



**Fulcrum Environmental**

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

**RE: Kennewick SD Drinking Water - Horse Heaven Hills MS**  
**Work Order Number: 1704001**

April 03, 2017

**Attention Ryan Mathews:**

Fremont Analytical, Inc. received 8 sample(s) on 4/3/2017 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



Date: 04/03/2017

**CLIENT:** Fulcrum Environmental  
**Project:** Kennewick SD Drinking Water - Horse Heav  
**Work Order:** 1704001

## Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1704001-001	HHH33117-P-CF-06	03/31/2017 6:00 AM	04/03/2017 9:22 AM
1704001-002	HHH33117-S-CF-06	03/31/2017 6:00 AM	04/03/2017 9:22 AM
1704001-003	HHH33117-T-CF-06	03/31/2017 6:00 AM	04/03/2017 9:22 AM
1704001-004	HHH33117-P-CDF-26	03/31/2017 6:00 AM	04/03/2017 9:22 AM
1704001-005	HHH33117-S-CDF-26	03/31/2017 6:00 AM	04/03/2017 9:22 AM
1704001-006	HHH33117-T-CDF-26	03/31/2017 6:00 AM	04/03/2017 9:22 AM
1704001-007	HHH33117-P-CF-33	03/31/2017 6:00 AM	04/03/2017 9:22 AM
1704001-008	HHH33117-P-CF-34	03/31/2017 6:00 AM	04/03/2017 9:22 AM

---

**CLIENT:** Fulcrum Environmental  
**Project:** Kennewick SD Drinking Water - Horse Heaven Hills MS

---

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:

1704001-001A 213702: Prep Comments for EPA200.8, Sample 1704001-001A: Turbidity: 0.01 NTU  
1704001-004A 213706: Prep Comments for EPA200.8, Sample 1704001-004A: Turbidity: 0.00 NTU  
1704001-007A 213707: Prep Comments for EPA200.8, Sample 1704001-007A: Turbidity: 0.04 NTU  
1704001-008A 213708: Prep Comments for EPA200.8, Sample 1704001-008A: Turbidity: 0.05 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 - Horse Heaven Hills MS

**Lab ID:** 1704001-001      **Collection Date:** 3/31/2017 6:00:00 AM  
**Client Sample ID:** HHH33117-P-CF-06      **Matrix:** Drinking Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
----------	--------	----	------	-------	----	---------------

**Drinking Water Metals by EPA Method 200.8**

Batch ID: 16676      Analyst: TN

Lead	2.04	1.00		µg/L	1	4/3/2017 1:11:26 PM
------	------	------	--	------	---	---------------------

**Lab ID:** 1704001-004      **Collection Date:** 3/31/2017 6:00:00 AM  
**Client Sample ID:** HHH33117-P-CDF-26      **Matrix:** Drinking Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
----------	--------	----	------	-------	----	---------------

**Drinking Water Metals by EPA Method 200.8**

Batch ID: 16676      Analyst: TN

Copper	460	0.500		µg/L	1	4/3/2017 1:35:38 PM
--------	-----	-------	--	------	---	---------------------

**Lab ID:** 1704001-007      **Collection Date:** 3/31/2017 6:00:00 AM  
**Client Sample ID:** HHH33117-P-CF-33      **Matrix:** Drinking Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
----------	--------	----	------	-------	----	---------------

**Drinking Water Metals by EPA Method 200.8**

Batch ID: 16676      Analyst: TN

Copper	ND	0.500		µg/L	1	4/3/2017 1:39:39 PM
Lead	ND	1.00		µg/L	1	4/3/2017 1:39:39 PM



**CLIENT:** Fulcrum Environmental

**Project:** Kennewick SD Drinking Water - Horse Heaven Hills MS

**Lab ID:** 1704001-008

**Collection Date:** 3/31/2017 6:00:00 AM

**Client Sample ID:** HHH33117-P-CF-34

**Matrix:** Drinking Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
----------	--------	----	------	-------	----	---------------

**Drinking Water Metals by EPA Method 200.8**

Batch ID: 16676

Analyst: TN

Copper	1,290	0.500		µg/L	1	4/3/2017 1:43:41 PM
Lead	16.4	1.00		µg/L	1	4/3/2017 1:43:41 PM

**Work Order:** 1704001  
**CLIENT:** Fulcrum Environmental  
**Project:** Kennewick SD Drinking Water - Horse Heav

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

Sample ID <b>MB-16676</b>	SampType: <b>MBLK</b>	Units: <b>µg/L</b>	Prep Date: <b>4/3/2017</b>	RunNo: <b>35295</b>							
Client ID: <b>MBLKW</b>	Batch ID: <b>16676</b>	Analysis Date: <b>4/3/2017</b>	SeqNo: <b>675377</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	ND	0.500									
Lead	ND	1.00									

Sample ID <b>LCS-16676</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>	Prep Date: <b>4/3/2017</b>	RunNo: <b>35295</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>16676</b>	Analysis Date: <b>4/3/2017</b>	SeqNo: <b>675378</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	98.8	0.500	100.0	0	98.8	85	115				
Lead	55.6	1.00	50.00	0	111	85	115				

Sample ID <b>1704001-001ADUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>	Prep Date: <b>4/3/2017</b>	RunNo: <b>35295</b>							
Client ID: <b>HHH33117-P-CF-06</b>	Batch ID: <b>16676</b>	Analysis Date: <b>4/3/2017</b>	SeqNo: <b>675380</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	347	0.500						366.4	5.37	30	
Lead	1.90	1.00						2.037	7.05	30	

Sample ID <b>1704001-001AMS</b>	SampType: <b>MS</b>	Units: <b>µg/L</b>	Prep Date: <b>4/3/2017</b>	RunNo: <b>35295</b>							
Client ID: <b>HHH33117-P-CF-06</b>	Batch ID: <b>16676</b>	Analysis Date: <b>4/3/2017</b>	SeqNo: <b>675381</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	544	0.500	200.0	366.4	88.8	70	130				
Lead	103	1.00	100.0	2.037	101	70	130				

Sample ID <b>1704001-001AMSD</b>	SampType: <b>MSD</b>	Units: <b>µg/L</b>	Prep Date: <b>4/3/2017</b>	RunNo: <b>35295</b>							
Client ID: <b>HHH33117-P-CF-06</b>	Batch ID: <b>16676</b>	Analysis Date: <b>4/3/2017</b>	SeqNo: <b>675384</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	551	0.500	200.0	366.4	92.5	70	130	544.0	1.35	30	
--------	-----	-------	-------	-------	------	----	-----	-------	------	----	--

**Work Order:** 1704001  
**CLIENT:** Fulcrum Environmental  
**Project:** Kennewick SD Drinking Water - Horse Heav

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

Sample ID	1704001-001AMSD	SampType:	MSD	Units:	µg/L	Prep Date:	4/3/2017	RunNo:	35295		
Client ID:	HHH33117-P-CF-06	Batch ID:	16676	Analysis Date:	4/3/2017	SeqNo:	675384				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	104	1.00	100.0	2.037	102	70	130	102.8	1.24	30	



Client Name: **FE**  
 Logged by: **Erica Silva**

Work Order Number: **1704001**  
 Date Received: **4/3/2017 9:22:00 AM**

### Chain of Custody

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

### 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, 005A, 006A  
 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:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

19. Additional remarks:

### Item Information

Item #	Temp °C
Cooler	5.4
Sample	1.1

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

