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December 28, 2022

Via Electronic Delivery

Mr. Brian Dietz
CHS Enforcement / Fund Lead Site Assessment Division
Waste Management Administration
Maryland Department of the Environment
1800 Washington Blvd.
Baltimore, MD 21230

RE: 2022 Annual Groundwater and Surface Water Summary Report – Environmental Covenant

Dear Mr. Dietz:

In accordance with the Eastalco Environmental Covenant dated December 12, 2017, the attached report documents the results of the 2022 groundwater and surface water monitoring conducted under the Groundwater & Surface Water Monitoring Plan submitted in 2011. Quantum Loophole acquired the property from ALCOA on June 28, 2021, and has assumed the monitoring and reporting requirements at the facility per the Environmental Covenant and the Site Management Plan, a component of the Environmental Covenant.

Please contact Bill Williams – Chief Operations Officer, if you require additional information or have any questions regarding this report. I can be reached at (703) 505-9378 or via email at bill@ql.email.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,

A handwritten signature in black ink, appearing to read "Bill Williams". The signature is fluid and cursive, with a long, sweeping underline that extends to the right.

Bill Williams
Chief Operations Officer

cc: Dustin Moore, Tetra Tech

Quantum Maryland, LLC

Groundwater and Surface Water Monitoring Report

QUANTUM MARYLAND, LLC



December 2022



Groundwater and Surface Water Monitoring Report

Quantum Maryland, LLC
December 2022

PRESENTED TO

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PRESENTED BY

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1.0 INTRODUCTION

This annual monitoring report was prepared by Tetra Tech, Inc (Tetra Tech) for Quantum Maryland, LLC (Quantum) to document and evaluate the results of groundwater monitoring and surface water monitoring activities completed in 2022 at the former Eastalco Works aluminum smelter located in Frederick, Maryland (Figure 1-1). Quantum acquired the property from the Eastalco Aluminum Company (Eastalco) on June 28, 2021. The site is now referred to as Quantum Fredrick. Quantum has begun the permitting and design process for a master planned, first-of-its-kind, clean cloud community campus to be located on the property while continuing groundwater and surface water monitoring at the facility per the requirements of the Environmental Covenant (EC) executed on December 12, 2017 (Eastalco, 2017) and the Site Management Plan (SMP), a component of the EC. The EC replaces the previous Administrative Consent Order (ACO) CO-07-026. This monitoring report presents the results of the semiannual and annual groundwater and surface water monitoring activities performed in 2022 in accordance with the Groundwater and Surface Water Monitoring Plan (Tetra Tech, 2011; Exhibit F of the EC).

1.1 OVERVIEW

Aluminum production was curtailed at the Eastalco smelter in December 2005, and the plant was formally closed in March 2010. Demolition of the plant was completed in June 2016. Regrading and seeding of the former plant area were completed by early 2017.

The 2007 ACO CO-07-026 required Eastalco to monitor fluoride concentrations in groundwater and free cyanide concentrations in surface water. A monitoring plan to address the ACO requirements was initially submitted in 2007 and revised in 2011. Groundwater and surface water monitoring occur semiannually and annually, respectively, and reports are submitted annually as approved by Maryland Department of the Environment (MDE, 2017).

The EC was executed in December 2017 and placed restrictions on land and groundwater use as a means of managing contamination and protecting human health and the environment during current and future activities/redevelopment. The SMP addresses the remediation and future management of known and potential environmental concerns (such as contaminated groundwater and surface water) associated with the former facility's operations. In the Activity and Use Limitations (Paragraph 6) of the EC, the property owner, now Quantum, is required to maintain compliance with long-term groundwater monitoring on the site in accordance with the Groundwater and Surface Water Monitoring Plan (Tetra Tech, 2011).

Per the Monitoring Plan, the annual report will contain the following:

1. A complete copy of the laboratory data;
2. A comparison of the results against the Definitions of Contamination;
3. Concentration maps depicting total contaminant concentrations measured during the monitoring events;

4. As applicable, charts depicting concentration trends for fluoride in groundwater and free cyanide in surface water using linear regression to calculate a straight line that best fits the data;
5. A summary of all groundwater elevations measured at the wells included in this monitoring program; and
6. A narrative discussion concerning background information, sampling procedures, and results/trends, etc.

This report contains the above items for the groundwater monitoring events performed during the first and third quarters of 2022, and the surface water monitoring event which was conducted during the third quarter of 2022.

1.2 DOCUMENT ORGANIZATION

Section 2 provides a description of the site setting, and Section 3 describes the monitoring tasks that were performed during the 2022 calendar year. Section 4 provides results and associated conclusions.

2.0 SITE SETTINGS

2.1 TOPOGRAPHY

The Quantum Frederick facility (formerly known as the Eastalco facility) is located in the Frederick Valley, a synclinal structure characterized by gently rolling topography. Natural elevations at the site range from approximately 300 feet above sea level in the low areas to about 400 feet in the higher areas (Figure 1-1).

2.2 SURFACE WATER

The site is drained by Tuscarora Creek, a tributary of the Potomac River, located east of the plant. There is also an unnamed tributary to the west that flows south to join Tuscarora Creek. Tuscarora Creek then flows south into the Potomac River. Several man-made drainage ditches flow into Tuscarora Creek or the unnamed tributary.

2.3 GEOLOGY

2.3.1 Regional Geology

The Quantum Frederick facility is located in the southwest corner of a geologic feature known as the Frederick Valley. The valley is the topographic expression of a subsurface asymmetrical synclinorium composed of folded Cambro-Ordovician carbonates and siltstones of the Araby, Frederick, and Grove Formations. The elongated western limb of the synclinorium is truncated by an angular unconformity and overlain by Triassic "redbed" sedimentary strata of the Newark Group, which includes the New Oxford Formation and the Gettysburg Shale. The eastern limb of the synclinorium is foreshortened and in some cases overturned. It is bounded to the east by Precambrian metasedimentary rocks of the Western Piedmont.

The Quantum property straddles the contact between the Triassic siltstones, sandstones, and shale of the New Oxford Formation and the Cambrian limestone of the Adamstown member of the Frederick Formation. The bedrock surface expression of this contact trends north-northeast by south-southwest and dips west-northwest. On the Quantum property, it is located approximately 200 feet southeast of the closed North landfill. From east to west across the Quantum property, the depth to the contact between the New Oxford and Frederick Formations varies from 0 feet at the bedrock surface contact to 90 feet beneath the closed North Landfill. The contact surface is irregular, reflecting the erosional nature of the angular unconformity, which defines the contact between these formations in the subsurface; but, in general, the depth to the contact increases westward.

The Frederick Formation is a thin-bedded, laminated limestone with argillaceous partings and shaley zones. Estimated thickness is approximately 500 feet. The Frederick Formation has been subdivided into three members designated in ascending order: Spring Station, Adamstown, and Lime Kiln. The Adamstown member underlies the south and eastern portion of the plant site and consists of laminated, fine grained, thinly

bedded, argillaceous, dark gray limestone. The beds have a north-northeast strike and dip about 40° to the east.

The New Oxford Formation consists of interbedded red and gray arkosic sandstone, red shale, and siltstone. A distinctive limestone/quartz pebble conglomerate at the base of the unit displays a mottled red and gray texture. Sandstone beds in this formation are lenticular and prone to pinching out over short distances. The total estimated thickness of the unit is 4,500 feet. In the vicinity of Quantum's property, beds of the New Oxford Formation underlie the western and northern portion of the property. The strike of these beds is north to south, and dip is to the west at 5°.

2.3.2 Site Geology

Based on lithologic logs generated during installation of soil borings and monitoring wells at the facility, unconsolidated materials above bedrock (overburden) are composed of clay and silt with varying amounts of sand, gravel, and angular rock fragments. Near surface materials are composed of reddish orange to reddish brown, dense, compact silty clay, with occasional sandstone and shale fragments, gravel, and cobbles. Poorly graded limestone gravel is present at the surface at some locations.

Site boring logs indicate that deeper unconsolidated materials (weathered bedrock) are composed of reddish brown to yellowish orange silt, clay, and occasional zones of clayey gravel. The logs note relict bedding (inclined 20 to 30 degrees from horizontal), micaceous inclusions, and quartzite fragments. Several past reports identify this unconsolidated residual material as saprolite; however, saprolite is derived from the in-situ weathering of igneous or metamorphic material retaining many of the visual characteristics of the parent rock. The deeper unconsolidated materials at the site retain some of the characteristics of the parent rock; but they are derived from in-situ weathering of limestone. The thickness of this highly weathered limestone, which grades into the overlying silty clay unit, varies but averages about 5 feet.

The Quantum property is located within the northeast-trending Frederick syncline. According to geologic maps prepared by the Maryland Geological Survey (MGS), two bedrock formations are present beneath the site: the New Oxford and Frederick Limestone Formations (MGS, 1968). The New Oxford Formation is composed of interbedded red and gray arkosic sandstone, red shale and siltstone, with a basal conglomerate containing a red and gray calcareous matrix (MGS, 1981). The New Oxford Formation overlies the Frederick Formation. To the northwest of the Substation Area, the New Oxford Formation is reportedly about 90 feet thick (beneath the north industrial Landfill) and thicknesses of the New Oxford increase to the west (Atlantic, 1996). The Upper Cambrian bedrock beneath the eastern portion of the Site is the Frederick Limestone Formation, which consists of highly jointed and fractured, thinly bedded, argillaceous limestone with minor shale (MGS, 1981).

The Site-Wide Investigation Report (MFG, 2005) contains a topographic map of the bedrock surface from the western portion of the plant to the southern property boundary that was developed based on survey data and logs of existing wells and former construction borings. The undulating bedrock surface slopes from north to south with a bedrock trough that starts near the former Substation Area and appears to extend southward to the property boundary.

2.4 HYDROGEOLOGY

2.4.1 Regional Hydrogeology

Information on the regional hydrogeology was obtained from the Groundwater Atlas of the United States published by the United States Geological Survey. In the Frederick Valley area, significant sources of groundwater exist in the carbonate rock aquifers. The Frederick Limestone, which underlies most of the site, has a typical well yield of 120 to 170 gallons per minute (GPM) and can yield up to 275 GPM in some areas. The carbonate rocks of the Piedmont have virtually no primary porosity, and water in these rocks moves through secondary openings such as fractures, bedding planes, joints, and faults. Water moving through the secondary openings dissolves the carbonate rock and forms dissolution channels to create an interconnected network of openings, greatly increasing the porosity of the rock. Most of the water obtained from bedrock in this area is found in fractures and dissolution channels.

2.4.2 Site Hydrogeology

The groundwater system beneath the site consists of two water-bearing units: an overburden water bearing zone and a bedrock water bearing zone. Based on lithologic descriptions of the overburden materials, most groundwater flow likely occurs in the highly fractured zone (weathered bedrock) located directly above the competent bedrock (Atlantic, 1996). Groundwater movement in bedrock beneath the site typically occurs through fractures. In both the overburden and bedrock zones, the general direction of horizontal groundwater flow across the plant is toward the southeast (MFG, 2005).

3.0 MONITORING PROGRAM

3.1 MONITORING PLAN SUMMARY

Table 3-1 summarizes the monitoring program (i.e., monitoring points and frequencies) as described in the associated monitoring plan. Figure 3-1 shows the monitoring point locations and also indicates monitoring frequencies (semiannual or annual). Five monitoring wells were sampled during the first quarter event on March 28 and March 29, 2022. Eighteen monitoring wells were sampled during the third quarter event on September 26 through 29, 2022. Annual surface water samples from three monitoring points were collected on September 29, 2022.

3.2 SAMPLING AND ANALYSIS

Groundwater and surface water samples were collected in accordance with the standard operating procedures (SOPs) appended to the Groundwater and Surface Water Monitoring Plan (Tetra Tech, 2011). Field measurements, including water levels, pH, conductivity, dissolved oxygen, turbidity, oxidation reduction potential (ORP), and temperature, were collected during purging activities.

The samples were submitted to an off-site laboratory, Eurofins Lancaster Laboratories Environment Testing in Lancaster, Pennsylvania. The Practical Quantitation Limits (PQLs) are 0.1 milligrams per liter (mg/L) for fluoride and 0.006 mg/L for free cyanide.

4.0 RESULTS AND CONCLUSIONS

Groundwater field data collected during the March and September 2022 events are provided in Tables 4-1 and 4-2, respectively. The results of fluoride analyses performed on groundwater samples during the two monitoring events in 2022 are provided in Tables 4-3 and 4-4; results of free cyanide analyses performed on surface water samples collected during the third quarter monitoring event in 2022 are also provided in Table 4-4. The results are also summarized on Figures 4-1 and 4-2.

Figures 4-3 through 4-5 are plots of temporal total fluoride concentrations near the source area, downgradient/cross gradient of the source area, and near the property boundary, respectively. Figure 4-6 is a plot of temporal free cyanide concentrations at the three surface water monitoring locations. The charts contain data collected from 2005 to the present to evaluate concentrations before and after the plant's curtailment in December 2005.

Figures 4-3 through 4-6 also show post-curtailment trends, where applicable. Results are compared to the maximum contaminant level (MCL) for fluoride (4 mg/l) (i.e., 40 Code of Federal Regulations [CFR] 141.62), and the Maryland surface water quality criteria for free cyanide (0.0052 mg/l) (i.e., Code of Maryland Regulations [COMAR] 26.08.02.03-2).

4.1 GROUNDWATER

4.1.1 Source Area

During the post-curtailment period, fluoride concentrations in groundwater near historical source areas (i.e., former Waste Disposal Site #10 [WDS-10] covered in 2016; and North and South Ponds, removed from service in 2005 and excavated in 2016) ranged from 7.00 to 100 mg/L in RW-29, 45, 56, and 68. Although MW-45 is not listed in Table 3-1 as a source area/former pumping well, it is located in close proximity to the former North and South Ponds.

Consistent with previous monitoring events, fluoride was detected above the MCL in each well near the source area during the third quarter 2022 monitoring event (Figure 4-2). Due to a lower water table affecting all overburden monitoring wells at the site, MW-56 was dry and could not be sampled during the third quarter 2022 monitoring event. The concentrations of fluoride in MW-45 have been relatively stable in the most recent sampling events but have showed an overall increasing trend since the third quarter of 2006. However, since the excavation and removal of source materials from source areas in 2016, concentrations in MW-45 have decreased from a maximum concentration of 53 mg/L in September 2016 to as low as 15 mg/L in the September 2021 monitoring event, with the most recent concentration in the September 2022 monitoring event being 26 mg/L. The concentration in MW-68 (located near the South Landfill) spiked to a concentration of 71.5 mg/L in the second quarter of 2006; but since then, the concentrations, although fluctuating, have remained relatively stable an overall decreasing trend since the elevation second quarter 2006 results. Fluoride concentrations in RW-29 increased during the first year after the plant curtailment; but since then, the concentrations, although fluctuating, have declined overall with the September 2022 monitoring event containing the second lowest concentration to date for fluoride in RW-29

With the exception of MW-45 (due to the elevated concentration of 53 mg/L during the September 2016 sampling event), the other source areas wells have shown a decreasing trend in concentrations since the complete closure of the facility in 2010, and also following the demolition of the facility and excavation and removal of source materials from source areas in 2016.

4.1.2 Downgradient Areas

Concentrations of fluoride in areas that are downgradient or cross-gradient of the source area are plotted on Figure 4-4, which shows that the concentrations in these wells are generally much lower than those measured near the source area. Over the last 8 years, concentrations in these wells have been less than 20 mg/L with the exception of an anomalous elevated concentration of 52 mg/L in MW-26 during the third quarter 2015 sampling event. The fluoride concentrations in MW-26 and MW-62 are stable while concentrations in MW-108 and MW-25 are decreasing despite slight increases during the 2022 sampling event.

4.1.3 Property Boundary

During post-curtailment, fluoride concentrations in groundwater near the property boundary wells (MW-52, MW-60, MW-72, and MW-73) ranged from 1.0 to 8.6 mg/L. Fluoride concentrations in MW-13 (off-site well) have ranged from non-detect (less than the reporting limit) to 1.3 mg/L and have remained less than 1.3 mg/L since the first quarter of 2008.

During the 2022 reporting period three of the four on-site wells had fluoride concentrations that slightly exceeded the MCL of 4 mg/L with an average concentration of 5.45 mg/L. The concentration in MW-60 has been below the MCL since 2008 and has been fairly stable since then. As shown on Figure 4-5, concentrations in the other on-site property boundary wells show seasonal fluctuations with slightly increasing trends over the first 6 years of the post-curtailment period (through 2012) followed by slightly decreasing trends over the last 10 years. The fluoride concentration in the off-site well (MW-13) continues to be much lower than the MCL.

It should be noted that the first quarter 2006 monitoring report submitted to MDE showed that concentrations in MW-60, 72, and 73 were less than 1 mg/L. Although the laboratory could not find any evidence suggesting these data were in error, the accuracy of these data is uncertain because the concentrations were historically in range of 5 to 9 mg/L for many years prior; and MW-52, which is paired with MW-60, did not show a similar decline in that quarter. As such, the first quarter 2006 data from MW-60, 72, and 73 were not plotted on Figure 4-5.

4.2 SURFACE WATER

As shown on Figure 4-6, during the first 3 years following curtailment (from 2006 through 2008), free cyanide was detected at least twice at each of three surface water monitoring locations. Since then, there have been eleven detections among all three of the surface water monitoring locations with only two detections slightly above the surface water quality criteria (0.0052 mg/L). During the September 2022 event, free cyanide concentrations were not detected above the laboratory reporting limit for free cyanide.

5.0 REFERENCES

Atlantic Environmental Services, Inc. (Atlantic), 1996. Eastalco Aluminum Company, Aquifer Characteristics Investigation. May 29.

Eastalco, 2017. Environmental Covenant, 5601 Manor Woods Road, Frederick, Maryland 21701. Deed References: Liber D.D.L. No. 2371, Folio 341; Liber 2531. Folio 347; Tax Parcels: District: 01, Account Number: 000152, 005383, and 005405. December 12.

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Maryland Department of the Environment (MDE), 2017. Email from Anuradha Mohanty (MDE) to Jason Mibroda (Alcoa), RE: Eastalco Report. February 1.

MFG, Inc., 2005. Site-Wide Investigation Report. Eastalco Aluminum Company. October.

Tetra Tech, Inc., 2011. Revised Groundwater and Surface Water Monitoring Plan. Eastalco Aluminum Company. February.

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TABLES

Table 3-1
Groundwater and Surface Water Monitoring Strategy
 Quantum Maryland, LLC

Groundwater Monitoring for Fluoride		
Location	Monitoring Location	Monitoring Frequency
Source Area/Pumping Wells	RW-29	A
	MW-56	A
	MW-68	A
Downgradient/Crossgradient Plume	MW-4	A
	MW-6	A
	MW-26	A
	MW-25	A
	MW-45	A
	MW-51	A
	MW-62	A
	MW-103	A
	MW-107	A
	MW-108	A
Property Boundary	MW-13 ⁽¹⁾	S
	MW-52	S
	MW-60	S
	MW-72	S
	MW-73	S

Surface Water Monitoring for Free Cyanide		
Location	Monitoring Location	Monitoring Frequency
Property Boundary	D	A
	E ⁽¹⁾	A
	I	A

S = Semi-annually

A = Annually

⁽¹⁾ Off-site location

Table 4-1
March 2022 Field Measurements

Quantum Maryland, LLC
Frederick, Maryland

Well ID	TOC Elevation (ft MSL)	Depth to Static Water (ft below TOC)	Groundwater Elevation (ft MSL)	pH (s.u.)	Specific Conductance (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	ORP (mV)
MW-13	290.28	4.80	285.48	7.16	0.469	8.99	7.55	12.08	296
MW-52	296.25	5.57	290.68	7.10	0.823	0.00	7.88	10.02	278
MW-60	295.72	5.81	289.91	7.15	0.774	0.00	7.83	12.18	264
MW-72	295.27	5.96	289.31	7.04	0.829	0.00	9.68	7.81	278
MW-73	294.69	5.36	289.33	7.11	0.836	0.00	10.58	9.25	270

Notes:

TOC Top of Casing
 ORP Oxidation-reduction Potential
 ft Feet
 ft MSL Feet Above Mean Sea Level
 s.u. Standard Units
 mS/cm Millisiemens per Centimeter
 NTUs Nephelometric Turbidity Units
 mV Millivolts
 mg/L Milligrams per Liter
 °C Degrees Centigrade

Table 4-2
September 2022 Field Measurements

Quantum Maryland, LLC
Frederick, Maryland

Well ID	TOC Elevation (ft MSL)	Depth to Static Water (ft below TOC)	Groundwater Elevation (ft MSL)	pH (s.u.)	Specific Conductance (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	ORP (mV)
MW-4	331.27	19.62	311.65	7.27	0.681	9.55 ⁽¹⁾	1.55	15.95	120
MW-6	323.66	14.85	308.81	6.58	1.15	89.0	1.40	15.54	-97
MW-13	290.28	5.59	284.69	7.52	0.578	0.02	3.13	15.13	160
MW-25	321.92	18.28	303.64	7.85	1.10	66.9	3.99	17.59	172
MW-26	324.49	18.42	306.07	7.63	0.742	19.5	4.81	16.52	104
RW-29	328.02	22.21	305.81	8.02	3.49	106 ⁽¹⁾	0.00	16.49	167
MW-45	328.03	20.71	307.32	8.78	2.74	13.7 ⁽¹⁾	1.67	16.26	168
MW-51	308.80	11.98	296.82	6.80	0.689	0.02	2.03	13.58	185
MW-52	296.25	5.71	290.54	7.22	0.796	0.0 ⁽¹⁾	2.36	16.54	249
MW-56 ⁽²⁾	330.86	Dry	NA	NA	NA	NA	NA	NA	NA
MW-60	295.72	5.93	289.79	7.32	0.745	1.0 ⁽¹⁾	0.59	14.21	228
MW-62	329.99	32.16	297.83	7.08	0.747	1.4 ⁽¹⁾	1.00	14.86	167
MW-68	328.12	24.11	304.01	7.63	1.41	14.7 ⁽¹⁾	5.31	15.07	164
MW-72	295.27	6.08	289.19	7.44	0.780	6.0 ⁽¹⁾	8.49	19.35	235
MW-73	294.69	5.49	289.20	7.11	0.798	0.0 ⁽¹⁾	1.48	17.30	260
MW-103	330.80	21.29	309.51	7.24	0.594	2.0 ⁽¹⁾	1.68	16.36	154
MW-107	329.16	27.57	301.59	7.74	0.460	Over	1.50	18.25	167
MW-108	328.72	26.68	302.04	7.23	1.25	15.8 ⁽¹⁾	1.31	16.02	188

Notes:

- TOC Top of Casing
- ORP Oxidation-reduction Potential
- ft Feet
- ft MSL Feet above Mean Sea Level
- s.u. Standard units
- mS/cm Millisiemens per Centimeter
- NTUs Nephelometric Turbidity Units
- mV Millivolts
- mg/L Milligrams per Liter
- °C Degrees Centigrade
- AU Attenuation Unit
- NA Not Applicable

Over Indicates that the turbidity exceeded the limit of the turbidity meter.

⁽¹⁾ Horiba U52 Used for Turbidity Measurements

⁽²⁾ Indicates that there was an absence of groundwater or an insufficient volume of groundwater required to complete purging and sampling of the well.

Table 4-3
March 2022
Groundwater Analytical Results

Quantum Maryland, LLC
Frederick, Maryland

Well ID	Fluoride (mg/L)
MCL ⁽¹⁾	4
MW-13	0.31
MW-52	7.7
MW-60	2.6
MW-72	4.3
MW-73	4.9

Notes:

All results are in milligrams/liter (mg/L).

⁽¹⁾ Maximum Contaminant Level (MCL)
(i.e. 40 CFR 141.62)

U = Not detected above the laboratory reporting limit. Value shown is reporting limit.

BOLD indicates detected value

indicates concentration above maximum contaminant level (MCL)

Table 4-4
September 2022 Groundwater and
Surface Water Analytical Results

Quantum Maryland, LLC
 Frederick, Maryland

Well ID/Surface Water Location	Fluoride (mg/L)	Free Cyanide (mg/L)
MCL ⁽¹⁾	4	0.0052
MW-4	2.4	NA
MW-6	2.6	NA
MW-13	0.51 J	NA
MW-25	14	NA
MW-26	4.3	NA
RW-29	24	NA
RW-29 DUP ⁽²⁾	23	NA
MW-45	26	NA
MW-51	1.6	NA
MW-52	5.2	NA
MW-56 ⁽⁵⁾	---	---
MW-60	2.5	NA
MW-62	3.4	NA
MW-68	20	NA
MW-68 DUP ⁽³⁾	19	NA
MW-72	5.3	NA
MW-73	5.3	NA
MW-103	3.9	NA
MW-107	1.6	NA
MW-108	11	NA
SW-D	NA	0.0060 U
TUSCARORA CREEK DUP ⁽⁴⁾	NA	0.0060 U
SW-E	NA	0.0060 U
SW-I	NA	0.0060 U

Notes:

All results are in milligrams/liter (mg/L).

⁽¹⁾ Per the ACO, Maximum Contaminant Level (MCL) (i.e. 40 CFR 141.62) for fluoride, and MDE surface water criterion for free cyanide

⁽²⁾ Duplicate sample from RW-29

⁽³⁾ Duplicate sample from MW-68

⁽⁴⁾ Duplicate sample from Creek Location D

⁽⁵⁾ Well was dry and was not sampled.

BOLD indicates detected value

▬ indicates concentration above MCL

NA = not analyzed

J= Estimated value; detected above the method detection limit and below the reporting limit (or limit of quantitation).

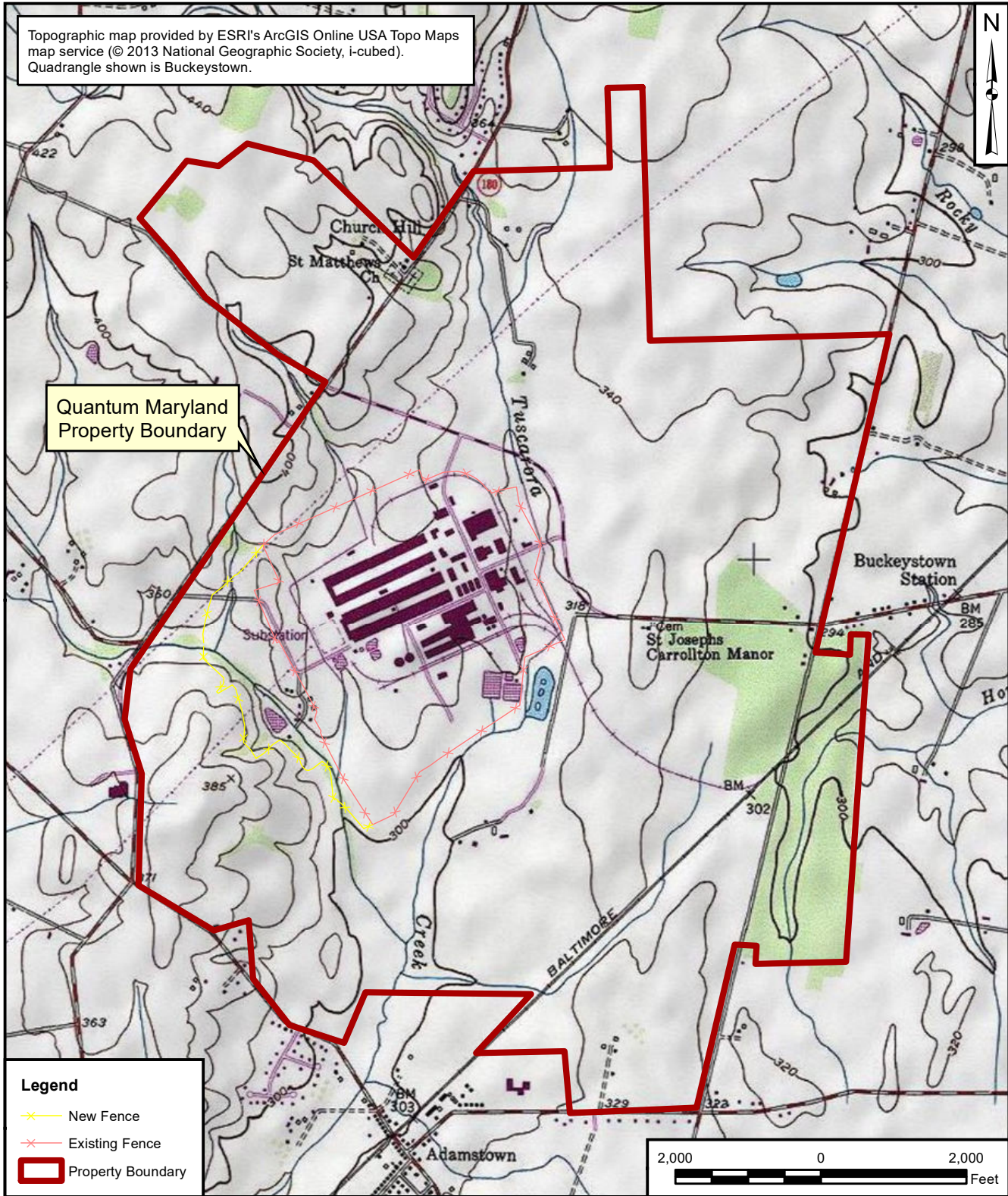
U = Not detected above the laboratory reporting limit. Value shown is reporting limit.

FIGURES

Topographic map provided by ESRI's ArcGIS Online USA Topo Maps map service (© 2013 National Geographic Society, i-cubed).
Quadrangle shown is Buckeystown.

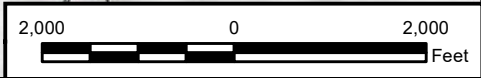


Quantum Maryland
Property Boundary



Legend

- New Fence
- Existing Fence
- Property Boundary

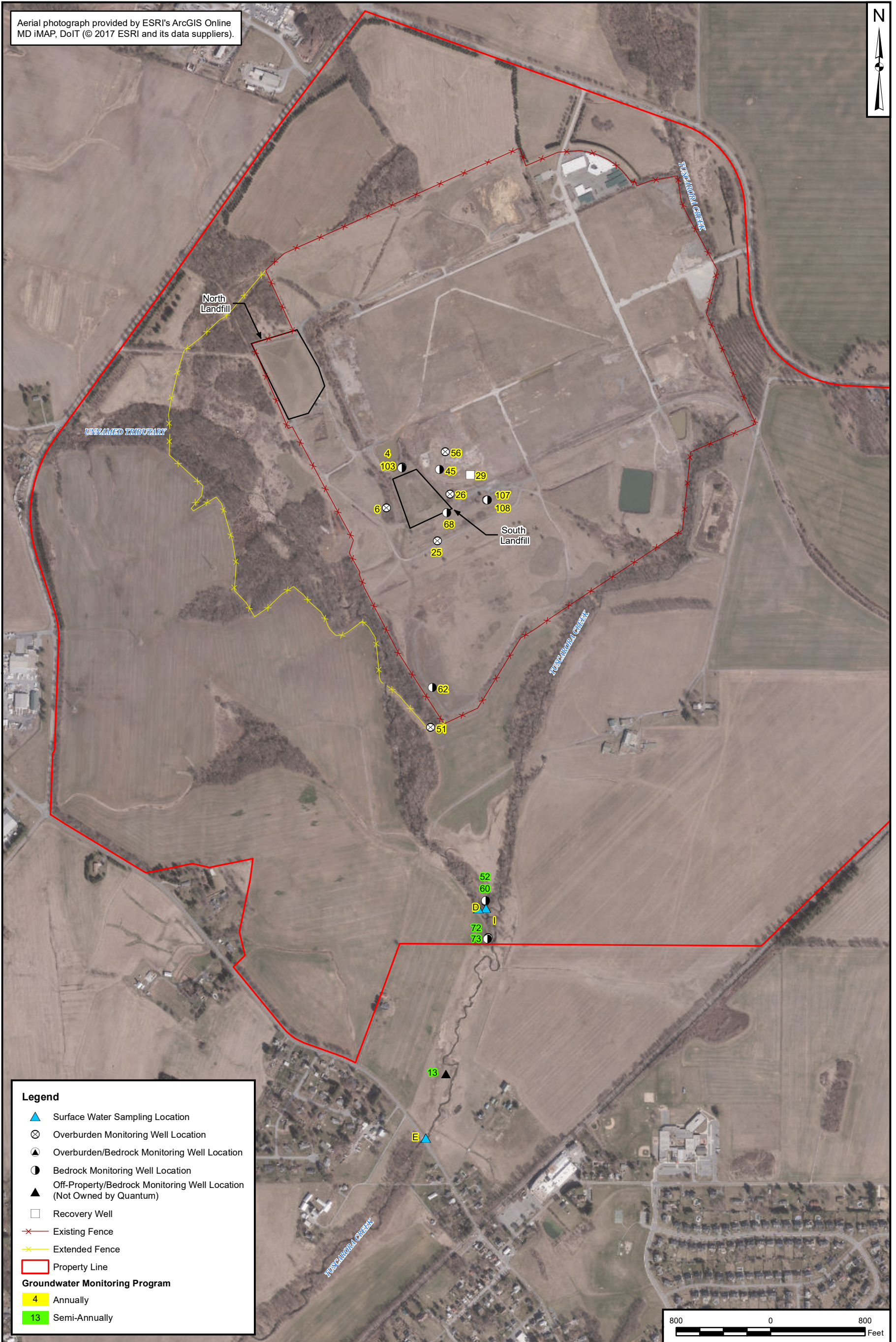


SITE LOCATION
QUANTUM MARYLAND, LLC
FREDERICK, MARYLAND

DRAWN BY: J. ZAMUDIO 06/03/22
CHECKED BY: D. MOORE 06/03/22
APPROVED BY: D. MOORE 06/03/22
CONTRACT NUMBER: 112C09729

FIGURE NUMBER	REV
1-1	0

Aerial photograph provided by ESRI's ArcGIS Online MD iMAP, DoIT (© 2017 ESRI and its data suppliers).



Legend

- Surface Water Sampling Location
- Overburden Monitoring Well Location
- Overburden/Bedrock Monitoring Well Location
- Bedrock Monitoring Well Location
- Off-Property/Bedrock Monitoring Well Location (Not Owned by Quantum)
- Recovery Well
- Existing Fence
- Extended Fence
- Property Line

Groundwater Monitoring Program

- 4 Annually
- 13 Semi-Annually



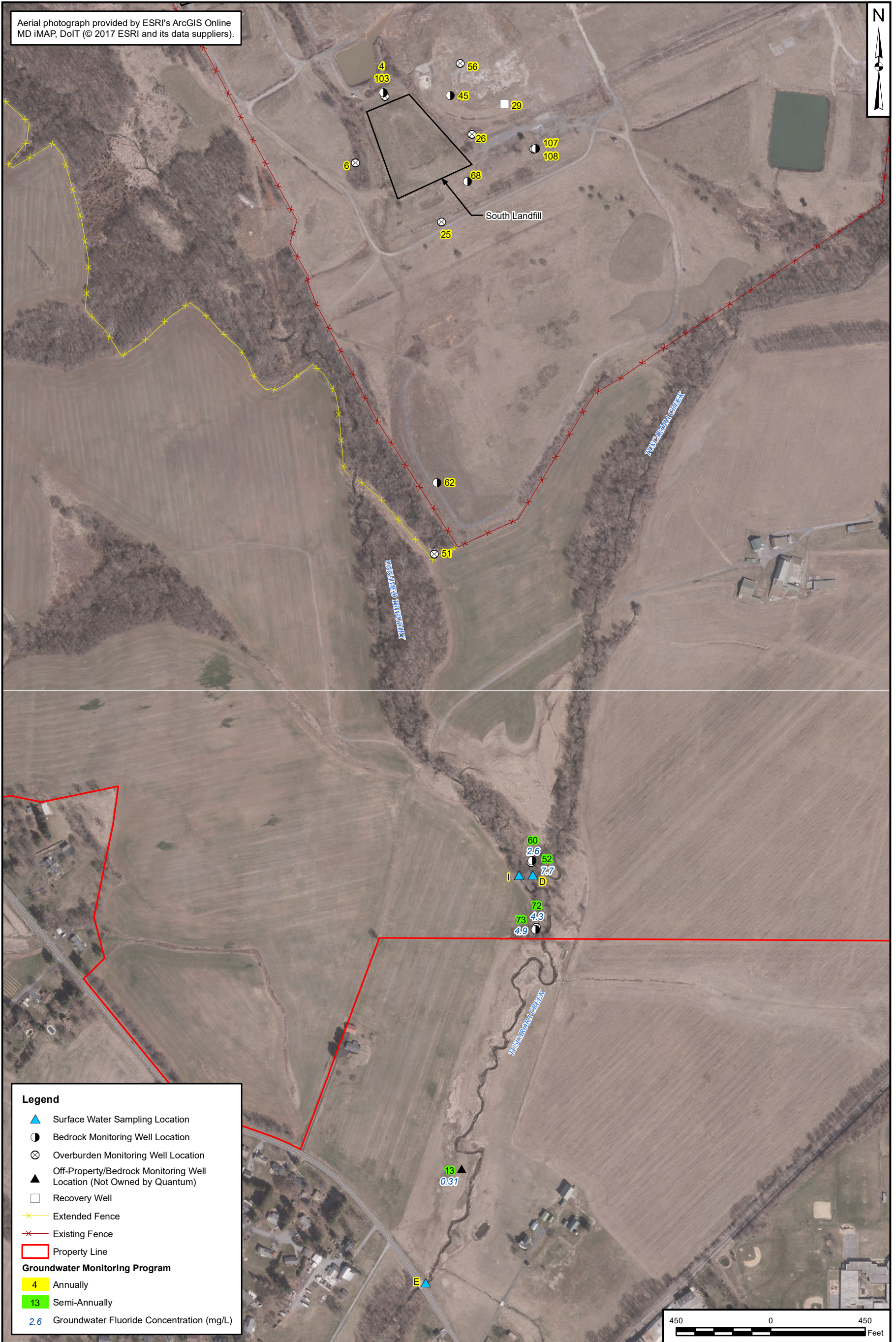
GROUNDWATER AND SURFACE WATER MONITORING POINTS
 QUANTUM MARYLAND, LLC
 FREDERICK, MARYLAND

DRAWN BY: S. PAXTON 11/27/18
 CHECKED BY: D. MOORE 12/13/22
 APPROVED BY: D. MOORE 12/13/22

CONTRACT NUMBER: 112C09729

FIGURE NUMBER	REV
3-1	0

Aerial photograph provided by ESRI's ArcGIS Online MD iMAP, DoIT (© 2017 ESRI and its data suppliers).



Legend

- Surface Water Sampling Location
- Bedrock Monitoring Well Location
- Overburden Monitoring Well Location
- Off-Property/Bedrock Monitoring Well Location (Not Owned by Quantum)
- Recovery Well
- Extended Fence
- Existing Fence
- Property Line

Groundwater Monitoring Program

- 4 Annually
- 13 Semi-Annually
- 2.6 Groundwater Fluoride Concentration (mg/L)



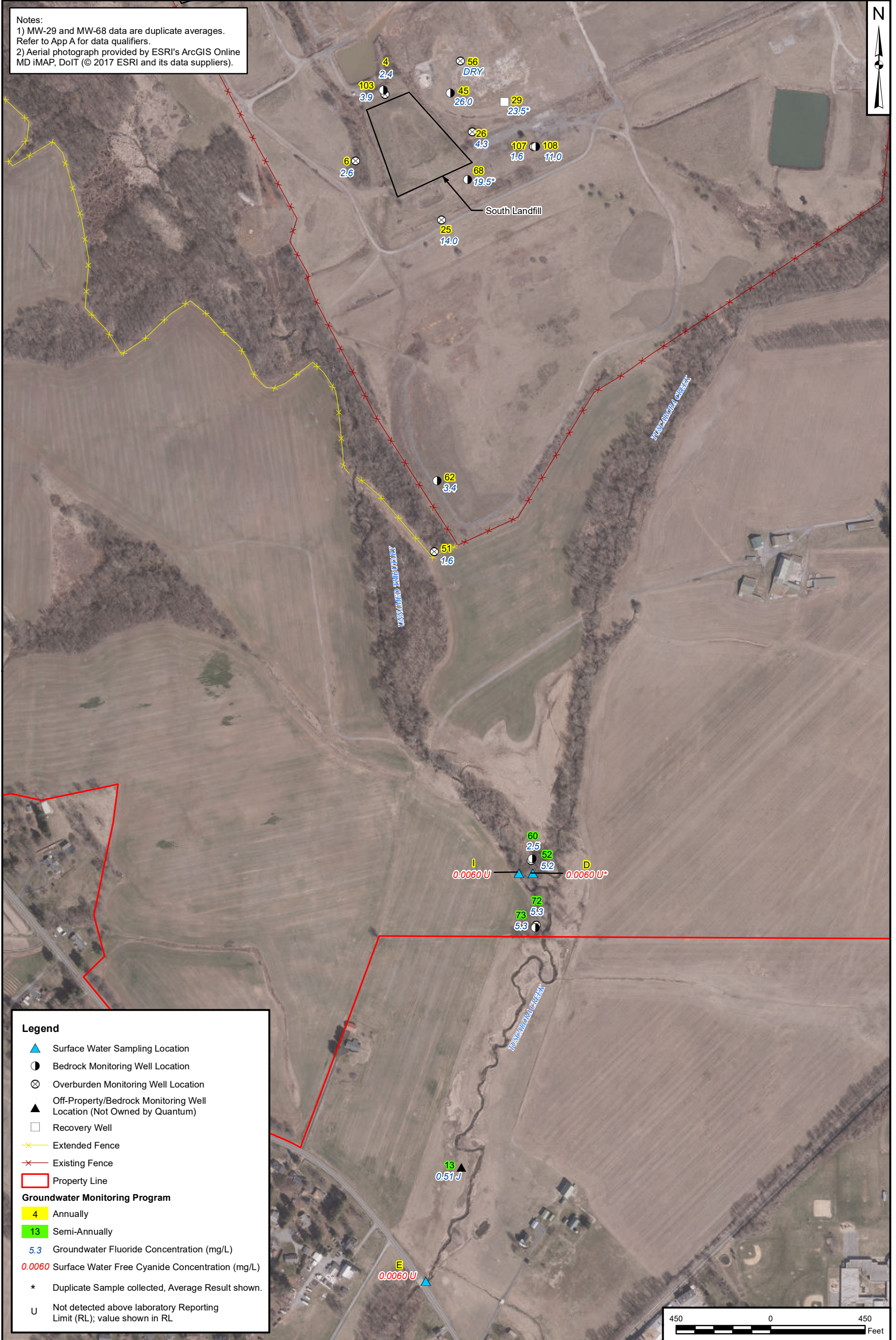
GROUNDWATER FLUORIDE CONCENTRATIONS
FIRST QUARTER 2022
QUANTUM MARYLAND, LLC
FREDERICK, MARYLAND

DRAWN BY: J. ZAMUDIO 11/17/22
CHECKED BY: D. MOORE 11/17/22
APPROVED BY: D. MOORE 11/17/22

CONTRACT NUMBER: 112C09729

FIGURE NUMBER	REV
4-1	0

Notes:
 1) MW-29 and MW-68 data are duplicate averages. Refer to App A for data qualifiers.
 2) Aerial photograph provided by ESRI's ArcGIS Online MD iMAP, DoIT (© 2017 ESRI and its data suppliers).



Legend

- Surface Water Sampling Location
- Bedrock Monitoring Well Location
- Overburden Monitoring Well Location
- Off-Property/Bedrock Monitoring Well Location (Not Owned by Quantum)
- Recovery Well
- Extended Fence
- Existing Fence
- Property Line

Groundwater Monitoring Program

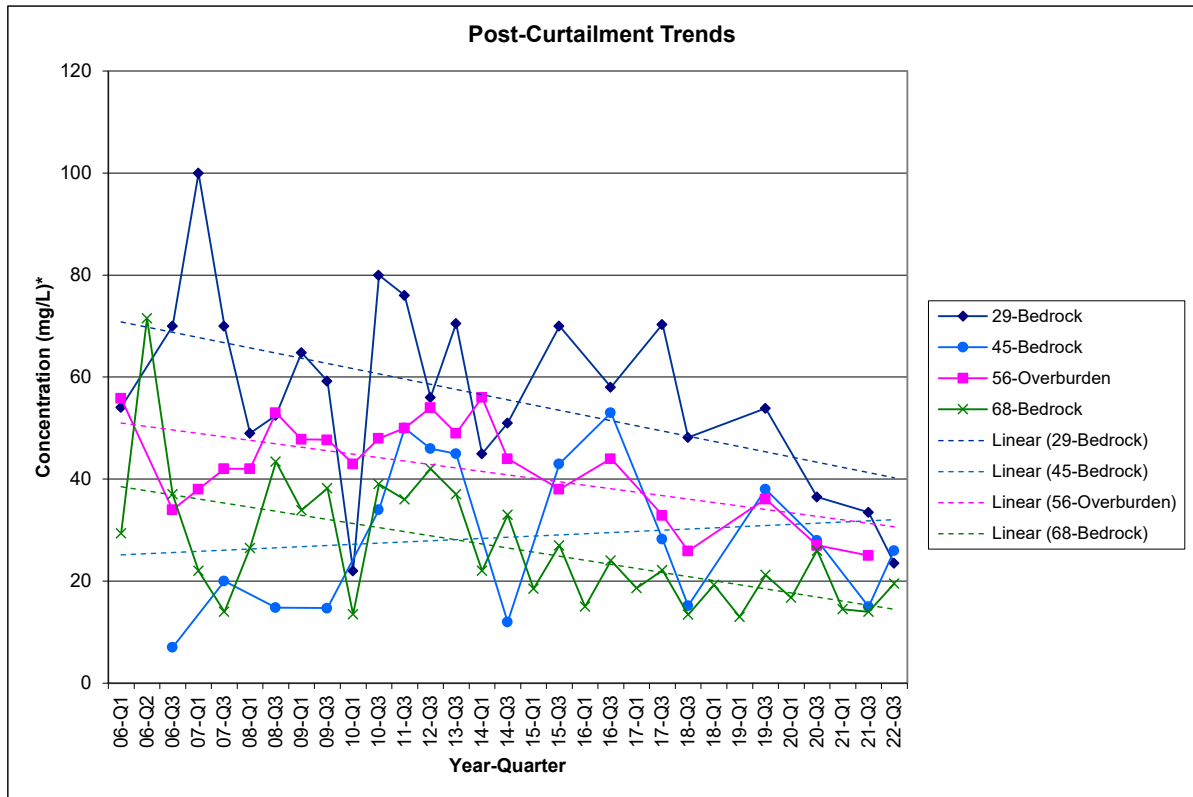
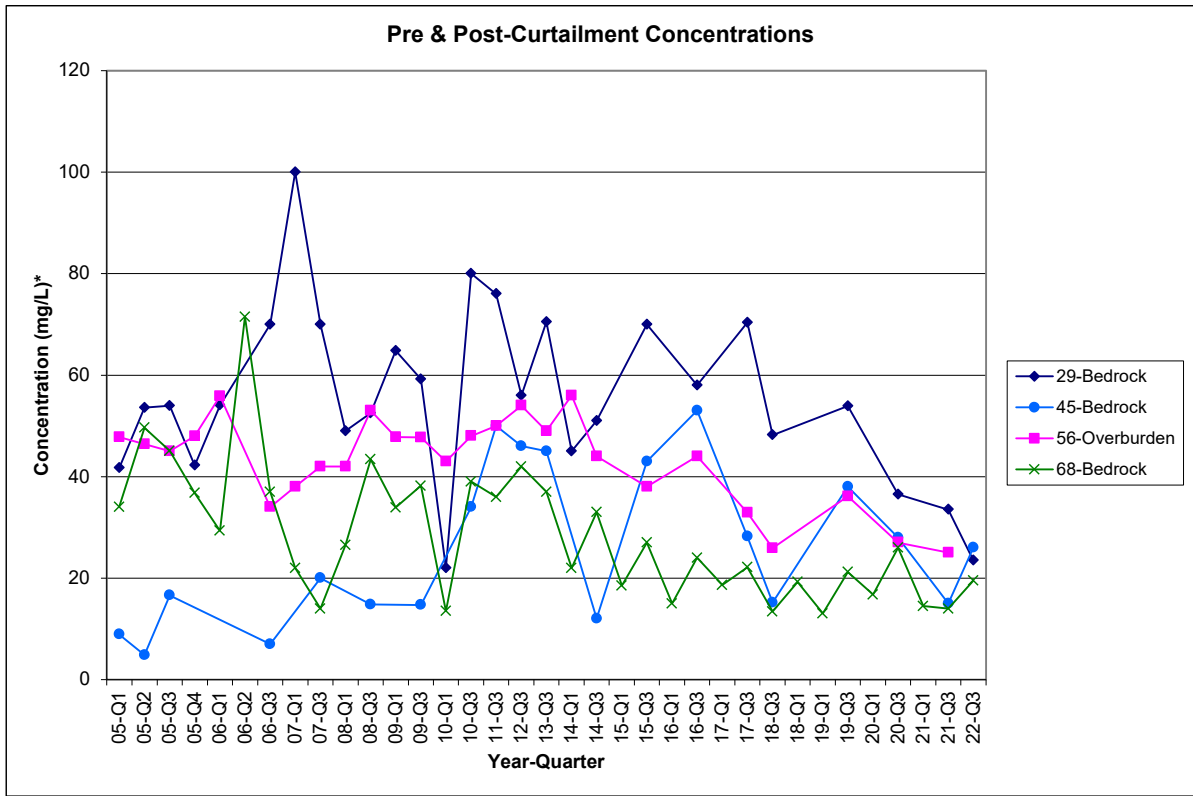
- 4 Annually
- 13 Semi-Annually
- 5.3 Groundwater Fluoride Concentration (mg/L)
- 0.0060 Surface Water Free Cyanide Concentration (mg/L)
- * Duplicate Sample collected, Average Result shown.
- U Not detected above laboratory Reporting Limit (RL); value shown in RL



GROUNDWATER AND SURFACE WATER SAMPLE RESULTS
 THIRD QUARTER 2022
 QUANTUM MARYLAND, LLC
 FREDERICK, MARYLAND

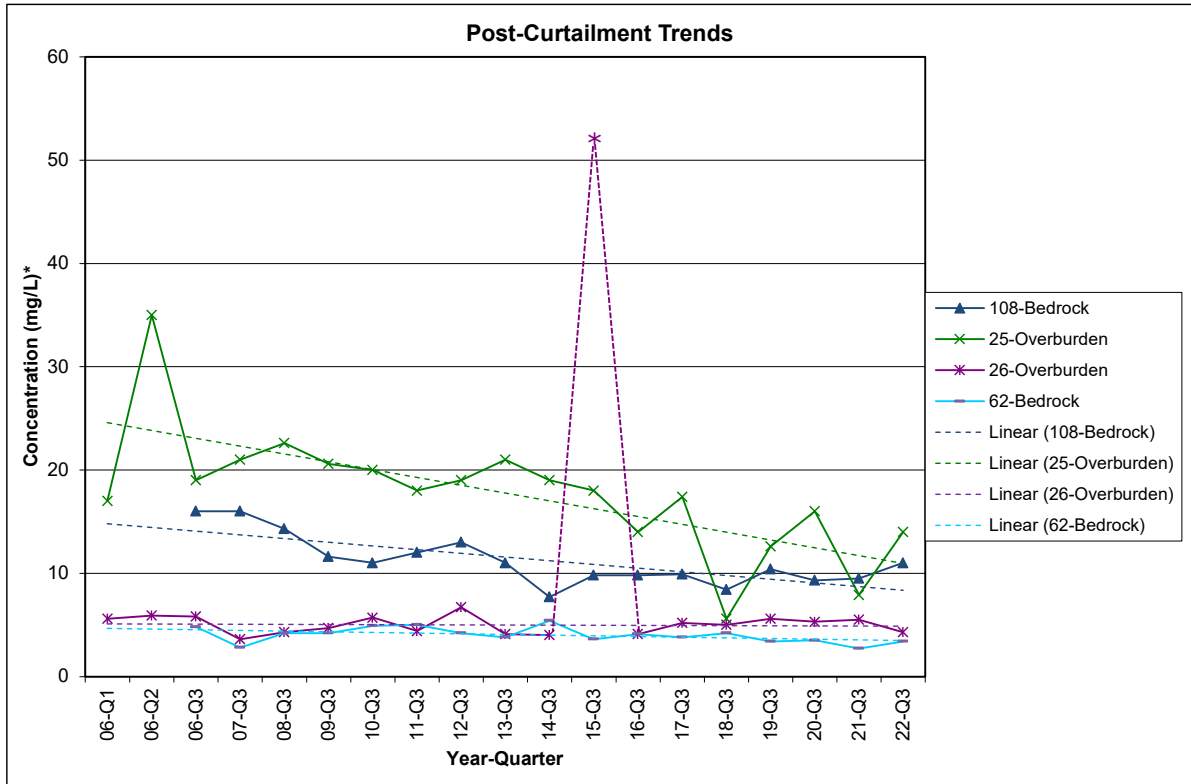
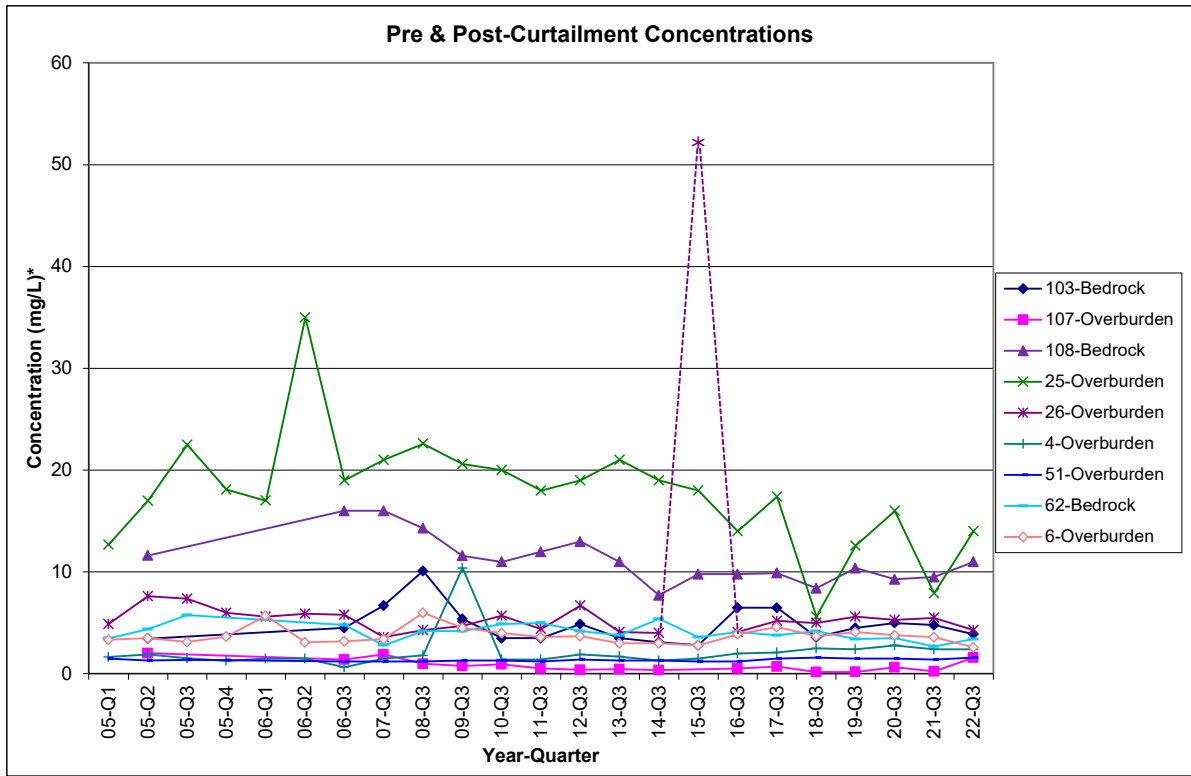
DRAWN BY: J. ZAMUDIO 11/17/22
 CHECKED BY: D. MOORE 12/13/22
 APPROVED BY: D. MOORE 12/13/22
 CONTRACT NUMBER: 112C09729

FIGURE NUMBER	REV
4-2	0



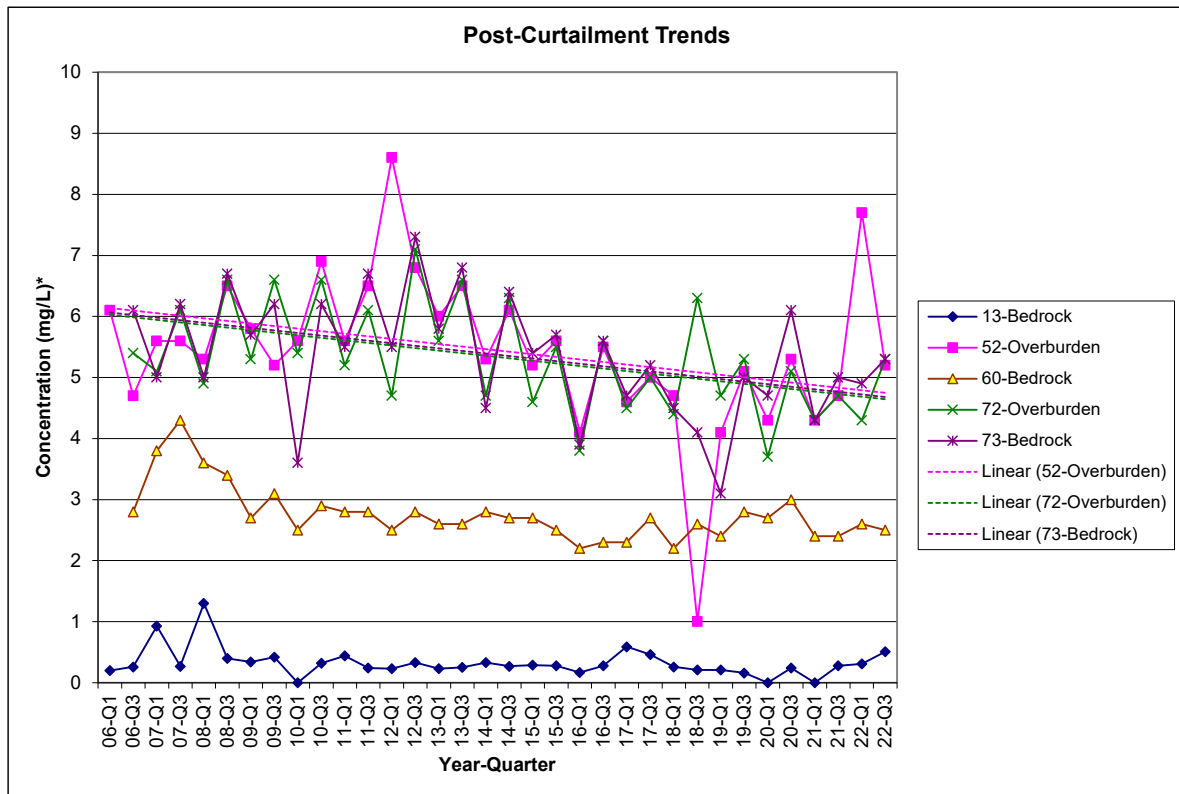
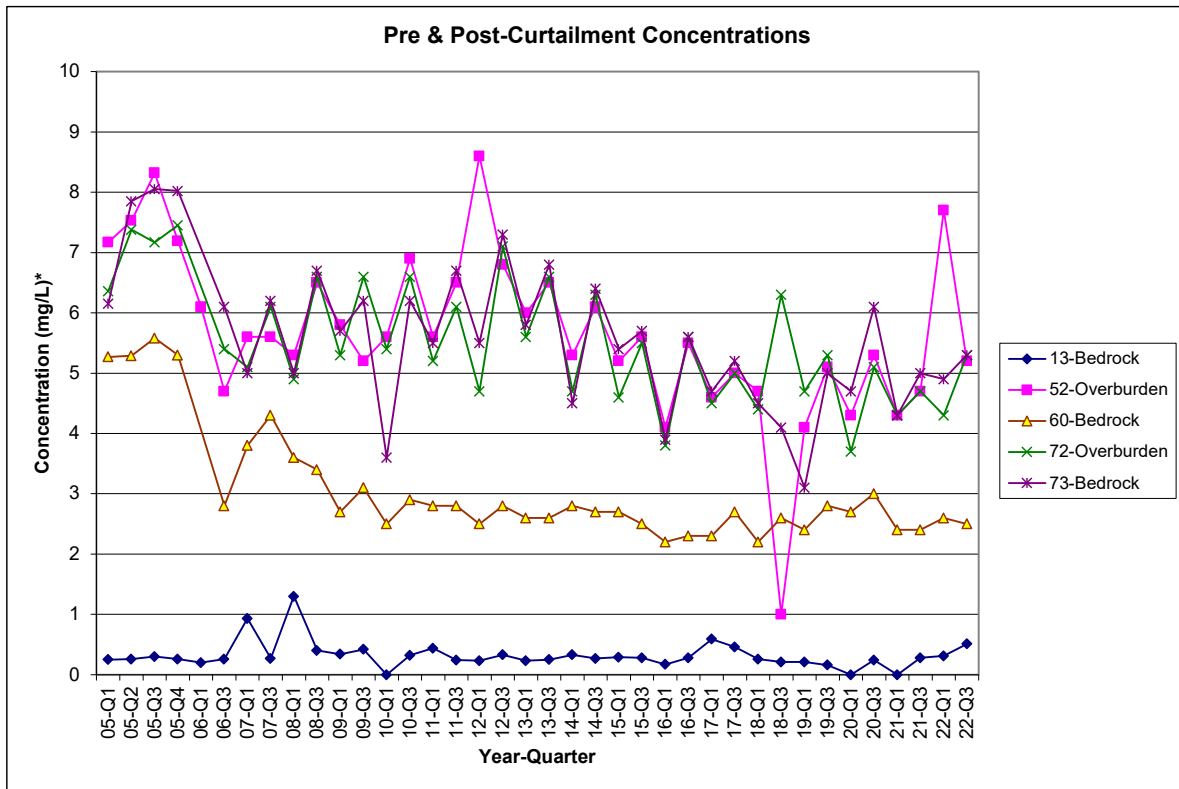
*The average concentration plotted if duplicate samples collected or well sampled more than once in a given quarter.

Figure 4-3
Fluoride in Groundwater near the Source Area



*Average concentration plotted if well was sampled more than once in a given quarter.
 Third quarter 2015 result for MW-26 is considered anomalous. Value is plotted, but was not used to create trend line.

Figure 4-4
Fluoride in Downgradient/Cross Gradient Groundwater

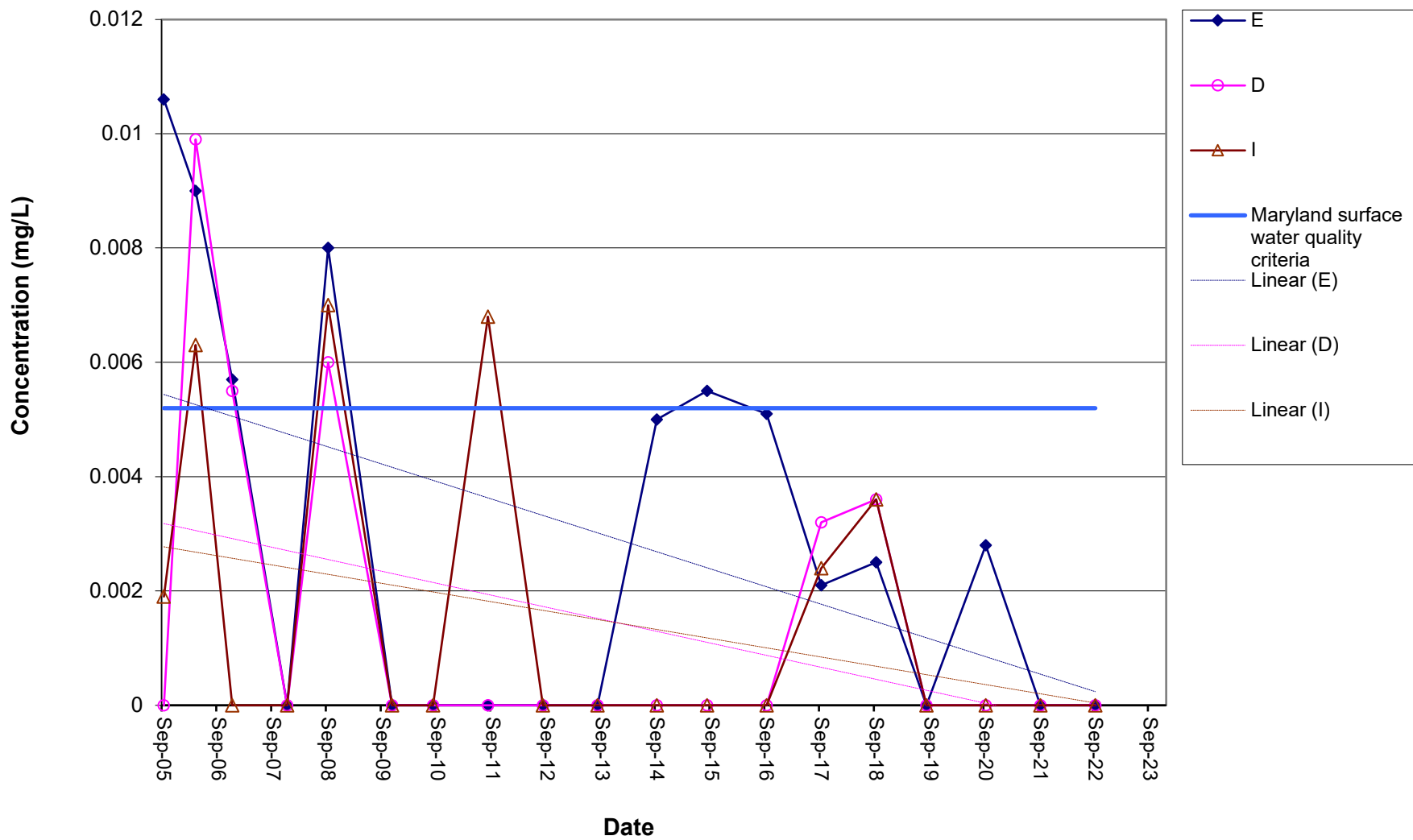


*The accuracy of the 06-Q1 concentrations from MW-60, 72, & 73 (reported as less than 1 mg/L) is uncertain. Therefore, this data was not plotted.

Figure 4-5
Fluoride in Groundwater near the Property Boundary

Figure 4-6

Free Cyanide Concentration Trends in Surface Water
Quantum Maryland, LLC



APPENDIX A: GROUNDWATER AND SURFACE WATER ANALYTICAL DATA

ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-77737-1
Client Project/Site: EastAlco WW

For:

Tetra Tech, Inc.
Foster Plaza VII
661 Anderson Drive
Foster Plaza 7 Suite 200
Pittsburgh, Pennsylvania 15220

Attn: Dan Drzik



Authorized for release by:
4/8/2022 1:42:53 PM

Stephen Gordon, Senior Project Manager
(412)525-0071
Stephen.Gordon@et.eurofinsus.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:

www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
 - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
 - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

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

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

This report shall not be reproduced except in full, without the written approval of the laboratory.

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

A handwritten signature in black ink, appearing to read "Stephen Gordon".

Stephen Gordon
Senior Project Manager
4/8/2022 1:42:53 PM



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Definitions/Glossary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-77737-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-77737-1

Job ID: 410-77737-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-77737-1

Receipt

The samples were received on 3/28/2022 5:54 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.7°C

HPLC/IC

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

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Detection Summary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-77737-1

Client Sample ID: MW-52-0322

Lab Sample ID: 410-77737-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	7.7	F1	0.50	0.25	mg/L	5		EPA 300.0 R2.1	Total/NA

Client Sample ID: MW-60-0322

Lab Sample ID: 410-77737-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	2.6		0.50	0.25	mg/L	5		EPA 300.0 R2.1	Total/NA

Client Sample ID: MW-72-0322

Lab Sample ID: 410-77737-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	4.3		0.50	0.25	mg/L	5		EPA 300.0 R2.1	Total/NA

Client Sample ID: MW-73-0322

Lab Sample ID: 410-77737-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	4.9		0.50	0.25	mg/L	5		EPA 300.0 R2.1	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Env, LLC

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-77737-1

Client Sample ID: MW-52-0322

Lab Sample ID: 410-77737-1

Date Collected: 03/28/22 13:39

Matrix: Water

Date Received: 03/28/22 17:54

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	7.7	F1	0.50	0.25	mg/L			04/07/22 23:43	5

Client Sample ID: MW-60-0322

Lab Sample ID: 410-77737-2

Date Collected: 03/28/22 14:40

Matrix: Water

Date Received: 03/28/22 17:54

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	2.6		0.50	0.25	mg/L			04/08/22 00:07	5

Client Sample ID: MW-72-0322

Lab Sample ID: 410-77737-3

Date Collected: 03/28/22 13:10

Matrix: Water

Date Received: 03/28/22 17:54

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	4.3		0.50	0.25	mg/L			04/08/22 00:15	5

Client Sample ID: MW-73-0322

Lab Sample ID: 410-77737-4

Date Collected: 03/28/22 12:48

Matrix: Water

Date Received: 03/28/22 17:54

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	4.9		0.50	0.25	mg/L			04/08/22 00:23	5

QC Sample Results

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-77737-1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 410-242239/5
Matrix: Water
Analysis Batch: 242239

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.10	0.050	mg/L			04/07/22 20:28	1

Lab Sample ID: LCS 410-242239/3
Matrix: Water
Analysis Batch: 242239

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.750	0.702		mg/L		94	90 - 110

Lab Sample ID: LCSD 410-242239/4
Matrix: Water
Analysis Batch: 242239

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.750	0.722		mg/L		96	90 - 110	3	20

QC Association Summary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-77737-1

HPLC/IC

Analysis Batch: 242239

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-77737-1	MW-52-0322	Total/NA	Water	EPA 300.0 R2.1	
410-77737-2	MW-60-0322	Total/NA	Water	EPA 300.0 R2.1	
410-77737-3	MW-72-0322	Total/NA	Water	EPA 300.0 R2.1	
410-77737-4	MW-73-0322	Total/NA	Water	EPA 300.0 R2.1	
MB 410-242239/5	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-242239/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
LCSD 410-242239/4	Lab Control Sample Dup	Total/NA	Water	EPA 300.0 R2.1	



Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-77737-1

Client Sample ID: MW-52-0322

Lab Sample ID: 410-77737-1

Date Collected: 03/28/22 13:39

Matrix: Water

Date Received: 03/28/22 17:54

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1		5	242239	04/07/22 23:43	W5UX	ELLE

Client Sample ID: MW-60-0322

Lab Sample ID: 410-77737-2

Date Collected: 03/28/22 14:40

Matrix: Water

Date Received: 03/28/22 17:54

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1		5	242239	04/08/22 00:07	W5UX	ELLE

Client Sample ID: MW-72-0322

Lab Sample ID: 410-77737-3

Date Collected: 03/28/22 13:10

Matrix: Water

Date Received: 03/28/22 17:54

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1		5	242239	04/08/22 00:15	W5UX	ELLE

Client Sample ID: MW-73-0322

Lab Sample ID: 410-77737-4

Date Collected: 03/28/22 12:48

Matrix: Water

Date Received: 03/28/22 17:54

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1		5	242239	04/08/22 00:23	W5UX	ELLE

Laboratory References:

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

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-77737-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Maryland	State	100	06-30-22

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Method Summary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-77737-1

Method	Method Description	Protocol	Laboratory
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	ELLE

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

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



Sample Summary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-77737-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-77737-1	MW-52-0322	Water	03/28/22 13:39	03/28/22 17:54
410-77737-2	MW-60-0322	Water	03/28/22 14:40	03/28/22 17:54
410-77737-3	MW-72-0322	Water	03/28/22 13:10	03/28/22 17:54
410-77737-4	MW-73-0322	Water	03/28/22 12:48	03/28/22 17:54

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410-77737 Chain of Custody



CHAIN OF CUSTODY

NO.

Page 1 of 1

Project No: 112C09729		Facility: Eastalco 2022 Q1		Project Manger: Dustin Moore		Phone: 412-921-7090		Laboratory Name and Contact: Stephen Gordon			
Samplers: <i>MULLIS EMM</i>				Field Ops. Leader: Josh Mullis		Phone: 410-279-2700		Address: <i>LANCASTER ENDOFIN</i>			
				Fed Ex Airbill Number:				City, State, Zip: <i>PA</i>			
Container Type: Plastic (P) or Glass (G)				P							
Preservative Used:				-							
Year: 2022	Date	Time	Sample ID	Matrix (GW, SO, SW, QC)	Grab, Composite (G, C)	Total No. of Containers	ANALYSIS Total Fluoride	Comments			
	<i>3/28</i>		MW-13 <i>JAN</i>	GW	G	1	1	<i>NS</i>			
		<i>1339</i>	MW-52 -0322	GW	G	1	1				
		<i>1440</i>	MW-60 -0322	GW	G	1	1				
			MW-66 <i>JAN</i>	GW	G	1	1	<i>NS</i>			
			MW-67 <i>JAN</i>	GW	G	1	1	<i>NS</i>			
			MW-68 <i>JAN</i>	GW	G	1	1	<i>NS</i>			
			MW-68DUP	GW	G	1	1	<i>NS</i>			
		<i>1310</i>	MW-72 -0322	GW	G	1	1				
		<i>1248</i>	MW-73 -0322	GW	G	1	1				
1. Relinquished By: <i>[Signature]</i>			Date: <i>3/28/22</i>	Time: <i>1453</i>	1. Received By: <i>[Signature]</i>			Date: <i>3/28/22</i>	Time: <i>1453</i>		
2. Relinquished By: <i>[Signature]</i>			Date: <i>3/28/22</i>	Time: <i>1756</i>	2. Received By: <i>[Signature]</i>			Date: <i>3/28/22</i>	Time: <i>18:17</i>		
Comments: Upon lab receiving send email confirmation to Matthew.Simcik@Tetrattech.com											

ph

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 410-77737-1

Login Number: 77737

List Source: Eurofins Lancaster Laboratories Env, LLC

List Number: 1

Creator: Knoedler, Christine M

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	N/A	

ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-77890-1
Client Project/Site: EastAlco WW

For:

Tetra Tech, Inc.
Foster Plaza VII
661 Anderson Drive
Foster Plaza 7 Suite 200
Pittsburgh, Pennsylvania 15220

Attn: Dan Drzik



Authorized for release by:
4/11/2022 2:33:13 AM

Stephen Gordon, Senior Project Manager
(412)525-0071
Stephen.Gordon@et.eurofinsus.com

LINKS

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results through
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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
 - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
 - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

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

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

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A handwritten signature in black ink, appearing to read "Stephen Gordon".

Stephen Gordon
Senior Project Manager
4/11/2022 2:33:13 AM



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Definitions/Glossary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-77890-1

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
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-77890-1

Job ID: 410-77890-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-77890-1

Receipt

The samples were received on 3/29/2022 4:46 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.6°C

HPLC/IC

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

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Detection Summary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-77890-1

Client Sample ID: MW-13-0322

Lab Sample ID: 410-77890-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	0.31		0.10	0.050	mg/L	1		EPA 300.0 R2.1	Total/NA

Client Sample ID: MW-66-0322

Lab Sample ID: 410-77890-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	10		1.0	0.50	mg/L	10		EPA 300.0 R2.1	Total/NA

Client Sample ID: MW-67-0322

Lab Sample ID: 410-77890-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	6.7		1.0	0.50	mg/L	10		EPA 300.0 R2.1	Total/NA

Client Sample ID: MW-68-0322

Lab Sample ID: 410-77890-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	14		1.0	0.50	mg/L	10		EPA 300.0 R2.1	Total/NA

Client Sample ID: MW-68-0322DUP

Lab Sample ID: 410-77890-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	16		1.0	0.50	mg/L	10		EPA 300.0 R2.1	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Env, LLC

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-77890-1

Client Sample ID: MW-13-0322

Lab Sample ID: 410-77890-1

Date Collected: 03/29/22 10:00

Matrix: Water

Date Received: 03/29/22 16:46

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.31		0.10	0.050	mg/L			04/08/22 01:20	1

Client Sample ID: MW-66-0322

Lab Sample ID: 410-77890-2

Date Collected: 03/29/22 11:30

Matrix: Water

Date Received: 03/29/22 16:46

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	10		1.0	0.50	mg/L			04/08/22 01:44	10

Client Sample ID: MW-67-0322

Lab Sample ID: 410-77890-3

Date Collected: 03/29/22 12:35

Matrix: Water

Date Received: 03/29/22 16:46

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	6.7		1.0	0.50	mg/L			04/08/22 02:00	10

Client Sample ID: MW-68-0322

Lab Sample ID: 410-77890-4

Date Collected: 03/29/22 14:00

Matrix: Water

Date Received: 03/29/22 16:46

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	14		1.0	0.50	mg/L			04/08/22 00:39	10

Client Sample ID: MW-68-0322DUP

Lab Sample ID: 410-77890-5

Date Collected: 03/29/22 00:00

Matrix: Water

Date Received: 03/29/22 16:46

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	16		1.0	0.50	mg/L			04/08/22 00:55	10

QC Sample Results

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-77890-1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 410-242239/5

Matrix: Water

Analysis Batch: 242239

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.10	0.050	mg/L			04/07/22 20:28	1

Lab Sample ID: LCS 410-242239/3

Matrix: Water

Analysis Batch: 242239

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.750	0.702		mg/L		94	90 - 110

Lab Sample ID: LCSD 410-242239/4

Matrix: Water

Analysis Batch: 242239

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.750	0.722		mg/L		96	90 - 110	3	20

QC Association Summary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-77890-1

HPLC/IC

Analysis Batch: 242239

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-77890-1	MW-13-0322	Total/NA	Water	EPA 300.0 R2.1	
410-77890-2	MW-66-0322	Total/NA	Water	EPA 300.0 R2.1	
410-77890-3	MW-67-0322	Total/NA	Water	EPA 300.0 R2.1	
410-77890-4	MW-68-0322	Total/NA	Water	EPA 300.0 R2.1	
410-77890-5	MW-68-0322DUP	Total/NA	Water	EPA 300.0 R2.1	
MB 410-242239/5	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-242239/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
LCSD 410-242239/4	Lab Control Sample Dup	Total/NA	Water	EPA 300.0 R2.1	

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-77890-1

Client Sample ID: MW-13-0322

Lab Sample ID: 410-77890-1

Date Collected: 03/29/22 10:00

Matrix: Water

Date Received: 03/29/22 16:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1		1	242239	04/08/22 01:20	W5UX	ELLE

Client Sample ID: MW-66-0322

Lab Sample ID: 410-77890-2

Date Collected: 03/29/22 11:30

Matrix: Water

Date Received: 03/29/22 16:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1		10	242239	04/08/22 01:44	W5UX	ELLE

Client Sample ID: MW-67-0322

Lab Sample ID: 410-77890-3

Date Collected: 03/29/22 12:35

Matrix: Water

Date Received: 03/29/22 16:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1		10	242239	04/08/22 02:00	W5UX	ELLE

Client Sample ID: MW-68-0322

Lab Sample ID: 410-77890-4

Date Collected: 03/29/22 14:00

Matrix: Water

Date Received: 03/29/22 16:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1		10	242239	04/08/22 00:39	W5UX	ELLE

Client Sample ID: MW-68-0322DUP

Lab Sample ID: 410-77890-5

Date Collected: 03/29/22 00:00

Matrix: Water

Date Received: 03/29/22 16:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1		10	242239	04/08/22 00:55	W5UX	ELLE

Laboratory References:

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

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-77890-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Maryland	State	100	06-30-22

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Method Summary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-77890-1

Method	Method Description	Protocol	Laboratory
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	ELLE

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

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



Sample Summary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-77890-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-77890-1	MW-13-0322	Water	03/29/22 10:00	03/29/22 16:46
410-77890-2	MW-66-0322	Water	03/29/22 11:30	03/29/22 16:46
410-77890-3	MW-67-0322	Water	03/29/22 12:35	03/29/22 16:46
410-77890-4	MW-68-0322	Water	03/29/22 14:00	03/29/22 16:46
410-77890-5	MW-68-0322DUP	Water	03/29/22 00:00	03/29/22 16:46

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LANCASTER



410-77890 Chain of Custody

CHAIN OF CUSTODY

NO.

Page ___ of ___

Project No: 112C09729		Facility: Eastalco 2022 Q1		Project Manger: Dustin Moore		Phone: 412-921-7090		Laboratory Name and Contact: Stephen Gordon			
Samplers: Nick Emm				Field Ops. Leader: Josh Mullis		Phone: 410-279-2700		Address:			
				Fed Ex Airbill Number:		City, State, Zip:					
Container Type: Plastic (P) or Glass (G)				P							
Preservative Used:				-							
Year: 2022	Date	Time	Sample ID	Matrix (GW, SO, SW, QC)	Grab, Composite (G, C)	Total No. of Containers	ANALYSIS	Total Fluoride	Comments		
	3/29	1000	MW-13	GW	G	1		1			
			MW-52	GW	G	1		1	Jan		
			MW-60	GW	G	1		1	Jan		
		1130	MW-66	GW	G	1		1			
		1235	MW-67	GW	G	1		1			
		1400	MW-68	GW	G	1		1			
		0000	MW-68DUP	GW	G	1		1			
			MW-72	GW	G	1		1	Jan		
			MW-73	GW	G	1		1	Jan		
1. Relinquished By:		Date:	Time:	1. Received By:		Date:	Time:				
<i>[Signature]</i>		3/29/22	14:26	<i>[Signature]</i>		3/29/22	14:26				
2. Relinquished By:		Date:	Time:	2. Received By:		Date:	Time:				
<i>[Signature]</i>		3/29/22	16:40	<i>[Signature]</i>		3/29/22	16:46				
Comments: Upon lab receiving send email confirmation to Matthew.Simcik@Tetrattech.com								5.6			

CL

[Handwritten initials]

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Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 410-77890-1

Login Number: 77890

List Source: Eurofins Lancaster Laboratories Env, LLC

List Number: 1

Creator: Leakway, Christian

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	N/A	

ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-99370-1
Client Project/Site: EastAlco WW

For:

Tetra Tech, Inc.
Foster Plaza VII
661 Anderson Drive
Foster Plaza 7 Suite 200
Pittsburgh, Pennsylvania 15220

Attn: Dan Drzik



Authorized for release by:
10/10/2022 4:12:44 PM

Stephen Gordon, Senior Project Manager
(412)525-0071
Stephen.Gordon@et.eurofinsus.com

LINKS

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results through



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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
 - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
 - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

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

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

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A handwritten signature in black ink, appearing to read "Stephen Gordon".

Stephen Gordon
Senior Project Manager
10/10/2022 4:12:44 PM



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Definitions/Glossary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99370-1

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
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99370-1

Job ID: 410-99370-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Narrative

Job Narrative
410-99370-1

Receipt

The samples were received on 9/26/2022 6:45 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.4°C

HPLC/IC

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



Detection Summary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99370-1

Client Sample ID: MW-52-0922

Lab Sample ID: 410-99370-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	5.2		1.0	0.45	mg/L	5		EPA 300.0 R2.1	Total/NA

Client Sample ID: MW-60-0922

Lab Sample ID: 410-99370-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	2.5		1.0	0.45	mg/L	5		EPA 300.0 R2.1	Total/NA

Client Sample ID: MW-72-0922

Lab Sample ID: 410-99370-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	5.3		1.0	0.45	mg/L	5		EPA 300.0 R2.1	Total/NA

Client Sample ID: MW-73-0922

Lab Sample ID: 410-99370-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	5.3		1.0	0.45	mg/L	5		EPA 300.0 R2.1	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99370-1

Client Sample ID: MW-52-0922

Lab Sample ID: 410-99370-1

Date Collected: 09/26/22 13:34

Matrix: Water

Date Received: 09/26/22 18:45

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	5.2		1.0	0.45	mg/L			10/08/22 12:03	5

Client Sample ID: MW-60-0922

Lab Sample ID: 410-99370-2

Date Collected: 09/26/22 14:30

Matrix: Water

Date Received: 09/26/22 18:45

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	2.5		1.0	0.45	mg/L			10/08/22 12:13	5

Client Sample ID: MW-72-0922

Lab Sample ID: 410-99370-3

Date Collected: 09/26/22 13:00

Matrix: Water

Date Received: 09/26/22 18:45

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	5.3		1.0	0.45	mg/L			10/08/22 12:24	5

Client Sample ID: MW-73-0922

Lab Sample ID: 410-99370-4

Date Collected: 09/26/22 13:02

Matrix: Water

Date Received: 09/26/22 18:45

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	5.3		1.0	0.45	mg/L			10/08/22 12:35	5

QC Sample Results

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99370-1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 410-304548/5
Matrix: Water
Analysis Batch: 304548

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.20	0.090	mg/L			10/08/22 11:30	1

Lab Sample ID: LCS 410-304548/3
Matrix: Water
Analysis Batch: 304548

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.750	0.711		mg/L		95	90 - 110

Lab Sample ID: LCSD 410-304548/4
Matrix: Water
Analysis Batch: 304548

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.750	0.743		mg/L		99	90 - 110	4	20

QC Association Summary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99370-1

HPLC/IC

Analysis Batch: 304548

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99370-1	MW-52-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99370-2	MW-60-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99370-3	MW-72-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99370-4	MW-73-0922	Total/NA	Water	EPA 300.0 R2.1	
MB 410-304548/5	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-304548/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
LCSD 410-304548/4	Lab Control Sample Dup	Total/NA	Water	EPA 300.0 R2.1	



Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99370-1

Client Sample ID: MW-52-0922

Lab Sample ID: 410-99370-1

Date Collected: 09/26/22 13:34

Matrix: Water

Date Received: 09/26/22 18:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	304548	L4QM	ELLE	10/08/22 12:03

Client Sample ID: MW-60-0922

Lab Sample ID: 410-99370-2

Date Collected: 09/26/22 14:30

Matrix: Water

Date Received: 09/26/22 18:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	304548	L4QM	ELLE	10/08/22 12:13

Client Sample ID: MW-72-0922

Lab Sample ID: 410-99370-3

Date Collected: 09/26/22 13:00

Matrix: Water

Date Received: 09/26/22 18:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	304548	L4QM	ELLE	10/08/22 12:24

Client Sample ID: MW-73-0922

Lab Sample ID: 410-99370-4

Date Collected: 09/26/22 13:02

Matrix: Water

Date Received: 09/26/22 18:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	304548	L4QM	ELLE	10/08/22 12:35

Laboratory References:

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

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99370-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

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

Authority	Program	Identification Number	Expiration Date
Maryland	State	100	06-30-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 300.0 R2.1		Water	Fluoride



Method Summary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99370-1

Method	Method Description	Protocol	Laboratory
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	ELLE

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

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



Sample Summary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99370-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-99370-1	MW-52-0922	Water	09/26/22 13:34	09/26/22 18:45
410-99370-2	MW-60-0922	Water	09/26/22 14:30	09/26/22 18:45
410-99370-3	MW-72-0922	Water	09/26/22 13:00	09/26/22 18:45
410-99370-4	MW-73-0922	Water	09/26/22 13:02	09/26/22 18:45

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410-99370 Chain of Custody

Environment

Chain of Custody Record



Environment Testing
America

- 1
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Client Contact: Josh Mullis		Company: Tetra Tech, Inc.		PWSID		Lab PM: Gordon, Stephen J		Carrier Tracking No(s)		COC No: 410-64743-18583 1						
Address: 20251 Century Blvd Suite 200		Due Date Requested:		Analysis Requested		E-Mail: Stephen.Gordon@et.eurofinsus.com		State of Origin: MD		Page: Page 1 of 1						
City: Germantown		TAT Requested (days): STANDARD		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%;">Field Filtered Sample (Y or No)</td> <td style="width: 5%;">300_ORGF_M_28D - Flouride Only</td> <td style="width: 5%;">300_ORGF_M_28D, 300_ORGFMS</td> <td style="width: 5%;">2320B, 2510B, 2540C_SingleDry, 9040B</td> <td style="width: 5%;">SM2130B - Turbidity</td> <td style="width: 5%;">6020B, 7470A</td> <td style="width: 5%;">1677_Free - Free Cyanide</td> </tr> </table>		Field Filtered Sample (Y or No)	300_ORGF_M_28D - Flouride Only	300_ORGF_M_28D, 300_ORGFMS	2320B, 2510B, 2540C_SingleDry, 9040B	SM2130B - Turbidity	6020B, 7470A	1677_Free - Free Cyanide	Job #		Preservation Codes:	
Field Filtered Sample (Y or No)	300_ORGF_M_28D - Flouride Only	300_ORGF_M_28D, 300_ORGFMS	2320B, 2510B, 2540C_SingleDry, 9040B			SM2130B - Turbidity	6020B, 7470A	1677_Free - Free Cyanide								
State, Zip: MD, 20874		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No				A - HCL		M - Hexane		N - None		O - AsNaO2				
Phone: 412-921-8277(Tel)		PO #: 1188904				E - NaHSO4		Q - Na2SO3		R - Na2S2O3		S - H2SO4				
Email: Josh.Mullis@tetratech.com		WO #:		F - MeOH		T - TSP Dodecahydrate		U - Acetone		V - MCAA						
Project Name: EastAlco WW 112IC09729		Project #: 41001054		G - Amchlor		W - pH 4-5		X - EDTA		Y - Trizma						
Site:		SSOW#:		H - Ascorbic Acid		Z - other (specify)		L - EDA		Other:						
Sample Identification		Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)		Special Instructions/Note:						
MW-43 JM		JM						Water		X						
RW-28 JM		JM						Water		N						
RW-29 DUP JM		JM						Water		N						
MW-45 JM		JM						Water		N						
MW-51 JM		JM						Water		N						
MW-52-0922		9/26/22		1334		G		Water		X						
MW-56 JM		JM						Water		R						
MW-60-0922		9/26/22		1430		G		Water		R						
MW-62 JM		JM						Water		X						
MW-72-0922		9/26/22		1300		G		Water		X						
MW-103 JM MW-73-0922		9/26/22		1302		G		Water		X						
Possible Hazard Identification						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)										
<input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological						<input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months										
Deliverable Requested: I, II, III, IV, Other (specify)						Special Instructions/QC Requirements:										
Empty Kit Relinquished by:				Date:		Time:		Method of Shipment:								
Relinquished by: Edm Hernandez		Date/Time: 9/19/22 8:40		Company:		Received by:		Date/Time:		Company:						
Relinquished by: [Signature]		Date/Time: 9/26/22		Company: TH		Received by: [Signature]		Date/Time: 9/26/22 1549		Company:						
Relinquished by: [Signature]		Date/Time: 9/26/22 1831		Company:		Received by: [Signature]		Date/Time: 9/26/22 1845		Company: ELC						
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.: not present		Cooler Temperature(s)°C and Other Remarks: 34°C												

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 410-99370-1

Login Number: 99370

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: Renner, Melissa

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	Not present
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	N/A	Not present.
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	



ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-99556-1
Client Project/Site: EastAlco WW

For:

Tetra Tech, Inc.
Foster Plaza VII
661 Anderson Drive
Foster Plaza 7 Suite 200
Pittsburgh, Pennsylvania 15220

Attn: Dan Drzik



Authorized for release by:
10/11/2022 8:15:05 PM

Stephen Gordon, Senior Project Manager
(412)525-0071

Stephen.Gordon@et.eurofinsus.com

LINKS

Review your project
results through



Have a Question?



Visit us at:

www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
 - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
 - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

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

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

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A handwritten signature in black ink, appearing to read "Stephen Gordon".

Stephen Gordon
Senior Project Manager
10/11/2022 8:15:05 PM



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Definitions/Glossary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99556-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99556-1

Job ID: 410-99556-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Narrative

Job Narrative 410-99556-1

Receipt

The samples were received on 9/27/2022 7:30 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.2°C

Receipt Exceptions

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): RW-29DUP-0922 (410-99556-2). The container labels list 09:15, while the COC lists 00:00. The client was contacted, and the lab was instructed to <EXPLANATION_REQUIRED>.

HPLC/IC

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

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Detection Summary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99556-1

Client Sample ID: RW-29-0922

Lab Sample ID: 410-99556-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	24		2.0	0.90	mg/L	10		EPA 300.0 R2.1	Total/NA

Client Sample ID: RW-29DUP-0922

Lab Sample ID: 410-99556-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	23		2.0	0.90	mg/L	10		EPA 300.0 R2.1	Total/NA

Client Sample ID: MW-108-0922

Lab Sample ID: 410-99556-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	11		1.0	0.45	mg/L	5		EPA 300.0 R2.1	Total/NA

Client Sample ID: MW-62-0922

Lab Sample ID: 410-99556-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	3.4		1.0	0.45	mg/L	5		EPA 300.0 R2.1	Total/NA

Client Sample ID: MW-68-0922

Lab Sample ID: 410-99556-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	20		2.0	0.90	mg/L	10		EPA 300.0 R2.1	Total/NA

Client Sample ID: MW-68DUP-0922

Lab Sample ID: 410-99556-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	19		2.0	0.90	mg/L	10		EPA 300.0 R2.1	Total/NA

Client Sample ID: MW-67-0922

Lab Sample ID: 410-99556-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	7.1		1.0	0.45	mg/L	5		EPA 300.0 R2.1	Total/NA

Client Sample ID: MW-66-0922

Lab Sample ID: 410-99556-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	9.6		1.0	0.45	mg/L	5		EPA 300.0 R2.1	Total/NA

Client Sample ID: MW-45-0922

Lab Sample ID: 410-99556-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	26		2.0	0.90	mg/L	10		EPA 300.0 R2.1	Total/NA

Client Sample ID: MW-103-0922

Lab Sample ID: 410-99556-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	3.9		1.0	0.45	mg/L	5		EPA 300.0 R2.1	Total/NA

Client Sample ID: MW-4-0922

Lab Sample ID: 410-99556-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	2.4		1.0	0.45	mg/L	5		EPA 300.0 R2.1	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99556-1

Client Sample ID: RW-29-0922

Lab Sample ID: 410-99556-1

Date Collected: 09/27/22 09:15

Matrix: Water

Date Received: 09/27/22 19:30

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	24		2.0	0.90	mg/L			10/10/22 17:45	10

Client Sample ID: RW-29DUP-0922

Lab Sample ID: 410-99556-2

Date Collected: 09/27/22 00:00

Matrix: Water

Date Received: 09/27/22 19:30

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	23		2.0	0.90	mg/L			10/10/22 17:24	10

Client Sample ID: MW-108-0922

Lab Sample ID: 410-99556-3

Date Collected: 09/27/22 10:45

Matrix: Water

Date Received: 09/27/22 19:30

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	11		1.0	0.45	mg/L			10/08/22 13:18	5

Client Sample ID: MW-62-0922

Lab Sample ID: 410-99556-4

Date Collected: 09/27/22 12:20

Matrix: Water

Date Received: 09/27/22 19:30

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	3.4		1.0	0.45	mg/L			10/08/22 13:29	5

Client Sample ID: MW-68-0922

Lab Sample ID: 410-99556-5

Date Collected: 09/27/22 08:55

Matrix: Water

Date Received: 09/27/22 19:30

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	20		2.0	0.90	mg/L			10/10/22 17:02	10

Client Sample ID: MW-68DUP-0922

Lab Sample ID: 410-99556-6

Date Collected: 09/27/22 00:00

Matrix: Water

Date Received: 09/27/22 19:30

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	19		2.0	0.90	mg/L			10/10/22 17:13	10

Client Sample ID: MW-67-0922

Lab Sample ID: 410-99556-7

Date Collected: 09/27/22 09:56

Matrix: Water

Date Received: 09/27/22 19:30

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	7.1		1.0	0.45	mg/L			10/08/22 14:44	5

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99556-1

Client Sample ID: MW-66-0922

Lab Sample ID: 410-99556-8

Date Collected: 09/27/22 10:29

Matrix: Water

Date Received: 09/27/22 19:30

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	9.6		1.0	0.45	mg/L			10/08/22 14:55	5

Client Sample ID: MW-45-0922

Lab Sample ID: 410-99556-9

Date Collected: 09/27/22 14:13

Matrix: Water

Date Received: 09/27/22 19:30

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	26		2.0	0.90	mg/L			10/10/22 17:35	10

Client Sample ID: MW-103-0922

Lab Sample ID: 410-99556-10

Date Collected: 09/27/22 14:25

Matrix: Water

Date Received: 09/27/22 19:30

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	3.9		1.0	0.45	mg/L			10/08/22 15:16	5

Client Sample ID: MW-4-0922

Lab Sample ID: 410-99556-11

Date Collected: 09/27/22 15:03

Matrix: Water

Date Received: 09/27/22 19:30

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	2.4		1.0	0.45	mg/L			10/08/22 15:27	5

QC Sample Results

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99556-1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 410-304548/5
Matrix: Water
Analysis Batch: 304548

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.20	0.090	mg/L			10/08/22 11:30	1

Lab Sample ID: LCS 410-304548/3
Matrix: Water
Analysis Batch: 304548

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.750	0.711		mg/L		95	90 - 110

Lab Sample ID: LCSD 410-304548/4
Matrix: Water
Analysis Batch: 304548

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.750	0.743		mg/L		99	90 - 110	4	20

Lab Sample ID: 410-99556-11 MS
Matrix: Water
Analysis Batch: 304548

Client Sample ID: MW-4-0922
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	2.4		2.50	5.15		mg/L		109	90 - 110

Lab Sample ID: 410-99556-11 DU
Matrix: Water
Analysis Batch: 304548

Client Sample ID: MW-4-0922
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	2.4		2.43		mg/L		0.3	15

Lab Sample ID: MB 410-305226/5
Matrix: Water
Analysis Batch: 305226

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.20	0.090	mg/L			10/10/22 13:27	1

Lab Sample ID: LCS 410-305226/3
Matrix: Water
Analysis Batch: 305226

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.750	0.758		mg/L		101	90 - 110

Lab Sample ID: LCSD 410-305226/4
Matrix: Water
Analysis Batch: 305226

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.750	0.764		mg/L		102	90 - 110	1	20

Eurofins Lancaster Laboratories Environment Testing, LLC

QC Association Summary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99556-1

HPLC/IC

Analysis Batch: 304548

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99556-3	MW-108-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99556-4	MW-62-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99556-7	MW-67-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99556-8	MW-66-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99556-10	MW-103-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99556-11	MW-4-0922	Total/NA	Water	EPA 300.0 R2.1	
MB 410-304548/5	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-304548/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
LCSD 410-304548/4	Lab Control Sample Dup	Total/NA	Water	EPA 300.0 R2.1	
410-99556-11 MS	MW-4-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99556-11 DU	MW-4-0922	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 305226

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99556-1	RW-29-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99556-2	RW-29DUP-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99556-5	MW-68-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99556-6	MW-68DUP-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99556-9	MW-45-0922	Total/NA	Water	EPA 300.0 R2.1	
MB 410-305226/5	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-305226/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
LCSD 410-305226/4	Lab Control Sample Dup	Total/NA	Water	EPA 300.0 R2.1	

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99556-1

Client Sample ID: RW-29-0922

Lab Sample ID: 410-99556-1

Date Collected: 09/27/22 09:15

Matrix: Water

Date Received: 09/27/22 19:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		10	305226	L4QM	ELLE	10/10/22 17:45

Client Sample ID: RW-29DUP-0922

Lab Sample ID: 410-99556-2

Date Collected: 09/27/22 00:00

Matrix: Water

Date Received: 09/27/22 19:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		10	305226	L4QM	ELLE	10/10/22 17:24

Client Sample ID: MW-108-0922

Lab Sample ID: 410-99556-3

Date Collected: 09/27/22 10:45

Matrix: Water

Date Received: 09/27/22 19:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	304548	L4QM	ELLE	10/08/22 13:18

Client Sample ID: MW-62-0922

Lab Sample ID: 410-99556-4

Date Collected: 09/27/22 12:20

Matrix: Water

Date Received: 09/27/22 19:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	304548	L4QM	ELLE	10/08/22 13:29

Client Sample ID: MW-68-0922

Lab Sample ID: 410-99556-5

Date Collected: 09/27/22 08:55

Matrix: Water

Date Received: 09/27/22 19:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		10	305226	L4QM	ELLE	10/10/22 17:02

Client Sample ID: MW-68DUP-0922

Lab Sample ID: 410-99556-6

Date Collected: 09/27/22 00:00

Matrix: Water

Date Received: 09/27/22 19:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		10	305226	L4QM	ELLE	10/10/22 17:13

Client Sample ID: MW-67-0922

Lab Sample ID: 410-99556-7

Date Collected: 09/27/22 09:56

Matrix: Water

Date Received: 09/27/22 19:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	304548	L4QM	ELLE	10/08/22 14:44

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99556-1

Client Sample ID: MW-66-0922

Lab Sample ID: 410-99556-8

Date Collected: 09/27/22 10:29

Matrix: Water

Date Received: 09/27/22 19:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	304548	L4QM	ELLE	10/08/22 14:55

Client Sample ID: MW-45-0922

Lab Sample ID: 410-99556-9

Date Collected: 09/27/22 14:13

Matrix: Water

Date Received: 09/27/22 19:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		10	305226	L4QM	ELLE	10/10/22 17:35

Client Sample ID: MW-103-0922

Lab Sample ID: 410-99556-10

Date Collected: 09/27/22 14:25

Matrix: Water

Date Received: 09/27/22 19:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	304548	L4QM	ELLE	10/08/22 15:16

Client Sample ID: MW-4-0922

Lab Sample ID: 410-99556-11

Date Collected: 09/27/22 15:03

Matrix: Water

Date Received: 09/27/22 19:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	304548	L4QM	ELLE	10/08/22 15:27

Laboratory References:

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

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99556-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

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

<u>Authority</u>	<u>Program</u>	<u>Identification Number</u>	<u>Expiration Date</u>
Maryland	State	100	06-30-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

<u>Analysis Method</u>	<u>Prep Method</u>	<u>Matrix</u>	<u>Analyte</u>
EPA 300.0 R2.1		Water	Fluoride

- 1
- 2
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- 14

Method Summary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99556-1

Method	Method Description	Protocol	Laboratory
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	ELLE

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

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



Sample Summary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99556-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-99556-1	RW-29-0922	Water	09/27/22 09:15	09/27/22 19:30
410-99556-2	RW-29DUP-0922	Water	09/27/22 00:00	09/27/22 19:30
410-99556-3	MW-108-0922	Water	09/27/22 10:45	09/27/22 19:30
410-99556-4	MW-62-0922	Water	09/27/22 12:20	09/27/22 19:30
410-99556-5	MW-68-0922	Water	09/27/22 08:55	09/27/22 19:30
410-99556-6	MW-68DUP-0922	Water	09/27/22 00:00	09/27/22 19:30
410-99556-7	MW-67-0922	Water	09/27/22 09:56	09/27/22 19:30
410-99556-8	MW-66-0922	Water	09/27/22 10:29	09/27/22 19:30
410-99556-9	MW-45-0922	Water	09/27/22 14:13	09/27/22 19:30
410-99556-10	MW-103-0922	Water	09/27/22 14:25	09/27/22 19:30
410-99556-11	MW-4-0922	Water	09/27/22 15:03	09/27/22 19:30

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410-99556 Chain of Custody

ries Environm

Chain of Custody Record



Environment Testing America

Sampler <i>Mullis/Musser</i>		Lab PM Gordon, Stephen J		Carrier Tracking No(s)		COC No. 410-64743-18583 2									
Phone <i>410-279-2700</i>		E-Mail Stephen.Gordon@et.eurofinsus.com		State of Origin <i>MD</i>		Page <i>2 of 1 of 1</i>									
Client Contact Josh Mullis		PWSID		Analysis Requested				Job #							
Company Tetra Tech, Inc.		Due Date Requested:		<table border="1"> <tr><td>300_ORGFM_28D - Flouride Only</td></tr> <tr><td>300_ORGFM_28D, 300_ORGFMS</td></tr> <tr><td>2320B, 2510B, 2540C_SingleDry, 9040B</td></tr> <tr><td>SM2100B - Turbidity</td></tr> <tr><td>6020B, 7470A</td></tr> <tr><td>1677_Free - Free Cyanide</td></tr> </table>				300_ORGFM_28D - Flouride Only	300_ORGFM_28D, 300_ORGFMS	2320B, 2510B, 2540C_SingleDry, 9040B	SM2100B - Turbidity	6020B, 7470A	1677_Free - Free Cyanide	Preservation Codes:	
300_ORGFM_28D - Flouride Only															
300_ORGFM_28D, 300_ORGFMS															
2320B, 2510B, 2540C_SingleDry, 9040B															
SM2100B - Turbidity															
6020B, 7470A															
1677_Free - Free Cyanide															
Address: 20251 Century Blvd Suite 200		TAT Requested (days): <i>Standard</i>		A - HCL		M - Hexane									
City Germantown		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No		B - NaOH		N - None									
State, Zip MD, 20874		PO #: 1188904		C - Zn Acetate		O - AsNaO2									
Phone 412-921-8277(Tel)		WO #:		D - Nitric Acid		P - Na2O4S									
Email Josh.Mullis@tetratech.com		Project #: 41001054		E - NaHSO4		Q - Na2SO3									
Project Name EastAlco WW		SSOV#:		F - MeOH		R - Na2S2O3									
Site		Sample Identification		G - Amchlor		S - H2SO4									
		Sample Date		H - Ascorbic Acid		T - TSP Dodecahydrate									
		Sample Time		I - Ice		U - Acetone									
		Sample Type (C=comp, G=grab)		J - DI Water		V - MCAA									
		Matrix (W=water, S=solid, O=water/oil, BT=Tissue, A=Air)		K - EDTA		W - pH 4-5									
				L - EDA		Y - Trizma									
						Z - other (specify)									
						Other:									
						Special Instructions/Note:									
MW-107 <i>RW-29-0922</i>		<i>9/27/22</i>		<i>0915</i>		<i>G</i>		Water							
MW-108 <i>RW-29DUP-0922</i>				<i>0000</i>				Water							
MW-4 <i>MW-108-0922</i>				<i>1045</i>				Water							
MW-6 <i>MW-62-0922</i>				<i>1220</i>				Water							
MW-25 <i>MW-68-0922</i>				<i>0855</i>				Water							
MW-26 <i>MW-68DUP-0922</i>				<i>0000</i>				Water							
MW-68 <i>MW-67-0922</i>				<i>0956</i>				Water							
MW-68DUP <i>MW-66-0922</i>				<i>1029</i>				Water							
MW-66 <i>MW-45-0922</i>				<i>1413</i>				Water							
MW-67 <i>Jr MW-108 MW-103-0922</i>				<i>1425</i>				Water							
<i>MW-4-0922</i>				<i>1503</i>				Water							
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological					Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months										
Deliverable Requested: I, II, III, IV, Other (specify)					Special Instructions/QC Requirements:										
Empty Kit Relinquished by:		Date		Time:		Method of Shipment:									
Relinquished by: <i>[Signature]</i>		Date/Time: <i>9/27/22</i>		Company: <i>ELLE</i>		Received by: <i>[Signature]</i>		Date/Time: <i>9/27/22 17:58</i>		Company: <i>ELLE</i>					
Relinquished by: <i>[Signature]</i>		Date/Time: <i>9/27/22 19:10</i>		Company: <i>ELLE</i>		Received by: <i>[Signature]</i>		Date/Time: _____		Company: _____					
Relinquished by: <i>[Signature]</i>		Date/Time: _____		Company: _____		Received by: <i>[Signature]</i>		Date/Time: <i>9/27/22 19:30</i>		Company: <i>ELLE</i>					
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: <i>0.2</i>											

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 410-99556-1

Login Number: 99556

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: Jeremiah, Cory T

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)?	N/A	

ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-99726-1
Client Project/Site: EastAlco WW

For:

Tetra Tech, Inc.
Foster Plaza VII
661 Anderson Drive
Foster Plaza 7 Suite 200
Pittsburgh, Pennsylvania 15220

Attn: Dan Drzik



Authorized for release by:
10/20/2022 8:02:01 AM

Stephen Gordon, Senior Project Manager
(412)525-0071
Stephen.Gordon@et.eurofinsus.com

LINKS

Review your project
results through



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www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
 - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
 - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

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

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

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A handwritten signature in black ink, appearing to read "Stephen Gordon".

Stephen Gordon
Senior Project Manager
10/20/2022 8:02:01 AM



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Definitions/Glossary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99726-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
cn	Refer to Case Narrative for further detail
F1	MS and/or MSD recovery exceeds control limits.
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.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
^+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.
cn	Refer to Case Narrative for further detail
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
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

Eurofins Lancaster Laboratories Environment Testing, LLC

Case Narrative

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99726-1

Job ID: 410-99726-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Narrative

Job Narrative 410-99726-1

Receipt

The samples were received on 9/28/2022 6:24 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.8°C

HPLC/IC

Method 300_ORGFM_28D: The continuing calibration verification (CCV) associated with batch 410-301680 recovered above the upper control limit for fluoride. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: MW-64-0922 (410-99726-4), MW-76-0922 (410-99726-5) and MW-77-0922 (410-99726-6).

Method 300_ORGFM_28D: The laboratory control sample (LCS) for analytical batch 410-301680 recovered outside control limits for the following analytes: fluoride. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

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

Metals

Method 6020B: The continuing calibration verification (CCV) associated with batch 410-305799 recovered above the upper control limit for Selenium. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

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

General Chemistry

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

Detection Summary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99726-1

Client Sample ID: MW-25-0922

Lab Sample ID: 410-99726-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	14		1.0	0.45	mg/L	5		EPA 300.0 R2.1	Total/NA

Client Sample ID: MW-26-0922

Lab Sample ID: 410-99726-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	4.3		1.0	0.45	mg/L	5		EPA 300.0 R2.1	Total/NA

Client Sample ID: MW-13-0922

Lab Sample ID: 410-99726-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	0.51	J	1.0	0.45	mg/L	5		EPA 300.0 R2.1	Total/NA

Client Sample ID: MW-64-0922

Lab Sample ID: 410-99726-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrogen, Nitrate	3.3		0.55	0.25	mg/L	5		EPA 300.0 R2.1	Total/NA
Sulfate	6.1	J cn	7.5	2.5	mg/L	5		EPA 300.0 R2.1	Total/NA
Chloride	4.1	J cn	7.5	3.0	mg/L	5		EPA 300.0 R2.1	Total/NA
Aluminum	150		25	12	ug/L	1		6020B	Total/NA
Barium	0.040		0.0020	0.00075	mg/L	1		6020B	Total/NA
Beryllium	0.00034	J	0.00050	0.00012	mg/L	1		6020B	Total/NA
Cadmium	0.00015	J	0.00050	0.00015	mg/L	1		6020B	Total/NA
Chromium	0.0014	J	0.0020	0.00033	mg/L	1		6020B	Total/NA
Lead	0.00021	J	0.00050	0.000071	mg/L	1		6020B	Total/NA
Nickel	0.0081		0.0010	0.00040	mg/L	1		6020B	Total/NA
Sodium	2.6		0.20	0.090	mg/L	1		6020B	Total/NA
Turbidity	3.0		1.0	1.0	NTU	1		2130B-2011	Total/NA
Specific Conductance	67		5.0	1.7	umhos/cm	1		2510B-2011	Total/NA
Total Dissolved Solids	37		30	12	mg/L	1		2540C-2011	Total/NA
pH	5.6	HF	0.01	0.01	S.U.	1		9040B	Total/NA
Temperature	22.0	HF	0.01	0.01	Degrees C	1		9040B	Total/NA

Client Sample ID: MW-76-0922

Lab Sample ID: 410-99726-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	0.20		0.20	0.090	mg/L	1		EPA 300.0 R2.1	Total/NA
Nitrogen, Nitrate	3.1		0.55	0.25	mg/L	5		EPA 300.0 R2.1	Total/NA
Sulfate	24	cn	7.5	2.5	mg/L	5		EPA 300.0 R2.1	Total/NA
Chloride	3.6	J cn	7.5	3.0	mg/L	5		EPA 300.0 R2.1	Total/NA
Aluminum	610	cn	25	12	ug/L	1		6020B	Total/NA
Barium	0.027	cn	0.0020	0.00075	mg/L	1		6020B	Total/NA
Beryllium	0.00041	J cn	0.00050	0.00012	mg/L	1		6020B	Total/NA
Chromium	0.0034	cn	0.0020	0.00033	mg/L	1		6020B	Total/NA
Lead	0.00031	J cn	0.00050	0.000071	mg/L	1		6020B	Total/NA
Nickel	0.0018	cn	0.0010	0.00040	mg/L	1		6020B	Total/NA
Sodium	5.7	cn	0.20	0.090	mg/L	1		6020B	Total/NA
Turbidity	10		1.0	1.0	NTU	1		2130B-2011	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	45		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Specific Conductance	180		5.0	1.7	umhos/cm	1		2510B-2011	Total/NA
Total Dissolved Solids	100		30	12	mg/L	1		2540C-2011	Total/NA
pH	6.5	HF	0.01	0.01	S.U.	1		9040B	Total/NA
Temperature	21.9	HF	0.01	0.01	Degrees C	1		9040B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

Detection Summary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99726-1

Client Sample ID: MW-77-0922

Lab Sample ID: 410-99726-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	0.15	J	0.20	0.090	mg/L	1		EPA 300.0 R2.1	Total/NA
Nitrogen, Nitrate	2.3		0.55	0.25	mg/L	5		EPA 300.0 R2.1	Total/NA
Sulfate	43	cn	7.5	2.5	mg/L	5		EPA 300.0 R2.1	Total/NA
Chloride	24	cn	7.5	3.0	mg/L	5		EPA 300.0 R2.1	Total/NA
Aluminum	42		25	12	ug/L	1		6020B	Total/NA
Barium	0.042		0.0020	0.00075	mg/L	1		6020B	Total/NA
Chromium	0.00087	J	0.0020	0.00033	mg/L	1		6020B	Total/NA
Sodium	14		0.20	0.090	mg/L	1		6020B	Total/NA
Turbidity	2.0		1.0	1.0	NTU	1		2130B-2011	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	240		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Specific Conductance	630		5.0	1.7	umhos/cm	1		2510B-2011	Total/NA
Total Dissolved Solids	320		60	24	mg/L	1		2540C-2011	Total/NA
pH	7.3	HF	0.01	0.01	S.U.	1		9040B	Total/NA
Temperature	21.9	HF	0.01	0.01	Degrees C	1		9040B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99726-1

Client Sample ID: MW-25-0922

Lab Sample ID: 410-99726-1

Date Collected: 09/28/22 08:20

Matrix: Water

Date Received: 09/28/22 18:24

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	14		1.0	0.45	mg/L			10/10/22 18:18	5

Client Sample ID: MW-26-0922

Lab Sample ID: 410-99726-2

Date Collected: 09/28/22 11:07

Matrix: Water

Date Received: 09/28/22 18:24

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	4.3		1.0	0.45	mg/L			10/10/22 19:01	5

Client Sample ID: MW-13-0922

Lab Sample ID: 410-99726-3

Date Collected: 09/28/22 14:52

Matrix: Water

Date Received: 09/28/22 18:24

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.51	J	1.0	0.45	mg/L			10/10/22 18:50	5

Client Sample ID: MW-64-0922

Lab Sample ID: 410-99726-4

Date Collected: 09/28/22 09:30

Matrix: Water

Date Received: 09/28/22 18:24

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.20	0.090	mg/L			10/18/22 17:53	1
Nitrogen, Nitrate	3.3		0.55	0.25	mg/L			09/29/22 21:41	5
Sulfate	6.1	J cn	7.5	2.5	mg/L			09/29/22 21:41	5
Chloride	4.1	J cn	7.5	3.0	mg/L			09/29/22 21:41	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	150		25	12	ug/L		10/04/22 17:50	10/13/22 19:01	1
Arsenic	ND		0.0020	0.00068	mg/L		10/04/22 17:50	10/13/22 19:01	1
Barium	0.040		0.0020	0.00075	mg/L		10/04/22 17:50	10/13/22 19:01	1
Beryllium	0.00034	J	0.00050	0.00012	mg/L		10/04/22 17:50	10/13/22 19:01	1
Cadmium	0.00015	J	0.00050	0.00015	mg/L		10/04/22 17:50	10/13/22 19:01	1
Chromium	0.0014	J	0.0020	0.00033	mg/L		10/04/22 17:50	10/13/22 19:01	1
Lead	0.00021	J	0.00050	0.000071	mg/L		10/04/22 17:50	10/13/22 19:01	1
Nickel	0.0081		0.0010	0.00040	mg/L		10/04/22 17:50	10/13/22 19:01	1
Selenium	ND		0.0010	0.00028	mg/L		10/04/22 17:50	10/13/22 19:01	1
Sodium	2.6		0.20	0.090	mg/L		10/04/22 17:50	10/13/22 19:01	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000079	mg/L		10/05/22 20:59	10/06/22 14:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity (SM 2130B-2011)	3.0		1.0	1.0	NTU			09/29/22 16:12	1
Total Alkalinity as CaCO3 to pH 4.5 (SM 2320B-2011)	ND		8.0	8.0	mg/L			10/01/22 03:01	1

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99726-1

Client Sample ID: MW-64-0922

Lab Sample ID: 410-99726-4

Date Collected: 09/28/22 09:30

Matrix: Water

Date Received: 09/28/22 18:24

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance (SM 2510B-2011)	67		5.0	1.7	umhos/cm			10/01/22 03:01	1
Total Dissolved Solids (SM 2540C-2011)	37		30	12	mg/L			09/29/22 07:44	1
pH (SW846 9040B)	5.6	HF	0.01	0.01	S.U.			10/01/22 03:01	1
Temperature (SW846 9040B)	22.0	HF	0.01	0.01	Degrees C			10/01/22 03:01	1

Client Sample ID: MW-76-0922

Lab Sample ID: 410-99726-5

Date Collected: 09/28/22 13:05

Matrix: Water

Date Received: 09/28/22 18:24

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.20		0.20	0.090	mg/L			10/18/22 18:04	1
Nitrogen, Nitrate	3.1		0.55	0.25	mg/L			09/29/22 22:01	5
Sulfate	24	cn	7.5	2.5	mg/L			09/29/22 22:01	5
Chloride	3.6	J cn	7.5	3.0	mg/L			09/29/22 22:01	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	610	cn	25	12	ug/L		10/04/22 17:55	10/12/22 09:44	1
Arsenic	ND	cn	0.0020	0.00068	mg/L		10/04/22 17:55	10/12/22 09:44	1
Barium	0.027	cn	0.0020	0.00075	mg/L		10/04/22 17:55	10/12/22 09:44	1
Beryllium	0.00041	J cn	0.00050	0.00012	mg/L		10/04/22 17:55	10/12/22 09:44	1
Cadmium	ND	cn	0.00050	0.00015	mg/L		10/04/22 17:55	10/12/22 09:44	1
Chromium	0.0034	cn	0.0020	0.00033	mg/L		10/04/22 17:55	10/12/22 09:44	1
Lead	0.00031	J cn	0.00050	0.000071	mg/L		10/04/22 17:55	10/12/22 09:44	1
Nickel	0.0018	cn	0.0010	0.00040	mg/L		10/04/22 17:55	10/12/22 09:44	1
Selenium	ND	^+ cn	0.0010	0.00028	mg/L		10/04/22 17:55	10/12/22 09:44	1
Sodium	5.7	cn	0.20	0.090	mg/L		10/04/22 17:55	10/12/22 09:44	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000079	mg/L		10/05/22 20:59	10/06/22 14:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity (SM 2130B-2011)	10		1.0	1.0	NTU			09/29/22 16:12	1
Total Alkalinity as CaCO3 to pH 4.5 (SM 2320B-2011)	45		8.0	8.0	mg/L			10/01/22 03:07	1
Specific Conductance (SM 2510B-2011)	180		5.0	1.7	umhos/cm			10/01/22 03:07	1
Total Dissolved Solids (SM 2540C-2011)	100		30	12	mg/L			09/29/22 07:44	1
pH (SW846 9040B)	6.5	HF	0.01	0.01	S.U.			10/01/22 03:07	1
Temperature (SW846 9040B)	21.9	HF	0.01	0.01	Degrees C			10/01/22 03:07	1

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99726-1

Client Sample ID: MW-77-0922

Lab Sample ID: 410-99726-6

Date Collected: 09/28/22 14:20

Matrix: Water

Date Received: 09/28/22 18:24

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.15	J	0.20	0.090	mg/L			10/18/22 18:15	1
Nitrogen, Nitrate	2.3		0.55	0.25	mg/L			09/29/22 22:20	5
Sulfate	43	cn	7.5	2.5	mg/L			09/29/22 22:20	5
Chloride	24	cn	7.5	3.0	mg/L			09/29/22 22:20	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	42		25	12	ug/L		10/04/22 17:50	10/13/22 19:06	1
Arsenic	ND		0.0020	0.00068	mg/L		10/04/22 17:50	10/13/22 19:06	1
Barium	0.042		0.0020	0.00075	mg/L		10/04/22 17:50	10/13/22 19:06	1
Beryllium	ND		0.00050	0.00012	mg/L		10/04/22 17:50	10/13/22 19:06	1
Cadmium	ND		0.00050	0.00015	mg/L		10/04/22 17:50	10/13/22 19:06	1
Chromium	0.00087	J	0.0020	0.00033	mg/L		10/04/22 17:50	10/13/22 19:06	1
Lead	ND		0.00050	0.000071	mg/L		10/04/22 17:50	10/13/22 19:06	1
Nickel	ND		0.0010	0.00040	mg/L		10/04/22 17:50	10/13/22 19:06	1
Selenium	ND		0.0010	0.00028	mg/L		10/04/22 17:50	10/13/22 19:06	1
Sodium	14		0.20	0.090	mg/L		10/04/22 17:50	10/13/22 19:06	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000079	mg/L		10/05/22 20:59	10/06/22 14:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity (SM 2130B-2011)	2.0		1.0	1.0	NTU			09/29/22 16:12	1
Total Alkalinity as CaCO3 to pH 4.5 (SM 2320B-2011)	240		8.0	8.0	mg/L			10/01/22 03:13	1
Specific Conductance (SM 2510B-2011)	630		5.0	1.7	umhos/cm			10/01/22 03:13	1
Total Dissolved Solids (SM 2540C-2011)	320		60	24	mg/L			09/29/22 07:44	1
pH (SW846 9040B)	7.3	HF	0.01	0.01	S.U.			10/01/22 03:13	1
Temperature (SW846 9040B)	21.9	HF	0.01	0.01	Degrees C			10/01/22 03:13	1

QC Sample Results

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99726-1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 410-301679/5
Matrix: Water
Analysis Batch: 301679

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	ND		0.11	0.050	mg/L			09/29/22 11:00	1

Lab Sample ID: LCS 410-301679/3
Matrix: Water
Analysis Batch: 301679

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrogen, Nitrate	0.755	0.743		mg/L		98	90 - 110

Lab Sample ID: LCSD 410-301679/4
Matrix: Water
Analysis Batch: 301679

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrogen, Nitrate	0.755	0.744		mg/L		99	90 - 110	0	20

Lab Sample ID: 410-99726-6 MS
Matrix: Water
Analysis Batch: 301679

Client Sample ID: MW-77-0922
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrogen, Nitrate	4.6	J	25.2	30.4		mg/L		103	90 - 110

Lab Sample ID: 410-99726-6 DU
Matrix: Water
Analysis Batch: 301679

Client Sample ID: MW-77-0922
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nitrogen, Nitrate	4.6	J	6.40	F5	mg/L		33	15

Lab Sample ID: MB 410-301680/5
Matrix: Water
Analysis Batch: 301680

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.20	0.090	mg/L			09/29/22 11:00	1
Sulfate	ND		1.5	0.50	mg/L			09/29/22 11:00	1
Chloride	ND		1.5	0.60	mg/L			09/29/22 11:00	1

Lab Sample ID: LCS 410-301680/3
Matrix: Water
Analysis Batch: 301680

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.750	1.00	*+	mg/L		133	90 - 110
Sulfate	7.51	7.79		mg/L		104	90 - 110
Chloride	3.00	3.19		mg/L		106	90 - 110

QC Sample Results

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99726-1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 410-301680/4
Matrix: Water
Analysis Batch: 301680

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.750	0.984	*+	mg/L		131	90 - 110	2	20
Sulfate	7.51	7.81		mg/L		104	90 - 110	0	20
Chloride	3.00	3.22		mg/L		107	90 - 110	1	20

Lab Sample ID: 410-99726-6 MS
Matrix: Water
Analysis Batch: 301680

Client Sample ID: MW-77-0922
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	ND	*+ F1	25.0	45.5	F1	mg/L		182	90 - 110
Sulfate	53	J F1	250	341	F1	mg/L		115	90 - 110
Chloride	ND	F1	100	143	F1	mg/L		143	90 - 110

Lab Sample ID: 410-99726-6 DU
Matrix: Water
Analysis Batch: 301680

Client Sample ID: MW-77-0922
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	ND	*+ F1	ND	*+	mg/L		NC	15
Sulfate	53	J F1	55.1	J	mg/L		3	15
Chloride	ND	F1	33.4	J	mg/L		NC	15

Lab Sample ID: MB 410-305226/5
Matrix: Water
Analysis Batch: 305226

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.20	0.090	mg/L			10/10/22 13:27	1

Lab Sample ID: LCS 410-305226/3
Matrix: Water
Analysis Batch: 305226

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.750	0.758		mg/L		101	90 - 110

Lab Sample ID: LCSD 410-305226/4
Matrix: Water
Analysis Batch: 305226

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.750	0.764		mg/L		102	90 - 110	1	20

Lab Sample ID: 410-99726-1 DU
Matrix: Water
Analysis Batch: 305226

Client Sample ID: MW-25-0922
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	14		13.5		mg/L		3	15

QC Sample Results

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99726-1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 410-307931/5
Matrix: Water
Analysis Batch: 307931

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.20	0.090	mg/L			10/18/22 16:38	1
Sulfate	ND		1.5	0.50	mg/L			10/18/22 16:38	1
Chloride	ND		1.5	0.60	mg/L			10/18/22 16:38	1

Lab Sample ID: LCS 410-307931/3
Matrix: Water
Analysis Batch: 307931

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.750	0.736		mg/L		98	90 - 110
Sulfate	7.50	7.59		mg/L		101	90 - 110
Chloride	3.00	3.07		mg/L		102	90 - 110

Lab Sample ID: LCSD 410-307931/4
Matrix: Water
Analysis Batch: 307931

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.750	0.738		mg/L		98	90 - 110	0	20
Sulfate	7.50	7.60		mg/L		101	90 - 110	0	20
Chloride	3.00	3.07		mg/L		102	90 - 110	0	20

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: 410-99726-5 MS
Matrix: Water
Analysis Batch: 305799

Client Sample ID: MW-76-0922
Prep Type: Total/NA
Prep Batch: 303081

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	610	cn	5000	6190		ug/L		112	75 - 125
Arsenic	ND	cn	0.500	0.488		mg/L		98	75 - 125
Barium	0.027	cn	0.500	0.541		mg/L		103	75 - 125
Beryllium	0.00041	J cn	0.0500	0.0479		mg/L		95	75 - 125
Cadmium	ND	cn	0.0500	0.0509		mg/L		102	75 - 125
Chromium	0.0034	cn	0.500	0.528		mg/L		105	75 - 125
Lead	0.00031	J cn	0.0500	0.0509		mg/L		101	75 - 125
Nickel	0.0018	cn	0.500	0.491		mg/L		98	75 - 125
Selenium	ND	^+ cn	0.100	0.104	^+	mg/L		104	75 - 125
Sodium	5.7	cn	5.00	11.1		mg/L		107	75 - 125

Lab Sample ID: 410-99726-5 MSD
Matrix: Water
Analysis Batch: 305799

Client Sample ID: MW-76-0922
Prep Type: Total/NA
Prep Batch: 303081

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	610	cn	5000	6340		ug/L		115	75 - 125	2	20
Arsenic	ND	cn	0.500	0.487		mg/L		97	75 - 125	0	20
Barium	0.027	cn	0.500	0.554		mg/L		105	75 - 125	2	20
Beryllium	0.00041	J cn	0.0500	0.0484		mg/L		96	75 - 125	1	20
Cadmium	ND	cn	0.0500	0.0525		mg/L		105	75 - 125	3	20

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QC Sample Results

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99726-1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 410-99726-5 MSD
Matrix: Water
Analysis Batch: 305799

Client Sample ID: MW-76-0922
Prep Type: Total/NA
Prep Batch: 303081

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chromium	0.0034	cn	0.500	0.535		mg/L		106	75 - 125	1	20
Lead	0.00031	J cn	0.0500	0.0517		mg/L		103	75 - 125	2	20
Nickel	0.0018	cn	0.500	0.496		mg/L		99	75 - 125	1	20
Selenium	ND	^+ cn	0.100	0.104	^+	mg/L		104	75 - 125	0	20
Sodium	5.7	cn	5.00	11.2		mg/L		109	75 - 125	1	20

Lab Sample ID: 410-99726-5 DU
Matrix: Water
Analysis Batch: 305799

Client Sample ID: MW-76-0922
Prep Type: Total/NA
Prep Batch: 303081

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Aluminum	610	cn	608		ug/L		0.07	20
Arsenic	ND	cn	ND		mg/L		NC	20
Barium	0.027	cn	0.0270		mg/L		0.1	20
Beryllium	0.00041	J cn	0.000398	J	mg/L		2	20
Cadmium	ND	cn	ND		mg/L		NC	20
Chromium	0.0034	cn	0.00300		mg/L		14	20
Lead	0.00031	J cn	0.000311	J	mg/L		0.3	20
Nickel	0.0018	cn	0.00174		mg/L		3	20
Selenium	ND	^+ cn	ND	^+	mg/L		NC	20
Sodium	5.7	cn	5.68		mg/L		0.8	20

Lab Sample ID: MB 410-303078/1-A
Matrix: Water
Analysis Batch: 306542

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 303078

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		25	12	ug/L		10/04/22 17:50	10/13/22 18:29	1
Arsenic	ND		0.0020	0.00068	mg/L		10/04/22 17:50	10/13/22 18:29	1
Barium	ND		0.0020	0.00075	mg/L		10/04/22 17:50	10/13/22 18:29	1
Beryllium	ND		0.00050	0.00012	mg/L		10/04/22 17:50	10/13/22 18:29	1
Cadmium	ND		0.00050	0.00015	mg/L		10/04/22 17:50	10/13/22 18:29	1
Chromium	ND		0.0020	0.00033	mg/L		10/04/22 17:50	10/13/22 18:29	1
Lead	ND		0.00050	0.000071	mg/L		10/04/22 17:50	10/13/22 18:29	1
Nickel	ND		0.0010	0.00040	mg/L		10/04/22 17:50	10/13/22 18:29	1
Selenium	ND		0.0010	0.00028	mg/L		10/04/22 17:50	10/13/22 18:29	1
Sodium	ND		0.20	0.090	mg/L		10/04/22 17:50	10/13/22 18:29	1

Lab Sample ID: LCS 410-303078/2-A
Matrix: Water
Analysis Batch: 306542

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 303078

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	5000	4930		ug/L		99	87 - 119
Arsenic	0.500	0.474		mg/L		95	85 - 120
Barium	0.500	0.510		mg/L		102	80 - 120
Beryllium	0.0500	0.0486		mg/L		97	90 - 112
Cadmium	0.0500	0.0509		mg/L		102	86 - 113
Chromium	0.500	0.507		mg/L		101	90 - 115

QC Sample Results

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99726-1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 410-303078/2-A
Matrix: Water
Analysis Batch: 306542

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 303078

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lead	0.0500	0.0493		mg/L		99	90 - 115
Nickel	0.500	0.496		mg/L		99	90 - 114
Selenium	0.100	0.0986		mg/L		99	80 - 120
Sodium	5.00	4.85		mg/L		97	89 - 112

Lab Sample ID: LCSD 410-303078/3-A
Matrix: Water
Analysis Batch: 306542

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 303078

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	5000	5080		ug/L		102	87 - 119	3	20
Arsenic	0.500	0.479		mg/L		96	85 - 120	1	20
Barium	0.500	0.504		mg/L		101	80 - 120	1	20
Beryllium	0.0500	0.0486		mg/L		97	90 - 112	0	20
Cadmium	0.0500	0.0505		mg/L		101	86 - 113	1	20
Chromium	0.500	0.516		mg/L		103	90 - 115	2	20
Lead	0.0500	0.0503		mg/L		101	90 - 115	2	20
Nickel	0.500	0.502		mg/L		100	90 - 114	1	20
Selenium	0.100	0.101		mg/L		101	80 - 120	2	20
Sodium	5.00	4.93		mg/L		99	89 - 112	2	20

Lab Sample ID: MB 410-303081/1-A
Matrix: Water
Analysis Batch: 305799

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 303081

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		25	12	ug/L		10/04/22 17:54	10/12/22 09:34	1
Arsenic	ND		0.0020	0.00068	mg/L		10/04/22 17:54	10/12/22 09:34	1
Barium	ND		0.0020	0.00075	mg/L		10/04/22 17:54	10/12/22 09:34	1
Beryllium	ND		0.00050	0.00012	mg/L		10/04/22 17:54	10/12/22 09:34	1
Cadmium	ND		0.00050	0.00015	mg/L		10/04/22 17:54	10/12/22 09:34	1
Chromium	ND		0.0020	0.00033	mg/L		10/04/22 17:54	10/12/22 09:34	1
Lead	ND		0.00050	0.000071	mg/L		10/04/22 17:54	10/12/22 09:34	1
Nickel	ND		0.0010	0.00040	mg/L		10/04/22 17:54	10/12/22 09:34	1
Selenium	ND		0.0010	0.00028	mg/L		10/04/22 17:54	10/12/22 09:34	1
Sodium	ND		0.20	0.090	mg/L		10/04/22 17:54	10/12/22 09:34	1

Lab Sample ID: LCS 410-303081/2-A
Matrix: Water
Analysis Batch: 305799

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 303081

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	5000	4960		ug/L		99	87 - 119
Arsenic	0.500	0.479		mg/L		96	85 - 120
Barium	0.500	0.508		mg/L		102	80 - 120
Beryllium	0.0500	0.0473		mg/L		95	90 - 112
Cadmium	0.0500	0.0504		mg/L		101	86 - 113
Chromium	0.500	0.500		mg/L		100	90 - 115
Lead	0.0500	0.0500		mg/L		100	90 - 115

QC Sample Results

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99726-1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 410-303081/2-A
Matrix: Water
Analysis Batch: 305799

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 303081

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nickel	0.500	0.492		mg/L		98	90 - 114
Selenium	0.100	0.104		mg/L		104	80 - 120
Sodium	5.00	4.96		mg/L		99	89 - 112

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 410-303587/1-A
Matrix: Water
Analysis Batch: 303940

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 303587

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000079	mg/L		10/05/22 20:59	10/06/22 13:45	1

Lab Sample ID: LCS 410-303587/2-A
Matrix: Water
Analysis Batch: 303940

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 303587

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00100	0.000960		mg/L		96	80 - 118

Lab Sample ID: LCSD 410-303587/3-A
Matrix: Water
Analysis Batch: 303940

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 303587

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Mercury	0.00100	0.000956		mg/L		96	80 - 118	0	20

Method: 2130B-2011 - Turbidity

Lab Sample ID: MB 410-301416/3
Matrix: Water
Analysis Batch: 301416

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity	ND		1.0	1.0	NTU			09/29/22 16:12	1

Lab Sample ID: LCS 410-301416/4
Matrix: Water
Analysis Batch: 301416

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	10.0	9.8		NTU		98	90 - 104

Method: 2320B-2011 - Alkalinity, Total

Lab Sample ID: MB 410-302465/75
Matrix: Water
Analysis Batch: 302465

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	ND		8.0	8.0	mg/L			10/01/22 00:28	1

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QC Sample Results

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99726-1

Method: 2320B-2011 - Alkalinity, Total

Lab Sample ID: LCS 410-302465/78
Matrix: Water
Analysis Batch: 302465

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Alkalinity as CaCO3 to pH 4.5	189	175		mg/L		92	82 - 106

Method: 2510B-2011 - Conductivity, Specific Conductance

Lab Sample ID: MB 410-302466/75
Matrix: Water
Analysis Batch: 302466

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		5.0	1.7	umhos/cm			10/01/22 00:28	1

Lab Sample ID: LCS 410-302466/76
Matrix: Water
Analysis Batch: 302466

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Specific Conductance	1410	1430		umhos/cm		101	97 - 103

Method: 2540C-2011 - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 410-301136/1
Matrix: Water
Analysis Batch: 301136

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		30	12	mg/L			09/29/22 07:44	1

Lab Sample ID: LCS 410-301136/2
Matrix: Water
Analysis Batch: 301136

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	200	193		mg/L		97	72 - 127

Method: 9040B - pH

Lab Sample ID: LCS 410-302467/77
Matrix: Water
Analysis Batch: 302467

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH	7.00	7.0		S.U.		100	95 - 105

QC Association Summary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99726-1

HPLC/IC

Analysis Batch: 301679

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99726-4	MW-64-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99726-5	MW-76-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99726-6	MW-77-0922	Total/NA	Water	EPA 300.0 R2.1	
MB 410-301679/5	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-301679/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
LCSD 410-301679/4	Lab Control Sample Dup	Total/NA	Water	EPA 300.0 R2.1	
410-99726-6 MS	MW-77-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99726-6 DU	MW-77-0922	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 301680

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99726-4	MW-64-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99726-5	MW-76-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99726-6	MW-77-0922	Total/NA	Water	EPA 300.0 R2.1	
MB 410-301680/5	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-301680/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
LCSD 410-301680/4	Lab Control Sample Dup	Total/NA	Water	EPA 300.0 R2.1	
410-99726-6 MS	MW-77-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99726-6 DU	MW-77-0922	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 305226

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99726-1	MW-25-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99726-2	MW-26-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99726-3	MW-13-0922	Total/NA	Water	EPA 300.0 R2.1	
MB 410-305226/5	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-305226/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
LCSD 410-305226/4	Lab Control Sample Dup	Total/NA	Water	EPA 300.0 R2.1	
410-99726-1 DU	MW-25-0922	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 307931

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99726-4	MW-64-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99726-5	MW-76-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99726-6	MW-77-0922	Total/NA	Water	EPA 300.0 R2.1	
MB 410-307931/5	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-307931/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
LCSD 410-307931/4	Lab Control Sample Dup	Total/NA	Water	EPA 300.0 R2.1	

Metals

Prep Batch: 303078

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99726-4	MW-64-0922	Total/NA	Water	3005A	
410-99726-6	MW-77-0922	Total/NA	Water	3005A	
MB 410-303078/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-303078/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 410-303078/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

QC Association Summary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99726-1

Metals

Prep Batch: 303081

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99726-5	MW-76-0922	Total/NA	Water	3005A	
MB 410-303081/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-303081/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
410-99726-5 MS	MW-76-0922	Total/NA	Water	3005A	
410-99726-5 MSD	MW-76-0922	Total/NA	Water	3005A	
410-99726-5 DU	MW-76-0922	Total/NA	Water	3005A	

Prep Batch: 303587

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99726-4	MW-64-0922	Total/NA	Water	7470A	
410-99726-5	MW-76-0922	Total/NA	Water	7470A	
410-99726-6	MW-77-0922	Total/NA	Water	7470A	
MB 410-303587/1-A	Method Blank	Total/NA	Water	7470A	
LCS 410-303587/2-A	Lab Control Sample	Total/NA	Water	7470A	
LCSD 410-303587/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	

Analysis Batch: 303940

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99726-4	MW-64-0922	Total/NA	Water	7470A	303587
410-99726-5	MW-76-0922	Total/NA	Water	7470A	303587
410-99726-6	MW-77-0922	Total/NA	Water	7470A	303587
MB 410-303587/1-A	Method Blank	Total/NA	Water	7470A	303587
LCS 410-303587/2-A	Lab Control Sample	Total/NA	Water	7470A	303587
LCSD 410-303587/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	303587

Analysis Batch: 305799

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99726-5	MW-76-0922	Total/NA	Water	6020B	303081
MB 410-303081/1-A	Method Blank	Total Recoverable	Water	6020B	303081
LCS 410-303081/2-A	Lab Control Sample	Total Recoverable	Water	6020B	303081
410-99726-5 MS	MW-76-0922	Total/NA	Water	6020B	303081
410-99726-5 MSD	MW-76-0922	Total/NA	Water	6020B	303081
410-99726-5 DU	MW-76-0922	Total/NA	Water	6020B	303081

Analysis Batch: 306542

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99726-4	MW-64-0922	Total/NA	Water	6020B	303078
410-99726-6	MW-77-0922	Total/NA	Water	6020B	303078
MB 410-303078/1-A	Method Blank	Total Recoverable	Water	6020B	303078
LCS 410-303078/2-A	Lab Control Sample	Total Recoverable	Water	6020B	303078
LCSD 410-303078/3-A	Lab Control Sample Dup	Total Recoverable	Water	6020B	303078

General Chemistry

Analysis Batch: 301136

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99726-4	MW-64-0922	Total/NA	Water	2540C-2011	
410-99726-5	MW-76-0922	Total/NA	Water	2540C-2011	
410-99726-6	MW-77-0922	Total/NA	Water	2540C-2011	
MB 410-301136/1	Method Blank	Total/NA	Water	2540C-2011	
LCS 410-301136/2	Lab Control Sample	Total/NA	Water	2540C-2011	

QC Association Summary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99726-1

General Chemistry

Analysis Batch: 301416

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99726-4	MW-64-0922	Total/NA	Water	2130B-2011	
410-99726-5	MW-76-0922	Total/NA	Water	2130B-2011	
410-99726-6	MW-77-0922	Total/NA	Water	2130B-2011	
MB 410-301416/3	Method Blank	Total/NA	Water	2130B-2011	
LCS 410-301416/4	Lab Control Sample	Total/NA	Water	2130B-2011	

Analysis Batch: 302465

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99726-4	MW-64-0922	Total/NA	Water	2320B-2011	
410-99726-5	MW-76-0922	Total/NA	Water	2320B-2011	
410-99726-6	MW-77-0922	Total/NA	Water	2320B-2011	
MB 410-302465/75	Method Blank	Total/NA	Water	2320B-2011	
LCS 410-302465/78	Lab Control Sample	Total/NA	Water	2320B-2011	

Analysis Batch: 302466

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99726-4	MW-64-0922	Total/NA	Water	2510B-2011	
410-99726-5	MW-76-0922	Total/NA	Water	2510B-2011	
410-99726-6	MW-77-0922	Total/NA	Water	2510B-2011	
MB 410-302466/75	Method Blank	Total/NA	Water	2510B-2011	
LCS 410-302466/76	Lab Control Sample	Total/NA	Water	2510B-2011	

Analysis Batch: 302467

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99726-4	MW-64-0922	Total/NA	Water	9040B	
410-99726-5	MW-76-0922	Total/NA	Water	9040B	
410-99726-6	MW-77-0922	Total/NA	Water	9040B	
LCS 410-302467/77	Lab Control Sample	Total/NA	Water	9040B	

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99726-1

Client Sample ID: MW-25-0922

Lab Sample ID: 410-99726-1

Date Collected: 09/28/22 08:20

Matrix: Water

Date Received: 09/28/22 18:24

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	305226	L4QM	ELLE	10/10/22 18:18

Client Sample ID: MW-26-0922

Lab Sample ID: 410-99726-2

Date Collected: 09/28/22 11:07

Matrix: Water

Date Received: 09/28/22 18:24

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	305226	L4QM	ELLE	10/10/22 19:01

Client Sample ID: MW-13-0922

Lab Sample ID: 410-99726-3

Date Collected: 09/28/22 14:52

Matrix: Water

Date Received: 09/28/22 18:24

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	305226	L4QM	ELLE	10/10/22 18:50

Client Sample ID: MW-64-0922

Lab Sample ID: 410-99726-4

Date Collected: 09/28/22 09:30

Matrix: Water

Date Received: 09/28/22 18:24

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	301679	L4QM	ELLE	09/29/22 21:41
Total/NA	Analysis	EPA 300.0 R2.1		5	301680	L4QM	ELLE	09/29/22 21:41
Total/NA	Analysis	EPA 300.0 R2.1		1	307931	L4QM	ELLE	10/18/22 17:53
Total/NA	Prep	3005A			303078	UAMX	ELLE	10/04/22 17:50
Total/NA	Analysis	6020B		1	306542	F7JF	ELLE	10/13/22 19:01
Total/NA	Prep	7470A			303587	UAMX	ELLE	10/05/22 20:59
Total/NA	Analysis	7470A		1	303940	UEFS	ELLE	10/06/22 14:42
Total/NA	Analysis	2130B-2011		1	301416	F8TI	ELLE	09/29/22 16:12
Total/NA	Analysis	2320B-2011		1	302465	DI9Q	ELLE	10/01/22 03:01
Total/NA	Analysis	2510B-2011		1	302466	DI9Q	ELLE	10/01/22 03:01
Total/NA	Analysis	2540C-2011		1	301136	M98K	ELLE	09/29/22 07:44
Total/NA	Analysis	9040B		1	302467	DI9Q	ELLE	10/01/22 03:01

Client Sample ID: MW-76-0922

Lab Sample ID: 410-99726-5

Date Collected: 09/28/22 13:05

Matrix: Water

Date Received: 09/28/22 18:24

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	301679	L4QM	ELLE	09/29/22 22:01
Total/NA	Analysis	EPA 300.0 R2.1		5	301680	L4QM	ELLE	09/29/22 22:01
Total/NA	Analysis	EPA 300.0 R2.1		1	307931	L4QM	ELLE	10/18/22 18:04
Total/NA	Prep	3005A			303081	UAMX	ELLE	10/04/22 17:55
Total/NA	Analysis	6020B		1	305799	F7JF	ELLE	10/12/22 09:44

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99726-1

Client Sample ID: MW-76-0922

Lab Sample ID: 410-99726-5

Date Collected: 09/28/22 13:05

Matrix: Water

Date Received: 09/28/22 18:24

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	7470A			303587	UAMX	ELLE	10/05/22 20:59
Total/NA	Analysis	7470A		1	303940	UEFS	ELLE	10/06/22 14:29
Total/NA	Analysis	2130B-2011		1	301416	F8TI	ELLE	09/29/22 16:12
Total/NA	Analysis	2320B-2011		1	302465	DI9Q	ELLE	10/01/22 03:07
Total/NA	Analysis	2510B-2011		1	302466	DI9Q	ELLE	10/01/22 03:07
Total/NA	Analysis	2540C-2011		1	301136	M98K	ELLE	09/29/22 07:44
Total/NA	Analysis	9040B		1	302467	DI9Q	ELLE	10/01/22 03:07

Client Sample ID: MW-77-0922

Lab Sample ID: 410-99726-6

Date Collected: 09/28/22 14:20

Matrix: Water

Date Received: 09/28/22 18:24

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	301679	L4QM	ELLE	09/29/22 22:20
Total/NA	Analysis	EPA 300.0 R2.1		5	301680	L4QM	ELLE	09/29/22 22:20
Total/NA	Analysis	EPA 300.0 R2.1		1	307931	L4QM	ELLE	10/18/22 18:15
Total/NA	Prep	3005A			303078	UAMX	ELLE	10/04/22 17:50
Total/NA	Analysis	6020B		1	306542	F7JF	ELLE	10/13/22 19:06
Total/NA	Prep	7470A			303587	UAMX	ELLE	10/05/22 20:59
Total/NA	Analysis	7470A		1	303940	UEFS	ELLE	10/06/22 14:40
Total/NA	Analysis	2130B-2011		1	301416	F8TI	ELLE	09/29/22 16:12
Total/NA	Analysis	2320B-2011		1	302465	DI9Q	ELLE	10/01/22 03:13
Total/NA	Analysis	2510B-2011		1	302466	DI9Q	ELLE	10/01/22 03:13
Total/NA	Analysis	2540C-2011		1	301136	M98K	ELLE	09/29/22 07:44
Total/NA	Analysis	9040B		1	302467	DI9Q	ELLE	10/01/22 03:13

Laboratory References:

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

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
 Project/Site: EastAlco WW

Job ID: 410-99726-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

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

Authority	Program	Identification Number	Expiration Date
Maryland	State	100	06-30-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
2130B-2011		Water	Turbidity
2320B-2011		Water	Total Alkalinity as CaCO ₃ to pH 4.5
2510B-2011		Water	Specific Conductance
2540C-2011		Water	Total Dissolved Solids
6020B	3005A	Water	Aluminum
6020B	3005A	Water	Arsenic
6020B	3005A	Water	Barium
6020B	3005A	Water	Beryllium
6020B	3005A	Water	Cadmium
6020B	3005A	Water	Chromium
6020B	3005A	Water	Lead
6020B	3005A	Water	Nickel
6020B	3005A	Water	Selenium
6020B	3005A	Water	Sodium
7470A	7470A	Water	Mercury
9040B		Water	pH
9040B		Water	Temperature
EPA 300.0 R2.1		Water	Chloride
EPA 300.0 R2.1		Water	Fluoride
EPA 300.0 R2.1		Water	Sulfate



Method Summary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99726-1

Method	Method Description	Protocol	Laboratory
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	ELLE
6020B	Metals (ICP/MS)	SW846	ELLE
7470A	Mercury (CVAA)	SW846	ELLE
2130B-2011	Turbidity	SM	ELLE
2320B-2011	Alkalinity, Total	SM	ELLE
2510B-2011	Conductivity, Specific Conductance	SM	ELLE
2540C-2011	Solids, Total Dissolved (TDS)	SM	ELLE
9040B	pH	SW846	ELLE
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	ELLE
7470A	Preparation, Mercury	SW846	ELLE

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

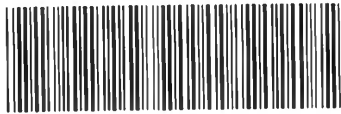
Sample Summary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99726-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-99726-1	MW-25-0922	Water	09/28/22 08:20	09/28/22 18:24
410-99726-2	MW-26-0922	Water	09/28/22 11:07	09/28/22 18:24
410-99726-3	MW-13-0922	Water	09/28/22 14:52	09/28/22 18:24
410-99726-4	MW-64-0922	Water	09/28/22 09:30	09/28/22 18:24
410-99726-5	MW-76-0922	Water	09/28/22 13:05	09/28/22 18:24
410-99726-6	MW-77-0922	Water	09/28/22 14:20	09/28/22 18:24

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onmi

Chain of Custody Record



Environment Testing America

410-99726 Chain of Custody

Client Contact: Josh Mullis	Sampler: <i>Mullis</i>	Lab PM: Gordon, Stephen J	Carrier Tracking No(s):	COC No: 410-64743-18583 3
Company: Tetra Tech, Inc.	Phone: <i>410-279-2700</i>	E-Mail: Stephen.Gordon@et.eurofinsus.com	State of Origin: <i>MD</i>	Page: Page 3 of 2 of 2

Address: 20251 Century Blvd Suite 200	Due Date Requested:	Analysis Requested 300_ORGFM_28D - Fluoride Only 300_ORGFM_28D, 300_ORGFM5 2320B, 2510B, 2540C_SingleDry, 9040B SM2130B - Turbidity 6020B, 7470A 1677_Free - Free Cyanide	Job #	
City: Germantown	TAT Requested (days): <i>Standard</i>		Preservation Codes:	
State, Zip: MD, 20874	Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No		A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA	M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Y - Trizma Z - other (specify)
Phone: 412-921-8277(Tel)	PO #: 1188904		Other:	
Email: Josh.Mullis@tetratech.com	WO #:			

Project Name: EastAlco WW	Project #: 41001054	Special Instructions/Note: Includes Fluoride
Site:	SSOW#:	

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=oil, BT=Tissue, A=Air)	300_ORGFM_28D - Fluoride Only	300_ORGFM_28D, 300_ORGFM5	2320B, 2510B, 2540C_SingleDry, 9040B	SM2130B - Turbidity	6020B, 7470A	1677_Free - Free Cyanide	Lab Number	Special Instructions/Note:
				Water								
MW-64				Water								
MW-64 - 0922	9/28/22	0930	G	Water		X	X	X	X			Includes Fluoride
MW-74 Jr				Water								
MW-76 Jr				Water								
MW-75DUP Jr				Water								
MW-76	9/28/22	1305	G	Water		X	X	X	X			" "
MW-77	9/28/22	1420	G	Water		X	X	X	X			" "
EUR-SATT Jr				Water								
				Water								
				Water								

Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months
--	--

Deliverable Requested: I, II, III, IV, Other (specify) _____

Special Instructions/QC Requirements: _____

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: <i>[Signature]</i>	Date/Time: <i>Tetra Tech Inc</i>	Company: <i>TT</i>	Received by: <i>[Signature]</i> Date/Time: <i>9/28/22 1526</i> Company: _____
Relinquished by: <i>[Signature]</i>	Date/Time: <i>9/28/22 1809</i>	Company: _____	Received by: _____ Date/Time: _____ Company: _____
Relinquished by: _____	Date/Time: _____	Company: _____	Received by: <i>[Signature]</i> Date/Time: <i>9-28-22 1824</i> Company: <i>ETC</i>

Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No.: <i>N/A</i>	Cooler Temperature(s) °C and Other Remarks: <i>4.8</i>
--	------------------------------	--

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 410-99726-1

Login Number: 99726

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: Metzger, Katherine A

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	Not present
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	N/A	Not present.
VOA sample vials do not have headspace $> 6\text{mm}$ in diameter (none, if from WV)?	N/A	

ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-99897-1
Client Project/Site: EastAlco WW
Revision: 1

For:
Tetra Tech, Inc.
Foster Plaza VII
661 Anderson Drive
Foster Plaza 7 Suite 200
Pittsburgh, Pennsylvania 15220

Attn: Dan Drzik



Authorized for release by:
10/25/2022 3:25:50 PM

Stephen Gordon, Senior Project Manager
(412)525-0071
Stephen.Gordon@et.eurofinsus.com

LINKS

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results through



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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
 - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
 - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

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

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

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A handwritten signature in black ink, appearing to read "Stephen Gordon".

Stephen Gordon
Senior Project Manager
10/25/2022 3:25:51 PM



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Definitions/Glossary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99897-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
cn	Refer to Case Narrative for further detail
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
^+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.
^5-	Linear Range Check (LRC) is outside acceptance limits, low biased.
cn	Refer to Case Narrative for further detail
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
♠	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
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)

Definitions/Glossary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99897-1

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Case Narrative

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99897-1

Job ID: 410-99897-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Narrative

Job Narrative 410-99897-1

REVISION

The report being provided is a revision of the original report sent on 10/13/2022. The report (revision 1) is being revised due to Revised to report fluoride at DF1.

Report revision history

Receipt

The samples were received on 9/29/2022 6:53 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.1°C

HPLC/IC

Method 300_ORGFM_28D: The continuing calibration verification (CCV) associated with batch 410-302228 recovered above the upper control limit for fluoride. The samples associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported. The following samples are impacted: MW-111-0922 (410-99897-1), MW-75-0922 (410-99897-3), MW-75DUP-0922 (410-99897-4) and EQR-SA11-0922 (410-99897-5).

Method 300_ORGFM_28D: The continuing calibration verification (CCV) associated with batch 410-302228 recovered above the upper control limit for sulfate. The sample associated with this CCV was non-detect for the affected analyte; therefore, the data have been reported. The following sample is impacted: EQR-SA11-0922 (410-99897-5).

Method 300_ORGFMS: The following samples were analyzed outside of analytical holding time due to a laboratory error: MW-111-0922 (410-99897-1), MW-74-0922 (410-99897-2), MW-75-0922 (410-99897-3), MW-75DUP-0922 (410-99897-4) and EQR-SA11-0922 (410-99897-5).

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

Metals

Method 6020B: The continuing calibration verification (CCV) associated with batch 410-305815 recovered above the upper control limit for Selenium. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

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

General Chemistry

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

Detection Summary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99897-1

Client Sample ID: MW-111-0922

Lab Sample ID: 410-99897-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	0.11	J	0.20	0.090	mg/L	1		EPA 300.0 R2.1	Total/NA
Nitrogen, Nitrate	2.8	H cn	0.55	0.25	mg/L	5		EPA 300.0 R2.1	Total/NA
Sulfate	13		7.5	2.5	mg/L	5		EPA 300.0 R2.1	Total/NA
Chloride	12	cn	7.5	3.0	mg/L	5		EPA 300.0 R2.1	Total/NA
Aluminum	110		25	12	ug/L	1		6020B	Total/NA
Barium	0.042		0.0020	0.00075	mg/L	1		6020B	Total/NA
Beryllium	0.00019	J	0.00050	0.00012	mg/L	1		6020B	Total/NA
Chromium	0.0014	J	0.0020	0.00033	mg/L	1		6020B	Total/NA
Lead	0.00028	J	0.00050	0.000071	mg/L	1		6020B	Total/NA
Nickel	0.0017		0.0010	0.00040	mg/L	1		6020B	Total/NA
Sodium	4.1		0.20	0.090	mg/L	1		6020B	Total/NA
Turbidity	5.1		1.0	1.0	NTU	1		2130B-2011	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	46		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Specific Conductance	190		5.0	1.7	umhos/cm	1		2510B-2011	Total/NA
Total Dissolved Solids	100		30	12	mg/L	1		2540C-2011	Total/NA
pH	6.4	HF	0.01	0.01	S.U.	1		9040B	Total/NA

Client Sample ID: MW-74-0922

Lab Sample ID: 410-99897-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	0.69		0.20	0.090	mg/L	1		EPA 300.0 R2.1	Total/NA
Nitrogen, Nitrate	0.89	H cn	0.55	0.25	mg/L	5		EPA 300.0 R2.1	Total/NA
Sulfate	21		7.5	2.5	mg/L	5		EPA 300.0 R2.1	Total/NA
Chloride	4.0	J	7.5	3.0	mg/L	5		EPA 300.0 R2.1	Total/NA
Aluminum	1300		25	12	ug/L	1		6020B	Total/NA
Barium	0.029		0.0020	0.00075	mg/L	1		6020B	Total/NA
Chromium	0.0017	J	0.0020	0.00033	mg/L	1		6020B	Total/NA
Lead	0.0013		0.00050	0.000071	mg/L	1		6020B	Total/NA
Nickel	0.0017		0.0010	0.00040	mg/L	1		6020B	Total/NA
Sodium	6.8		0.20	0.090	mg/L	1		6020B	Total/NA
Turbidity	39		1.0	1.0	NTU	1		2130B-2011	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	160		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Specific Conductance	370		5.0	1.7	umhos/cm	1		2510B-2011	Total/NA
Total Dissolved Solids	190		30	12	mg/L	1		2540C-2011	Total/NA
pH	7.3	HF	0.01	0.01	S.U.	1		9040B	Total/NA

Client Sample ID: MW-75-0922

Lab Sample ID: 410-99897-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	0.14	J	0.20	0.090	mg/L	1		EPA 300.0 R2.1	Total/NA
Sulfate	28		7.5	2.5	mg/L	5		EPA 300.0 R2.1	Total/NA
Chloride	43		15	6.0	mg/L	10		EPA 300.0 R2.1	Total/NA
Aluminum	96	cn	25	12	ug/L	1		6020B	Total/NA
Barium	0.055	cn	0.0020	0.00075	mg/L	1		6020B	Total/NA
Chromium	0.00051	J cn	0.0020	0.00033	mg/L	1		6020B	Total/NA
Lead	0.00010	J cn	0.00050	0.000071	mg/L	1		6020B	Total/NA
Sodium	19	cn	0.20	0.090	mg/L	1		6020B	Total/NA
Turbidity	3.2		1.0	1.0	NTU	1		2130B-2011	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	230		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Specific Conductance	640		5.0	1.7	umhos/cm	1		2510B-2011	Total/NA
Total Dissolved Solids	320		60	24	mg/L	1		2540C-2011	Total/NA
pH	7.3	HF	0.01	0.01	S.U.	1		9040B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

Detection Summary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99897-1

Client Sample ID: MW-75DUP-0922

Lab Sample ID: 410-99897-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	0.15	J	0.20	0.090	mg/L	1		EPA 300.0 R2.1	Total/NA
Sulfate	27		7.5	2.5	mg/L	5		EPA 300.0 R2.1	Total/NA
Chloride	43		15	6.0	mg/L	10		EPA 300.0 R2.1	Total/NA
Aluminum	97		25	12	ug/L	1		6020B	Total/NA
Barium	0.053		0.0020	0.00075	mg/L	1		6020B	Total/NA
Chromium	0.00034	J	0.0020	0.00033	mg/L	1		6020B	Total/NA
Lead	0.000080	J	0.00050	0.000071	mg/L	1		6020B	Total/NA
Nickel	0.00057	J	0.0010	0.00040	mg/L	1		6020B	Total/NA
Sodium	20		0.20	0.090	mg/L	1		6020B	Total/NA
Turbidity	3.5		1.0	1.0	NTU	1		2130B-2011	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	230		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Specific Conductance	630		5.0	1.7	umhos/cm	1		2510B-2011	Total/NA
Total Dissolved Solids	330		60	24	mg/L	1		2540C-2011	Total/NA
pH	7.3	HF	0.01	0.01	S.U.	1		9040B	Total/NA

Client Sample ID: EQR-SA11-0922

Lab Sample ID: 410-99897-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Specific Conductance	2.1	J	5.0	1.7	umhos/cm	1		2510B-2011	Total/NA
Total Dissolved Solids	3100		240	96	mg/L	1		2540C-2011	Total/NA
pH	6.2	HF	0.01	0.01	S.U.	1		9040B	Total/NA

Client Sample ID: SW-D-0922

Lab Sample ID: 410-99897-6

No Detections.

Client Sample ID: SW-E-0922

Lab Sample ID: 410-99897-7

No Detections.

Client Sample ID: SW-I-0922

Lab Sample ID: 410-99897-8

No Detections.

Client Sample ID: TUSCARORA CREEK DUP

Lab Sample ID: 410-99897-9

No Detections.

Client Sample ID: MW-107-0922

Lab Sample ID: 410-99897-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.6		1.0	0.45	mg/L	5		EPA 300.0 R2.1	Total/NA

Client Sample ID: MW-6-0922

Lab Sample ID: 410-99897-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	2.6		1.0	0.45	mg/L	5		EPA 300.0 R2.1	Total/NA

Client Sample ID: MW-51-0922

Lab Sample ID: 410-99897-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.6		1.0	0.45	mg/L	5		EPA 300.0 R2.1	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99897-1

Client Sample ID: MW-111-0922

Lab Sample ID: 410-99897-1

Date Collected: 09/29/22 09:00

Matrix: Water

Date Received: 09/29/22 18:53

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.11	J	0.20	0.090	mg/L			10/18/22 17:10	1
Nitrogen, Nitrate	2.8	H cn	0.55	0.25	mg/L			10/01/22 13:54	5
Sulfate	13		7.5	2.5	mg/L			10/04/22 05:54	5
Chloride	12	cn	7.5	3.0	mg/L			10/01/22 13:54	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	110		25	12	ug/L		10/05/22 19:44	10/12/22 11:54	1
Arsenic	ND		0.0020	0.00068	mg/L		10/05/22 19:44	10/12/22 11:54	1
Barium	0.042		0.0020	0.00075	mg/L		10/05/22 19:44	10/12/22 11:54	1
Beryllium	0.00019	J	0.00050	0.00012	mg/L		10/05/22 19:44	10/12/22 11:54	1
Cadmium	ND		0.00050	0.00015	mg/L		10/05/22 19:44	10/12/22 11:54	1
Chromium	0.0014	J	0.0020	0.00033	mg/L		10/05/22 19:44	10/12/22 11:54	1
Lead	0.00028	J	0.00050	0.000071	mg/L		10/05/22 19:44	10/12/22 11:54	1
Nickel	0.0017		0.0010	0.00040	mg/L		10/05/22 19:44	10/12/22 11:54	1
Selenium	ND		0.0010	0.00028	mg/L		10/05/22 19:44	10/12/22 11:54	1
Sodium	4.1		0.20	0.090	mg/L		10/05/22 19:44	10/12/22 15:25	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000079	mg/L		10/05/22 20:59	10/06/22 13:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity (SM 2130B-2011)	5.1		1.0	1.0	NTU			10/01/22 06:47	1
Total Alkalinity as CaCO3 to pH 4.5 (SM 2320B-2011)	46		8.0	8.0	mg/L			10/01/22 02:06	1
Specific Conductance (SM 2510B-2011)	190		5.0	1.7	umhos/cm			10/01/22 02:06	1
Total Dissolved Solids (SM 2540C-2011)	100		30	12	mg/L			09/30/22 07:33	1
pH (SW846 9040B)	6.4	HF	0.01	0.01	S.U.			10/01/22 02:06	1

Client Sample ID: MW-74-0922

Lab Sample ID: 410-99897-2

Date Collected: 09/29/22 12:45

Matrix: Water

Date Received: 09/29/22 18:53

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.69		0.20	0.090	mg/L			10/18/22 17:21	1
Nitrogen, Nitrate	0.89	H cn	0.55	0.25	mg/L			10/01/22 14:11	5
Sulfate	21		7.5	2.5	mg/L			10/04/22 18:25	5
Chloride	4.0	J	7.5	3.0	mg/L			10/01/22 14:11	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	1300		25	12	ug/L		10/05/22 19:52	10/13/22 10:07	1
Arsenic	ND		0.0020	0.00068	mg/L		10/05/22 19:52	10/13/22 10:07	1
Barium	0.029		0.0020	0.00075	mg/L		10/05/22 19:52	10/13/22 10:07	1
Beryllium	ND	^5- ^+	0.00050	0.00012	mg/L		10/05/22 19:52	10/13/22 10:07	1
Cadmium	ND		0.00050	0.00015	mg/L		10/05/22 19:52	10/13/22 10:07	1
Chromium	0.0017	J	0.0020	0.00033	mg/L		10/05/22 19:52	10/13/22 10:07	1

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99897-1

Client Sample ID: MW-74-0922

Lab Sample ID: 410-99897-2

Date Collected: 09/29/22 12:45

Matrix: Water

Date Received: 09/29/22 18:53

Method: SW846 6020B - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.0013		0.00050	0.000071	mg/L		10/05/22 19:52	10/13/22 10:07	1
Nickel	0.0017		0.0010	0.00040	mg/L		10/05/22 19:52	10/13/22 10:07	1
Selenium	ND		0.0010	0.00028	mg/L		10/05/22 19:52	10/13/22 10:07	1
Sodium	6.8		0.20	0.090	mg/L		10/05/22 19:52	10/13/22 10:07	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000079	mg/L		10/05/22 20:59	10/06/22 14:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity (SM 2130B-2011)	39		1.0	1.0	NTU			10/01/22 06:47	1
Total Alkalinity as CaCO3 to pH 4.5 (SM 2320B-2011)	160		8.0	8.0	mg/L			10/01/22 02:12	1
Specific Conductance (SM 2510B-2011)	370		5.0	1.7	umhos/cm			10/01/22 02:12	1
Total Dissolved Solids (SM 2540C-2011)	190		30	12	mg/L			09/30/22 07:33	1
pH (SW846 9040B)	7.3	HF	0.01	0.01	S.U.			10/01/22 02:12	1

Client Sample ID: MW-75-0922

Lab Sample ID: 410-99897-3

Date Collected: 09/29/22 10:40

Matrix: Water

Date Received: 09/29/22 18:53

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.14	J	0.20	0.090	mg/L			10/18/22 17:32	1
Nitrogen, Nitrate	ND	H cn	0.55	0.25	mg/L			10/01/22 14:28	5
Sulfate	28		7.5	2.5	mg/L			10/04/22 03:47	5
Chloride	43		15	6.0	mg/L			10/04/22 03:57	10

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	96	cn	25	12	ug/L		10/05/22 19:44	10/12/22 11:18	1
Arsenic	ND	cn	0.0020	0.00068	mg/L		10/05/22 19:44	10/12/22 11:18	1
Barium	0.055	cn	0.0020	0.00075	mg/L		10/05/22 19:44	10/12/22 11:18	1
Beryllium	ND	cn	0.00050	0.00012	mg/L		10/05/22 19:44	10/12/22 11:18	1
Cadmium	ND	cn	0.00050	0.00015	mg/L		10/05/22 19:44	10/12/22 11:18	1
Chromium	0.00051	J cn	0.0020	0.00033	mg/L		10/05/22 19:44	10/12/22 11:18	1
Lead	0.00010	J cn	0.00050	0.000071	mg/L		10/05/22 19:44	10/12/22 11:18	1
Nickel	ND	cn	0.0010	0.00040	mg/L		10/05/22 19:44	10/12/22 11:18	1
Selenium	ND	^+ cn	0.0010	0.00028	mg/L		10/05/22 19:44	10/12/22 11:18	1
Sodium	19	cn	0.20	0.090	mg/L		10/05/22 19:44	10/12/22 15:21	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000079	mg/L		10/05/22 20:59	10/06/22 14:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity (SM 2130B-2011)	3.2		1.0	1.0	NTU			10/01/22 06:47	1

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99897-1

Client Sample ID: MW-75-0922

Lab Sample ID: 410-99897-3

Date Collected: 09/29/22 10:40

Matrix: Water

Date Received: 09/29/22 18:53

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5 (SM 2320B-2011)	230		8.0	8.0	mg/L			10/01/22 02:18	1
Specific Conductance (SM 2510B-2011)	640		5.0	1.7	umhos/cm			10/01/22 02:18	1
Total Dissolved Solids (SM 2540C-2011)	320		60	24	mg/L			09/30/22 07:33	1
pH (SW846 9040B)	7.3	HF	0.01	0.01	S.U.			10/01/22 02:18	1

Client Sample ID: MW-75DUP-0922

Lab Sample ID: 410-99897-4

Date Collected: 09/29/22 00:00

Matrix: Water

Date Received: 09/29/22 18:53

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.15	J	0.20	0.090	mg/L			10/18/22 17:43	1
Nitrogen, Nitrate	ND	H cn	0.55	0.25	mg/L			10/01/22 15:03	5
Sulfate	27		7.5	2.5	mg/L			10/04/22 04:07	5
Chloride	43		15	6.0	mg/L			10/04/22 04:17	10

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	97		25	12	ug/L		10/05/22 19:44	10/12/22 11:30	1
Arsenic	ND		0.0020	0.00068	mg/L		10/05/22 19:44	10/12/22 11:30	1
Barium	0.053		0.0020	0.00075	mg/L		10/05/22 19:44	10/12/22 11:30	1
Beryllium	ND		0.00050	0.00012	mg/L		10/05/22 19:44	10/12/22 11:30	1
Cadmium	ND		0.00050	0.00015	mg/L		10/05/22 19:44	10/12/22 11:30	1
Chromium	0.00034	J	0.0020	0.00033	mg/L		10/05/22 19:44	10/12/22 11:30	1
Lead	0.000080	J	0.00050	0.000071	mg/L		10/05/22 19:44	10/12/22 11:30	1
Nickel	0.00057	J	0.0010	0.00040	mg/L		10/05/22 19:44	10/12/22 11:30	1
Selenium	ND		0.0010	0.00028	mg/L		10/05/22 19:44	10/12/22 11:30	1
Sodium	20		0.20	0.090	mg/L		10/05/22 19:44	10/12/22 15:23	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000079	mg/L		10/05/22 20:59	10/06/22 14:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity (SM 2130B-2011)	3.5		1.0	1.0	NTU			10/01/22 06:47	1
Total Alkalinity as CaCO3 to pH 4.5 (SM 2320B-2011)	230		8.0	8.0	mg/L			10/01/22 02:24	1
Specific Conductance (SM 2510B-2011)	630		5.0	1.7	umhos/cm			10/01/22 02:24	1
Total Dissolved Solids (SM 2540C-2011)	330		60	24	mg/L			09/30/22 07:33	1
pH (SW846 9040B)	7.3	HF	0.01	0.01	S.U.			10/01/22 02:24	1

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99897-1

Client Sample ID: EQR-SA11-0922

Lab Sample ID: 410-99897-5

Date Collected: 09/29/22 00:00

Matrix: Water

Date Received: 09/29/22 18:53

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.20	0.090	mg/L			10/24/22 23:21	1
Nitrogen, Nitrate	ND	H cn	0.55	0.25	mg/L			10/01/22 15:20	5
Sulfate	ND	cn	7.5	2.5	mg/L			10/01/22 15:20	5
Chloride	ND	cn	7.5	3.0	mg/L			10/01/22 15:20	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND	cn	25	12	ug/L		10/05/22 19:44	10/12/22 11:12	1
Arsenic	ND	cn	0.0020	0.00068	mg/L		10/05/22 19:44	10/12/22 11:12	1
Barium	ND	cn	0.0020	0.00075	mg/L		10/05/22 19:44	10/12/22 11:12	1
Beryllium	ND	cn	0.00050	0.00012	mg/L		10/05/22 19:44	10/12/22 11:12	1
Cadmium	ND	cn	0.00050	0.00015	mg/L		10/05/22 19:44	10/12/22 11:12	1
Chromium	ND	cn	0.0020	0.00033	mg/L		10/05/22 19:44	10/12/22 11:12	1
Lead	ND	cn	0.00050	0.000071	mg/L		10/05/22 19:44	10/12/22 11:12	1
Nickel	ND	cn	0.0010	0.00040	mg/L		10/05/22 19:44	10/12/22 11:12	1
Selenium	ND	^+ cn	0.0010	0.00028	mg/L		10/05/22 19:44	10/12/22 11:12	1
Sodium	ND	cn	0.20	0.090	mg/L		10/05/22 19:44	10/12/22 15:19	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000079	mg/L		10/05/22 20:59	10/06/22 14:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity (SM 2130B-2011)	ND		1.0	1.0	NTU			10/01/22 06:47	1
Total Alkalinity as CaCO3 to pH 4.5 (SM 2320B-2011)	ND		8.0	8.0	mg/L			10/01/22 02:30	1
Specific Conductance (SM 2510B-2011)	2.1	J	5.0	1.7	umhos/cm			10/01/22 02:30	1
Total Dissolved Solids (SM 2540C-2011)	3100		240	96	mg/L			09/30/22 07:33	1
pH (SW846 9040B)	6.2	HF	0.01	0.01	S.U.			10/01/22 02:30	1

Client Sample ID: SW-D-0922

Lab Sample ID: 410-99897-6

Date Collected: 09/29/22 14:05

Matrix: Water

Date Received: 09/29/22 18:53

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Free (OI CORP OIA-1677)	ND	F1	0.0060	0.0050	mg/L			09/30/22 10:05	1

Client Sample ID: SW-E-0922

Lab Sample ID: 410-99897-7

Date Collected: 09/29/22 13:35

Matrix: Water

Date Received: 09/29/22 18:53

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Free (OI CORP OIA-1677)	ND		0.0060	0.0050	mg/L			09/30/22 10:13	1

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99897-1

Client Sample ID: SW-I-0922

Lab Sample ID: 410-99897-8

Date Collected: 09/29/22 13:55

Matrix: Water

Date Received: 09/29/22 18:53

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Free (OI CORP OIA-1677)	ND		0.0060	0.0050	mg/L			09/30/22 10:16	1

Client Sample ID: TUSCARORA CREEK DUP

Lab Sample ID: 410-99897-9

Date Collected: 09/29/22 00:00

Matrix: Water

Date Received: 09/29/22 18:53

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Free (OI CORP OIA-1677)	ND		0.0060	0.0050	mg/L			09/30/22 10:19	1

Client Sample ID: MW-107-0922

Lab Sample ID: 410-99897-10

Date Collected: 09/29/22 09:29

Matrix: Water

Date Received: 09/29/22 18:53

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.6		1.0	0.45	mg/L			10/11/22 20:56	5

Client Sample ID: MW-6-0922

Lab Sample ID: 410-99897-11

Date Collected: 09/29/22 09:42

Matrix: Water

Date Received: 09/29/22 18:53

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	2.6		1.0	0.45	mg/L			10/11/22 21:06	5

Client Sample ID: MW-51-0922

Lab Sample ID: 410-99897-12

Date Collected: 09/29/22 09:01

Matrix: Water

Date Received: 09/29/22 18:53

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.6		1.0	0.45	mg/L			10/11/22 21:39	5

QC Sample Results

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99897-1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 410-302227/5
Matrix: Water
Analysis Batch: 302227

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	ND		0.11	0.050	mg/L			10/01/22 12:54	1

Lab Sample ID: MB 410-302227/64
Matrix: Water
Analysis Batch: 302227

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	ND		0.11	0.050	mg/L			10/01/22 21:20	1

Lab Sample ID: LCS 410-302227/3
Matrix: Water
Analysis Batch: 302227

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrogen, Nitrate	0.755	0.776		mg/L		103	90 - 110

Lab Sample ID: LCS 410-302227/62
Matrix: Water
Analysis Batch: 302227

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrogen, Nitrate	0.755	0.782		mg/L		104	90 - 110

Lab Sample ID: LCSD 410-302227/4
Matrix: Water
Analysis Batch: 302227

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrogen, Nitrate	0.755	0.787		mg/L		104	90 - 110	1	20

Lab Sample ID: LCSD 410-302227/63
Matrix: Water
Analysis Batch: 302227

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrogen, Nitrate	0.755	0.790		mg/L		105	90 - 110	1	20

Lab Sample ID: MB 410-302228/5
Matrix: Water
Analysis Batch: 302228

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.20	0.090	mg/L			10/01/22 12:54	1
Sulfate	ND		1.5	0.50	mg/L			10/01/22 12:54	1
Chloride	ND		1.5	0.60	mg/L			10/01/22 12:54	1

QC Sample Results

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99897-1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 410-302228/64
Matrix: Water
Analysis Batch: 302228

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.20	0.090	mg/L			10/01/22 21:20	1
Sulfate	ND		1.5	0.50	mg/L			10/01/22 21:20	1
Chloride	ND		1.5	0.60	mg/L			10/01/22 21:20	1

Lab Sample ID: LCS 410-302228/3
Matrix: Water
Analysis Batch: 302228

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.750	0.749		mg/L		100	90 - 110
Sulfate	7.51	8.07		mg/L		108	90 - 110
Chloride	3.00	3.25		mg/L		108	90 - 110

Lab Sample ID: LCS 410-302228/62
Matrix: Water
Analysis Batch: 302228

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.750	0.811		mg/L		108	90 - 110
Chloride	3.00	3.29		mg/L		110	90 - 110

Lab Sample ID: LCSD 410-302228/4
Matrix: Water
Analysis Batch: 302228

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.750	0.749		mg/L		100	90 - 110	0	20
Sulfate	7.51	8.09		mg/L		108	90 - 110	0	20
Chloride	3.00	3.28		mg/L		109	90 - 110	1	20

Lab Sample ID: LCSD 410-302228/63
Matrix: Water
Analysis Batch: 302228

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.750	0.793		mg/L		106	90 - 110	2	20
Chloride	3.00	3.29		mg/L		110	90 - 110	0	20

Lab Sample ID: MB 410-302604/5
Matrix: Water
Analysis Batch: 302604

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.20	0.090	mg/L			10/03/22 20:59	1
Sulfate	ND		1.5	0.50	mg/L			10/03/22 20:59	1
Chloride	ND		1.5	0.60	mg/L			10/03/22 20:59	1

QC Sample Results

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99897-1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 410-302604/3
Matrix: Water
Analysis Batch: 302604

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.750	0.296	*-	mg/L		39	90 - 110
Sulfate	7.51	7.56		mg/L		101	90 - 110
Chloride	3.00	3.07		mg/L		102	90 - 110

Lab Sample ID: LCSD 410-302604/4
Matrix: Water
Analysis Batch: 302604

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	7.51	7.55		mg/L		101	90 - 110	0	20
Chloride	3.00	3.09		mg/L		103	90 - 110	1	20

Lab Sample ID: MB 410-302609/5
Matrix: Water
Analysis Batch: 302609

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.20	0.090	mg/L			10/04/22 05:25	1
Sulfate	ND		1.5	0.50	mg/L			10/04/22 05:25	1
Chloride	ND		1.5	0.60	mg/L			10/04/22 05:25	1

Lab Sample ID: LCS 410-302609/3
Matrix: Water
Analysis Batch: 302609

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	7.51	7.81		mg/L		104	90 - 110
Chloride	3.00	3.12		mg/L		104	90 - 110

Lab Sample ID: LCSD 410-302609/4
Matrix: Water
Analysis Batch: 302609

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	7.51	7.72		mg/L		103	90 - 110	1	20
Chloride	3.00	3.11		mg/L		104	90 - 110	0	20

Lab Sample ID: MB 410-302612/5
Matrix: Water
Analysis Batch: 302612

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.20	0.090	mg/L			10/04/22 11:41	1
Sulfate	ND		1.5	0.50	mg/L			10/04/22 11:41	1
Chloride	ND		1.5	0.60	mg/L			10/04/22 11:41	1

QC Sample Results

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99897-1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 410-302612/3
Matrix: Water
Analysis Batch: 302612

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.750	0.682		mg/L		91	90 - 110
Sulfate	7.50	6.84		mg/L		91	90 - 110
Chloride	3.00	2.89		mg/L		96	90 - 110

Lab Sample ID: LCSD 410-302612/4
Matrix: Water
Analysis Batch: 302612

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.750	0.680		mg/L		91	90 - 110	0	20
Sulfate	7.50	6.84		mg/L		91	90 - 110	0	20
Chloride	3.00	2.88		mg/L		96	90 - 110	0	20

Lab Sample ID: 410-99897-2 MS
Matrix: Water
Analysis Batch: 302612

Client Sample ID: MW-74-0922
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.81	J	2.50	3.39		mg/L		103	90 - 110
Sulfate	21		25.0	46.8		mg/L		104	90 - 110

Lab Sample ID: 410-99897-2 DU
Matrix: Water
Analysis Batch: 302612

Client Sample ID: MW-74-0922
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	0.81	J	0.792	J	mg/L		3	15
Sulfate	21		20.7		mg/L		0.1	15

Lab Sample ID: MB 410-305447/5
Matrix: Water
Analysis Batch: 305447

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.20	0.090	mg/L			10/11/22 14:38	1

Lab Sample ID: LCS 410-305447/3
Matrix: Water
Analysis Batch: 305447

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.750	0.747		mg/L		100	90 - 110

Lab Sample ID: LCSD 410-305447/4
Matrix: Water
Analysis Batch: 305447

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.750	0.728		mg/L		97	90 - 110	3	20

QC Sample Results

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99897-1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 410-307931/5
Matrix: Water
Analysis Batch: 307931

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.20	0.090	mg/L			10/18/22 16:38	1
Sulfate	ND		1.5	0.50	mg/L			10/18/22 16:38	1
Chloride	ND		1.5	0.60	mg/L			10/18/22 16:38	1

Lab Sample ID: LCS 410-307931/3
Matrix: Water
Analysis Batch: 307931

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.750	0.736		mg/L		98	90 - 110
Sulfate	7.50	7.59		mg/L		101	90 - 110
Chloride	3.00	3.07		mg/L		102	90 - 110

Lab Sample ID: LCSD 410-307931/4
Matrix: Water
Analysis Batch: 307931

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.750	0.738		mg/L		98	90 - 110	0	20
Sulfate	7.50	7.60		mg/L		101	90 - 110	0	20
Chloride	3.00	3.07		mg/L		102	90 - 110	0	20

Lab Sample ID: MB 410-309905/5
Matrix: Water
Analysis Batch: 309905

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.20	0.090	mg/L			10/24/22 22:27	1
Sulfate	ND		1.5	0.50	mg/L			10/24/22 22:27	1
Chloride	ND		1.5	0.60	mg/L			10/24/22 22:27	1

Lab Sample ID: LCS 410-309905/3
Matrix: Water
Analysis Batch: 309905

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.750	0.703		mg/L		94	90 - 110
Sulfate	7.50	7.12		mg/L		95	90 - 110
Chloride	3.00	2.77		mg/L		92	90 - 110

Lab Sample ID: LCSD 410-309905/4
Matrix: Water
Analysis Batch: 309905

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.750	0.706		mg/L		94	90 - 110	0	20
Sulfate	7.50	7.17		mg/L		96	90 - 110	1	20
Chloride	3.00	2.79		mg/L		93	90 - 110	1	20

QC Sample Results

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99897-1

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: 410-99897-2 MS

Matrix: Water

Analysis Batch: 306267

Client Sample ID: MW-74-0922

Prep Type: Total/NA

Prep Batch: 303581

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier				
Aluminum	1300		5000	7220		ug/L		119	75 - 125
Arsenic	ND		0.500	0.483		mg/L		97	75 - 125
Barium	0.029		0.500	0.542		mg/L		103	75 - 125
Beryllium	ND	^5- ^+	0.0500	0.0512	^5- ^+	mg/L		102	75 - 125
Cadmium	ND		0.0500	0.0506		mg/L		101	75 - 125
Chromium	0.0017	J	0.500	0.499		mg/L		100	75 - 125
Lead	0.0013		0.0500	0.0512		mg/L		100	75 - 125
Nickel	0.0017		0.500	0.494		mg/L		98	75 - 125
Selenium	ND		0.100	0.101		mg/L		101	75 - 125
Sodium	6.8		5.00	11.7		mg/L		99	75 - 125

Lab Sample ID: 410-99897-2 MSD

Matrix: Water

Analysis Batch: 306267

Client Sample ID: MW-74-0922

Prep Type: Total/NA

Prep Batch: 303581

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier						
Aluminum	1300		5000	7380		ug/L		122	75 - 125	2	20
Arsenic	ND		0.500	0.473		mg/L		95	75 - 125	2	20
Barium	0.029		0.500	0.539		mg/L		102	75 - 125	1	20
Beryllium	ND	^5- ^+	0.0500	0.0510	^5- ^+	mg/L		102	75 - 125	1	20
Cadmium	ND		0.0500	0.0504		mg/L		101	75 - 125	0	20
Chromium	0.0017	J	0.500	0.497		mg/L		99	75 - 125	0	20
Lead	0.0013		0.0500	0.0511		mg/L		99	75 - 125	0	20
Nickel	0.0017		0.500	0.490		mg/L		98	75 - 125	1	20
Selenium	ND		0.100	0.101		mg/L		101	75 - 125	0	20
Sodium	6.8		5.00	12.2		mg/L		109	75 - 125	4	20

Lab Sample ID: 410-99897-2 DU

Matrix: Water

Analysis Batch: 306267

Client Sample ID: MW-74-0922

Prep Type: Total/NA

Prep Batch: 303581

Analyte	Sample	Sample	DU		Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Aluminum	1300		1390		ug/L		8	20
Arsenic	ND		ND		mg/L		NC	20
Barium	0.029		0.0299		mg/L		4	20
Beryllium	ND	^5- ^+	0.000126	J ^+	mg/L		NC	20
Cadmium	ND		ND		mg/L		NC	20
Chromium	0.0017	J	0.00188	J	mg/L		9	20
Lead	0.0013		0.00137		mg/L		3	20
Nickel	0.0017		0.00202		mg/L		16	20
Selenium	ND		0.000284	J	mg/L		NC	20
Sodium	6.8		6.85		mg/L		1	20

Lab Sample ID: MB 410-303577/1-A

Matrix: Water

Analysis Batch: 305815

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 303577

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil	Fac
	Result	Qualifier								
Aluminum	ND		25	12	ug/L		10/05/22 19:44	10/12/22 10:39	1	

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QC Sample Results

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99897-1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 410-303577/1-A
Matrix: Water
Analysis Batch: 305815

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 303577

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0020	0.00068	mg/L		10/05/22 19:44	10/12/22 10:39	1
Barium	ND		0.0020	0.00075	mg/L		10/05/22 19:44	10/12/22 10:39	1
Beryllium	ND		0.00050	0.00012	mg/L		10/05/22 19:44	10/12/22 10:39	1
Cadmium	ND		0.00050	0.00015	mg/L		10/05/22 19:44	10/12/22 10:39	1
Chromium	ND		0.0020	0.00033	mg/L		10/05/22 19:44	10/12/22 10:39	1
Lead	ND		0.00050	0.000071	mg/L		10/05/22 19:44	10/12/22 10:39	1
Nickel	ND		0.0010	0.00040	mg/L		10/05/22 19:44	10/12/22 10:39	1
Selenium	ND	^+	0.0010	0.00028	mg/L		10/05/22 19:44	10/12/22 10:39	1
Sodium	ND		0.20	0.090	mg/L		10/05/22 19:44	10/12/22 10:39	1

Lab Sample ID: LCS 410-303577/2-A
Matrix: Water
Analysis Batch: 305815

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 303577

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	5000	5120		ug/L		102	87 - 119
Arsenic	0.500	0.486		mg/L		97	85 - 120
Barium	0.500	0.518		mg/L		104	80 - 120
Beryllium	0.0500	0.0486		mg/L		97	90 - 112
Cadmium	0.0500	0.0510		mg/L		102	86 - 113
Chromium	0.500	0.526		mg/L		105	90 - 115
Lead	0.0500	0.0514		mg/L		103	90 - 115
Nickel	0.500	0.495		mg/L		99	90 - 114
Selenium	0.100	0.105	^+	mg/L		105	80 - 120
Sodium	5.00	5.16		mg/L		103	89 - 112

Lab Sample ID: MB 410-303581/1-A
Matrix: Water
Analysis Batch: 306267

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 303581

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		25	12	ug/L		10/05/22 19:52	10/13/22 09:57	1
Arsenic	ND		0.0020	0.00068	mg/L		10/05/22 19:52	10/13/22 09:57	1
Barium	ND		0.0020	0.00075	mg/L		10/05/22 19:52	10/13/22 09:57	1
Beryllium	ND	^5- ^+	0.00050	0.00012	mg/L		10/05/22 19:52	10/13/22 09:57	1
Cadmium	ND		0.00050	0.00015	mg/L		10/05/22 19:52	10/13/22 09:57	1
Chromium	ND		0.0020	0.00033	mg/L		10/05/22 19:52	10/13/22 09:57	1
Lead	ND		0.00050	0.000071	mg/L		10/05/22 19:52	10/13/22 09:57	1
Nickel	ND		0.0010	0.00040	mg/L		10/05/22 19:52	10/13/22 09:57	1
Selenium	ND		0.0010	0.00028	mg/L		10/05/22 19:52	10/13/22 09:57	1
Sodium	ND		0.20	0.090	mg/L		10/05/22 19:52	10/13/22 09:57	1

Lab Sample ID: LCS 410-303581/2-A
Matrix: Water
Analysis Batch: 306267

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 303581

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	5000	5060		ug/L		101	87 - 119
Arsenic	0.500	0.486		mg/L		97	85 - 120

QC Sample Results

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99897-1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 410-303581/2-A
Matrix: Water
Analysis Batch: 306267

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 303581

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	0.500	0.506		mg/L		101	80 - 120
Cadmium	0.0500	0.0502		mg/L		100	86 - 113
Chromium	0.500	0.503		mg/L		101	90 - 115
Lead	0.0500	0.0502		mg/L		100	90 - 115
Nickel	0.500	0.509		mg/L		102	90 - 114
Selenium	0.100	0.103		mg/L		103	80 - 120
Sodium	5.00	5.08		mg/L		102	89 - 112

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 410-303587/1-A
Matrix: Water
Analysis Batch: 303940

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 303587

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000079	mg/L		10/05/22 20:59	10/06/22 13:45	1

Lab Sample ID: LCS 410-303587/2-A
Matrix: Water
Analysis Batch: 303940

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 303587

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00100	0.000960		mg/L		96	80 - 118

Lab Sample ID: LCSD 410-303587/3-A
Matrix: Water
Analysis Batch: 303940

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 303587

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.00100	0.000956		mg/L		96	80 - 118	0	20

Lab Sample ID: 410-99897-1 MS
Matrix: Water
Analysis Batch: 303940

Client Sample ID: MW-111-0922
Prep Type: Total/NA
Prep Batch: 303587

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		0.00100	0.000934		mg/L		93	80 - 120

Lab Sample ID: 410-99897-1 MSD
Matrix: Water
Analysis Batch: 303940

Client Sample ID: MW-111-0922
Prep Type: Total/NA
Prep Batch: 303587

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		0.00100	0.000989		mg/L		99	80 - 120	6	20

QC Sample Results

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99897-1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: 410-99897-1 DU
Matrix: Water
Analysis Batch: 303940

Client Sample ID: MW-111-0922
Prep Type: Total/NA
Prep Batch: 303587

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Mercury	ND		ND		mg/L		NC	20

Method: 2130B-2011 - Turbidity

Lab Sample ID: MB 410-302041/3
Matrix: Water
Analysis Batch: 302041

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity	ND		1.0	1.0	NTU			10/01/22 06:47	1

Lab Sample ID: LCS 410-302041/4
Matrix: Water
Analysis Batch: 302041

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	10.0	9.7		NTU		97	90 - 104

Lab Sample ID: 410-99897-2 DU
Matrix: Water
Analysis Batch: 302041

Client Sample ID: MW-74-0922
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Turbidity	39		39		NTU		0.8	8

Method: 2320B-2011 - Alkalinity, Total

Lab Sample ID: MB 410-302465/75
Matrix: Water
Analysis Batch: 302465

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	ND		8.0	8.0	mg/L			10/01/22 00:28	1

Lab Sample ID: LCS 410-302465/78
Matrix: Water
Analysis Batch: 302465

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Alkalinity as CaCO3 to pH 4.5	189	175		mg/L		92	82 - 106

Method: 2510B-2011 - Conductivity, Specific Conductance

Lab Sample ID: MB 410-302466/75
Matrix: Water
Analysis Batch: 302466

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		5.0	1.7	umhos/cm			10/01/22 00:28	1

QC Sample Results

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99897-1

Method: 2510B-2011 - Conductivity, Specific Conductance (Continued)

Lab Sample ID: LCS 410-302466/76
Matrix: Water
Analysis Batch: 302466

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Specific Conductance	1410	1430		umhos/cm		101	97 - 103

Method: 2540C-2011 - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 410-301647/1
Matrix: Water
Analysis Batch: 301647

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		30	12	mg/L			09/30/22 07:33	1

Lab Sample ID: LCS 410-301647/2
Matrix: Water
Analysis Batch: 301647

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	200	195		mg/L		98	72 - 127

Method: 9040B - pH

Lab Sample ID: LCS 410-302467/77
Matrix: Water
Analysis Batch: 302467

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH	7.00	7.0		S.U.		100	95 - 105

Method: OIA-1677 - Cyanide, Free (Flow Injection)

Lab Sample ID: MB 410-301757/18
Matrix: Water
Analysis Batch: 301757

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Free	ND		0.0060	0.0050	mg/L			09/30/22 08:40	1

Lab Sample ID: MB 410-301757/40
Matrix: Water
Analysis Batch: 301757

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Free	ND		0.0060	0.0050	mg/L			09/30/22 09:57	1

Lab Sample ID: LCS 410-301757/38
Matrix: Water
Analysis Batch: 301757

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Free	0.0500	0.0468		mg/L		94	86 - 132

QC Sample Results

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99897-1

Method: OIA-1677 - Cyanide, Free (Flow Injection) (Continued)

Lab Sample ID: LCSD 410-301757/39
Matrix: Water
Analysis Batch: 301757

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Free	0.0500	0.0495		mg/L		99	86 - 132	5	11

Lab Sample ID: 410-99897-6 MS
Matrix: Water
Analysis Batch: 301757

Client Sample ID: SW-D-0922
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Free	ND	F1	0.0500	0.0392	F1	mg/L		78	82 - 130		

Lab Sample ID: 410-99897-6 MSD
Matrix: Water
Analysis Batch: 301757

Client Sample ID: SW-D-0922
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Free	ND	F1	0.0500	0.0419		mg/L		84	82 - 130	6	11

QC Association Summary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99897-1

HPLC/IC

Analysis Batch: 302227

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-1	MW-111-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99897-2	MW-74-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99897-3	MW-75-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99897-4	MW-75DUP-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99897-5	EQR-SA11-0922	Total/NA	Water	EPA 300.0 R2.1	
MB 410-302227/5	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
MB 410-302227/64	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-302227/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-302227/62	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
LCSD 410-302227/4	Lab Control Sample Dup	Total/NA	Water	EPA 300.0 R2.1	
LCSD 410-302227/63	Lab Control Sample Dup	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 302228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-1	MW-111-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99897-2	MW-74-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99897-5	EQR-SA11-0922	Total/NA	Water	EPA 300.0 R2.1	
MB 410-302228/5	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
MB 410-302228/64	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-302228/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-302228/62	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
LCSD 410-302228/4	Lab Control Sample Dup	Total/NA	Water	EPA 300.0 R2.1	
LCSD 410-302228/63	Lab Control Sample Dup	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 302604

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-3	MW-75-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99897-3	MW-75-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99897-4	MW-75DUP-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99897-4	MW-75DUP-0922	Total/NA	Water	EPA 300.0 R2.1	
MB 410-302604/5	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-302604/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
LCSD 410-302604/4	Lab Control Sample Dup	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 302609

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-1	MW-111-0922	Total/NA	Water	EPA 300.0 R2.1	
MB 410-302609/5	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-302609/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
LCSD 410-302609/4	Lab Control Sample Dup	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 302612

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-2	MW-74-0922	Total/NA	Water	EPA 300.0 R2.1	
MB 410-302612/5	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-302612/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
LCSD 410-302612/4	Lab Control Sample Dup	Total/NA	Water	EPA 300.0 R2.1	
410-99897-2 MS	MW-74-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99897-2 DU	MW-74-0922	Total/NA	Water	EPA 300.0 R2.1	

QC Association Summary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99897-1

HPLC/IC

Analysis Batch: 305447

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-10	MW-107-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99897-11	MW-6-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99897-12	MW-51-0922	Total/NA	Water	EPA 300.0 R2.1	
MB 410-305447/5	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-305447/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
LCSD 410-305447/4	Lab Control Sample Dup	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 307931

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-1	MW-111-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99897-2	MW-74-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99897-3	MW-75-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99897-4	MW-75DUP-0922	Total/NA	Water	EPA 300.0 R2.1	
MB 410-307931/5	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-307931/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
LCSD 410-307931/4	Lab Control Sample Dup	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 309905

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-5	EQR-SA11-0922	Total/NA	Water	EPA 300.0 R2.1	
MB 410-309905/5	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-309905/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
LCSD 410-309905/4	Lab Control Sample Dup	Total/NA	Water	EPA 300.0 R2.1	

Metals

Prep Batch: 303577

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-1	MW-111-0922	Total/NA	Water	3005A	
410-99897-3	MW-75-0922	Total/NA	Water	3005A	
410-99897-4	MW-75DUP-0922	Total/NA	Water	3005A	
410-99897-5	EQR-SA11-0922	Total/NA	Water	3005A	
MB 410-303577/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-303577/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 303581

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-2	MW-74-0922	Total/NA	Water	3005A	
MB 410-303581/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-303581/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
410-99897-2 MS	MW-74-0922	Total/NA	Water	3005A	
410-99897-2 MSD	MW-74-0922	Total/NA	Water	3005A	
410-99897-2 DU	MW-74-0922	Total/NA	Water	3005A	

Prep Batch: 303587

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-1	MW-111-0922	Total/NA	Water	7470A	
410-99897-2	MW-74-0922	Total/NA	Water	7470A	
410-99897-3	MW-75-0922	Total/NA	Water	7470A	
410-99897-4	MW-75DUP-0922	Total/NA	Water	7470A	
410-99897-5	EQR-SA11-0922	Total/NA	Water	7470A	

Eurofins Lancaster Laboratories Environment Testing, LLC

QC Association Summary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99897-1

Metals (Continued)

Prep Batch: 303587 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-303587/1-A	Method Blank	Total/NA	Water	7470A	
LCS 410-303587/2-A	Lab Control Sample	Total/NA	Water	7470A	
LCSD 410-303587/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	
410-99897-1 MS	MW-111-0922	Total/NA	Water	7470A	
410-99897-1 MSD	MW-111-0922	Total/NA	Water	7470A	
410-99897-1 DU	MW-111-0922	Total/NA	Water	7470A	

Analysis Batch: 303940

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-1	MW-111-0922	Total/NA	Water	7470A	303587
410-99897-2	MW-74-0922	Total/NA	Water	7470A	303587
410-99897-3	MW-75-0922	Total/NA	Water	7470A	303587
410-99897-4	MW-75DUP-0922	Total/NA	Water	7470A	303587
410-99897-5	EQR-SA11-0922	Total/NA	Water	7470A	303587
MB 410-303587/1-A	Method Blank	Total/NA	Water	7470A	303587
LCS 410-303587/2-A	Lab Control Sample	Total/NA	Water	7470A	303587
LCSD 410-303587/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	303587
410-99897-1 MS	MW-111-0922	Total/NA	Water	7470A	303587
410-99897-1 MSD	MW-111-0922	Total/NA	Water	7470A	303587
410-99897-1 DU	MW-111-0922	Total/NA	Water	7470A	303587

Analysis Batch: 305815

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-1	MW-111-0922	Total/NA	Water	6020B	303577
410-99897-3	MW-75-0922	Total/NA	Water	6020B	303577
410-99897-4	MW-75DUP-0922	Total/NA	Water	6020B	303577
410-99897-5	EQR-SA11-0922	Total/NA	Water	6020B	303577
MB 410-303577/1-A	Method Blank	Total Recoverable	Water	6020B	303577
LCS 410-303577/2-A	Lab Control Sample	Total Recoverable	Water	6020B	303577

Analysis Batch: 305934

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-1	MW-111-0922	Total/NA	Water	6020B	303577
410-99897-3	MW-75-0922	Total/NA	Water	6020B	303577
410-99897-4	MW-75DUP-0922	Total/NA	Water	6020B	303577
410-99897-5	EQR-SA11-0922	Total/NA	Water	6020B	303577

Analysis Batch: 306267

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-2	MW-74-0922	Total/NA	Water	6020B	303581
MB 410-303581/1-A	Method Blank	Total Recoverable	Water	6020B	303581
LCS 410-303581/2-A	Lab Control Sample	Total Recoverable	Water	6020B	303581
410-99897-2 MS	MW-74-0922	Total/NA	Water	6020B	303581
410-99897-2 MSD	MW-74-0922	Total/NA	Water	6020B	303581
410-99897-2 DU	MW-74-0922	Total/NA	Water	6020B	303581

General Chemistry

Analysis Batch: 301647

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-1	MW-111-0922	Total/NA	Water	2540C-2011	

QC Association Summary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99897-1

General Chemistry (Continued)

Analysis Batch: 301647 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-2	MW-74-0922	Total/NA	Water	2540C-2011	
410-99897-3	MW-75-0922	Total/NA	Water	2540C-2011	
410-99897-4	MW-75DUP-0922	Total/NA	Water	2540C-2011	
410-99897-5	EQR-SA11-0922	Total/NA	Water	2540C-2011	
MB 410-301647/1	Method Blank	Total/NA	Water	2540C-2011	
LCS 410-301647/2	Lab Control Sample	Total/NA	Water	2540C-2011	

Analysis Batch: 301757

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-6	SW-D-0922	Total/NA	Water	OIA-1677	
410-99897-7	SW-E-0922	Total/NA	Water	OIA-1677	
410-99897-8	SW-I-0922	Total/NA	Water	OIA-1677	
410-99897-9	TUSCARORA CREEK DUP	Total/NA	Water	OIA-1677	
MB 410-301757/18	Method Blank	Total/NA	Water	OIA-1677	
MB 410-301757/40	Method Blank	Total/NA	Water	OIA-1677	
LCS 410-301757/38	Lab Control Sample	Total/NA	Water	OIA-1677	
LCS 410-301757/39	Lab Control Sample Dup	Total/NA	Water	OIA-1677	
410-99897-6 MS	SW-D-0922	Total/NA	Water	OIA-1677	
410-99897-6 MSD	SW-D-0922	Total/NA	Water	OIA-1677	

Analysis Batch: 302041

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-1	MW-111-0922	Total/NA	Water	2130B-2011	
410-99897-2	MW-74-0922	Total/NA	Water	2130B-2011	
410-99897-3	MW-75-0922	Total/NA	Water	2130B-2011	
410-99897-4	MW-75DUP-0922	Total/NA	Water	2130B-2011	
410-99897-5	EQR-SA11-0922	Total/NA	Water	2130B-2011	
MB 410-302041/3	Method Blank	Total/NA	Water	2130B-2011	
LCS 410-302041/4	Lab Control Sample	Total/NA	Water	2130B-2011	
410-99897-2 DU	MW-74-0922	Total/NA	Water	2130B-2011	

Analysis Batch: 302465

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-1	MW-111-0922	Total/NA	Water	2320B-2011	
410-99897-2	MW-74-0922	Total/NA	Water	2320B-2011	
410-99897-3	MW-75-0922	Total/NA	Water	2320B-2011	
410-99897-4	MW-75DUP-0922	Total/NA	Water	2320B-2011	
410-99897-5	EQR-SA11-0922	Total/NA	Water	2320B-2011	
MB 410-302465/75	Method Blank	Total/NA	Water	2320B-2011	
LCS 410-302465/78	Lab Control Sample	Total/NA	Water	2320B-2011	

Analysis Batch: 302466

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-1	MW-111-0922	Total/NA	Water	2510B-2011	
410-99897-2	MW-74-0922	Total/NA	Water	2510B-2011	
410-99897-3	MW-75-0922	Total/NA	Water	2510B-2011	
410-99897-4	MW-75DUP-0922	Total/NA	Water	2510B-2011	
410-99897-5	EQR-SA11-0922	Total/NA	Water	2510B-2011	
MB 410-302466/75	Method Blank	Total/NA	Water	2510B-2011	
LCS 410-302466/76	Lab Control Sample	Total/NA	Water	2510B-2011	

QC Association Summary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99897-1

General Chemistry

Analysis Batch: 302467

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-1	MW-111-0922	Total/NA	Water	9040B	
410-99897-2	MW-74-0922	Total/NA	Water	9040B	
410-99897-3	MW-75-0922	Total/NA	Water	9040B	
410-99897-4	MW-75DUP-0922	Total/NA	Water	9040B	
410-99897-5	EQR-SA11-0922	Total/NA	Water	9040B	
LCS 410-302467/77	Lab Control Sample	Total/NA	Water	9040B	

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99897-1

Client Sample ID: MW-111-0922

Lab Sample ID: 410-99897-1

Date Collected: 09/29/22 09:00

Matrix: Water

Date Received: 09/29/22 18:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	302609	L4QM	ELLE	10/04/22 05:54
Total/NA	Analysis	EPA 300.0 R2.1		5	302227	L4QM	ELLE	10/01/22 13:54
Total/NA	Analysis	EPA 300.0 R2.1		5	302228	L4QM	ELLE	10/01/22 13:54
Total/NA	Analysis	EPA 300.0 R2.1		1	307931	L4QM	ELLE	10/18/22 17:10
Total/NA	Prep	3005A			303577	UAMX	ELLE	10/05/22 19:44
Total/NA	Analysis	6020B		1	305934	UCIG	ELLE	10/12/22 15:25
Total/NA	Prep	3005A			303577	UAMX	ELLE	10/05/22 19:44
Total/NA	Analysis	6020B		1	305815	F7JF	ELLE	10/12/22 11:54
Total/NA	Prep	7470A			303587	UAMX	ELLE	10/05/22 20:59
Total/NA	Analysis	7470A		1	303940	UEFS	ELLE	10/06/22 13:51
Total/NA	Analysis	2130B-2011		1	302041	UDS7	ELLE	10/01/22 06:47
Total/NA	Analysis	2320B-2011		1	302465	DI9Q	ELLE	10/01/22 02:06
Total/NA	Analysis	2510B-2011		1	302466	DI9Q	ELLE	10/01/22 02:06
Total/NA	Analysis	2540C-2011		1	301647	M98K	ELLE	09/30/22 07:33
Total/NA	Analysis	9040B		1	302467	DI9Q	ELLE	10/01/22 02:06

Client Sample ID: MW-74-0922

Lab Sample ID: 410-99897-2

Date Collected: 09/29/22 12:45

Matrix: Water

Date Received: 09/29/22 18:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	302227	L4QM	ELLE	10/01/22 14:11
Total/NA	Analysis	EPA 300.0 R2.1		5	302228	L4QM	ELLE	10/01/22 14:11
Total/NA	Analysis	EPA 300.0 R2.1		5	302612	L4QM	ELLE	10/04/22 18:25
Total/NA	Analysis	EPA 300.0 R2.1		1	307931	L4QM	ELLE	10/18/22 17:21
Total/NA	Prep	3005A			303581	UAMX	ELLE	10/05/22 19:52
Total/NA	Analysis	6020B		1	306267	F7JF	ELLE	10/13/22 10:07
Total/NA	Prep	7470A			303587	UAMX	ELLE	10/05/22 20:59
Total/NA	Analysis	7470A		1	303940	UEFS	ELLE	10/06/22 14:10
Total/NA	Analysis	2130B-2011		1	302041	UDS7	ELLE	10/01/22 06:47
Total/NA	Analysis	2320B-2011		1	302465	DI9Q	ELLE	10/01/22 02:12
Total/NA	Analysis	2510B-2011		1	302466	DI9Q	ELLE	10/01/22 02:12
Total/NA	Analysis	2540C-2011		1	301647	M98K	ELLE	09/30/22 07:33
Total/NA	Analysis	9040B		1	302467	DI9Q	ELLE	10/01/22 02:12

Client Sample ID: MW-75-0922

Lab Sample ID: 410-99897-3

Date Collected: 09/29/22 10:40

Matrix: Water

Date Received: 09/29/22 18:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	302604	L4QM	ELLE	10/04/22 03:47
Total/NA	Analysis	EPA 300.0 R2.1		10	302604	L4QM	ELLE	10/04/22 03:57
Total/NA	Analysis	EPA 300.0 R2.1		5	302227	L4QM	ELLE	10/01/22 14:28

Eurofins Lancaster Laboratories Environment Testing, LLC

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99897-1

Client Sample ID: MW-75-0922

Lab Sample ID: 410-99897-3

Date Collected: 09/29/22 10:40

Matrix: Water

Date Received: 09/29/22 18:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		1	307931	L4QM	ELLE	10/18/22 17:32
Total/NA	Prep	3005A			303577	UAMX	ELLE	10/05/22 19:44
Total/NA	Analysis	6020B		1	305934	UCIG	ELLE	10/12/22 15:21
Total/NA	Prep	3005A			303577	UAMX	ELLE	10/05/22 19:44
Total/NA	Analysis	6020B		1	305815	F7JF	ELLE	10/12/22 11:18
Total/NA	Prep	7470A			303587	UAMX	ELLE	10/05/22 20:59
Total/NA	Analysis	7470A		1	303940	UEFS	ELLE	10/06/22 14:02
Total/NA	Analysis	2130B-2011		1	302041	UDS7	ELLE	10/01/22 06:47
Total/NA	Analysis	2320B-2011		1	302465	DI9Q	ELLE	10/01/22 02:18
Total/NA	Analysis	2510B-2011		1	302466	DI9Q	ELLE	10/01/22 02:18
Total/NA	Analysis	2540C-2011		1	301647	M98K	ELLE	09/30/22 07:33
Total/NA	Analysis	9040B		1	302467	DI9Q	ELLE	10/01/22 02:18

Client Sample ID: MW-75DUP-0922

Lab Sample ID: 410-99897-4

Date Collected: 09/29/22 00:00

Matrix: Water

Date Received: 09/29/22 18:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	302604	L4QM	ELLE	10/04/22 04:07
Total/NA	Analysis	EPA 300.0 R2.1		10	302604	L4QM	ELLE	10/04/22 04:17
Total/NA	Analysis	EPA 300.0 R2.1		5	302227	L4QM	ELLE	10/01/22 15:03
Total/NA	Analysis	EPA 300.0 R2.1		1	307931	L4QM	ELLE	10/18/22 17:43
Total/NA	Prep	3005A			303577	UAMX	ELLE	10/05/22 19:44
Total/NA	Analysis	6020B		1	305934	UCIG	ELLE	10/12/22 15:23
Total/NA	Prep	3005A			303577	UAMX	ELLE	10/05/22 19:44
Total/NA	Analysis	6020B		1	305815	F7JF	ELLE	10/12/22 11:30
Total/NA	Prep	7470A			303587	UAMX	ELLE	10/05/22 20:59
Total/NA	Analysis	7470A		1	303940	UEFS	ELLE	10/06/22 14:04
Total/NA	Analysis	2130B-2011		1	302041	UDS7	ELLE	10/01/22 06:47
Total/NA	Analysis	2320B-2011		1	302465	DI9Q	ELLE	10/01/22 02:24
Total/NA	Analysis	2510B-2011		1	302466	DI9Q	ELLE	10/01/22 02:24
Total/NA	Analysis	2540C-2011		1	301647	M98K	ELLE	09/30/22 07:33
Total/NA	Analysis	9040B		1	302467	DI9Q	ELLE	10/01/22 02:24

Client Sample ID: EQR-SA11-0922

Lab Sample ID: 410-99897-5

Date Collected: 09/29/22 00:00

Matrix: Water

Date Received: 09/29/22 18:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	302227	L4QM	ELLE	10/01/22 15:20
Total/NA	Analysis	EPA 300.0 R2.1		5	302228	L4QM	ELLE	10/01/22 15:20
Total/NA	Analysis	EPA 300.0 R2.1		1	309905	L4QM	ELLE	10/24/22 23:21

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99897-1

Client Sample ID: EQR-SA11-0922

Lab Sample ID: 410-99897-5

Date Collected: 09/29/22 00:00

Matrix: Water

Date Received: 09/29/22 18:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			303577	UAMX	ELLE	10/05/22 19:44
Total/NA	Analysis	6020B		1	305934	UCIG	ELLE	10/12/22 15:19
Total/NA	Prep	3005A			303577	UAMX	ELLE	10/05/22 19:44
Total/NA	Analysis	6020B		1	305815	F7JF	ELLE	10/12/22 11:12
Total/NA	Prep	7470A			303587	UAMX	ELLE	10/05/22 20:59
Total/NA	Analysis	7470A		1	303940	UEFS	ELLE	10/06/22 14:25
Total/NA	Analysis	2130B-2011		1	302041	UDS7	ELLE	10/01/22 06:47
Total/NA	Analysis	2320B-2011		1	302465	DI9Q	ELLE	10/01/22 02:30
Total/NA	Analysis	2510B-2011		1	302466	DI9Q	ELLE	10/01/22 02:30
Total/NA	Analysis	2540C-2011		1	301647	M98K	ELLE	09/30/22 07:33
Total/NA	Analysis	9040B		1	302467	DI9Q	ELLE	10/01/22 02:30

Client Sample ID: SW-D-0922

Lab Sample ID: 410-99897-6

Date Collected: 09/29/22 14:05

Matrix: Water

Date Received: 09/29/22 18:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	OIA-1677		1	301757	CBM8	ELLE	09/30/22 10:05

Client Sample ID: SW-E-0922

Lab Sample ID: 410-99897-7

Date Collected: 09/29/22 13:35

Matrix: Water

Date Received: 09/29/22 18:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	OIA-1677		1	301757	CBM8	ELLE	09/30/22 10:13

Client Sample ID: SW-I-0922

Lab Sample ID: 410-99897-8

Date Collected: 09/29/22 13:55

Matrix: Water

Date Received: 09/29/22 18:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	OIA-1677		1	301757	CBM8	ELLE	09/30/22 10:16

Client Sample ID: TUSCARORA CREEK DUP

Lab Sample ID: 410-99897-9

Date Collected: 09/29/22 00:00

Matrix: Water

Date Received: 09/29/22 18:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	OIA-1677		1	301757	CBM8	ELLE	09/30/22 10:19

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99897-1

Client Sample ID: MW-107-0922

Lab Sample ID: 410-99897-10

Date Collected: 09/29/22 09:29

Matrix: Water

Date Received: 09/29/22 18:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	305447	L4QM	ELLE	10/11/22 20:56

Client Sample ID: MW-6-0922

Lab Sample ID: 410-99897-11

Date Collected: 09/29/22 09:42

Matrix: Water

Date Received: 09/29/22 18:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	305447	L4QM	ELLE	10/11/22 21:06

Client Sample ID: MW-51-0922

Lab Sample ID: 410-99897-12

Date Collected: 09/29/22 09:01

Matrix: Water

Date Received: 09/29/22 18:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	305447	L4QM	ELLE	10/11/22 21:39

Laboratory References:

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

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
 Project/Site: EastAlco WW

Job ID: 410-99897-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

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

Authority	Program	Identification Number	Expiration Date
Maryland	State	100	06-30-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
2130B-2011		Water	Turbidity
2320B-2011		Water	Total Alkalinity as CaCO3 to pH 4.5
2510B-2011		Water	Specific Conductance
2540C-2011		Water	Total Dissolved Solids
6020B	3005A	Water	Aluminum
6020B	3005A	Water	Arsenic
6020B	3005A	Water	Barium
6020B	3005A	Water	Beryllium
6020B	3005A	Water	Cadmium
6020B	3005A	Water	Chromium
6020B	3005A	Water	Lead
6020B	3005A	Water	Nickel
6020B	3005A	Water	Selenium
6020B	3005A	Water	Sodium
7470A	7470A	Water	Mercury
9040B		Water	pH
EPA 300.0 R2.1		Water	Chloride
EPA 300.0 R2.1		Water	Fluoride
EPA 300.0 R2.1		Water	Sulfate
OIA-1677		Water	Cyanide, Free



Method Summary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99897-1

Method	Method Description	Protocol	Laboratory
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	ELLE
6020B	Metals (ICP/MS)	SW846	ELLE
7470A	Mercury (CVAA)	SW846	ELLE
2130B-2011	Turbidity	SM	ELLE
2320B-2011	Alkalinity, Total	SM	ELLE
2510B-2011	Conductivity, Specific Conductance	SM	ELLE
2540C-2011	Solids, Total Dissolved (TDS)	SM	ELLE
9040B	pH	SW846	ELLE
OIA-1677	Cyanide, Free (Flow Injection)	OI CORP	ELLE
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	ELLE
7470A	Preparation, Mercury	SW846	ELLE

Protocol References:

EPA = US Environmental Protection Agency

OI CORP = OI Corporation Instrument Manual.

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: Tetra Tech, Inc.
Project/Site: EastAlco WW

Job ID: 410-99897-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-99897-1	MW-111-0922	Water	09/29/22 09:00	09/29/22 18:53
410-99897-2	MW-74-0922	Water	09/29/22 12:45	09/29/22 18:53
410-99897-3	MW-75-0922	Water	09/29/22 10:40	09/29/22 18:53
410-99897-4	MW-75DUP-0922	Water	09/29/22 00:00	09/29/22 18:53
410-99897-5	EQR-SA11-0922	Water	09/29/22 00:00	09/29/22 18:53
410-99897-6	SW-D-0922	Water	09/29/22 14:05	09/29/22 18:53
410-99897-7	SW-E-0922	Water	09/29/22 13:35	09/29/22 18:53
410-99897-8	SW-I-0922	Water	09/29/22 13:55	09/29/22 18:53
410-99897-9	TUSCARORA CREEK DUP	Water	09/29/22 00:00	09/29/22 18:53
410-99897-10	MW-107-0922	Water	09/29/22 09:29	09/29/22 18:53
410-99897-11	MW-6-0922	Water	09/29/22 09:42	09/29/22 18:53
410-99897-12	MW-51-0922	Water	09/29/22 09:01	09/29/22 18:53



Chain of Custody Record

Client Information		Sampler: <i>Mullis/Musser</i>		Lab PM: Gordon, Stephen J		Camer Tracking No(s)		COC No: 410-64743-18583 4									
Client Contact: Josh Mullis		Phone: <i>410-279-7900</i>		E-Mail: Stephen.Gordon@et.eurofinsus.com		State of Origin: <i>PA</i>		Page: <i>4 of 2 of 3</i>									
Company: Tetra Tech, Inc.				PWSID		Analysis Requested											
Address: 20251 Century Blvd Suite 200		Due Date Requested:		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:10%;">300_ORGFM_28D - Fluoride Only</td> <td style="width:10%;">300_ORGFM_28D, 300_ORGFMS</td> <td style="width:10%;">2320B, 2510B, 2540C, SingleDry, 9040B</td> <td style="width:10%;">SM2130B - Turbidity</td> <td style="width:10%;">6020B, 7470A</td> <td style="width:10%;">1877_Free - Free Cyanide</td> </tr> </table>				300_ORGFM_28D - Fluoride Only	300_ORGFM_28D, 300_ORGFMS	2320B, 2510B, 2540C, SingleDry, 9040B	SM2130B - Turbidity	6020B, 7470A	1877_Free - Free Cyanide	Job #			
300_ORGFM_28D - Fluoride Only	300_ORGFM_28D, 300_ORGFMS	2320B, 2510B, 2540C, SingleDry, 9040B	SM2130B - Turbidity					6020B, 7470A	1877_Free - Free Cyanide								
City: Germantown		TAT Requested (days): <i>Standard</i>						Preservation Codes:									
State, Zip: MD, 20874		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No						A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Y - Trnzma Z - other (specify)									
Phone: 412-921-8277(Tel)		PO #: 1188904						Other:									
Email: Josh.Mullis@tetratech.com		WO #:															
Project Name: EastAlco WW		Project #: 41001054		Special Instructions/Note:													
Site		SSOW#:															
Sample Identification		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=metal/oil, BT=Tissue, A=Air)	Preservation Code	Analysis Results	Analysis Results	Analysis Results								
<i>D SW-D-0922</i>		<i>9/29/22</i>	<i>1405</i>	<i>G</i>	<i>Water</i>	<i>K</i>											
<i>E SW-E-0922</i>		<i>↓</i>	<i>1335</i>	<i>↓</i>	<i>Water</i>	<i>K</i>											
<i>T SW-T-0922</i>		<i>↓</i>	<i>1355</i>	<i>↓</i>	<i>Water</i>	<i>K</i>											
TUSCARORA CREEK DUP		<i>↓</i>	<i>0000</i>	<i>↓</i>	<i>Water</i>	<i>K</i>											
					<i>Water</i>												
Possible Hazard Identification		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)															
<input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		<input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months															
Deliverable Requested I, II, III, IV, Other (specify)		Special Instructions/QC Requirements:															
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:											
Relinquished by: <i>[Signature]</i>		Date/Time: <i>9/29/22</i>		Company: <i>TH</i>		Received by: <i>[Signature]</i>		Date/Time: <i>9/29/22 1505</i>									
Relinquished by: <i>[Signature]</i>		Date/Time: <i>9/29/22 1830</i>		Company:		Received by:		Date/Time:									
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time: <i>9/29/22 1853</i>									
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: <i>4.1</i>													

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CD

Chain of Custody Record

Client Information		Sampler: <i>Mullis/Muller</i>		Lab PM: Gordon, Stephen J		Carrier Tracking No(s)		COC No: 410-64743-18583 1			
Client Contact: Josh Mullis		Phone: <i>410-279-2700</i>		E-Mail: Stephen.Gordon@et.eurofins.com		State of Origin: <i>MD</i>		Page: <i>1 of 4</i> of <i>3 of 3</i>			
Company: Tetra Tech, Inc.				PWSID		Analysis Requested					
Address: 20251 Century Blvd Suite 200		Due Date Requested:		Filtration Method (Y/N) 300_ORGFM_28D - Fluoride Only 300_ORGFM_28D, 300_ORGFMS 2320B, 2510B, 2540C - SingleDry, 9040B SM2130B - Turbidity 6020B, 7470A 1677_Free - Free Cyanide		Total Number of Containers		Job #:			
City: Germantown		TAT Requested (days): <i>Standard</i>						Preservation Codes:			
State, Zip: MD, 20874		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No						A - HCL		M - Hexane	
Phone: 412-921-8277(Tel)		PO #: 1188904						B - NaOH		N - None	
Email: Josh.Mullis@tetratech.com		WO #:						C - Zn Acetate		O - AsNaO2	
Project Name: EastAlco WW		Project #: 41001054		D - Nitric Acid		P - Na2O4S		Q - Na2SO3			
Site:		SSOW#:		E - NaHSO4		R - Na2S2O3		S - H2SO4			
Sample Identification		Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)			
								Other:			
								Special Instructions/Note:			
								A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Y - Trizma Z - other (specify)			
MW-13		<i>MW-107-0922</i>		<i>9/29/22</i>		<i>0929</i>		<i>6</i>			
RW-29		<i>MW-6-0922</i>		<i>↓</i>		<i>0942</i>		<i>6</i>			
RW-29 DUP		<i>MW-51-0922</i>		<i>↓</i>		<i>0901</i>		<i>6</i>			
MW-45											
MW-51											
MW-52											
MW-56											
MW-60											
MW-62											
MW-72											
MW-103											
Possible Hazard Identification					Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)						
<input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological					<input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months						
Deliverable Requested: I, II, III, IV, Other (specify)					Special Instructions/QC Requirements:						
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:					
Relinquished by: <i>[Signature]</i>		Date/Time: <i>9/29/22</i>		Company:		Received by: <i>[Signature]</i>		Date/Time: <i>9/29/22 1505</i>			
Relinquished by: <i>[Signature]</i>		Date/Time: <i>9/29/22 1830</i>		Company:		Received by:		Date/Time:			
Relinquished by:		Date/Time:		Company:		Received by: <i>[Signature]</i>		Date/Time: <i>9-29-22 1855</i>			
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s)°C and Other Remarks: <i>4-1</i>							



Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 410-99897-1

Login Number: 99897

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: Jeremiah, Cory T

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	Not present.
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	N/A	Not present.
VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)?	N/A	

APPENDIX B: HISTORICAL GROUNDWATER AND SURFACE WATER DATA

Appendix B
Groundwater and Surface Water Monitoring Data Summary
Quantum Maryland, LLC

Fluoride Concentrations in Source Area Groundwater						
Monitoring Era	Yr-Qtr	Well ID & Zone				
		29-Bedrock	45-Bedrock	56-Overburden	57-Overburden	68-Bedrock
Pre-Curtailment	05-Q1	42	8.9	48	58	34
	05-Q2	54	4.8	46	74	50
	05-Q3	54	17	45	78	45
	05-Q4	42	--	48	92	37
Post-Curtailment	06-Q1	54	--	56	80	29
	06-Q2	--	--	--	--	72
	06-Q3	70	7	34	120	37
	07-Q1	100	--	38	110	22
	07-Q3	70	20.0	42	160	14
	08-Q1	49	--	42	100	27
	08-Q3	53	14.8	53	168	43
	09-Q1	65	--	48	170	34
	09-Q3	59	14.7	48	152	38
	10-Q1	22	--	43	140	14
	10-Q3	80	34	48	180	39
	11-Q3	76	50	50	190	36
	12-Q3	56	46	54	190	42
	13-Q3	70.5	45	49	170	37
	14-Q3	51.0	12	44	140	33
	15-Q3	70.0	43	38	160	27
	16-Q3	58.0	53	44	--	24
	17-Q3	70.4	28	33	--	22
	18-Q3	47.3	15.2	25.9	--	13.2
	19-Q3	53.9	38.0	36.1	--	21.2
20-Q3	36.5	28.0	27.0	--	26.0	
21-Q1	--	--	--	--	14.5	
21-Q3	33.5	15.0	25.0	--	14.0	
22-Q3	23.5	26.0	-- ⁽¹⁾	--	19.5	

Units = mg/L

⁽¹⁾ = Indicates MW-56 was dry and was unable to be sampled.

-- = not sampled

Appendix B
Groundwater and Surface Water Monitoring Data Summary
Quantum Maryland, LLC

Fluoride Concentrations in Downgradient Groundwater										
Monitoring Era	Yr-Qtr	Well ID & Zone								
		4-Overburden	6-Overburden	25-Overburden	26-Overburden	51-Overburden	62-Bedrock	103-Bedrock	107-Overburden	108-Bedrock
Pre-Curtailment	05-Q1	1.7	3.4	13	4.9	1.5	3.5	--	--	--
	05-Q2	1.9	3.5	17	7.6	1.3	4.4	3.5	2.0	12
	05-Q3	1.5	3.1	22	7.4	1.4	5.8	--	--	--
	05-Q4	1.3	3.7	18	6.0	1.4	--	--	--	--
Post-Curtailment	06-Q1	1.5	5.7	17	5.6	--	--	--	--	--
	06-Q2	1.5	3.1	35	5.9	--	--	--	--	--
	06-Q3	0.6	3.2	19	5.8	1.2	4.8	4.5	1.4	16
	07-Q3	1.5	3.4	21	3.6	1.2	2.8	6.7	1.9	16
	08-Q3	1.8	6.0	23	4.3	1.2	4.2	10.1	1.0	14
	09-Q3	10.4	4.5	21	4.7	1.3	4.2	5.4	0.8	12
	10-Q3	1.4	4.0	20	5.7	1.3	4.9	3.5	0.9	11
	11-Q3	1.4	3.6	18	4.4	1.2	5.0	3.5	0.5	12
	12-Q3	1.9	3.7	19	6.7	1.4	4.2	4.9	0.4	13
	13-Q3	1.7	3.0	21	4.1	1.3	3.8	3.5	0.5	11
	14-Q3	1.3	3.0	19	4.0	1.3	5.4	3.1	0.4	7.7
	15-Q3	1.5	2.8	18	52.0	1.2	3.6	2.8	0.47	9.8
	16-Q3	2.0	3.9	14	4.1	1.2	4.1	6.5	0.51	9.8
	17-Q3	2.1	4.6	17	5.2	1.5	3.8	6.5	0.71	9.9
	18-Q3	2.5	3.7	5.6	5.0	1.6	4.2	3.6	0.16	8.4
	19-Q3	2.4	4.1	12.6	5.6	1.5	3.4	4.5	0.19	10.4
	20-Q3	2.8	3.8	16.0	5.3	1.5	3.5	5.0	0.65	9.3
	21-Q3	2.4	3.6	7.9	5.5	1.4	2.7	4.8	0.23	9.5
22-Q3	2.4	2.6	14.0	4.3	1.6	3.4	3.9	1.50	11.0	

Units = mg/L
-- = not sampled

Appendix B
Groundwater and Surface Water Monitoring Data Summary
Quantum Maryland, LLC

Fluoride Concentrations in Property Boundary Groundwater						
Monitoring Era	Yr-Qtr	Well ID & Zone				
		13-Bedrock ^a	52-Overburden	60-Bedrock	72-Overburden	73-Bedrock
Pre-Curtailment	05-Q1	0.25	7.2	5.3	6.4	6.2
	05-Q2	0.26	7.5	5.3	7.4	7.9
	05-Q3	0.30	8.3	5.6	7.2	8.1
	05-Q4	0.26	7.2	5.3	7.5	8.0
Post-Curtailment	06-Q1	0.20	6.1	0.85 ^b	0.95 ^b	0.93 ^b
	06-Q3	0.26	4.7	2.8	5.4	6.1
	07-Q1	0.93	5.6	3.8	5.1	5.0
	07-Q3	0.27	5.6	4.3	6.1	6.2
	08-Q1	1.30	5.3	3.6	4.9	5.0
	08-Q3	0.40	6.5	3.4	6.6	6.7
	09-Q1	0.34	5.8	2.7	5.3	5.7
	09-Q3	0.42	5.2	3.1	6.6	6.2
	10-Q1	0.00	5.6	2.5	5.4	3.6
	10-Q3	0.32	6.9	2.9	6.6	6.2
	11-Q1	0.44	5.6	2.8	5.2	5.5
	11-Q3	0.24	6.5	2.8	6.1	6.7
	12-Q1	0.23	8.6	2.5	4.7	5.5
	12-Q3	0.33	6.8	2.8	7.1	7.3
	13-Q3	0.25	6.5	2.6	6.6	6.8
	14-Q3	0.27	6.1	2.7	6.3	6.4
	15-Q1	0.29	5.2	2.7	4.6	5.4
	15-Q3	0.28	5.6	2.5	5.5	5.7
	16-Q1	0.17	4.1	2.2	3.8	3.9
	16-Q3	0.28	5.5	2.3	5.6	5.6
	17-Q1	0.59	4.6	2.3	4.5	4.7
	17-Q3	0.46	5.0	2.7	5.0	5.2
	18-Q1	0.26	4.7	2.2	4.4	4.5
	18-Q3	0.21	1.0	2.6	6.3	4.1
	19-Q1	0.21	4.1	2.4	4.7	3.1
	19-Q3	0.16	5.1	2.8	5.3	5
20-Q3	0.24	5.3	3	5.1	6.1	
21-Q1	0.25 U	4.3	2.4	4.3	4.3	
21-Q3	0.28	4.7	2.4	4.7	5.0	
22-Q1	0.31	7.7	2.6	4.3	4.9	
22-Q3	0.51 J	5.2	2.5	5.3	5.3	

Units = mg/L

U = Not detected above reporting limit

J = Result is less than the reporting limit but greater than or equal to the MDL and the concentration is an approximate value.

^aOff-Site Location

^bAccuracy of these data is uncertain (see Section 4.2.1.3)

Appendix B
Groundwater and Surface Water Monitoring Data Summary
Quantum Maryland, LLC

Free Cyanide Concentrations in Surface Water

Monitoring Era	Yr-Qtr	Monitoring Location		
		D	E*	I
Pre-Curtailment	05-Q3	0.005 U	0.0106	0.0019
Post-Curtailment	06-Q2	0.0099	0.0090	0.0063
	06-Q4	0.0055	0.0057	0.005 U
	07-Q4	0.005 U	0.005 U	0.005 U
	08-Q3	0.006 J	0.008 J	0.007 J
	09-Q4	0.0034 U	0.0034 U	0.0034 U
	10-Q3	0.0034 U	0.0034 U	0.0034 U
	11-Q3	0.005 U	0.005 U	0.0068
	12-Q3	0.005 U	0.005 U	0.005 U
	13-Q3	0.005 U	0.005 U	0.005 U
	14-Q3	0.005 U	0.0050	0.005 U
	15-Q3	0.005 U	0.0055	0.005 U
	16-Q3	0.005 U	0.0051	0.005 U
	17-Q3	0.0032 J	0.0021 J	0.0024 J
	18-Q3	0.0036 J	0.0025 J	0.0036 J
	19-Q3	0.0020 U	0.0020 U	0.0020 U
	20-Q3	0.0060 U	0.0028 J	0.0060 U
	21-Q3	0.0060 U	0.0060 U	0.0060 U
22-Q3	0.0060 U	0.006 U	0.0060 U	

Units = mg/L

*Off-Site Location

U = Not detected above reporting limit