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Fulcrum Environmental Ryan Mathews

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

RE: Kennewick SD Drinking Water - Lincoln Elementary

Work Order Number: 1703211

March 21, 2017

Attention Ryan Mathews:

Fremont Analytical, Inc. received 8 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

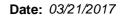
All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

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 - Lincoln Ele

Work Order: 1703211

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1703211-001	LE31817-P-CDF-19	03/18/2017 9:00 AM	03/20/2017 9:00 AM
1703211-002	LE31817-P-OF-21	03/18/2017 9:00 AM	03/20/2017 9:00 AM
1703211-003	LE31817-P-CDF-32	03/18/2017 9:00 AM	03/20/2017 9:00 AM
1703211-004	LE31817-P-CDF-48	03/18/2017 9:00 AM	03/20/2017 9:00 AM
1703211-005	LE31817-S-CDF-48	03/18/2017 9:00 AM	03/20/2017 9:00 AM
1703211-006	LE31817-T-CDF-48	03/18/2017 9:00 AM	03/20/2017 9:00 AM
1703211-007	LE31817-P-WC-53	03/18/2017 9:00 AM	03/20/2017 9:00 AM
1703211-008	LE31817-P-WC-54	03/18/2017 9:00 AM	03/20/2017 9:00 AM



Case Narrative

WO#: **1703211**Date: **3/21/2017**

CLIENT: Fulcrum Environmental

Project: Kennewick SD Drinking Water - Lincoln 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:

1703211-001A 211549: Prep Comments for EPA200.8, Sample 1703211-001A: 0.34 NTU 1703211-002A 211550: Prep Comments for EPA200.8, Sample 1703211-002A: 0.00 NTU 1703211-003A 211551: Prep Comments for EPA200.8, Sample 1703211-003A: 0.04 NTU 1703211-004A 211552: Prep Comments for EPA200.8, Sample 1703211-004A: 0.10 NTU 1703211-007A 211555: Prep Comments for EPA200.8, Sample 1703211-007A: 0.01 NTU 1703211-008A 211559: Prep Comments for EPA200.8, Sample 1703211-008A: 0.01 NTU



Qualifiers & Acronyms

WO#: 1703211

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: 1703211

Date Reported: 3/21/2017

CLIENT: Fulcrum Environmental

Project: Kennewick SD Drinking Water - Lincoln Elementary

Lab ID: 1703211-001 **Collection Date:** 3/18/2017 9:00:00 AM

Client Sample ID: LE31817-P-CDF-19 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 1,020 0.500 µg/L 1 3/20/2017 4:49:28 PM

Lab ID: 1703211-002 **Collection Date:** 3/18/2017 9:00:00 AM

Client Sample ID: LE31817-P-OF-21 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 1,090 0.500 $\mu g/L$ 1 3/20/2017 4:53:29 PM

Lab ID: 1703211-003 **Collection Date:** 3/18/2017 9:00:00 AM

Client Sample ID: LE31817-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 1,070 0.500 µg/L 1 3/20/2017 4:57:30 PM

Original



Analytical Report

Work Order: 1703211

Date Reported: 3/21/2017

CLIENT: Fulcrum Environmental

Project: Kennewick SD Drinking Water - Lincoln Elementary

Lab ID: 1703211-004 **Collection Date:** 3/18/2017 9:00:00 AM

Client Sample ID: LE31817-P-CDF-48 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 1,500 0.500 μg/L 1 3/20/2017 5:01:31 PM

Lab ID: 1703211-007 **Collection Date:** 3/18/2017 9:00:00 AM

Client Sample ID: LE31817-P-WC-53 Matrix: Drinking Water

Analyses Result RL Qual Units DF Date Analyzed

<u>Drinking Water Metals by EPA Method 200.8</u>
Batch ID: 16542 Analyst: TN

Copper ND 0.500 µg/L 1 3/21/2017 11:28:16 AM

Lab ID: 1703211-008 Collection Date: 3/18/2017 9:00:00 AM

Client Sample ID: LE31817-P-WC-54 Matrix: Drinking Water

Analyses Result RL Qual Units DF Date Analyzed

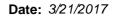
<u>Drinking Water Metals by EPA Method 200.8</u>

Batch ID: 16542

Analyst: TN

Copper 1,370 0.500 µg/L 1 3/21/2017 11:44:21 AM

Original





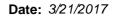
Work Order: 1703211

QC SUMMARY REPORT

CLIENT: Fulcrum Environmental

Project:	Kennewick S	SD Drinking Water -	Lincoln E	le		Drinking Water Metals by EPA Method 200
Sample ID N	MB-16542 MBLKW	SampType: MBLK Batch ID: 16542			Units: µg/L	Prep Date: 3/20/2017 RunNo: 35065 Analysis Date: 3/21/2017 SeqNo: 670309
Analyte		Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Copper		ND	0.500			
Sample ID L	_CS-16542	SampType: LCS			Units: µg/L	Prep Date: 3/20/2017 RunNo: 35065
Client ID: L	_CSW	Batch ID: 16542				Analysis Date: 3/21/2017 SeqNo: 670310
Analyte		Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Copper		105	0.500	100.0	0	105 85 115
Sample ID 1	1703211-007ADUP	SampType: DUP			Units: µg/L	Prep Date: 3/20/2017 RunNo: 35065
Client ID: L	_E31817-P-WC-53	Batch ID: 16542				Analysis Date: 3/21/2017 SeqNo: 670312
Analyte		Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Copper		0.689	0.500			0 200 30
Sample ID 1	1703211-007AMS	SampType: MS			Units: µg/L	Prep Date: 3/20/2017 RunNo: 35065
Client ID: L	_E31817-P-WC-53	Batch ID: 16542				Analysis Date: 3/21/2017 SeqNo: 670313
Analyte		Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Copper		200	0.500	200.0	0	100 70 130
Sample ID 1	1703211-007AMSD	SampType: MSD			Units: µg/L	Prep Date: 3/20/2017 RunNo: 35065
Client ID: L	_E31817-P-WC-53	Batch ID: 16542				Analysis Date: 3/21/2017 SeqNo: 670314
Analyte		Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Copper		213	0.500	200.0	0	106 70 130 200.1 6.16 30

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Work Order: 1703211

QC SUMMARY REPORT

CLIENT: Fulcrum Environmental

Project:		SD Drinking Water - I	Lincoln E	le		Drinking Water Metals by EPA Method 200
Sample ID	MB-16538 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	1703147-001ADUP	SampType: DUP			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: MS			Units: µg/L	Prep Date: 3/20/2017 RunNo: 35047
Client ID:	ВАТСН	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	1703147-001AMSD	SampType: MSD			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 8 of 10



Sample Log-In Check List

CI	ient Name:	FE			Work Or	der Number:	1703211		
Lo	gged by:	Erica Silva	1		Date Red	ceived:	3/20/201	7 9:00:00 AM	
Cha	in of Custo	ody							
	Is Chain of C	-	olete?		Yes	✓	No 🗌	Not Present	
2.	How was the	sample deliv	vered?		FedE:	<u>x</u>			
1 00	In								
<u>Log</u>		roomt?			Yes		No 🗌	na 🗆	
3.	Coolers are p	oresent?			res	•	NO 🗀	NA L	
4.	Shipping con	tainer/cooler	r in good condition?		Yes	✓	No \square		
5.			n shipping container/cooler? custody Seals not intact)		Yes		No 🗹	Not Required	
6.	Was an atten	npt made to	cool the samples?		Yes	✓	No \square	NA 🗌	
7.	Were all item	s received a	at a temperature of >0°C to 10	0.0°C*	Yes	✓	No \square	NA \square	
8.	Sample(s) in	proper conta	ainer(s)?		Yes	✓	No \square		
_			for indicated test(s)?		Yes	✓	No 🗌		
10.	Are samples	properly pre	served?		Yes	✓	No \square		
11.	Was preserva	ative added	to bottles?		Yes	✓	No \square	NA \square	
							_ ⊦	HNO3 to 005A - 006A	
	Is there head				Yes		No 📙	NA 🗹	
13.	Did all sample	es container	s arrive in good condition(unb	roken)?		✓	No 📙		
14.	Does paperw	ork match b	ottle labels?		Yes	✓	No \square		
15.	Are matrices	correctly ide	entified on Chain of Custody?		Yes	✓	No \square		
16.	Is it clear wha	at analyses v	were requested?		Yes	✓	No \square		
17.	Were all hold	ling times ab	ele to be met?		Yes	✓	No \square		
Cno	aial Handl	ing /if one	aliaahla)						
-	<u>cial Handli</u>		-				\Box	A	
18.	was client no	otified of all c	discrepancies with this order?		Yes		No 🗆	NA 🗹	7
	Person	Notified:		Date					
	By Who	m:		Via:	eMai	l 🗌 Phone	e 🗌 Fax	☐ In Person	
	Regardi	ng:							
	Client In	structions:							
19.	Additional rer	marks:							
<u>ltem l</u>	nformation								
		Item #	Temp °C						

2.9

1.9

Original

Cooler

Sample

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

SAN A HIN			Chain o	f Custody Reco	rd and Labo	Chain of Custody Record and Laboratory Services Agreement
	remonu Analytical			Date: 3/18	3/18/2017	Laboratory Project No (Internal): 1703211
3600 Fremont Ave N. Seattle, WA 98103	l. Tel: 206-352-3790 Fax: 206-352-7178	90			Pa	1
Client:	Fulcrum Environmental Consulting	Consulting	Project Name:	MADIT. O	Collected by: Aman	Collected by: Amanda Enbysk
Address:	406 North Second Street	eet	Location:	Luch	Elementary, Kenneyvick,	wick, wh
City, State, Zip:	Yakima, WA, 98901		Report To (PM):	Ryan Mat		
Telephone:	509.574.0839	Fax: 509.575.8453	.8453 PM Email:		rmathews@efulcrum.net; cc: aenbysk@efulcrum.net	rum.net
A = Air,	AQ = Aqueous, B = Bulk, O = Other,		P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water,	DW = Drinking Water,	round Water, SW = Storm	GW = Ground Water, SW = Storm Water, WW = Waste Water
Sample Name	Sample Date	Sample Type te Time (Matrix)*	LOS (ERA SEG) (SEA) PLOS (ERA SEG) (SEA) PLOS (ERA SEG) (SEA) PLOS (ERA SEG) (SEA)	14 (2 4 2 6 2 1 (1 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2		Comments
1/= 18/18/18/18/19	190	∞ bo		⊗		thos preserved
2LE31817-P-0	(8		A STATE OF THE STA
JE31817-P-WF-32	OF-32			8		
1 LE 31817 P-WF-48	DF-48			8		
31E31817-5-CDF-40	DF-46				#	HOLO; impreserved
8-4-402-4-181818	84-30					
7 LE31817-J-WC-53	00-63			8	-	tNO2 preserved
45-2m-8-4/812718.	10-54	4		8		
9						The state of the s
**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): Niti	Nitrate Nitrite Chloride		Bromide O-Phosphate Fluoride		Turn-around times for samples Space Space	Special Remarks:
Sample Disposal:	Return to Client	Disposal by Lab (Sam assessed if samples a	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.)			please gresseve all urpr. samples
I represent that I am au agreement to each of the	I represent that I am authorized to enter into this Agreement with Fremont agreement to each of the terms on the front and backside of this Agreement.	Agreement with Free ckside of this Agreen	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.	it named above, that I have ver	ified Client's	
Relipquished MW	3/13/17/136D	00°	Received	Date/Time 3/20/2017	0900	TAT: ASAR
Relinquished ×	Date/Time		Received ×	Date/Time	^F	TAT → SameDay^ NextDay^ 2 Day 3 Day STD ^Please coordinate with the lab in advance