

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

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

RE: Kennewick SD Drinking Water - Sagecrest Elementary

Work Order Number: 1703209

March 21, 2017

## **Attention Ryan Mathews:**

Fremont Analytical, Inc. received 5 sample(s) on 3/20/2017 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

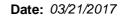
All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Chelsea Ward Project Manager

DoD/ELAP Certification #L2371, ISO/IEC 17025:2005 ORELAP Certification: WA 100009-007 (NELAP Recognized)





CLIENT: Fulcrum Environmental Work Order Sample Summary

Project: Kennewick SD Drinking Water - Sagecrest

Work Order: 1703209

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1703209-001	SCE31817-P-CDF-08	03/18/2017 8:15 AM	03/20/2017 9:00 AM
1703209-002	SCE31817-S-CDF-08	03/18/2017 8:15 AM	03/20/2017 9:00 AM
1703209-003	SCE31817-T-CDF-08	03/18/2017 8:15 AM	03/20/2017 9:00 AM
1703209-004	SCE31817-P-CF-31	03/18/2017 8:15 AM	03/20/2017 9:00 AM
1703209-005	SCE31817-P-CDF-32	03/18/2017 8:15 AM	03/20/2017 9:00 AM



## Case Narrative

WO#: **1703209**Date: **3/21/2017** 

**CLIENT:** Fulcrum Environmental

Project: Kennewick SD Drinking Water - Sagecrest 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:

1703209-001A 211544: Prep Comments for EPA200.8, Sample 1703209-001A: 0.03 NTU 1703209-004A 211545: Prep Comments for EPA200.8, Sample 1703209-004A: 0.03 NTU 1703209-005A 211546: Prep Comments for EPA200.8, Sample 1703209-005A: 0.01 NTU



## **Qualifiers & Acronyms**

WO#: 1703209

Date Reported: 3/21/2017

### 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: 1703209

Date Reported: 3/21/2017

**CLIENT:** Fulcrum Environmental

Project: Kennewick SD Drinking Water - Sagecrest Elementary

**Lab ID:** 1703209-001 **Collection Date:** 3/18/2017 8:15:00 AM

Client Sample ID: SCE31817-P-CDF-08 Matrix: Drinking Water

Analyses Result RL Qual Units DF Date Analyzed

<u>Drinking Water Metals by EPA Method 200.8</u>

Batch ID: 16538

Analyst: MW

Copper 64.0 0.500 µg/L 1 3/20/2017 4:21:17 PM

**Lab ID:** 1703209-004 **Collection Date:** 3/18/2017 8:15:00 AM

Client Sample ID: SCE31817-P-CF-31 Matrix: Drinking Water

Analyses Result RL Qual Units DF Date Analyzed

Drinking Water Metals by EPA Method 200.8 Batch ID: 16538 Analyst: MW

Copper ND 0.500  $\mu g/L$  1 3/20/2017 4:25:19 PM

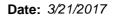
**Lab ID:** 1703209-005 **Collection Date:** 3/18/2017 8:15:00 AM

Client Sample ID: SCE31817-P-CDF-32 Matrix: Drinking Water

Analyses Result RL Qual Units DF Date Analyzed

<u>Drinking Water Metals by EPA Method 200.8</u>
Batch ID: 16538 Analyst: MW

Copper 1,360 0.500 µg/L 1 3/20/2017 4:29:20 PM





**Work Order:** 1703209

## **QC SUMMARY REPORT**

**CLIENT:** Fulcrum Environmental

	ck SD Drinking Water -	Sagecres	Drinking Water Metals by EPA Method 200.									
Sample ID MB-16538 Client ID: MBLKW	SampType: MBLK Batch ID: 16538			Units: µg/L	Prep Date: 3/20/2017 RunNo: 35047  Analysis Date: 3/20/2017 SeqNo: 669901							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual							
Copper	ND	0.500										
Sample ID LCS-16538	SampType: LCS			Units: µg/L	Prep Date: 3/20/2017 RunNo: 35047							
Client ID: LCSW	Batch ID: 16538				Analysis Date: 3/20/2017 SeqNo: 669902							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual							
Copper	201	0.500	200.0	0	100 85 115							
Sample ID <b>1703147-001ADUF</b>	SampType: <b>DUP</b>			Units: µg/L	Prep Date: 3/20/2017 RunNo: 35047							
Client ID: BATCH	Batch ID: 16538				Analysis Date: 3/20/2017 SeqNo: 669904							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual							
Copper	8.90	0.500			9.003 1.17 30							
Sample ID 1703147-001AMS	SampType: <b>MS</b>			Units: µg/L	Prep Date: 3/20/2017 RunNo: 35047							
Client ID: BATCH	Batch ID: 16538				Analysis Date: 3/20/2017 SeqNo: 669905							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual							
Copper	215	0.500	200.0	9.003	103 70 130							
Sample ID <b>1703147-001AMS</b>	SampType: <b>MSD</b>			Units: µg/L	Prep Date: 3/20/2017 RunNo: 35047							
Client ID: BATCH	Batch ID: 16538				Analysis Date: 3/20/2017 SeqNo: 669906							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual							
Copper	199	0.500	200.0	9.003	95.2 70 130 214.7 7.38 30							

Original Page 6 of 8



# Sample Log-In Check List

CI	ient Name:	FE			Work O				
Lo	ogged by:	Erica Silva			Date Re	ceived:	3/20/20	17 9:00:00 AM	
<u>Cha</u>	in of Custo	ody							
1.	Is Chain of C	ustody comp	lete?		Yes	<b>✓</b>	No 🗌	Not Present	
2.	How was the	sample deliv	vered?		<u>FedE</u>	<u>x</u>			
Log	· In								
_	Coolers are p	resent?			Yes	<b>✓</b>	No 🗌	na 🗆	
Э.	Coolers are p	ACCOUNT.			100		то 🗀	14/1	
4.	Shipping con	tainer/cooler	in good condition?		Yes	<b>✓</b>	No $\square$		
5.			shipping container/cooler? ustody Seals not intact)		Yes		No 🗹	Not Required	
6.	Was an atten	npt made to	cool the samples?		Yes	✓	No 🗌	NA 🗌	
7.	Were all item	s received a	t a temperature of >0°C to 10.	0°C*	Yes	<b>✓</b>	No $\square$	NA $\square$	
8.	Sample(s) in	proper conta	ainer(s)?		Yes	<b>✓</b>	No 🗌		
9.	Sufficient sar	nple volume	for indicated test(s)?		Yes	✓	No 🗌		
10.	Are samples	properly pre	served?		Yes	✓	No 🗌		
11.	Was preserva	ative added t	o bottles?		Yes	✓	No 🗌	NA 🗌	
			VOA : 1.0					HNO3 to 002A - 003A	
	Is there head			-110	Yes		No □	NA 🗸	
_			s arrive in good condition(unbro	oken)?	Yes	<b>✓</b>	No □		
14.	Does paperw	ork match bo	ottie labeis?		Yes	•	No 🗀		
15.	Are matrices	correctly ide	ntified on Chain of Custody?		Yes	<b>✓</b>	No 🗆		
16.	Is it clear wha	at analyses v	vere requested?		Yes	✓	No 🗌		
17.	Were all hold	ing times ab	le to be met?		Yes	✓	No $\square$		
<u>Spe</u>	cial Handli	ing (if app	olicable)						
18.	Was client no	otified of all d	iscrepancies with this order?		Yes		No $\square$	NA 🗸	
	Person	Notified:		Date					
	By Who	m:		Via:	eMa	il 🗌 Ph	one Fax	☐ In Person	
	Regardi	ng:							
		structions:							
19.	Additional rer	narks:							_
ltem l	Information								
		Item #	Temp °C						

2.9

1.9

Original

Cooler

Sample

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

Refinquished Date/Time Necesived	11/2/1/2 P/1/2/1/2	Relipquished Date/Time Received	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.	Sample Disposal: Disposal by Lab (Samples will be held for 30 days unless otherwise noted. A ree may be assessed if samples are retained after 30 days.)	***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fl	**Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al As B	The second second is the second of the second secon	Explained to the second of the	XE31817-8-05-32 & V N	SCE31817-P-CF-31	SCE 31617 P. CHANGE	SŒ 3/8/7-OF-08	SCE31817-\$5-COF-08 1 1	7-P-COF-08 3/18/2017 0815 DW	Sample Sa	A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Soild,	509.574.0839 Fax: 509.575.8453	e, Zip: Yakima, WA, 98901	406 North Second Street	Client: Fulcrum Environmental Consulting P		2600 Eromont Ava N Tel: 206-352-3790	Analytical	
	Date/Time	ime	he Client named above, that I have verified Client's	s day.	received after 4:00pm will begin	Ba Be Ca Cd Co Cr (Cy Fe Hg K Mg Mn Mo Na Ni Pb			<i>⊗</i>	8					CASOLINE AS THE CASOLINE CONTROL OF STATE OF STA	ng Water, $GW = Ground Water$ ,	PM Email: rmathews@efulcrum.net; cc: aenbysk@efulcrum.net	(PM):	yearst Elemen	१८ मान्यमा	Project Name: Kumawick SO Dinking vinter	The second design of the second sector of the second secon	Date: 3/18/2017	in of Custody Record and Lab
Aplease coordinate with the lab in advance	TAT → SameDav^ NextDav^ 2 Dav 3 Dav STD	IN I ASAT	1/4 + 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	please preserve all unp. samples	Special Remarks:	Sb Se Sr Sn Ti Tl U V Zn				Hubz preserved		7	Hosp, impresence	HWG preserved	Comments	SW = Storm Water, WW = Waste Water	ulcrum.net	Charles Control of the Control of th	Janucick, wx	Collected by: Amanda Enbysk	Sogarest Elynpoter)	Page: of:	Laboratory Project No (internal): 1703209	Chain of Custody Record and Laboratory Services Agreement