

3600 Fremont Ave. N.
Seattle, WA 98103
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info@fremontanalytical.com

Fulcrum Environmental
Ryan Mathews

406 N. 2nd Street Yakima, WA 98901

RE: Kennewick SD Drinking Water - Southgate Elementary

Work Order Number: 1703023

March 10, 2017

### **Attention Ryan Mathews:**

Fremont Analytical, Inc. received 11 sample(s) on 3/3/2017 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

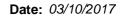
All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Chelsea Ward Project Manager CC:

Amanda Enbysk





CLIENT: Fulcrum Environmental Work Order Sample Summary

**Project:** Kennewick SD Drinking Water - Southgate

Work Order: 1703023

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1703023-001	SGE3217-P-CDF-15	03/02/2017 7:00 AM	03/03/2017 9:30 AM
1703023-002	SGE3217-S-CDF-15	03/02/2017 7:00 AM	03/03/2017 9:30 AM
1703023-003	SGE3217-T-CDF-15	03/02/2017 7:00 AM	03/03/2017 9:30 AM
1703023-004	SGE3217-P-CDF-32	03/02/2017 7:00 AM	03/03/2017 9:30 AM
1703023-005	SGE3217-S-CDF-32	03/02/2017 7:00 AM	03/03/2017 9:30 AM
1703023-006	SGE3217-T-CDF-32	03/02/2017 7:00 AM	03/03/2017 9:30 AM
1703023-007	SGE3217-P-CF-35	03/02/2017 7:00 AM	03/03/2017 9:30 AM
1703023-008	SGE3217-S-CF-35	03/02/2017 7:00 AM	03/03/2017 9:30 AM
1703023-009	SGE3217-T-CF-35	03/02/2017 7:00 AM	03/03/2017 9:30 AM
1703023-010	SGE3217-P-WC-46	03/02/2017 7:00 AM	03/03/2017 9:30 AM
1703023-011	SGE3217-P-WC-47	03/02/2017 7:00 AM	03/03/2017 9:30 AM



### Case Narrative

WO#: **1703023**Date: **3/10/2017** 

**CLIENT:** Fulcrum Environmental

**Project:** Kennewick SD Drinking Water - Southgate 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:**

1703023-001A 209595: Prep Comments for EPA200.8, Sample 1703023-001A: Turbidity: 0.00 NTU 1703023-004A 209596: Prep Comments for EPA200.8, Sample 1703023-004A: Turbidity: 0.00 NTU 1703023-007A 209597: Prep Comments for EPA200.8, Sample 1703023-007A: Turbidity: 0.00 NTU 1703023-010A 209598: Prep Comments for EPA200.8, Sample 1703023-010A: Turbidity: 0.00 NTU 1703023-011A 209599: Prep Comments for EPA200.8, Sample 1703023-011A: Turbidity: 0.00 NTU

Original



# **Qualifiers & Acronyms**

WO#: **1703023** 

Date Reported: 3/10/2017

### 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: 1703023

Date Reported: 3/10/2017

**CLIENT:** Fulcrum Environmental

**Project:** Kennewick SD Drinking Water - Southgate Elementary

Lab ID: 1703023-001 Collection Date: 3/2/2017 7:00:00 AM

Client Sample ID: SGE3217-P-CDF-15 Matrix: Drinking Water

Analyses Result RL Qual Units DF Date Analyzed

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

Batch ID: 16420 Analyst: TN

Copper 963 0.500 µg/L 1 3/10/2017 11:24:01 AM

**Lab ID:** 1703023-004 **Collection Date:** 3/2/2017 7:00:00 AM

Client Sample ID: SGE3217-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: 16420 Analyst: TN

Copper 918 0.500 μg/L 1 3/10/2017 11:29:32 AM

**Lab ID:** 1703023-007 **Collection Date:** 3/2/2017 7:00:00 AM

Client Sample ID: SGE3217-P-CF-35 Matrix: Drinking Water

Analyses Result RL Qual Units DF Date Analyzed

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

Batch ID: 16420

Analyst: TN

Copper 1,070 0.500 µg/L 1 3/10/2017 11:35:03 AM

Original



# **Analytical Report**

Work Order: 1703023

Date Reported: 3/10/2017

CLIENT: Fulcrum Environmental

Project: Kennewick SD Drinking Water - Southgate Elementary

**Lab ID:** 1703023-010 **Collection Date:** 3/2/2017 7:00:00 AM

Client Sample ID: SGE3217-P-WC-46 Matrix: Drinking Water

Analyses Result RL Qual Units DF Date Analyzed

<u>Drinking Water Metals by EPA Method 200.8</u>
Batch ID: 16420 Analyst: TN

Copper ND 0.500 µg/L 1 3/10/2017 12:50:16 PM

**Lab ID:** 1703023-011 **Collection Date:** 3/2/2017 7:00:00 AM

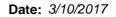
Client Sample ID: SGE3217-P-WC-47 Matrix: Drinking Water

Analyses Result RL Qual Units DF Date Analyzed

<u>Drinking Water Metals by EPA Method 200.8</u>
Batch ID: 16420 Analyst: TN

Copper 1,190 0.500  $\mu g/L$  1 3/10/2017 12:54:18 PM

Original





Work Order: 1703023

## **QC SUMMARY REPORT**

**CLIENT:** Fulcrum Environmental

Project:	Kennewick	SD Drinking Water -	Southgate	<b>:</b>			D	rinking	Water Me	tals by EP	A Metho	d 200.8
Sample ID	MB-16420	SampType: MBLK			Units: µg/L		Prep Date:	3/6/2017		RunNo: 348	373	
Client ID:	MBLKW	Batch ID: 16420					Analysis Date:	3/10/201	7	SeqNo: 66	5786	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit F	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		ND	0.500									
Sample ID	LCS-16420	SampType: <b>LCS</b>			Units: µg/L		Prep Date:	3/6/2017		RunNo: 348	373	
Client ID:	LCSW	Batch ID: 16420					Analysis Date:	3/10/201	7	SeqNo: 66	5787	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit F	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		89.3	0.500	100.0	0	89.3	85	115				
Sample ID	1703021-001ADUP	SampType: <b>DUP</b>			Units: µg/L		Prep Date:	3/6/2017		RunNo: 348	373	
Client ID:	ВАТСН	Batch ID: 16420					Analysis Date:	3/10/201	7	SeqNo: 66	5789	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit F	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		16.6	0.500						18.64	11.8	30	
Sample ID	1703021-001AMS	SampType: <b>MS</b>			Units: µg/L		Prep Date:	3/6/2017		RunNo: 348	373	
Client ID:	ВАТСН	Batch ID: 16420					Analysis Date:	3/10/201	7	SeqNo: 66	5790	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit f	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		200	0.500	200.0	18.64	90.5	70	130				
Sample ID	1703021-001AMSD	SampType: <b>MSD</b>			Units: µg/L		Prep Date:	3/6/2017		RunNo: 348	373	
Client ID:	ВАТСН	Batch ID: 16420					Analysis Date:	3/10/201	7	SeqNo: 66	5791	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit f	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		202	0.500	200.0	18.64	91.8	70	130	199.6	1.32	30	

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# Sample Log-In Check List

CI	ient Name:	FE		\ \	Vork Or	der Num	nber: <b>17030</b> 2	23	
Lo	ogged by:	Erica Silva		[	Date Re	ceived:	3/3/20	17 9:30:00 AM	
<u>Cha</u>	in of Custo	ody							
	Is Chain of C	-	lete?		Yes	<b>✓</b>	No 🗌	Not Present	
2.	How was the	sample deliv	ered?		<u>UPS</u>				
Log	In								
_	Coolers are p	oresent?			Yes	<b>✓</b>	No 🗌	NA 🗆	
0.	·								
4.	Shipping conf	tainer/cooler	in good condition?		Yes	✓	No 🗌		
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 $\square$	
7.	Were all item	s received a	t a temperature of >0°C to 10.0°C	*	Yes	<b>✓</b>	No 🗌	na 🗆	
8.	Sample(s) in	proper conta	iner(s)?		Yes	<b>✓</b>	No 🗌		
9.	Sufficient san	mple volume	for indicated test(s)?		Yes	<b>✓</b>	No 🗌		
10.	Are samples	properly pres	served?		Yes	✓	No $\square$		
11.	Was preserva	ative added t	o bottles?		Yes	✓	No $\square$	NA $\square$	
40	la 4h ana h a a d		VOA . dala 2		V		No. 🗆	HNO3	
	Is there head			1/2	Yes Yes	<b>✓</b>	No □ No □	NA 🗸	
	Does paperw		s arrive in good condition(unbroken ottle labels?	1) :	Yes	<b>✓</b>	No $\square$		
14.	Dood paper	on maton be	Allo Idbolo.		100	_			
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	<b>✓</b>	No 🗌		
17.	Were all hold	ling times ab	e to be met?		Yes	✓	No 🗀		
Spe	cial Handli	ing (if app	licable)						
-		•	iscrepancies with this order?		Yes		No 🗌	NA 🗸	
		Notified:		Date				7	
	By Who	,		Via:	eMa	il $\square$ P	hone  Fax	⟨	
	Regardi								
	Client In	nstructions:							
19.	Additional rer	marks:							
	HNO3 a	added to 002	A, 003A, 005A, 006A, 008A, 009A						
ltem	Information								
		Item #	Temp °C						

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

2.7

1.3

Cooler

Sample

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ical	7
	Analytical

# **Chain of Custody Record and Laboratory Services Agreement**

		) ) ) ) ) )	12000
	Analytical	Date: 3/2/201/	atory Project No (internal):
3600 Fremont Ave N. Seattle, WA 98103	Tel: 206-352-3790 Fax: 206-352-7178		Page: of: s
Client:	Fulcrum Environmental Consulting	162017.02	: Amanda Enbysk
Address:	406 North Second Street	Southgate Elementary, Kennewick, W	
City, State, Zip:	Yakima, WA, 98901	(PM): Ryan Mathews	1. Sept. 2011 (1982) 1. Sept. 2012 (1982) 1. Sept. 10 Sep
Telephone:	509.574.0839 Fax: 509.575.8453	PM Email: rmathews@efulcrum.net; cc: aenbysk@efulcrum.net	:fulcrum.net
*Matrix Codes: A = Air, AQ	AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid,	ing Water, GW = Ground Water, SW =	rm Water, WW = Waste Water
	260 1638		ON SOME HOUSE
Sample Name	1 Soline	\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Comments
15663217-P-CDF-15	3-2-11 0700 pw	X	
2 SGE 3217-S-COP-15	CBP -15		R H-10
3 SGE3217-T-COF-15	OF -15		<b>←</b>
4 SGE 3217 - P-1	2-CDF-32	X	
5 SGE3217 -S-CDF-32	CDF-32		418
6 SCE3217 -T-COP -32	20° -32		6
756E3217-P-CF-35	CF-35	X	
8SLE3217-5-CF-35	CF-35		(40 (d)
, SGF3217-T-CF-35	12-35		
1056E3217-P-WC-46	wc-uc to to the	X	
**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	b Sb Se Sr Sn Ti Tl U V Zn
***Anions (Circle): Nitrate	Nitrite Chloride	Fluoride Nitrate+Nitrite Turn-around times for samples received after 4:00pm will begin	Special Remarks:
Sample Disposal:	<ul> <li>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.)</li> </ul>		please persent all import somples
I represent that I am aut agreement to each of the	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.	the Client named above, that I have verified Client's	
* Northon Be	3-2-17 - 4:00 PM & Received	373 7017 0930	TAT: ASA
x x	Date/lime Received	Date/lime	TAT → SameDay^ NextDay^ 2 Day 3 Day STD
>	>		

3600 Fren			
1600 Fremont Ave N.			
Tel:	Am	7	3
Tel: 206-352-3790	alytica		5
2-3790	cal)		

# Chain of Custody Record and Laboratory Services Agreement

	Analytical		Date: 3/2/2017	Laboratory Project No (internal):	7/00076
3600 Fremont Ave N.	Tel: 206-352-3790			Page: 2 of: 2	The state of the second second second
Seattle, WA 98103	Fax: 206-352-7178				
		Project Name:	Kennewick SD Drinking Water - Southgate Elementary	Southgate Elementary	
Client:	Fulcrum Environmental Consulting	Project No:	162017.02	Collected by: Amanda Enbysk	
Address:	406 North Second Street	Location:	Southgate Elementary, Kennewick, WA	wick, WA	
City, State, Zip:	Yakima, WA, 98901	Report To (PM):	Ryan Mathews		
Telephone:	509.574.0839 Fax: 509.575.8453	PM Email:	rmathews@efulcrum.net; cc: aenbysk@efulcrum.net	aenbysk@efulcrum.net	1

reiebnone:	309.374.0839	Fax: 509.575.8453		PM Email:r	rmathews@efulcrum.net; cc: aenbysk@efulcrum.net	;; cc: aenbysk@efulcru	um.net
Sample Name	Sample Name  Sample Name  Sample Name  Sample Sample  Sample Sample Name  Sample Name  Sample Name  Sample Sample Name  Sample Sample Name  Sample N	sr, P=Product, S=Soil, SD  Sample Sample Sample Type  Time (Matrix)*	SD = Sediment, SL = Solid, SC Color,	SL = Solid, W = Water, DW = Drinking Water,  W = Water, DW = Drinking Water,  St. = Solid, W = Water, DW = Drinkin	Thicking Water, GW = Ground Water, GW = GW	Water, SW = Storm Wa	Storm Water, WW = Waste Water  Comments
1 SGE3217-P-WC-47	3-2-17						
2							
3			8 2 3 3 4 5 5				
4							
5							
6					And the state of t		
7							
8				9			
9							
10							
**Metals Analysis (Circle):	MTCA-5 RCRA-8	Priority Pollutants TAL	Individual: Ag Al As	B Ba Be Ca Cd Co Cr	€ Hg K	Mg Mn Mo Na Ni Pb Sb	Se Sr Sn Ti Tl U V Zn
***Anions (Circle): Nitrate	ite Nitrite Chloride	Sulfate Bromide	O-Phosphate F	Fluoride Nitrate+Nitrite			Special Remarks:
Sample Disposal:	Return to Client D	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.)	be held for 30 days unlessed after 30 days.)	otherwise noted. A fee r	on the following business day.	day.	_
I represent that I am aut agreement to each of the	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.	greement with Fremont A side of this Agreement.	nalytical on behalf of	the Client named abo	ve, that I have verified		5000 +
Relinquished × Y/ 2/	Date/Time  H: Oc	820	Received	Date	7)3/2017 0	0960	
Relinquished x	Date/Time		Received	Date	Date/Time	TAT	TAT → SameDay^ NextDay^ 2 Day 3 Day STD
						\phi \phi \phi \phi \phi \phi \phi \phi	APlease coordinate with the lab in advance