



Fremont
Analytical

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Fulcrum Environmental

Ryan Mathews
406 N. 2nd Street
Yakima, WA 98901

RE: Kennewick SD Drinking Water - Hawthorne Elementary
Work Order Number: 1702289

February 27, 2017

Attention Ryan Mathews:

Fremont Analytical, Inc. received 8 sample(s) on 2/27/2017 for the analyses presented in the following report.

Drinking Water Metals by EPA Method 200.8

This report consists of the following:

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

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

Thank you for using Fremont Analytical.

Sincerely,

Chelsea Ward
Project Manager

CC:
Amanda Enbysk

CLIENT: Fulcrum Environmental
Project: Kennewick SD Drinking Water - Hawthorne
Work Order: 1702289

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1702289-001	22517-HTE-P-CF-06	02/25/2017 8:20 AM	02/27/2017 9:19 AM
1702289-002	22517-HTE-S-CF-06	02/25/2017 8:20 AM	02/27/2017 9:19 AM
1702289-003	22517-HTE-T-CF-06	02/25/2017 8:20 AM	02/27/2017 9:19 AM
1702289-004	22517-HTE-P-OF-32	02/25/2017 8:20 AM	02/27/2017 9:19 AM
1702289-005	22517-HTE-S-OF-32	02/25/2017 8:20 AM	02/27/2017 9:19 AM
1702289-006	22517-HTE-T-OF-32	02/25/2017 8:20 AM	02/27/2017 9:19 AM
1702289-007	22517-HTE-P-OF-43	02/25/2017 8:20 AM	02/27/2017 9:19 AM
1702289-008	22517-HTE-P-OF-44	02/25/2017 8:20 AM	02/27/2017 9:19 AM

CLIENT: Fulcrum Environmental
Project: Kennewick SD Drinking Water - Hawthorne Elementary

WorkOrder Narrative:

I. SAMPLE RECEIPT:

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

II. GENERAL REPORTING COMMENTS:

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

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

III. ANALYSES AND EXCEPTIONS:

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

Prep Sample Comments:

1702289-007A 208803: Prep Comments for EPA200.8, Sample 1702289-007A: Turbidity: 0.00 NTU
1702289-001A 208801: Prep Comments for EPA200.8, Sample 1702289-001A: Turbidity: 0.04 NTU
1702289-004A 208802: Prep Comments for EPA200.8, Sample 1702289-004A: Turbidity: 0.17 NTU
1702289-008A 208804: Prep Comments for EPA200.8, Sample 1702289-008A: Turbidity: 0.01 NTU

Qualifiers:

- * - Flagged value is not within established control limits
- B - Analyte detected in the associated Method Blank
- D - Dilution was required
- E - Value above quantitation range
- H - Holding times for preparation or analysis exceeded
- I - Analyte with an internal standard that does not meet established acceptance criteria
- J - Analyte detected below Reporting Limit
- N - Tentatively Identified Compound (TIC)
- Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
- S - Spike recovery outside accepted recovery limits
- ND - Not detected at the Reporting Limit
- R - High relative percent difference observed

Acronyms:

- %Rec - Percent Recovery
- CCB - Continued Calibration Blank
- CCV - Continued Calibration Verification
- DF - Dilution Factor
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



Analytical Report

Work Order: 1702289
Date Reported: 2/27/2017

CLIENT: Fulcrum Environmental
Project: Kennewick SD Drinking Water - Hawthorne Elementary

Lab ID: 1702289-001 **Collection Date:** 2/25/2017 8:20:00 AM
Client Sample ID: 22517-HTE-P-CF-06 **Matrix:** Drinking Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<u>Drinking Water Metals by EPA Method 200.8</u>				Batch ID: 16360		Analyst: TN
Copper	480	0.500		µg/L	1	2/27/2017 4:58:41 PM

Lab ID: 1702289-004 **Collection Date:** 2/25/2017 8:20:00 AM
Client Sample ID: 22517-HTE-P-OF-32 **Matrix:** Drinking Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<u>Drinking Water Metals by EPA Method 200.8</u>				Batch ID: 16360		Analyst: TN
Copper	872	0.500		µg/L	1	2/27/2017 5:02:17 PM

Lab ID: 1702289-007 **Collection Date:** 2/25/2017 8:20:00 AM
Client Sample ID: 22517-HTE-P-OF-43 **Matrix:** Drinking Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<u>Drinking Water Metals by EPA Method 200.8</u>				Batch ID: 16360		Analyst: TN
Copper	ND	0.500		µg/L	1	2/27/2017 5:13:08 PM



Analytical Report

Work Order: 1702289

Date Reported: 2/27/2017

CLIENT: Fulcrum Environmental

Project: Kennewick SD Drinking Water - Hawthorne Elementary

Lab ID: 1702289-008

Collection Date: 2/25/2017 8:20:00 AM

Client Sample ID: 22517-HTE-P-OF-44

Matrix: Drinking Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Drinking Water Metals by EPA Method 200.8

Batch ID: 16360

Analyst: TN

Copper	1,220	0.500		µg/L	1	2/27/2017 5:16:44 PM
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Work Order: 1702289
CLIENT: Fulcrum Environmental
Project: Kennewick SD Drinking Water - Hawthorne

QC SUMMARY REPORT

Drinking Water Metals by EPA Method 200.8

Sample ID	MB-16360	SampType:	MBLK	Units:	µg/L	Prep Date:	2/27/2017	RunNo:	34678		
Client ID:	MBLKW	Batch ID:	16360			Analysis Date:	2/27/2017	SeqNo:	662272		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	ND	0.500									
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Sample ID	LCS-16360	SampType:	LCS	Units:	µg/L	Prep Date:	2/27/2017			RunNo:	34678	
Client ID:	LCSW	Batch ID:	16360	Analysis Date:			2/27/2017			SeqNo:	662273	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Copper	95.8	0.500	100.0	0	95.8	85	115				
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Sample ID	1702286-001ADUP	SampType:	DUP	Units:	µg/L	Prep Date:	2/27/2017	RunNo:	34678		
Client ID:	BATCH	Batch ID:	16360			Analysis Date:	2/27/2017	SeqNo:	662277		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	521	0.500						546.9	4.82	30	
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Sample ID	1702286-001AMS	SampType:	MS	Units:	µg/L	Prep Date:	2/27/2017	RunNo:	34678		
Client ID:	BATCH	Batch ID:	16360			Analysis Date:	2/27/2017	SeqNo:	662278		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	728	0.500	200.0	546.9	90.5	70	130				
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Sample ID	1702286-001AMSD	SampType:	MSD	Units:	µg/L	Prep Date:	2/27/2017	RunNo:	34678		
Client ID:	BATCH	Batch ID:	16360			Analysis Date:	2/27/2017	SeqNo:	662279		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	737	0.500	200.0	546.9	94.9	70	130	727.8	1.21	30	
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Work Order Number: **1702289**
Date Received: **2/27/2017 9:19:00 AM**

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐

2. How was the sample delivered? FedEx

3. Coolers are present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
4. Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
5. Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Not Required <input type="checkbox"/>
6. Was an attempt made to cool the samples?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
7. Were all items received at a temperature of $>0^{\circ}\text{C}$ to 10.0°C^{*}	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
8. Sample(s) in proper container(s)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
9. Sufficient sample volume for indicated test(s)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
10. Are samples properly preserved?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
11. Was preservative added to bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
12. Is there headspace in the VOA vials?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	HNO3 <input type="checkbox"/>
13. Did all samples containers arrive in good condition(unbroken)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
14. Does paperwork match bottle labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
15. Are matrices correctly identified on Chain of Custody?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
16. Is it clear what analyses were requested?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
17. Were all holding times able to be met?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

18. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: Date:
 By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
 Regarding:
 Client Instructions:

19. Additional remarks:

HNO3 added to 002A, 003A, 005A, 006A

Item #	Temp °C
Cooler 1	1.8
Cooler 2	0.9
Sample 1	1.2
Sample 2	1.5

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



3600 Fremont Ave N.
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Tel: 206-352-3790
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Client:

Fulcrum Environmental Consulting, Inc.

Address:

406 North Second Street

City, State, Zip:

Yakima, WA 98901

Telephone:

509.574.0839

Fax: 509.575.8453

Project Name: Kennelick SD Drinking Water - Hawthorne Elementary
Project No: 162017.20
Location: Hawthorne Elementary, Kennelick, WA
Report To (PM): Ryan Mathews
PM Email: rmathews@fulcrum.net; cc: aenbysk@fulcrum.net

Date: 2/25/2017

Laboratory Project No (Internal): 1702289

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Chain of Custody Record and Laboratory Services Agreement

*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOCs (EPA 8260 / 624)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals ** (EPA 6020 / 200.8)	Total (T) Dissolved (D)	Anions (IC)***	EDS (8011)	Comments
22517-HTE-R-CF-06	2/25/2017	0900	DW														H2O3 preserved
22517-HTE-S-CF-06																	H2O3 preserved
22517-HTE-T-CF-06																	H2O3 preserved
22517-HTE-R-CF-32																	H2O3 preserved
22517-HTE-S-CF-32																	H2O3 preserved
22517-HTE-T-CF-32																	H2O3 preserved
22517-HTE-R-CF-43																	H2O3 preserved
22517-HTE-R-CF-44																	H2O3 preserved

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite
Sample Disposal: ☐ Return to Client ☐ Disposal by Lab (Samples will be held for 30 days unless otherwise noted. A fee may be assessed if samples are retained after 30 days.)

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished ☒ Received ☒
Date/Time 2/25/2017, 1300 Date/Time 2/27/17 0919
Relinquished ☒ Received ☒
Date/Time Date/Time
TAT → SameDay^ NextDay^ 2 Day 3 Day STD
^Please coordinate with the lab in advance