



**Fulcrum Environmental**

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

**RE: Kennewick SD Drinking Water - Park Middle School**  
**Work Order Number: 1702287**

February 27, 2017

**Attention Ryan Mathews:**

Fremont Analytical, Inc. received 20 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 - Park Middle  
**Work Order:** 1702287

**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1702287-001	PMS22517-P-KF-01	02/25/2017 9:00 AM	02/27/2017 9:20 AM
1702287-002	PMS22517-S-KF-01	02/25/2017 9:00 AM	02/27/2017 9:20 AM
1702287-003	PMS22517-T-KF-01	02/25/2017 9:00 AM	02/27/2017 9:20 AM
1702287-004	PMS22517-P-CDF-12	02/25/2017 9:00 AM	02/27/2017 9:20 AM
1702287-005	PMS22517-S-CDF-12	02/25/2017 9:00 AM	02/27/2017 9:20 AM
1702287-006	PMS22517-T-CDF-12	02/25/2017 9:00 AM	02/27/2017 9:20 AM
1702287-007	PMS22517-P-CDF-19	02/25/2017 9:00 AM	02/27/2017 9:20 AM
1702287-008	PMS22517-S-CDF-19	02/25/2017 9:00 AM	02/27/2017 9:20 AM
1702287-009	PMS22517-T-CDF-19	02/25/2017 9:00 AM	02/27/2017 9:20 AM
1702287-010	PMS22517-P-CF-30	02/25/2017 9:00 AM	02/27/2017 9:20 AM
1702287-011	PMS22517-S-CF-30	02/25/2017 9:30 AM	02/27/2017 9:20 AM
1702287-012	PMS22517-T-CF-30	02/25/2017 9:30 AM	02/27/2017 9:20 AM
1702287-013	PMS22517-P-CF-34	02/25/2017 9:30 AM	02/27/2017 9:20 AM
1702287-014	PMS22517-S-CF-34	02/25/2017 9:30 AM	02/27/2017 9:20 AM
1702287-015	PMS22517-T-CF-34	02/25/2017 9:30 AM	02/27/2017 9:20 AM
1702287-016	PMS22517-P-CF-35	02/25/2017 9:30 AM	02/27/2017 9:20 AM
1702287-017	PMS22517-P-CF-36	02/25/2017 9:30 AM	02/27/2017 9:20 AM
1702287-018	PMS22517-P-DF-14	02/25/2017 9:30 AM	02/27/2017 9:20 AM
1702287-019	PMS22517-S-DF-14	02/25/2017 9:30 AM	02/27/2017 9:20 AM
1702287-020	PMS22517-T-DF-14	02/25/2017 9:30 AM	02/27/2017 9:20 AM

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**CLIENT:** Fulcrum Environmental  
**Project:** Kennewick SD Drinking Water - Park Middle School

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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:

1702287-010A 208794: Prep Comments for EPA200.8, Sample 1702287-010A: Turbidity: 0.00 NTU  
1702287-001A 208791: Prep Comments for EPA200.8, Sample 1702287-001A: Turbidity: 0.01 NTU  
1702287-016A 208796: Prep Comments for EPA200.8, Sample 1702287-016A: Turbidity: 0.00 NTU  
1702287-007A 208793: Prep Comments for EPA200.8, Sample 1702287-007A: Turbidity: 0.00 NTU  
1702287-013A 208795: Prep Comments for EPA200.8, Sample 1702287-013A: Turbidity: 0.00 NTU  
1702287-017A 208797: Prep Comments for EPA200.8, Sample 1702287-017A: Turbidity: 0.00 NTU  
1702287-004A 208792: Prep Comments for EPA200.8, Sample 1702287-004A: Turbidity: 0.06 NTU  
1702287-018A 208849: Prep Comments for EPA200.8, Sample 1702287-018A: Turbidity: 0.00 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



**CLIENT:** Fulcrum Environmental  
**Project:** Kennewick SD Drinking Water - Park Middle School

**Lab ID:** 1702287-001      **Collection Date:** 2/25/2017 9:00:00 AM  
**Client Sample ID:** PMS22517-P-KF-01      **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	981	0.500		µg/L	1	2/27/2017 4:15:23 PM
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**Lab ID:** 1702287-004      **Collection Date:** 2/25/2017 9:00:00 AM  
**Client Sample ID:** PMS22517-P-CDF-12      **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	822	0.500		µg/L	1	2/27/2017 4:19:00 PM
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**Lab ID:** 1702287-007      **Collection Date:** 2/25/2017 9:00:00 AM  
**Client Sample ID:** PMS22517-P-CDF-19      **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	926	0.500		µg/L	1	2/27/2017 4:29:51 PM
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**CLIENT:** Fulcrum Environmental  
**Project:** Kennewick SD Drinking Water - Park Middle School

**Lab ID:** 1702287-010      **Collection Date:** 2/25/2017 9:00:00 AM  
**Client Sample ID:** PMS22517-P-CF-30      **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	788	0.500		µg/L	1	2/27/2017 4:33:27 PM
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**Lab ID:** 1702287-013      **Collection Date:** 2/25/2017 9:30:00 AM  
**Client Sample ID:** PMS22517-P-CF-34      **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	808	0.500		µg/L	1	2/27/2017 4:37:03 PM
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**Lab ID:** 1702287-016      **Collection Date:** 2/25/2017 9:30:00 AM  
**Client Sample ID:** PMS22517-P-CF-35      **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	3.02	0.500		µg/L	1	2/27/2017 4:40:39 PM
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**CLIENT:** Fulcrum Environmental  
**Project:** Kennewick SD Drinking Water - Park Middle School

**Lab ID:** 1702287-017      **Collection Date:** 2/25/2017 9:30:00 AM  
**Client Sample ID:** PMS22517-P-CF-36      **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	1,200	0.500		µg/L	1	2/27/2017 4:44:16 PM
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**Lab ID:** 1702287-018      **Collection Date:** 2/25/2017 9:30:00 AM  
**Client Sample ID:** PMS22517-P-DF-14      **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	1,030	0.500		µg/L	1	2/27/2017 5:20:20 PM
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**Work Order:** 1702287  
**CLIENT:** Fulcrum Environmental  
**Project:** Kennewick SD Drinking Water - Park Middle

**QC SUMMARY REPORT**  
**Drinking Water Metals by EPA Method 200.8**

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

Copper ND 0.500

Sample ID <b>LCS-16360</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>	Prep Date: <b>2/27/2017</b>	RunNo: <b>34678</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>16360</b>	Analysis Date: <b>2/27/2017</b>	SeqNo: <b>662273</b>								
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

Sample ID <b>1702286-001ADUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>	Prep Date: <b>2/27/2017</b>	RunNo: <b>34678</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>16360</b>	Analysis Date: <b>2/27/2017</b>	SeqNo: <b>662277</b>								
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

Sample ID <b>1702286-001AMS</b>	SampType: <b>MS</b>	Units: <b>µg/L</b>	Prep Date: <b>2/27/2017</b>	RunNo: <b>34678</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>16360</b>	Analysis Date: <b>2/27/2017</b>	SeqNo: <b>662278</b>								
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

Sample ID <b>1702286-001AMSD</b>	SampType: <b>MSD</b>	Units: <b>µg/L</b>	Prep Date: <b>2/27/2017</b>	RunNo: <b>34678</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>16360</b>	Analysis Date: <b>2/27/2017</b>	SeqNo: <b>662279</b>								
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



Client Name: <b>FE</b>	Work Order Number: <b>1702287</b>
Logged by: <b>Erica Silva</b>	Date Received: <b>2/27/2017 9:20:00 AM</b>

**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
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:	Amanda Enbysk	Date:	2/27/2017
By Whom:	Erica Silva	Via:	<input checked="" type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	"DF-14" bottles received, not on COC		
Client Instructions:	Add and analyze "P". preserve "S" and "T"		

19. Additional remarks:

HNO3 added to 002A, 003A, 005A, 006A, 008A, 009A, 011A, 012A, 014A, 015A, 019A, 020A

**Item Information**

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













