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

RE: KSD Drinking Water - Cascade Elementary
Work Order Number: 1705256

May 22, 2017

Attention Ryan Mathews:

Fremont Analytical, Inc. received 4 sample(s) on 5/22/2017 for the analyses presented in the following report.

Drinking Water Metals by EPA Method 200.8
Total Metals by EPA Method 200.8

This report consists of the following:

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

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

Thank you for using Fremont Analytical.

Sincerely,

Chelsea Ward
Project Manager

Date: *05/22/2017*

CLIENT: Fulcrum Environmental
Project: KSD Drinking Water - Cascade Elementary
Work Order: 1705256

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1705256-001	CCE52017-P-CDF-45	05/20/2017 7:30 AM	05/22/2017 9:56 AM
1705256-002	CCE52017-S-CDF-45	05/20/2017 7:30 AM	05/22/2017 9:56 AM
1705256-003	CCE52017-T-CDF-45	05/20/2017 7:30 AM	05/22/2017 9:56 AM
1705256-004	CCE52017-P-WC-49	05/20/2017 7:30 AM	05/22/2017 9:56 AM

Case Narrative

WO#: **1705256**
Date: **5/22/2017**

CLIENT: Fulcrum Environmental
Project: KSD Drinking Water - Cascade 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:
1705256-001A 220410: Prep Comments for EPA200.8, Sample 1705256-001A: Turbidity: 1.17 NTU -> fails, needs digestion.
1705256-004A 220411: Prep Comments for EPA200.8, Sample 1705256-004A: 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: **1705256**
Date Reported: **5/22/2017**

CLIENT: Fulcrum Environmental
Project: KSD Drinking Water - Cascade Elementary

Lab ID: 1705256-001 **Collection Date:** 5/20/2017 7:30:00 AM
Client Sample ID: **CCE52017-P-CDF-45** **Matrix:** Drinking Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Metals by EPA Method 200.8				Batch ID: 17123		Analyst: TN
Copper	79.7	0.500		µg/L	1	5/22/2017 1:54:51 PM

Lab ID: 1705256-004 **Collection Date:** 5/20/2017 7:30:00 AM
Client Sample ID: **CCE52017-P-WC-49** **Matrix:** Drinking Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Drinking Water Metals by EPA Method 200.8				Batch ID: 17121		Analyst: TN
Copper	1,400	0.500		µg/L	1	5/22/2017 11:52:43 AM

Work Order: 1705256
CLIENT: Fulcrum Environmental
Project: KSD Drinking Water - Cascade Elementary

QC SUMMARY REPORT

Drinking Water Metals by EPA Method 200.8

Sample ID	**MB-17121**	SampType:	**MBLK**			Units:	**µg/L**		Prep Date:	**5/22/2017**		RunNo:	**36308**	
Client ID:	**MBLKW**	Batch ID:	**17121**						Analysis Date:	**5/22/2017**		SeqNo:	**695842**	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Copper		ND	0.500											

Sample ID	**LCS-17121**	SampType:	**LCS**			Units:	**µg/L**		Prep Date:	**5/22/2017**		RunNo:	**36308**	
Client ID:	**LCSW**	Batch ID:	**17121**						Analysis Date:	**5/22/2017**		SeqNo:	**695843**	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Copper		101	0.500	100.0	0	101	85	115						

Sample ID	**1705251-001ADUP**	SampType:	**DUP**			Units:	**µg/L**		Prep Date:	**5/22/2017**		RunNo:	**36308**	
Client ID:	**BATCH**	Batch ID:	**17121**						Analysis Date:	**5/22/2017**		SeqNo:	**695845**	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Copper		134	0.500						137.0	2.29	30			

Sample ID	**1705251-001AMS**	SampType:	**MS**			Units:	**µg/L**		Prep Date:	**5/22/2017**		RunNo:	**36308**	
Client ID:	**BATCH**	Batch ID:	**17121**						Analysis Date:	**5/22/2017**		SeqNo:	**695846**	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Copper		343	0.500	200.0	137.0	103	70	130						

Sample ID	**1705251-001AMSD**	SampType:	**MSD**			Units:	**µg/L**		Prep Date:	**5/22/2017**		RunNo:	**36308**	
Client ID:	**BATCH**	Batch ID:	**17121**						Analysis Date:	**5/22/2017**		SeqNo:	**695847**	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Copper		328	0.500	200.0	137.0	95.7	70	130	342.5	4.19	30			

Work Order: 1705256
CLIENT: Fulcrum Environmental
Project: KSD Drinking Water - Cascade Elementary

QC SUMMARY REPORT

Total Metals by EPA Method 200.8

Sample ID	**MB-17123**	SampType:	**MBLK**			Units:	**µg/L**	Prep Date:	**5/22/2017**	RunNo:	**36313**	
Client ID:	**MBLKW**	Batch ID:	**17123**					Analysis Date:	**5/22/2017**	SeqNo:	**695959**	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		ND	0.500									

Sample ID	**LCS-17123**	SampType:	**LCS**			Units:	**µg/L**	Prep Date:	**5/22/2017**	RunNo:	**36313**	
Client ID:	**LCSW**	Batch ID:	**17123**					Analysis Date:	**5/22/2017**	SeqNo:	**695960**	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		98.0	0.500	100.0	0	98.0	85	115				

Sample ID	**1705225-009BDUP**	SampType:	**DUP**			Units:	**µg/L**	Prep Date:	**5/22/2017**	RunNo:	**36313**	
Client ID:	**BATCH**	Batch ID:	**17123**					Analysis Date:	**5/22/2017**	SeqNo:	**695964**	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		0.813	0.500						0.4830	50.9	30	

Sample ID	**1705225-009BMS**	SampType:	**MS**			Units:	**µg/L**	Prep Date:	**5/22/2017**	RunNo:	**36313**	
Client ID:	**BATCH**	Batch ID:	**17123**					Analysis Date:	**5/22/2017**	SeqNo:	**695967**	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		497	0.500	500.0	0.4830	99.3	70	130				

Sample ID	**1705225-009BMSD**	SampType:	**MSD**			Units:	**µg/L**	Prep Date:	**5/22/2017**	RunNo:	**36313**	
Client ID:	**BATCH**	Batch ID:	**17123**					Analysis Date:	**5/22/2017**	SeqNo:	**695968**	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		498	0.500	500.0	0.4830	99.5	70	130	497.2	0.137	30	

Sample Log-In Check List

Client Name:	**FE**	Work Order Number:	**1705256**
Logged by:	**Erica Silva**	Date Received:	**5/22/2017 9:56:00 AM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	FedEx		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☑	Not Required ☐
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all items received at a temperature of >0°C to 10.0°C*	Yes ☑	No ☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☑	No ☐	NA ☐ HNO3 to 002A - 003A
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

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:

Item Information

Item #	Temp ºC
Cooler	6.4
Sample	6.0

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

Chain of Custody Record and Laboratory Services Agreement

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Date: 5/20/2017 Laboratory Project No (internal): 1705256

Page: 1 of: 1

Client: Fulcrum Environmental Consulting
Address: 406 North Second Street
City, State, Zip: Yakima, WA, 98901
Telephone: 509.574.0839 Fax: 509.575.8453

Project Name: KSD Drinking Water - Cascade Elementary
Project No: 162017.26 Collected by: Amanda Enbysk
Location: Cascade Elementary, Kennewick, WA
Report To (PM): Ryan Mathews
PM Email: rmathews@efulcrum.net; cc: aenbysk@efulcrum.net

*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)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8)	Total (T)	Dissolved (D)	Anions (IC)***	EDB (8011)	HNO3 preserved	Comments
1	CCE52017-P-COF-45	5/20/2017	0930	DW									X						X	
2	CCE52017-S-COF-45	↓	↓	↓																HOLD; unpreserved ↓
3	CCE52017-T-COF-45																			
4	CCE52017-P-WC-49												X						X	
5																				
6																				
7																				
8																				
9																				
10																				

**Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL *Individual:* Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

***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.)

Turn-around times for samples received after 4:00pm will begin on the following business day.

Special Remarks:
Please preserve all unpreserved
TAT: ASAP

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	Date/Time	Received	Date/Time
x [signature]	5/20/2017; 1200	x [signature]	5/22/2017 0956
x		x	

TAT → SameDay^ NextDay^ 2 Day 3 Day STD
^Please coordinate with the lab in advance