02:47	1
Perfluorododecanesulfonic acid (PFDoS)	ND	1.7	ng/L		01/09/24 11:44	01/14/24 02:47	1
4:2 FTS	ND	6.9	ng/L		01/09/24 11:44	01/14/24 02:47	1
6:2 FTS	ND	6.9	ng/L		01/09/24 11:44	01/14/24 02:47	1
8:2 FTS	ND	6.9	ng/L		01/09/24 11:44	01/14/24 02:47	1
Perfluorooctanesulfonamide (FOSA)	ND	1.7	ng/L		01/09/24 11:44	01/14/24 02:47	1
NMeFOSA	ND	1.7	ng/L		01/09/24 11:44	01/14/24 02:47	1
NEtFOSA	ND	1.7	ng/L		01/09/24 11:44	01/14/24 02:47	1
NMeFOSAA	ND	1.7	ng/L		01/09/24 11:44	01/14/24 02:47	1
NEtFOSAA	ND	1.7	ng/L		01/09/24 11:44	01/14/24 02:47	1
NMeFOSE	ND	17	ng/L		01/09/24 11:44	01/14/24 02:47	1
NEtFOSE	ND	17	ng/L		01/09/24 11:44	01/14/24 02:47	1
HFPO-DA (GenX)	ND	6.9	ng/L		01/09/24 11:44	01/14/24 02:47	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	6.9	ng/L		01/09/24 11:44	01/14/24 02:47	1
PFMBA	ND	3.4	ng/L		01/09/24 11:44	01/14/24 02:47	1

Eurofins Sacramento

Page 16 of 37

Client: Maul Foster & Alongi Inc Job ID: 320-108065-1 Project/Site: TWAAFA, M0615.20.012

Client Sample ID: Trip Blank1-1223

Date Collected: 12/12/23 12:00 Date Received: 12/14/23 09:15 Lab Sample ID: 320-108065-7 **Matrix: Water**

Method: EPA 1633 - Per- and Po	olyfluoroalkyl Substances	by LC/MS/MS,	, QSM Table	B-24	4 (Continued)	
A I t	D 16 O 116	D.	1114	_	Barrier and all	

Analyte	Result Qualifier	RL	Unit	D Prepared	Analyzed	Dil Fac
NFDHA	ND ND	3.4	ng/L	01/09/24 11:44	01/14/24 02:47	1
PFMPA	ND	3.4	ng/L	01/09/24 11:44	01/14/24 02:47	1
9CI-PF3ONS	ND	6.9	ng/L	01/09/24 11:44	01/14/24 02:47	1
11CI-PF3OUdS	ND	6.9	ng/L	01/09/24 11:44	01/14/24 02:47	1
PFEESA	ND	3.4	ng/L	01/09/24 11:44	01/14/24 02:47	1
3:3 FTCA	ND	8.6	ng/L	01/09/24 11:44	01/14/24 02:47	1
5:3 FTCA	ND	43	ng/L	01/09/24 11:44	01/14/24 02:47	1
7:3 FTCA	ND	43	ng/L	01/09/24 11:44	01/14/24 02:47	1

7:3 FTCA	ND		43	ng/L	01/09/24 11:44	01/14/24 02:47	
Isotope Dilution	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fa
13C4 PFBA	86		5 - 130		01/09/24 11:44	01/14/24 02:47	
13C5 PFPeA	87		40 - 130		01/09/24 11:44	01/14/24 02:47	
13C5 PFHxA	80		40 - 130		01/09/24 11:44	01/14/24 02:47	
13C4 PFHpA	83		40 - 130		01/09/24 11:44	01/14/24 02:47	
13C8 PFOA	87		40 - 130		01/09/24 11:44	01/14/24 02:47	
13C9 PFNA	87		40 - 130		01/09/24 11:44	01/14/24 02:47	
13C6 PFDA	84		40 - 130		01/09/24 11:44	01/14/24 02:47	
13C7 PFUnA	79		30 - 130		01/09/24 11:44	01/14/24 02:47	
13C2 PFDoA	68		10 - 130		01/09/24 11:44	01/14/24 02:47	
13C2 PFTeDA	73		10 - 130		01/09/24 11:44	01/14/24 02:47	
13C3 PFBS	87		40 - 135		01/09/24 11:44	01/14/24 02:47	
13C3 PFHxS	85		40 - 130		01/09/24 11:44	01/14/24 02:47	
13C8 PFOS	85		40 - 130		01/09/24 11:44	01/14/24 02:47	
13C8 FOSA	82		40 - 130		01/09/24 11:44	01/14/24 02:47	
d3-NMeFOSAA	82		40 - 170		01/09/24 11:44	01/14/24 02:47	
d5-NEtFOSAA	75		25 - 135		01/09/24 11:44	01/14/24 02:47	
M2-4:2 FTS	85		40 - 200		01/09/24 11:44	01/14/24 02:47	
M2-6:2 FTS	86		40 - 200		01/09/24 11:44	01/14/24 02:47	
M2-8:2 FTS	80		40 - 300		01/09/24 11:44	01/14/24 02:47	
13C3 HFPO-DA	77		40 - 130		01/09/24 11:44	01/14/24 02:47	
d7-N-MeFOSE-M	77		10 - 130		01/09/24 11:44	01/14/24 02:47	
d9-N-EtFOSE-M	75		10 - 130		01/09/24 11:44	01/14/24 02:47	:
d5-NEtPFOSA	74		10 - 130		01/09/24 11:44	01/14/24 02:47	
d3-NMePFOSA	66		10 - 130		01/09/24 11:44	01/14/24 02:47	

Client: Maul Foster & Alongi Inc Project/Site: TWAAFA, M0615.20.012 Job ID: 320-108065-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24

Matrix: Water Prep Type: Total/NA

		PFBA	Perce PFPeA	ent Isotope 13C5PHA		covery (Ac	ceptance L C9PFNA	imits) C6PFDA	13C7PU
Lab Sample ID	Client Sample ID	(5-130)	(40-130)	(40-130)	(40-130)	(40-130)	(40-130)	(40-130)	(30-130)
320-108065-1	TWA-3-1223	85	84	86	89	85	93	82	73
320-108065-1 - RA	TWA-3-1223						92		
320-108065-2	TWA-9-3-1223	85	81	84	86	83	89	78	67
320-108065-3	Rinsate Blank1-1223	84	86	80	85	86	85	83	89
320-108065-4	Field Blank1-1223	92	91	90	98	92	90	94	86
320-108065-5	SB-2A-1223	87	85	87	88	88	89	78	74
320-108065-5 MS	SB-2A-1223	86	87	84	88	85	88	82	80
320-108065-5 MSD	SB-2A-1223	86	84	82	86	84	85	87	76
320-108065-6	Rinsate Blank2-1223	86	88	84	88	89	88	85	88
320-108065-7	Trip Blank1-1223	86	87	80	83	87	87	84	79
LCS 320-732202/3-A	Lab Control Sample	83	82	80	81	84	86	81	72
LLCS 320-732202/2-A	Lab Control Sample	84	88	85	85	85	88	87	89
MB 320-732202/1-A	Method Blank	86	88	82	88	88	86	88	86
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	imits)	
		PFDoA	PFTDA	C3PFBS	C3PFHS	C8PFOS	PFOSA	d3NMFOS	d5NEFO
Lab Sample ID	Client Sample ID	(10-130)	(10-130)	(40-135)	(40-130)	(40-130)	(40-130)	(40-170)	(25-135)
320-108065-1	TWA-3-1223	60	43	98	86	83	85	82	71
320-108065-1 - RA	TWA-3-1223								
320-108065-2	TWA-9-3-1223	52	32	91	78	73	84	79	66
320-108065-3	Rinsate Blank1-1223	77	78	87	87	85	85	93	81
320-108065-4	Field Blank1-1223	66	67	95	92	94	90	95	85
320-108065-5	SB-2A-1223	60	43	101	83	79	80	85	70
320-108065-5 MS	SB-2A-1223	68	58	100	86	89	84	90	80
320-108065-5 MSD	SB-2A-1223	59	45	99	89	83	83	84	74
320-108065-6	Rinsate Blank2-1223	78	78	87	86	90	85	91	84
320-108065-7	Trip Blank1-1223	68	73	87	85	85	82	82	75
LCS 320-732202/3-A	Lab Control Sample	65	64	84	82	85	79	85	74
LLCS 320-732202/2-A	Lab Control Sample	81	83	91	91	88	85	88	80
MB 320-732202/1-A	Method Blank	78	80	87	90	84	82	86	76
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	imits)	
		M242FTS		M282FTS		NMFM	NEFM	d5NPFSA	d3NMFS
Lab Sample ID	Client Sample ID	(40-200)	(40-200)	(40-300)	(40-130)	(10-130)	(10-130)	(10-130)	(10-130)
320-108065-1	TWA-3-1223	107	92	80	78	43	32	54	57
320-108065-1 - RA	TWA-3-1223								
320-108065-2	TWA-9-3-1223	109	91	75	75	30	18	50	52
320-108065-3	Rinsate Blank1-1223	78	81	80	77	75	73	74	66
320-108065-4	Field Blank1-1223	92	91	84	82	76	70	74	69
320-108065-5	SB-2A-1223	89	84	80	77	49	39	57	55
320-108065-5 MS	SB-2A-1223	100	78	78	76	60	51	68	66
320-108065-5 MSD	SB-2A-1223	104	83	79	72	55	46	63	64
320-108065-6	Rinsate Blank2-1223	87	86	83	75	76	71	78	73
320-108065-7	Trip Blank1-1223	85	86	80	77	77	75	74	66
_CS 320-732202/3-A	Lab Control Sample	71	73	74	71	64	59	69	65
LLCS 320-732202/2-A	Lab Control Sample	79	80	83	77	75	75	73	69
MB 320-732202/1-A	Method Blank	77	78	81	78	71	69	67	62
Surrogate Legend									

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Page 18 of 37

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Isotope Dilution Summary

Client: Maul Foster & Alongi Inc

Project/Site: TWAAFA, M0615.20.012

13C5PHA = 13C5 PFHxA C4PFHA = 13C4 PFHpA

C8PFOA = 13C8 PFOA

C9PFNA = 13C9 PFNA

C6PFDA = 13C6 PFDA

13C7PUA = 13C7 PFUnA

PFDoA = 13C2 PFDoA

PFTDA = 13C2 PFTeDA

C3PFBS = 13C3 PFBS

C3PFHS = 13C3 PFHxS

C8PFOS = 13C8 PFOS

PFOSA = 13C8 FOSA

d3NMFOS = d3-NMeFOSAA

d5NEFOS = d5-NEtFOSAA

M242FTS = M2-4:2 FTS

M262FTS = M2-6:2 FTS

M282FTS = M2-8:2 FTS

HFPODA = 13C3 HFPO-DA

NMFM = d7-N-MeFOSE-M

NEFM = d9-N-EtFOSE-M

d5NPFSA = d5-NEtPFOSA

d3NMFSA = d3-NMePFOSA

Job ID: 320-108065-1

Client: Maul Foster & Alongi Inc Job ID: 320-108065-1 Project/Site: TWAAFA, M0615.20.012

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24

Lab Sample ID: MB 320-732202/1-A

13C5 PFPeA

13C5 PFHxA

Matrix: Water							Prep Type: To	
Analysis Batch: 733325							Prep Batch:	732202
Analyte		MB Qualifier	RL	Unit	D	Dropared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND	Qualifier	8.0	ng/L		Prepared	01/13/24 22:58	1 Tac
Perfluoropentanoic acid (PFPeA)	ND		4.0	ng/L			01/13/24 22:58	4
Perfluorohexanoic acid (PFHxA)	ND		2.0	ng/L			01/13/24 22:58	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	ng/L			01/13/24 22:58	
Perfluorooctanoic acid (PFOA)	ND		2.0	ng/L			01/13/24 22:58	,
Perfluorononanoic acid (PFNA)	ND ND		2.0	ng/L			01/13/24 22:58	1
Perfluorodecanoic acid (PFDA)	ND		2.0				01/13/24 22:58	
Perfluoroundecanoic acid (PFUnA)	ND ND		2.0	ng/L			01/13/24 22:58	1
,				ng/L				1
Perfluorododecanoic acid (PFDoA)	ND		2.0	ng/L			01/13/24 22:58	
Perfluorotridecanoic acid (PFTrDA)	ND		2.0	ng/L			01/13/24 22:58	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	ng/L			01/13/24 22:58	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	ng/L			01/13/24 22:58	1
Perfluoropentanesulfonic acid (PFPeS)	ND		2.0	ng/L		01/09/24 11:44	01/13/24 22:58	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	ng/L		01/09/24 11:44	01/13/24 22:58	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		2.0	ng/L		01/09/24 11:44	01/13/24 22:58	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	ng/L		01/09/24 11:44	01/13/24 22:58	1
Perfluorononanesulfonic acid (PFNS)	ND		2.0	ng/L		01/09/24 11:44	01/13/24 22:58	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	ng/L		01/09/24 11:44	01/13/24 22:58	1
Perfluorododecanesulfonic acid	ND		2.0	ng/L		01/09/24 11:44	01/13/24 22:58	1
(PFDoS)				-				
4:2 FTS	ND		8.0	ng/L		01/09/24 11:44	01/13/24 22:58	1
6:2 FTS	ND		8.0	ng/L		01/09/24 11:44	01/13/24 22:58	1
8:2 FTS	ND		8.0	ng/L		01/09/24 11:44	01/13/24 22:58	1
Perfluorooctanesulfonamide (FOSA)	ND		2.0	ng/L		01/09/24 11:44	01/13/24 22:58	1
NMeFOSA	ND		2.0	ng/L		01/09/24 11:44	01/13/24 22:58	1
NEtFOSA	ND		2.0	ng/L		01/09/24 11:44	01/13/24 22:58	1
NMeFOSAA	ND		2.0	ng/L		01/09/24 11:44	01/13/24 22:58	1
NEtFOSAA	ND		2.0	ng/L		01/09/24 11:44	01/13/24 22:58	1
NMeFOSE	ND		20	ng/L		01/09/24 11:44	01/13/24 22:58	1
NEtFOSE	ND		20	ng/L		01/09/24 11:44	01/13/24 22:58	1
HFPO-DA (GenX)	ND		8.0	ng/L		01/09/24 11:44	01/13/24 22:58	1
4,8-Dioxa-3H-perfluorononanoic acid	ND		8.0	ng/L		01/09/24 11:44	01/13/24 22:58	1
(ADONA)				· ·				
PFMBA	ND		4.0	ng/L		01/09/24 11:44	01/13/24 22:58	1
NFDHA	ND		4.0	ng/L		01/09/24 11:44	01/13/24 22:58	1
PFMPA	ND		4.0	ng/L		01/09/24 11:44	01/13/24 22:58	1
9CI-PF3ONS	ND		8.0	ng/L		01/09/24 11:44	01/13/24 22:58	1
11CI-PF3OUdS	ND		8.0	ng/L		01/09/24 11:44	01/13/24 22:58	1
PFEESA	ND		4.0	ng/L		01/09/24 11:44	01/13/24 22:58	1
3:3 FTCA	ND		10	ng/L			01/13/24 22:58	1
5:3 FTCA	ND		50	ng/L			01/13/24 22:58	1
7:3 FTCA	ND		50	ng/L			01/13/24 22:58	1
		МВ					2.1.2.2.2.2.30	
Isotope Dilution	%Recovery		Limits			Prepared	Analyzed	Dil Fac
13C4 PFBA	86		5 - 130				01/13/24 22:58	

40 - 130

40 - 130

88

82

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01/09/24 11:44 01/13/24 22:58

Client Sample ID: Method Blank

Page 20 of 37 1/23/2024

Client: Maul Foster & Alongi Inc Job ID: 320-108065-1

Project/Site: TWAAFA, M0615.20.012

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24 (Continued)

Lab Sample ID: MB 320-732202/1-A

Matrix: Water

Analysis Batch: 733325

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

Prep Batch: 732202

MB MB Isotope Dilution %Recovery Qualifier Limits Prepared Analyzed Dil Fac 13C4 PFHpA 88 40 - 130 13C8 PFOA 88 40 - 130 01/09/24 11:44 01/13/24 22:58 13C9 PFNA 86 40 - 130 01/09/24 11:44 01/13/24 22:58 13C6 PFDA 88 40 - 130 01/09/24 11:44 01/13/24 22:58 13C7 PFUnA 86 30 - 130 01/09/24 11:44 01/13/24 22:58 13C2 PFDoA 78 10 - 130 01/09/24 11:44 01/13/24 22:58 13C2 PFTeDA 01/09/24 11:44 01/13/24 22:58 80 10 - 130 13C3 PFBS 87 40 - 135 01/09/24 11:44 01/13/24 22:58 13C3 PFHxS 90 40 - 130 01/09/24 11:44 01/13/24 22:58 01/09/24 11:44 01/13/24 22:58 13C8 PFOS 84 40 - 130 82 01/09/24 11:44 01/13/24 22:58 13C8 FOSA 40 - 130 d3-NMeFOSAA 86 40 - 170 01/09/24 11:44 01/13/24 22:58 d5-NEtFOSAA 76 25 - 135 01/09/24 11:44 01/13/24 22:58 77 M2-4:2 FTS 40 - 200 01/09/24 11:44 01/13/24 22:58 M2-6:2 FTS 78 40 - 200 01/09/24 11:44 01/13/24 22:58 81 40 - 300 M2-8:2 FTS 01/09/24 11:44 01/13/24 22:58 13C3 HFPO-DA 78 40 - 130 01/09/24 11:44 01/13/24 22:58 d7-N-MeFOSE-M 71 01/09/24 11:44 01/13/24 22:58 10 - 130 d9-N-EtFOSE-M 69 10 - 130 01/09/24 11:44 01/13/24 22:58 d5-NEtPFOSA 67 10 - 130 01/09/24 11:44 01/13/24 22:58 d3-NMePFOSA 62 10 - 130 01/09/24 11:44 01/13/24 22:58

Lab Sample ID: LCS 320-732202/3-A

Matrix: Water

Analysis Batch: 733325

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

Prep Batch: 732202

•	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorobutanoic acid (PFBA)	128	128		ng/L		100	70 - 140	
Perfluoropentanoic acid (PFPeA)	64.0	64.8		ng/L		101	65 - 135	
Perfluorohexanoic acid (PFHxA)	32.0	32.9		ng/L		103	70 - 145	
Perfluoroheptanoic acid (PFHpA)	32.0	32.2		ng/L		101	70 - 150	
Perfluorooctanoic acid (PFOA)	32.0	31.9		ng/L		100	70 - 150	
Perfluorononanoic acid (PFNA)	32.0	31.6		ng/L		99	70 - 150	
Perfluorodecanoic acid (PFDA)	32.0	29.1		ng/L		91	70 - 140	
Perfluoroundecanoic acid (PFUnA)	32.0	34.1		ng/L		107	70 - 145	
Perfluorododecanoic acid (PFDoA)	32.0	32.6		ng/L		102	70 - 140	
Perfluorotridecanoic acid (PFTrDA)	32.0	28.5		ng/L		89	65 - 140	
Perfluorotetradecanoic acid (PFTeA)	32.0	27.8		ng/L		87	60 - 140	
Perfluorobutanesulfonic acid (PFBS)	28.4	27.3		ng/L		96	60 - 145	
Perfluoropentanesulfonic acid (PFPeS)	30.1	30.2		ng/L		100	65 - 140	
Perfluorohexanesulfonic acid (PFHxS)	29.2	27.4		ng/L		94	65 - 145	
Perfluoroheptanesulfonic acid (PFHpS)	30.5	29.3		ng/L		96	70 - 150	

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Page 21 of 37

Client: Maul Foster & Alongi Inc Project/Site: TWAAFA, M0615.20.012 Job ID: 320-108065-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24 (Continued)

Lab Sample ID: LCS 320-732202/3-A

Matrix: Water

Analysis Batch: 733325

Client Sample ID: Lab Control Sample

Prep Type: Total/NA Prep Batch: 732202

	Spike	LCS	LCS		%Rec	
Analyte	Added	Result	Qualifier Unit	D %Rec	Limits	
Perfluorooctanesulfonic acid	29.8	30.4	ng/L	102	55 - 150	
(PFOS)						
Perfluorononanesulfonic acid	30.7	28.4	ng/L	92	65 - 145	
(PFNS)	20.0	00.5	/I	00	00 445	
Perfluorodecanesulfonic acid (PFDS)	30.8	28.5	ng/L	92	60 - 145	
Perfluorododecanesulfonic acid	31.0	23.1	ng/L	74	50 - 145	
(PFDoS)	00		9/=		00 - 1.10	
4:2 FTS	120	121	ng/L	101	70 - 145	
6:2 FTS	122	120	ng/L	98	65 - 155	
8:2 FTS	123	129	ng/L	105	60 - 150	
Perfluorooctanesulfonamide	32.0	32.2	ng/L	101	70 - 145	
(FOSA)						
NMeFOSA	32.0	31.8	ng/L	99	60 - 150	
NEtFOSA	32.0	30.8	ng/L	96	65 - 145	
NMeFOSAA	32.0	31.8	ng/L	100	50 - 140	
NEtFOSAA	32.0	33.3	ng/L	104	70 - 145	
NMeFOSE	320	323	ng/L	101	70 - 145	
NEtFOSE	320	335	ng/L	105	70 - 135	
HFPO-DA (GenX)	128	123	ng/L	96	70 - 140	
4,8-Dioxa-3H-perfluorononanoic	121	134	ng/L	111	65 - 145	
acid (ADONA)						
PFMBA	64.0	63.6	ng/L	99	60 - 150	
NFDHA	64.0	66.8	ng/L	104	50 - 150	
PFMPA	64.0	61.8	ng/L	96	55 - 140	
9CI-PF3ONS	120	136	ng/L	114	70 - 155	
11CI-PF3OUdS	121	127	ng/L	105	55 - 160	
PFEESA	57.1	59.9	ng/L	105	70 - 140	
3:3 FTCA	160	145	ng/L	91	65 - 130	
5:3 FTCA	799	779	ng/L	98	70 - 135	
7:3 FTCA	799	771	ng/L	97	50 - 145	

1	22	100	

		-00
Isotope Dilution	%Recovery	Qualifier Limits
13C4 PFBA	83	5 - 130
13C5 PFPeA	82	40 - 130
13C5 PFHxA	80	40 - 130
13C4 PFHpA	81	40 - 130
13C8 PFOA	84	40 - 130
13C9 PFNA	86	40 - 130
13C6 PFDA	81	40 - 130
13C7 PFUnA	72	30 - 130
13C2 PFDoA	65	10 - 130
13C2 PFTeDA	64	10 - 130
13C3 PFBS	84	40 - 135
13C3 PFHxS	82	40 - 130
13C8 PFOS	85	40 - 130
13C8 FOSA	79	40 - 130
d3-NMeFOSAA	85	40 - 170
d5-NEtFOSAA	74	25 - 135
M2-4:2 FTS	71	40 - 200

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1/23/2024

Page 22 of 37

9

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12

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Client: Maul Foster & Alongi Inc Job ID: 320-108065-1

Project/Site: TWAAFA, M0615.20.012

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24 (Continued)

Lab Sample ID: LCS 320-732202/3-A

Matrix: Water

Analysis Batch: 733325

Client Sample ID: Lab Control Sample

Prep Type: Total/NA Prep Batch: 732202

Isotope Dilution	%Recovery	Qualifier	Limits
M2-6:2 FTS	73		40 - 200
M2-8:2 FTS	74		40 - 300
13C3 HFPO-DA	71		40 - 130
d7-N-MeFOSE-M	64		10 - 130
d9-N-EtFOSE-M	59		10 - 130
d5-NEtPFOSA	69		10 - 130
d3-NMePFOSA	65		10 - 130

LCS LCS

Lab Sample ID: LLCS 320-732202/2-A **Client Sample ID: Lab Control Sample**

Matrix: Water

6:2 FTS

8:2 FTS

(FOSA) **NMeFOSA**

NEtFOSA

NMeFOSAA

Perfluorooctanesulfonamide

Analysis Batch: 733325

Prep Type: Total/NA

Prep Batch: 732202

	Spike	LLCS LLCS			%Rec	
Analyte	Added	Result Qualifi	er Unit	D %Rec	Limits	
Perfluorobutanoic acid (PFBA)	12.8	12.4	ng/L	97	70 - 140	
Perfluoropentanoic acid (PFPeA)	6.40	6.08	ng/L	95	65 - 135	
Perfluorohexanoic acid (PFHxA)	3.20	3.21	ng/L	100	70 - 145	
Perfluoroheptanoic acid (PFHpA)	3.20	3.14	ng/L	98	70 - 150	
Perfluorooctanoic acid (PFOA)	3.20	3.19	ng/L	100	70 - 150	
Perfluorononanoic acid (PFNA)	3.20	2.92	ng/L	91	70 - 150	
Perfluorodecanoic acid (PFDA)	3.20	2.79	ng/L	87	70 - 140	
Perfluoroundecanoic acid (PFUnA)	3.20	3.32	ng/L	104	70 - 145	
Perfluorododecanoic acid (PFDoA)	3.20	3.09	ng/L	96	70 - 140	
Perfluorotridecanoic acid (PFTrDA)	3.20	2.95	ng/L	92	65 - 140	
Perfluorotetradecanoic acid (PFTeA)	3.20	2.75	ng/L	86	60 - 140	
Perfluorobutanesulfonic acid (PFBS)	2.84	2.88	ng/L	101	60 - 145	
Perfluoropentanesulfonic acid (PFPeS)	3.01	2.70	ng/L	90	65 - 140	
Perfluorohexanesulfonic acid (PFHxS)	2.92	2.85	ng/L	98	65 - 145	
Perfluoroheptanesulfonic acid (PFHpS)	3.05	2.57	ng/L	84	70 - 150	
Perfluorooctanesulfonic acid (PFOS)	2.98	2.73	ng/L	92	55 - 150	
Perfluorononanesulfonic acid (PFNS)	3.07	2.78	ng/L	91	65 - 145	
Perfluorodecanesulfonic acid (PFDS)	3.08	2.88	ng/L	93	60 - 145	
Perfluorododecanesulfonic acid (PFDoS)	3.10	2.57	ng/L	83	50 - 145	
4:2 FTS	12.0	12.1	ng/L	101	70 - 145	

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Page 23 of 37

12.2

12.3

3.20

3.20

3.20

3.20

12.3

12.9

3.01

2.91

2.80

2.95

ng/L

ng/L

ng/L

ng/L

ng/L

ng/L

101

105

94

91

88

92

65 - 155

60 - 150

70 - 145

60 - 150

65 - 145

50 - 140

Job ID: 320-108065-1

Client: Maul Foster & Alongi Inc Project/Site: TWAAFA, M0615.20.012

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24 (Continued)

Lab Sample ID: LLCS 320-732202/2-A

Matrix: Water

5:3 FTCA

7:3 FTCA

Analysis Batch: 733325

Client Sample ID: Lab Control Sample

94

70 - 135

50 - 145

Prep Type: Total/NA Prep Batch: 732202

	Spike	LLCS	LLCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
NEtFOSAA	3.20	3.04		ng/L		95	70 - 145	
NMeFOSE	32.0	31.7		ng/L		99	70 - 145	
NEtFOSE	32.0	30.9		ng/L		96	70 - 135	
HFPO-DA (GenX)	12.8	12.3		ng/L		96	70 - 140	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	12.1	13.1		ng/L		108	65 - 145	
PFMBA	6.40	6.05		ng/L		94	60 - 150	
NFDHA	6.40	6.28		ng/L		98	50 - 150	
PFMPA	6.40	5.83		ng/L		91	55 - 140	
9CI-PF3ONS	12.0	13.0		ng/L		109	70 - 155	
11CI-PF3OUdS	12.1	12.9		ng/L		107	55 - 160	
PFEESA	5.71	5.71		ng/L		100	70 - 140	
3:3 FTCA	16.0	13.4		na/L		84	65 - 130	

79.9

79.9

75.4

74.8

ng/L

ng/L

LLCS	LLCS	
%Recovery	Qualifier	Limits
84		5 - 130
88		40 - 130
85		40 - 130
85		40 - 130
85		40 - 130
88		40 - 130
87		40 - 130
89		30 - 130
81		10 - 130
83		10 - 130
91		40 - 135
91		40 - 130
88		40 - 130
85		40 - 130
88		40 - 170
80		25 - 135
79		40 - 200
80		40 - 200
83		40 - 300
77		40 - 130
75		10 - 130
75		10 - 130
73		10 - 130
69		10 - 130
	%Recovery 84 88 85 85 85 88 87 89 81 83 91 91 88 85 88 80 79 80 83 77 75 75	88 85 85 88 88 87 89 81 83 91 91 91 88 85 88 80 79 80 83 77 75 75

Lab Sample ID: 320-108065-5 MS

Matrix: Water

Client Sample ID: SB-2A-1223

Prep Type: Total/NA

Prep Batch: 732202

Analysis Batch: 733325									Prep Bato	ch: 7
	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorobutanoic acid (PFBA)	23		128	151		ng/L		101	70 - 140	
Perfluoropentanoic acid (PFPeA)	ND		63.9	68.2		na/L		107	65 - 135	

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Page 24 of 37

Client: Maul Foster & Alongi Inc Project/Site: TWAAFA, M0615.20.012 Job ID: 320-108065-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24 (Continued)

Lab Sample ID: 320-108065-5 MS

Matrix: Water

Client Sample ID: SB-2A-1223

Prep Type: Total/NA

Analysis Batch: 733325	Sample	Sample	Spike	MS	MS				Prep Batch: 73220 %Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Perfluorohexanoic acid (PFHxA)	ND	F1	31.9	46.4		ng/L		140	70 - 145
Perfluoroheptanoic acid (PFHpA)	ND		31.9	34.0		ng/L		102	70 - 150
Perfluorooctanoic acid (PFOA)	4.1		31.9	37.4		ng/L		104	70 - 150
Perfluorononanoic acid (PFNA)	ND		31.9	29.9		ng/L		94	70 - 150
Perfluorodecanoic acid (PFDA)	ND		31.9	31.3		ng/L		98	70 - 140
Perfluoroundecanoic acid (PFUnA)	ND		31.9	31.7		ng/L		99	70 - 145
Perfluorododecanoic acid (PFDoA)	ND		31.9	32.1		ng/L		101	70 - 140
Perfluorotridecanoic acid (PFTrDA)	ND		31.9	29.5		ng/L		92	65 - 140
Perfluorotetradecanoic acid (PFTeA)	ND		31.9	28.0		ng/L		88	60 - 140
Perfluorobutanesulfonic acid (PFBS)	ND		28.4	32.8		ng/L		112	60 - 145
Perfluoropentanesulfonic acid (PFPeS)	ND		30.0	32.0		ng/L		107	65 - 140
Perfluorohexanesulfonic acid (PFHxS)	ND		29.1	29.1		ng/L		95	65 - 145
Perfluoroheptanesulfonic acid (PFHpS)	ND		30.5	27.9		ng/L		92	70 - 150
Perfluorooctanesulfonic acid (PFOS)	ND		29.7	28.3		ng/L		90	55 - 150
Perfluorononanesulfonic acid (PFNS)	ND		30.7	25.4		ng/L		83	65 - 145
Perfluorodecanesulfonic acid (PFDS)	ND		30.8	23.5		ng/L		76	60 - 145
Perfluorododecanesulfonic acid (PFDoS)	ND	F1	31.0	16.2		ng/L		52	50 - 145
4:2 FTS	ND		119	97.2		ng/L		81	70 - 145
6:2 FTS	ND		122	133		ng/L		109	65 - 155
8:2 FTS	ND		123	136		ng/L		111	60 - 150
Perfluorooctanesulfonamide (FOSA)	ND		31.9	31.2		ng/L		98	70 - 145
NMeFOSA	ND		31.9	32.1		ng/L		100	60 - 150
NEtFOSA	ND		31.9	32.1		ng/L		100	65 - 145
NMeFOSAA	ND		31.9	31.1		ng/L		97	50 - 140
NEtFOSAA	ND		31.9	33.7		ng/L		105	70 - 145
NMeFOSE	ND		319	335		ng/L		105	70 - 145
NEtFOSE	ND		319	341		ng/L		107	70 - 135
HFPO-DA (GenX)	ND		128	138		ng/L		108	70 - 140
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		121	131		ng/L		109	65 - 145
PFMBA	ND		63.9	68.4		ng/L		107	60 - 150
NFDHA	ND		63.9	77.1		ng/L		121	50 - 150
PFMPA	ND		63.9	59.6		ng/L		93	55 - 140
9CI-PF3ONS	ND		119	123		ng/L		103	70 - 155
11CI-PF3OUdS	ND		121	98.3		ng/L		82	55 - 160
PFEESA	ND		57.0	58.1		ng/L		102	70 - 140
3:3 FTCA	ND		159	140		ng/L		88	65 - 130
5:3 FTCA	ND		797	781		ng/L		98	70 - 135
7:3 FTCA	ND		797	786		ng/L		99	50 - 145

Eurofins Sacramento

Page 25 of 37

Job ID: 320-108065-1

Client: Maul Foster & Alongi Inc Project/Site: TWAAFA, M0615.20.012

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24 (Continued)

	MS	MS	
Isotope Dilution	%Recovery	Qualifier	Limits
13C4 PFBA	86		5 - 130
13C5 PFPeA	87		40 - 130
13C5 PFHxA	84		40 - 130
13C4 PFHpA	88		40 - 130
13C8 PFOA	85		40 - 130
13C9 PFNA	88		40 - 130
13C6 PFDA	82		40 - 130
13C7 PFUnA	80		30 - 130
13C2 PFDoA	68		10 - 130
13C2 PFTeDA	58		10 - 130
13C3 PFBS	100		40 - 135
13C3 PFHxS	86		40 - 130
13C8 PFOS	89		40 - 130
13C8 FOSA	84		40 - 130
d3-NMeFOSAA	90		40 - 170
d5-NEtFOSAA	80		25 - 135
M2-4:2 FTS	100		40 - 200
M2-6:2 FTS	78		40 - 200
M2-8:2 FTS	78		40 - 300
13C3 HFPO-DA	76		40 - 130
d7-N-MeFOSE-M	60		10 - 130
d9-N-EtFOSE-M	51		10 - 130
d5-NEtPFOSA	68		10 - 130
d3-NMePFOSA	66		10 - 130

Lab Sample ID: 320-108065-5 MSD

Matrix: Water

Analysis Batch: 733325

Client Sample ID: SB-2A-1223	
Prep Type: Total/NA	

Prep Batch: 732202

Analysis Batom 700020									op De		
	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluorobutanoic acid (PFBA)	23		132	158		ng/L		102	70 - 140	4	30
Perfluoropentanoic acid (PFPeA)	ND		66.0	71.2		ng/L		108	65 - 135	4	30
Perfluorohexanoic acid (PFHxA)	ND	F1	33.0	51.1	F1	ng/L		150	70 - 145	10	30
Perfluoroheptanoic acid (PFHpA)	ND		33.0	34.1		ng/L		99	70 - 150	0	30
Perfluorooctanoic acid (PFOA)	4.1		33.0	36.8		ng/L		99	70 - 150	2	30
Perfluorononanoic acid (PFNA)	ND		33.0	32.1		ng/L		97	70 - 150	7	30
Perfluorodecanoic acid (PFDA)	ND		33.0	30.7		ng/L		93	70 - 140	2	30
Perfluoroundecanoic acid (PFUnA)	ND		33.0	32.0		ng/L		97	70 - 145	1	30
Perfluorododecanoic acid (PFDoA)	ND		33.0	36.3		ng/L		110	70 - 140	12	30
Perfluorotridecanoic acid (PFTrDA)	ND		33.0	32.1		ng/L		97	65 - 140	8	30
Perfluorotetradecanoic acid (PFTeA)	ND		33.0	31.4		ng/L		95	60 - 140	11	30
Perfluorobutanesulfonic acid (PFBS)	ND		29.3	34.5		ng/L		114	60 - 145	5	30
Perfluoropentanesulfonic acid (PFPeS)	ND		31.0	31.9		ng/L		103	65 - 140	0	30
Perfluorohexanesulfonic acid (PFHxS)	ND		30.1	29.5		ng/L		93	65 - 145	1	30
Perfluoroheptanesulfonic acid (PFHpS)	ND		31.5	29.1		ng/L		92	70 - 150	4	30

Page 26 of 37

Eurofins Sacramento

Client: Maul Foster & Alongi Inc Project/Site: TWAAFA, M0615.20.012 Job ID: 320-108065-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24 (Continued)

Lab Sample ID: 320-108065-5 MSD Client Sample ID: SB-2A-1223

Matrix: Water

Analysis Batch: 733325

Dilent Sample ID: SB-2A-1223
Prep Type: Total/NA

Prep Batch: 732202

Analyte	%Rec				MSD	MSD	Spike	Sample	Sample	-
Perfluoronanesulfonic acid ND 31.7 27.4 ng/L 86 65.145 Perfluoronanesulfonic acid ND 31.8 24.0 ng/L 75 60.145 Perfluorodecanesulfonic acid ND F1 32.0 13.9 F1 ng/L 43 50.145 Perfluorodecanesulfonic acid ND F1 32.0 13.9 F1 ng/L 43 50.145 10.0 Perfluorodecanesulfonic acid ND F1 32.0 13.9 F1 ng/L 43 50.145 10.0 Perfluorodecanesulfonic acid ND T2 T2 T2 T2 T2 T2 T2 T	Limits RF	%Rec	D	Unit	Qualifier	Result	Added	Qualifier	Result	Analyte
Perfluorodecanesulfonic acid ND 31.8 24.0 ng/L 75 60 . 145 FPDS)	55 - 150	96		ng/L		31.1	30.7		ND	
Perfluorododecanesulfonic acid ND F1 32.0 13.9 F1 ng/L 43 50.145 14 17 14 17 14 14 14 14	65 - 145	86		ng/L		27.4	31.7		ND	
(PFDoS) 4:2 FTS ND 123 99.4 ng/L 81 70 - 145 6:2 FTS ND 126 126 ng/L 100 65 - 155 8:2 FTS ND 127 129 ng/L 102 60 - 150 Perfluorooctanesulfonamide ND 33.0 33.0 ng/L 100 70 - 145 (FOSA) NMEFOSA ND 33.0 35.3 ng/L 107 60 - 150 1 NEIFOSA ND 33.0 32.1 ng/L 104 65 - 145 NMEFOSA ND 33.0 35.8 ng/L 104 65 - 145 NMEFOSE ND 33.0 35.8 ng/L 102 70 - 145 NEIFOSE ND 33.0 35.8 ng/L 102 70 - 145 NEIFOSE ND 33.0 35.8 ng/L 102 70 - 145 NEIFOSE ND 33.0 35.8 ng/L 102 70 - 145 NEIFOSE ND 33.0 34.2 ng/L 104 70 - 135 NEIFOSE ND 132 140 ng/L 104 70 - 135 NEIFOSE ND 132 140 ng/L 106 70 - 140 4.8-Dioxa-3H-perfluorononanoic ND 125 143 ng/L 114 65 - 145 acid (ADONA) PFMBA ND 66.0 69.2 ng/L 114 65 - 145 NEDHA ND 66.0 69.2 ng/L 114 50 - 150 NFDHA ND 66.0 61.1 ng/L 93 55 - 140 PFMPA ND 66.0 61.1 ng/L 93 55 - 140 PFLESA ND 58.9 60.1 ng/L 107 70 - 155 PFEESA ND 58.9 60.1 ng/L 107 70 - 140 3:3 FTCA ND 65 - 144 ng/L 87 65 - 130 5:3 FTCA	60 - 145	75		ng/L		24.0	31.8		ND	
6:2 FTS ND 126 126 ng/L 100 65 155 8:2 FTS ND 127 129 ng/L 102 60 - 150 Perfluoroctanesulfonamide ND 33.0 33.0 ng/L 100 70 - 145 (FOSA) NMeFOSA ND 33.0 35.3 ng/L 107 60 - 150 1 NEtFOSA ND 33.0 34.5 ng/L 104 65 - 145 NMeFOSAA ND 33.0 32.1 ng/L 97 50 - 140 NEtFOSA ND 33.0 35.8 ng/L 108 70 - 145 NMeFOSAA ND 33.0 35.8 ng/L 108 70 - 145 NMeFOSE ND 33.0 35.8 ng/L 102 70 - 145 NMeFOSE ND 33.0 35.8 ng/L 102 70 - 145 NEtFOSE ND 33.0 342 ng/L 104 70 - 135 HFPO-DA (GenX) ND 132 140 ng/L 106 70 - 140 4,8-Dioxa-3H-perfluoronanoic ND 125 143 ng/L 106 70 - 140 4,8-Dioxa-3H-perfluoronanoic ND 66.0 69.2 ng/L 114 65 - 145 acid (ADONA) PFMBA ND 66.0 75.5 ng/L 114 50 - 150 NFDHA ND 66.0 61.1 ng/L 93 55 - 140 PFMPA ND 66.0 61.1 ng/L 93 55 - 140 PFMPAN ND 123 132 ng/L 107 70 - 155 11CI-PF3OUIS ND 125 96.2 ng/L 77 55 - 160 PFEESA ND 58.9 60.1 ng/L 102 70 - 140 3:3 FTCA ND 824 791 ng/L 87 65 - 130 5:3 FTCA	50 - 145	43		ng/L	F1	13.9	32.0	F1	ND	
8:2 FTS ND 127 129 ng/L 102 60 - 150 Perfluorooctanesulfonamide (FOSA) ND 33.0 33.0 ng/L 100 70 - 145 NMeFOSA ND 33.0 35.3 ng/L 107 60 - 150 1 NEtFOSA ND 33.0 34.5 ng/L 104 65 - 145 NMeFOSAA ND 33.0 35.8 ng/L 197 50 - 140 NEtFOSAA ND 33.0 35.8 ng/L 102 70 - 145 NMeFOSE ND 330 338 ng/L 102 70 - 145 NEtFOSE ND 330 342 ng/L 104 70 - 145 NETFOSE ND 330 342 ng/L 104 70 - 135 HFPO-DA (GenX) ND 132 140 ng/L 106 70 - 140 4,8-Dioxa-3H-perfluorononanoic ND 125 143 ng/L 105 60 - 150 NFDHA ND 66.0 69.2 ng/L 105 60 - 150 <t< td=""><td>70 - 145</td><td>81</td><td></td><td>ng/L</td><td></td><td>99.4</td><td>123</td><td></td><td>ND</td><td>4:2 FTS</td></t<>	70 - 145	81		ng/L		99.4	123		ND	4:2 FTS
Perfluorooctanesulfonamide ND 33.0 33.0 ng/L 100 70 - 145	65 - 155	100		ng/L		126	126		ND	6:2 FTS
(FOSA) NMeFOSA ND 33.0 35.3 ng/L 107 60-150 1 NEtFOSA ND 33.0 34.5 ng/L 104 65-145 NMeFOSAA ND 33.0 32.1 ng/L 97 50-140 NEtFOSAA ND NETFOSA ND 33.0 35.8 ng/L 108 70-145 NMeFOSE ND 330 338 ng/L 102 70-145 NETFOSE ND 330 338 ng/L 102 70-145 NETFOSE ND 330 342 ng/L 104 70-135 HFPO-DA (GenX) ND 132 140 ng/L 106 70-140 4,8-Dioxa-3H-perfluorononanoic ND 125 143 ng/L 114 65-145 126 NFDHA ND 66.0 69.2 ng/L 114 50-150 NFDHA ND 66.0 75.5 ng/L 114 50-150 PFMPA ND 66.0 61.1 ng/L 93 55-140 9CI-PF3ONS ND 123 132 ng/L 107 70-155 11CI-PF3OUdS ND 125 96.2 ng/L 77 55-160 PFEESA ND 53 FTCA ND 824 791 ng/L 87 65-130 53 FTCA	60 - 150	102		ng/L		129	127		ND	8:2 FTS
NEIFOSA ND 33.0 34.5 ng/L 104 65 - 145 NMeFOSAA ND 33.0 32.1 ng/L 97 50 - 140 NEIFOSAA ND 33.0 35.8 ng/L 108 70 - 145 NMeFOSE ND 330 338 ng/L 102 70 - 145 NEIFOSE ND 330 342 ng/L 104 70 - 135 HFPO-DA (GenX) ND 132 140 ng/L 106 70 - 140 4,8-Dioxa-3H-perfluorononanoic ND 125 143 ng/L 114 65 - 145 acid (ADONA) PFMBA ND 66.0 69.2 ng/L 105 60 - 150 NFDHA ND 66.0 75.5 ng/L 114 50 - 150 PFMPA ND 66.0 61.1 ng/L 93 55 - 140 9CI-PF3ONS ND 123 132 ng/L 107 70 - 155 11CI-PF3OUdS <td< td=""><td>70 - 145</td><td>100</td><td></td><td>ng/L</td><td></td><td>33.0</td><td>33.0</td><td></td><td>ND</td><td></td></td<>	70 - 145	100		ng/L		33.0	33.0		ND	
NMeFOSAA ND 33.0 32.1 ng/L 97 50 - 140 NEtFOSAA ND 33.0 35.8 ng/L 108 70 - 145 NMeFOSE ND 330 338 ng/L 102 70 - 145 NEtFOSE ND 330 342 ng/L 104 70 - 135 HFPO-DA (GenX) ND 132 140 ng/L 106 70 - 140 4,8-Dioxa-3H-perfluorononanoic ND 125 143 ng/L 114 65 - 145 acid (ADONA) PFMBA ND 66.0 69.2 ng/L 105 60 - 150 NFDHA ND 66.0 75.5 ng/L 114 50 - 150 PFMPA ND 66.0 61.1 ng/L 93 55 - 140 9CI-PF3ONS ND 123 132 ng/L 107 70 - 155 11CI-PF3OUdS ND 125 96.2 ng/L 77 55 - 160 PFEESA ND	60 - 150	107		ng/L		35.3	33.0		ND	NMeFOSA
NEtFOSAA ND 33.0 35.8 ng/L 108 70 - 145 NMeFOSE ND 330 338 ng/L 102 70 - 145 NEtFOSE ND 330 342 ng/L 104 70 - 135 HFPO-DA (GenX) ND 132 140 ng/L 106 70 - 140 4,8-Dioxa-3H-perfluorononanoic ND 125 143 ng/L 114 65 - 145 acid (ADONA) ND 66.0 69.2 ng/L 105 60 - 150 NFDHA ND 66.0 75.5 ng/L 114 50 - 150 NFDHA ND 66.0 61.1 ng/L 93 55 - 140 9CI-PF3ONS ND 123 132 ng/L 107 70 - 155 11CI-PF3OUdS ND 125 96.2 ng/L 77 55 - 160 PFEESA ND 58.9 60.1 ng/L 102 70 - 140 3:3 FTCA ND 824<	65 - 145	104		ng/L		34.5	33.0		ND	NEtFOSA
NMeFOSE ND 330 338 ng/L 102 70 - 145 NEtFOSE ND 330 342 ng/L 104 70 - 135 HFPO-DA (GenX) ND 132 140 ng/L 106 70 - 140 4,8-Dioxa-3H-perfluorononanoic ND 125 143 ng/L 114 65 - 145 acid (ADONA) PFMBA ND 66.0 69.2 ng/L 105 60 - 150 NFDHA ND 66.0 75.5 ng/L 114 50 - 150 PFMPA ND 66.0 61.1 ng/L 93 55 - 140 9CI-PF3ONS ND 123 132 ng/L 107 70 - 155 11CI-PF3OUdS ND 125 96.2 ng/L 77 55 - 160 PFEESA ND 58.9 60.1 ng/L 102 70 - 140 3:3 FTCA ND 824 791 ng/L 96 70 - 135	50 - 140	97		ng/L		32.1	33.0		ND	NMeFOSAA
NEtFOSE ND 330 342 ng/L 104 70 - 135 HFPO-DA (GenX) ND 132 140 ng/L 106 70 - 140 4,8-Dioxa-3H-perfluorononanoic ND 125 143 ng/L 114 65 - 145 acid (ADONA) ND 66.0 69.2 ng/L 105 60 - 150 NFDHA ND 66.0 75.5 ng/L 114 50 - 150 PFMPA ND 66.0 61.1 ng/L 93 55 - 140 9CI-PF3ONS ND 123 132 ng/L 107 70 - 155 11CI-PF3OUdS ND 125 96.2 ng/L 77 55 - 160 PFEESA ND 58.9 60.1 ng/L 102 70 - 140 3:3 FTCA ND 824 791 ng/L 96 70 - 135	70 - 145	108		ng/L		35.8	33.0		ND	NEtFOSAA
HFPO-DA (GenX) ND 132 140 ng/L 106 70 - 140 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) ND 125 143 ng/L 114 65 - 145 PFMBA ND 66.0 69.2 ng/L 105 60 - 150 NFDHA ND 66.0 75.5 ng/L 114 50 - 150 PFMPA ND 66.0 61.1 ng/L 93 55 - 140 9CI-PF3ONS ND 123 132 ng/L 107 70 - 155 11CI-PF3OUdS ND 125 96.2 ng/L 77 55 - 160 PFEESA ND 58.9 60.1 ng/L 102 70 - 140 3:3 FTCA ND 824 791 ng/L 96 70 - 135	70 - 145	102		ng/L		338	330		ND	NMeFOSE
4,8-Dioxa-3H-perfluorononanoic acid (ADONA) ND 125 143 ng/L 114 65 - 145 PFMBA ND 66.0 69.2 ng/L 105 60 - 150 NFDHA ND 66.0 75.5 ng/L 114 50 - 150 PFMPA ND 66.0 61.1 ng/L 93 55 - 140 9CI-PF3ONS ND 123 132 ng/L 107 70 - 155 11CI-PF3OUdS ND 125 96.2 ng/L 77 55 - 160 PFEESA ND 58.9 60.1 ng/L 102 70 - 140 3:3 FTCA ND 165 144 ng/L 87 65 - 130 5:3 FTCA ND 824 791 ng/L 96 70 - 135	70 - 135	104		ng/L		342	330		ND	NEtFOSE
acid (ADONA) PFMBA ND 66.0 69.2 ng/L 105 60 - 150 NFDHA ND 66.0 75.5 ng/L 114 50 - 150 PFMPA ND 66.0 61.1 ng/L 93 55 - 140 9CI-PF3ONS ND 123 132 ng/L 107 70 - 155 11CI-PF3OUdS ND 125 96.2 ng/L 77 55 - 160 PFEESA ND 58.9 60.1 ng/L 102 70 - 140 3:3 FTCA ND 165 144 ng/L 87 65 - 130 5:3 FTCA ND 824 791 ng/L 96 70 - 135	70 - 140	106		ng/L		140	132		ND	HFPO-DA (GenX)
NFDHA ND 66.0 75.5 ng/L 114 50 - 150 PFMPA ND 66.0 61.1 ng/L 93 55 - 140 9CI-PF3ONS ND 123 132 ng/L 107 70 - 155 11CI-PF3OUdS ND 125 96.2 ng/L 77 55 - 160 PFEESA ND 58.9 60.1 ng/L 102 70 - 140 3:3 FTCA ND 165 144 ng/L 87 65 - 130 5:3 FTCA ND 824 791 ng/L 96 70 - 135	65 - 145	114		ng/L		143	125		ND	•
PFMPA ND 66.0 61.1 ng/L 93 55 - 140 9CI-PF3ONS ND 123 132 ng/L 107 70 - 155 11CI-PF3OUdS ND 125 96.2 ng/L 77 55 - 160 PFEESA ND 58.9 60.1 ng/L 102 70 - 140 3:3 FTCA ND 165 144 ng/L 87 65 - 130 5:3 FTCA ND 824 791 ng/L 96 70 - 135	60 - 150	105		ng/L		69.2	66.0		ND	PFMBA
9CI-PF3ONS ND 123 132 ng/L 107 70 - 155 11CI-PF3OUdS ND 125 96.2 ng/L 77 55 - 160 PFEESA ND 58.9 60.1 ng/L 102 70 - 140 3:3 FTCA ND 165 144 ng/L 87 65 - 130 5:3 FTCA ND 824 791 ng/L 96 70 - 135	50 - 150	114		ng/L		75.5	66.0		ND	NFDHA
11CI-PF3OUdS ND 125 96.2 ng/L 77 55 - 160 PFEESA ND 58.9 60.1 ng/L 102 70 - 140 3:3 FTCA ND 165 144 ng/L 87 65 - 130 5:3 FTCA ND 824 791 ng/L 96 70 - 135	55 - 140	93		ng/L		61.1	66.0		ND	PFMPA
PFEESA ND 58.9 60.1 ng/L 102 70 - 140 3:3 FTCA ND 165 144 ng/L 87 65 - 130 5:3 FTCA ND 824 791 ng/L 96 70 - 135	70 - 155	107		ng/L		132	123		ND	9CI-PF3ONS
3:3 FTCA ND 165 144 ng/L 87 65 - 130 5:3 FTCA ND 824 791 ng/L 96 70 - 135	55 - 160	77		ng/L		96.2	125		ND	11CI-PF3OUdS
5:3 FTCA ND 824 791 ng/L 96 70 - 135	70 - 140	102		ng/L		60.1	58.9		ND	PFEESA
	65 - 130	87		ng/L		144	165		ND	3:3 FTCA
7:3 ETCA ND 824 903 pg/l 07 50 145	70 - 135	96		ng/L		791	824		ND	5:3 FTCA
7.3 FTCA ND 024 003 Hg/L 97 30 - 143	50 - 145	97		ng/L		803	824		ND	7:3 FTCA

MSD MSD

	IIIOD	MOD	
Isotope Dilution	%Recovery	Qualifier	Limits
13C4 PFBA	86		5 - 130
13C5 PFPeA	84		40 - 130
13C5 PFHxA	82		40 - 130
13C4 PFHpA	86		40 - 130
13C8 PFOA	84		40 - 130
13C9 PFNA	85		40 - 130
13C6 PFDA	87		40 - 130
13C7 PFUnA	76		30 - 130
13C2 PFDoA	59		10 - 130
13C2 PFTeDA	45		10 - 130
13C3 PFBS	99		40 - 135
13C3 PFHxS	89		40 - 130
13C8 PFOS	83		40 - 130
13C8 FOSA	83		40 - 130
d3-NMeFOSAA	84		40 - 170
d5-NEtFOSAA	74		25 - 135
M2-4:2 FTS	104		40 - 200

Eurofins Sacramento

Page 27 of 37

9

3

5

7

8

10

12

13

14

1

1/23/2024

Client: Maul Foster & Alongi Inc Job ID: 320-108065-1

Project/Site: TWAAFA, M0615.20.012

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24 (Continued)

Lab Sample ID: 320-108065-5 MSD Client Sample ID: SB-2A-1223 **Matrix: Water**

Analysis Batch: 733325

	MSD	MSD	
Isotope Dilution	%Recovery	Qualifier	Limits
M2-6:2 FTS	83		40 - 200
M2-8:2 FTS	79		40 - 300
13C3 HFPO-DA	72		40 - 130
d7-N-MeFOSE-M	55		10 - 130
d9-N-EtFOSE-M	46		10 - 130
d5-NEtPFOSA	63		10 - 130
d3-NMePFOSA	64		10 - 130

Prep Type: Total/NA

Prep Batch: 732202

QC Association Summary

Client: Maul Foster & Alongi Inc Job ID: 320-108065-1 Project/Site: TWAAFA, M0615.20.012

LCMS

Prep Batch: 732202

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-108065-1	TWA-3-1223	Total/NA	Water	1633	
320-108065-1 - RA	TWA-3-1223	Total/NA	Water	1633	
320-108065-2	TWA-9-3-1223	Total/NA	Water	1633	
320-108065-3	Rinsate Blank1-1223	Total/NA	Water	1633	
320-108065-4	Field Blank1-1223	Total/NA	Water	1633	
320-108065-5	SB-2A-1223	Total/NA	Water	1633	
320-108065-6	Rinsate Blank2-1223	Total/NA	Water	1633	
320-108065-7	Trip Blank1-1223	Total/NA	Water	1633	
MB 320-732202/1-A	Method Blank	Total/NA	Water	1633	
LCS 320-732202/3-A	Lab Control Sample	Total/NA	Water	1633	
LLCS 320-732202/2-A	Lab Control Sample	Total/NA	Water	1633	
320-108065-5 MS	SB-2A-1223	Total/NA	Water	1633	
320-108065-5 MSD	SB-2A-1223	Total/NA	Water	1633	

Analysis Batch: 733325

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-108065-1	TWA-3-1223	Total/NA	Water	1633	732202
320-108065-2	TWA-9-3-1223	Total/NA	Water	1633	732202
320-108065-3	Rinsate Blank1-1223	Total/NA	Water	1633	732202
320-108065-4	Field Blank1-1223	Total/NA	Water	1633	732202
320-108065-5	SB-2A-1223	Total/NA	Water	1633	732202
320-108065-6	Rinsate Blank2-1223	Total/NA	Water	1633	732202
320-108065-7	Trip Blank1-1223	Total/NA	Water	1633	732202
MB 320-732202/1-A	Method Blank	Total/NA	Water	1633	732202
LCS 320-732202/3-A	Lab Control Sample	Total/NA	Water	1633	732202
LLCS 320-732202/2-A	Lab Control Sample	Total/NA	Water	1633	732202
320-108065-5 MS	SB-2A-1223	Total/NA	Water	1633	732202
320-108065-5 MSD	SB-2A-1223	Total/NA	Water	1633	732202

Analysis Batch: 733755

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-108065-1 - RA	TWA-3-1223	Total/NA	Water	1633	732202

Eurofins Sacramento

Page 29 of 37

2

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Job ID: 320-108065-1

Client: Maul Foster & Alongi Inc Project/Site: TWAAFA, M0615.20.012

Client Sample ID: TWA-3-1223

Date Collected: 12/12/23 12:40 Date Received: 12/14/23 09:15 Lab Sample ID: 320-108065-1

Matrix: Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	1633			489.5 mL	5.0 mL	732202	01/09/24 11:44	JS	EET SAC
Total/NA	Analysis	1633		1			733325	01/13/24 23:50	EMF	EET SAC
Total/NA	Prep	1633	RA		489.5 mL	5.0 mL	732202	01/09/24 11:44	JS	EET SAC
Total/NA	Analysis	1633	RA	1	1 mL	1 mL	733755	01/15/24 16:42	S1M	EET SAC

Client Sample ID: TWA-9-3-1223

Date Collected: 12/12/23 12:40 Date Received: 12/14/23 09:15

Lab Sample ID: 320-108065-2 **Matrix: Water**

Batch Batch Dil Initial Batch Final Prepared Method Number or Analyzed **Prep Type Factor Amount** Amount Analyst Type Run Lab 732202 Total/NA Prep 1633 486.9 mL 5.0 mL 01/09/24 11:44 JS **EET SAC** 733325 Total/NA 1633 01/14/24 00:08 EMF Analysis **EET SAC** 1

Client Sample ID: Rinsate Blank1-1223

Date Collected: 12/12/23 13:15 Date Received: 12/14/23 09:15

Lab Sample ID: 320-108065-3

Lab Sample ID: 320-108065-4

Matrix: Water

Batch Batch Dil Initial Final Batch Prepared Method **Prep Type** Type Run **Factor** Amount **Amount** Number or Analyzed Analyst Lab Total/NA Prep 1633 533.5 mL 5.0 mL 732202 01/09/24 11:44 JS **EET SAC** Total/NA Analysis 1633 733325 01/14/24 00:26 EMF **EET SAC** 1

Client Sample ID: Field Blank1-1223

Date Collected: 12/12/23 15:50

Date Received: 12/14/23 09:15

Pre	р Туре	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Tota	al/NA	Prep	1633			503.1 mL	5.0 mL	732202	01/09/24 11:44	JS	EET SAC
Tota	al/NA	Analysis	1633		1			733325	01/14/24 00:43	EMF	EET SAC

Client Sample ID: SB-2A-1223

Date Collected: 12/12/23 16:15

Lab Sample ID: 320-108065-5 **Matrix: Water** Date Received: 12/14/23 09:15

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	1633			492.7 mL	5.0 mL	732202	01/09/24 11:44	JS	EET SAC
Total/NA	Analysis	1633		1			733325	01/14/24 01:01	EMF	EET SAC

Client Sample ID: Rinsate Blank2-1223

Date Collected: 12/12/23 16:40

Date Received: 12/14/23 09:15

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	1633			507.1 mL	5.0 mL	732202	01/09/24 11:44	JS	EET SAC
Total/NA	Analysis	1633		1			733325	01/14/24 02:29	EMF	EET SAC

Eurofins Sacramento

1/23/2024

Page 30 of 37

10

Matrix: Water

Lab Chronicle

Client: Maul Foster & Alongi Inc Job ID: 320-108065-1

Project/Site: TWAAFA, M0615.20.012

Client Sample ID: Trip Blank1-1223 Lab Sample ID: 320-108065-7

Date Collected: 12/12/23 12:00 **Matrix: Water** Date Received: 12/14/23 09:15

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	1633			582.2 mL	5.0 mL	732202	01/09/24 11:44	JS	EET SAC
Total/NA	Analysis	1633		1			733325	01/14/24 02:47	EMF	EET SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: Maul Foster & Alongi Inc Job ID: 320-108065-1

Project/Site: TWAAFA, M0615.20.012

Laboratory: Eurofins Sacramento

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C581	05-05-24

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Method Summary

Client: Maul Foster & Alongi Inc Project/Site: TWAAFA, M0615.20.012 Job ID: 320-108065-1

Method	Method Description	Protocol	Laboratory
1633	Per- and Polyfluoroalkyl Substances by LC/MS/MS, QSM Table B-24	EPA	EET SAC
1633	Solid-Phase Extraction (SPE)	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

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

Sample Summary

Client: Maul Foster & Alongi Inc Project/Site: TWAAFA, M0615.20.012

Job ID: 320-108065-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-108065-1	TWA-3-1223	Water	12/12/23 12:40	12/14/23 09:15
320-108065-2	TWA-9-3-1223	Water	12/12/23 12:40	12/14/23 09:15
320-108065-3	Rinsate Blank1-1223	Water	12/12/23 13:15	12/14/23 09:15
320-108065-4	Field Blank1-1223	Water	12/12/23 15:50	12/14/23 09:15
320-108065-5	SB-2A-1223	Water	12/12/23 16:15	12/14/23 09:15
320-108065-6	Rinsate Blank2-1223	Water	12/12/23 16:40	12/14/23 09:15
320-108065-7	Trip Blank1-1223	Water	12/12/23 12:00	12/14/23 09:15

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		Lab	İ	Carrier Tracking No(s);	COC No:
Client Information	Chrstan > 400	17	Justing Gronzales		***************************************
Audion Hackett	541-391-3652	型 で いっ	Just an Gorcal SCET GUE Fas	State of Origin:	Page:
May Foster & Hong Inc	:OIS/Mal				Job #.
ty of puc	Due Date Requested:			The second secon	1
2 AVK 31K	TAT Requested (days):				HCL N. M.
	-				Zn Acetate
WA 48121	Compliance Project: A Yes A No				Nitric Acid NaHSO4
Phone: 206 331-1835	PO #.		320-108065	Chain of Custody	: w ⊢
	WO#:		(0)	-	I ce V
Project Name: TWAMEN Actof town (PW Sermpl, nu	Project#.				ㅈㄱ
			Y) as	noo 10	Other
	Sample Type	ole Matrix e (Wewater, Sessitie,	i bərəliri Məm moʻ 니니 (TegmuN ['] lı	
Sample Identification.		의 훈			Special Instructions/Note:
TWA-3-1223	2 24 21 E2/21/21	3	× 2 2		
TWA-9-3-1223	12 40	3	X		THE PROPERTY OF THE PROPERTY O
Rinsute Blankl-1223	12/12/23 1315 6	3	× 35 ×	×	The state of the s
Field Blank! -1223	12/12/23 15 50 6	3	N N	M	
58-24-1223	12/12/23 16 15 6	3	XXX	<i>b</i>	MS/MSD
Rusate Blank2-1223	9 on 11 52/21/21	3	XAX	160	
Tr. Blank1-1223	12/12/23 12 00 6	3	XXV	2	
	AND THE PROPERTY OF THE PROPER				The state of the s
Possible Hazard Identification Non-Hazard — Flammable Skin Inflant Poison B	son B Unknown Radiological	oical	Sample Disposal (A fee m	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) Return To Client Disposal By Lab Mor	tained longer than 1 month) Archive For
Other (specify)			Special Instructions/QC Requirements:		
nquished by:	Date:		Тіте:	Method of Shipment:	
Neinguarrecty.	3/23 15	CO LECT	Real Part Control	Date/Time:	COMPany Company
Reinquished by:	Date/Time:	Company	Received by:	Date/Tinfe:	Сотрапу
	Date/Time:	Сотрапу	Received by:	Date/Time:	Сотралу
Custody Seals Intact Custody Seal No. 12-4467	2204427 1104422		Cooler Temperature(s) °C and Other Remarks:	Other Remarks: 0 5	The state of the s
					Ver 01/16/2019

🔅 eurofins | Environment Testing

Chain of Custody Record

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

Environment Testing

Sacramento Sample Receiving Notes (SSRN)

Loc 320 108065			Tra	cking# 7879 8695 5416	-
Job			s	O (PO) FO / SAT / 2-Day / Ground / UPS / CDO / Couri	er
				SSL / OnTrac / Goldstreak / USPS / Other	
Han this form to record Savenia Contrato Cont	Saalar C	untadu			-
File in the job folder with the COC	ooier C	ustoay	Seal ler	nperature & corrected Temperature & other observations.	
Therm ID <u>LUL</u> Corr Factor	(+/-)		_°C	Notes	
lce Wet Gel	Othe	r			
Cooler Custody Seal 224071	2000	·	······································		
Cooler Custody Seal VL9971	007	100			
Cooler ID			······		
Temp Observed 6 5 °C Correct	ted <i>(</i>	5.5	°C		
	ple 🗅	•	_ ~		—
•					—
Opening/Processing The Shipment Cooler compromised/tampered with?	Yes	No.	NA D		—
Cooler Temperature is acceptable?	₽\ P\		ם		
Frozen samples show signs of thaw?			5 2″		
Initials M Date 12/14/03	_ 	_	7		
Initials 7000 Date. Vol. 1000					
Unpacking/Labeling The Samples	<u>Yes</u>	<u>No</u>	<u>NA</u>		
Containers are not broken or leaking?	<u> </u>		_		
Samples compromised/tampered with?	_ 	5	ם	Trizma Lot #(s)	
COC is complete w/o discrepancies	2		_		•
Sample custody seal?	n n	Ø –	ם		-
Sample containers have legible labels? Sample date/times are provided?	<u>മ</u>	<u> </u>	ם		-
Appropriate containers are used?	o o	ם	ם	Ammonium	
Sample bottles are completely filled?	D/	ם	ם	Acetate Lot #(s)	_
Sample preservatives verified?	ם	ם	മ്		
Is the Field Sampler's name on COC?		ם	ם		•
Samples w/o discrepancies?	□ ′	ם	ם		•
Zero headspace?*	ם	ם	□⁄		
Alkalinity has no headspace?	ם	_	ם ׄ ם′	Login Completion <u>Yes</u> <u>No</u>	NA
Perchlorate has headspace?			rd	Receipt Temperature on COC?	ر ۵
(Methods 314 331 6850)	ם	□	L	NCM Filed?	Ø
Multiphasic samples are not present?	ď	D		Samples received within hold time?	_
				Log Release checked in TALS?	ם
*Containers requiring zero headspace have no headspac	e, or bubb	le < 6 mn	(1/4")		
Initials MV Date. 12 141 23				Initials MAN Data 12/14/23	

1/23/2024

Client: Maul Foster & Alongi Inc Job Number: 320-108065-1

Login Number: 108065 List Source: Eurofins Sacramento

List Number: 1

Creator: Oropeza, Salvador

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