

November 3, 2017

Kennewick School District No. 17  
Attn: Keith Colee, Maintenance and Operations Manager  
1000 West Fourth Avenue  
Kennewick, Washington, 99336

**RE: Winter 2016 Drinking Water Sampling Results  
Kennewick High School, 500 South Dayton Street, Kennewick, Washington**

Dear Keith:

On Wednesday, December 21, 2016, Fulcrum Environmental Consulting, Inc. (Fulcrum) collected 59 drinking water samples for lead and copper analysis from Kennewick High School (School) located at 500 South Dayton Street in Kennewick, Washington. Initial sampling identified one fixture location with a lead concentration above guidance levels and four fixture locations with copper concentrations above guidance levels. Fulcrum returned to the School to collect samples after remediation of the fixtures and found results below guidance levels. Sampling was completed as part of a District-wide project and all analysis was completed by Washington State Department of Ecology (Ecology) accredited laboratories.

### Summary

The purpose of initial sampling was to evaluate current drinking water quality conditions with respect to lead and copper as a result of the increased national and local interest related to lead in drinking water. The intent of sampling was to meet the requirements of the pending regulations set forth in Washington Administrative Code (WAC) 246-366A-130 and 246-366A-135<sup>1</sup>. Consistent with the regulations, Fulcrum completed sampling at the rates of at least 50% of plumbing fixtures used regularly for drinking or cooking in elementary and preschools and at least 25% of drinking or cooking fixtures in middle schools, junior high schools, and high schools. In addition, Fulcrum sampled administrative facilities in the District at the same rate as elementary schools, of at least 50% of drinking and cooking fixtures.

Fulcrum completed initial sampling on December 21, 2016. Initial results identified one sample with a lead concentration of 15 micrograms per liter ( $\mu\text{g/L}$ ), at or above the Environmental Protection Agency (EPA) action level of 15  $\mu\text{g/L}$ , and four samples with copper concentrations above the EPA action level of 1,300  $\mu\text{g/L}$ . Upon receipt of results, the District removed the identified fixtures from service pending remediation and further testing.

The District elected to permanently remove the fixture identified with an elevated lead concentration from service. No other fixtures of like style were identified in the building.

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<sup>1</sup> Washington State Department of Health, WAC 246-366A, *The Environmental Health and Safety Standards of Primary and Secondary Schools*, <http://apps.leg.wa.gov/WAC/default.aspx?cite=246-366A>, July 26, 2016

Copper is not a significant component in fixtures, but is the primary material in the plumbing system. To remediate elevated copper, the District aggressively flushed the identified fixtures with cold water to clear the plumbing of copper construction debris. Fulcrum returned on January 21, January 28, and April 5, 2017 and collected samples to evaluate the success of the remediation. Follow-up samples found copper concentrations below the EPA action level, confirming the remediation was successful. Following sampling and review of laboratory results, Fulcrum recommended, and the District elected, to return all fixtures reporting below action levels to service.

As all samples now report concentrations below lead and copper action levels, at this time Fulcrum does not recommend any additional sampling. However, consistent with industry practice and the intent of WAC 246-366A, Fulcrum recommends that the District complete re-sampling of the building within the next five years (before December 2021). See Figure 1 in Attachment A for fixture locations and laboratory results.

### **Sampling Methodology**

As a portion of this project, Fulcrum prepared a Sampling and Analysis Plan (SAP) intended to satisfy future initial sampling requirements under pending regulations.

For initial evaluation purposes, Fulcrum collected “first draw” samples. This “first draw” water volume consists of 250 milliliters (mL) and is intended to represent the water quality in the fixture, tubing connecting the fixture to the building piping, and potentially a portion of the building piping. If lead and copper are present, this first-draw sample typically contains the highest lead levels and indicates high copper from the associated building piping.

For most post-remediation evaluation sampling, Fulcrum collected three-part samples consisting of the first draw, “second draw”, and “third draw” water volumes. Second and third draw samples are intended to represent the water quality of building piping and plumbing components behind the fixture and the water entering the building from the water main.

As a quality control measure, Fulcrum also included a laboratory blank of distilled water and a laboratory “spike” sample with known concentrations of lead and copper at the selected action levels for the project during all sampling events. Blank and spike sample results are included in the results tables for reference.

Blank and spike samples were used to evaluate laboratory performance. The reported lead and copper concentrations of quality assurance samples provided a metric to determine accuracy of the analyses. If the reported concentration of the spike sample differed from the action level, then the spike sample concentration was used as the action level.

Field evaluation of pH and temperature of drinking water was completed during the cold water flush and immediately following sample collection on select fixtures during the initial sampling event as a general evaluation of water quality.

## Sampling Activities

Fulcrum's two-part sampling process consisted of an initial site visit the prior afternoon/evening to locate and flush each water sampling location (fixture). Sample collection occurred the following morning, after the fixture sat motionless for more than eight but no less than 18 hours, typically approximately 14 hours.

### Initial Sampling

On the initial visit, Fulcrum flushed cold water through each fixture selected for sampling for approximately one minute. Following the flush, each fixture was covered and secured within a plastic bag. The plastic bags were marked with signage indicating testing was in progress and the fixture should not be used. Fulcrum returned to the school eight to 18 hours later to collect the samples. Each sample consisted of the first draw collected into 250-mL unpreserved polyethylene bottles and was immediately placed on ice in a chilled cooler.

Samples collected from the initial sampling event were delivered under chain-of-custody to RJ Lee Group's Columbia Basin Analytical Laboratory (Ecology Lab ID: C859-16) in Pasco, Washington for analysis.

### Fixture Replacement and Flushing

Fixtures identified with elevated lead concentrations were replaced and preconditioned by running cold water continuously through the fixture for 24 hours, as outlined in WAC 246-366A-130. Following replacement and preconditioning, Fulcrum collected follow-up samples to confirm the success of fixture replacement.

Fixtures producing elevated copper concentrations were generally identified in newer District buildings and were not associated with specific fixture styles. The relationship between building construction age and fixture styles indicates elevated copper concentrations are principally associated with construction debris in the plumbing system.

All fixtures with elevated copper were flushed aggressively by running water through the fixture at high flow with the aerator removed for approximately 30 minutes to clear the plumbing of any debris potentially causing elevated copper concentrations. Following an aggressive flush, fixtures were resampled to evaluate the effectiveness at reducing copper concentrations. The District elected to install filters, install signage indicating the fixtures should be used only for handwashing, or permanently removed from service fixtures that did not respond to an aggressive flush. Filtered fixtures were resampled following filter installation to verify effectiveness of the filter.

### Remedial Sampling

Remedial sampling typically consisted of first, second, and third draw samples from the fixture locations and plumbing system in question. First draw samples were collected into 250 mL polyethylene bottles preserved with nitric acid. The second draw water volume consists of water collected into a 250 mL

unpreserved polyethylene container immediately following the first draw. No water was lost between collection of the first and second draw samples. The third draw water volume is a 1,000 mL sample collected into a one liter unpreserved polyethylene container after the fixture has been flushed for about three to five minutes.

Samples collected following remedial activities were shipped by common carrier under chain of custody to Fremont Analytical Laboratory (Ecology Lab ID: C910-16) in Seattle, Washington for analysis. Fremont was selected based on their availability to complete analysis on an expedited schedule.

## **Analytical Results**

Samples from both initial and remedial sampling events were analyzed for lead and copper in drinking water by EPA Method 200.8.

### Initial Sampling

Sample locations from the initial sampling event are presented in Figure 1 in Attachment A of this letter. A site-specific sampling and analysis plan (SSSAP) that provides a building specific summary of the location, number, and sampling frequency of water fixture locations is located in Attachment B. Initial analytical results are summarized in Table 1 located in Attachment C of this letter. Laboratory analytical results from the initial sampling event are located in Attachment D of this letter.

In addition, pH and temperature data from the initial sampling event is presented in Table 2 in Attachment C of this letter.

### Remedial Sampling

Sample locations from remedial sampling events are presented in Figure 1 in Attachment A of this letter. The remedial analytical results from this project are summarized in Table 3 located in Attachment C of this letter. Laboratory analytical results from the remedial sampling event are located in Attachment E of this letter.

## **Discussion**

### Initial Sampling

Analytical results identified one sample with a lead concentration above the EPA action level of 15 µg/L and four samples with copper concentrations above the EPA action level of 1,300 µg/L.

### Remedial Sampling

Immediately following receipt of initial sampling results, the District removed the identified fixtures from service pending remediation and further testing. To remediate elevated lead concentrations, the District

permanently removed the identified fixture from service. No fixtures of the same style were identified in the building.

To remediate elevated copper concentrations, the District completed an aggressive flush of the identified fixtures. Fulcrum returned on the morning following the aggressive flush, January 21, January 28, and April 5, 2017, to collect follow-up samples from the fixtures.

Analytical results from remedial sampling indicated the aggressive flushes were successful at reducing copper concentrations below action levels for the fixtures in question.

### Recommendations

One initial sample contained lead above the EPA action level of 15 µg/L and four initial samples contained copper above the EPA action level of 1,300 µg/L. The District permanently removed the identified fixture with elevated lead from service. No other fixtures of like style were identified in the building. The District completed an aggressive flush of the fixtures identified with elevated copper. Follow-up sampling demonstrated that all copper concentrations were below the action level. Following remedial sampling and review of laboratory results, Fulcrum recommended, and the District elected, to return all fixtures reporting below action levels to service.

As all samples now report concentrations below lead and copper action levels, Fulcrum does not recommend any additional sampling at this time. However, consistent with industry practice and the intent of WAC 246-366A, Fulcrum recommends that the District complete re-sampling of the building within the next five years (before December 2021).

If you have any questions, please feel free to contact me at (509) 574-0839.

Sincerely,



Amanda Enbysk, GIT  
Environmental Geologist

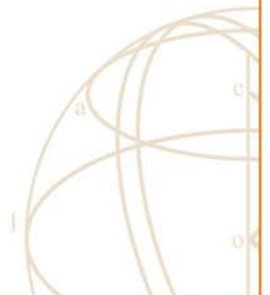


Ryan K. Mathews, CIH, CHMM  
Principal



**ATTACHMENT A**

Figure 1: Sample Location Map



**ATTACHMENT B**

Site-Specific Sampling and Analysis Plan





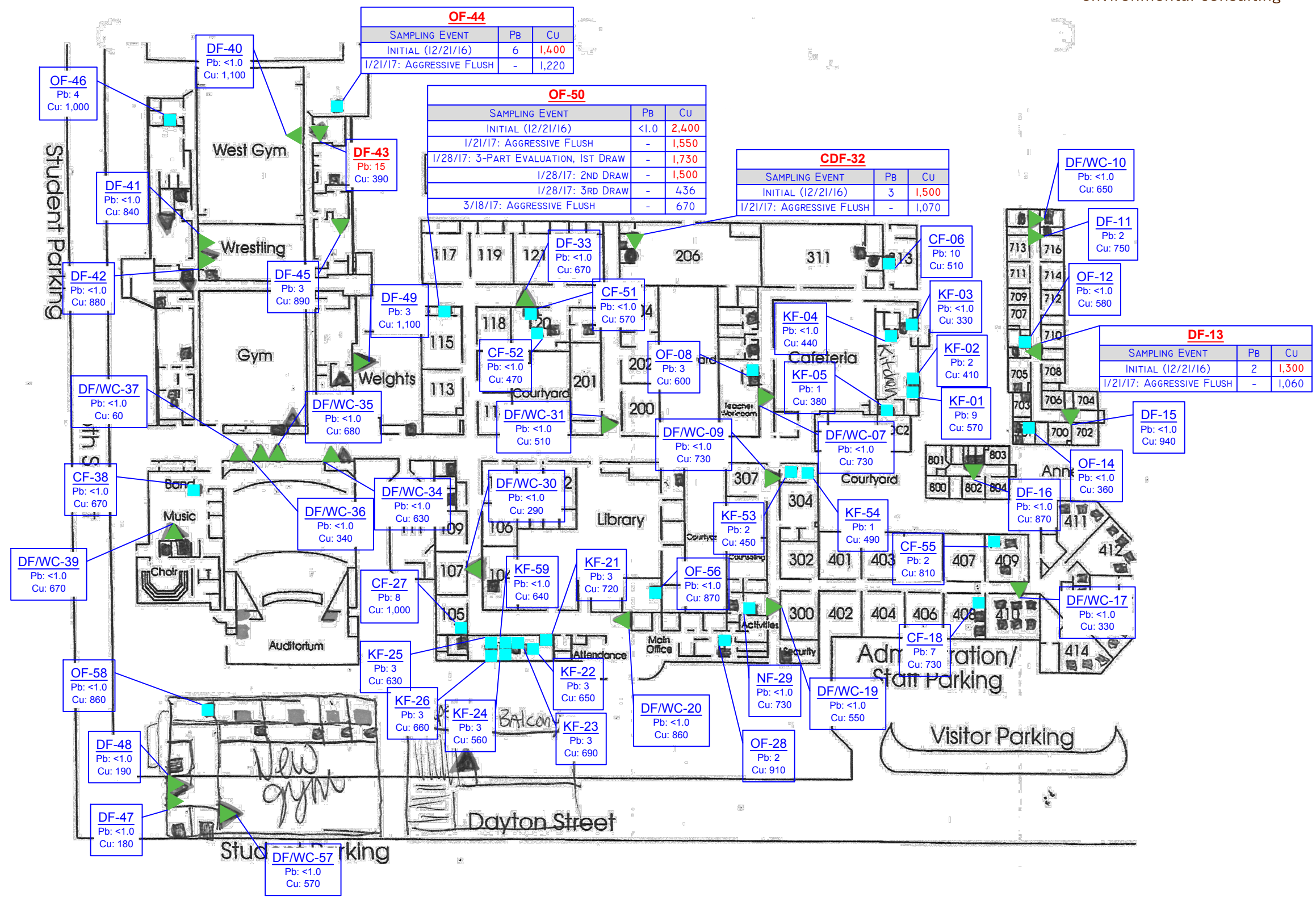
**LEGEND**

- KF-## - Kitchen faucet
- CF-## - Classroom faucet
- CDF-## - Classroom drinking fountain
- OF-## - Office faucet
- WC-## - Water cooler fountain
- BF-## - Bottle filler fountain
- NF-## - Nurse's faucet

■ - Sample location: faucet  
■ - Sample location: drinking fountain at sink  
■ - Sample location: faucet and drinking fountain at same sink  
▼ - Sample location: water cooler fountain

-Lead (Pb) and copper (Cu) results for each sample location are below each identifier. All results reported in µg/L.

-Samples in **BOLD RED** indicate fixture locations where the initial concentrations of lead or copper were above the respective action level.



DRAWING PROVIDED BY KENNEWICK SCHOOL DISTRICT



## Site-Specific Sampling and Analysis Plan

### **Kennewick School District – Winter 2016 Drinking Water Sampling**

*Note: This SSSAP has been prepared as a supplement to the project SAP/QAPP and provide a building specific summary of the location, number, and sampling frequency of water fixture locations.*

Campus/Building: Kennewick High School Address: 500 South Dayton Street, Kennewick, WA

Elementary       Middle School       High School       Administration

Date of Construction: 1952 Modernizations: 1985, 1990

<b>Fixture Type</b>	<b>Locations</b>	<b>Fixture Styles<sup>1</sup></b>	<b>Samples</b>	<b>Ratio</b>
Drinking fountain/water cooler (DF/WC)	31	7	28	90%
Kitchen Fixture (KF)	7	4	7	100%
Classroom faucet, including faucets in Food Labs and Life Sciences Classrooms (CF)	26	6	16	62%
Classroom drinking fountain at sink (CDF)	7	1	1	14%
Nurse's Office/Health Room (NF)	1	1	1	100%
Teacher's Lounges/Work Rooms (OF)	8	4	6	75%
<b>TOTALS</b>	<b>80</b>		<b>59</b>	<b>74%</b>

<sup>1</sup> Fixture styles are approximate based on sampler's observations

Lead Sampler: Nathan Bostrom Date: 12/21/2016

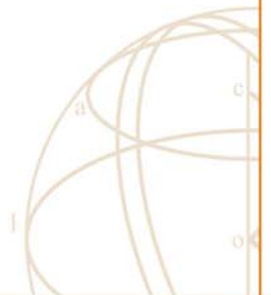
Sample Prefix: KHS – 122116 – P (first-draw) –  – 01-61  
*School Code Date Sample Type Fixture Type Sample Number*

Laboratory: R. J. Lee Group, Columbia Basin Analytical Delivery Date: December 21, 2016

Comments:

**ATTACHMENT C**

Table 1: Initial Sampling Analytical Results Summary Table  
Table 2: pH and Temperature Data Summary Table  
Table 3: Remedial Sampling Analytical Results Summary Table



**Table 1: Initial Sampling Analytical Results**

Sample Identification and Location	Fixture Type	Lead Results (µg/L)	Copper Results (µg/L)
KHS122116-P-KF-01: Kitchen, N. wall, right fixture	Kitchen Faucet	9	570
KHS122116-P-KF-02: Kitchen, N. wall, center fixture	Kitchen Faucet	2	410
KHS122116-P-KF-03: Kitchen, N. wall, center fixture	Kitchen Faucet	<1.0	330
KHS122116-P-KF-04: Kitchen, W. wall	Kitchen Faucet	<1.0	440
KHS122116-P-KF-05: Kitchen, E. wall, left fixture	Kitchen Faucet	1	380
KHS122116-P-CF-06: Room 313	Classroom Faucet	10	510
KHS122116-P-DF/WC-07: Corridor S. of Cafeteria	Drinking Fountain/ Water Cooler	<1.0	730
KHS122116-P-OF-08: Teacher Workroom	Office Faucet	3	600
KHS122116-P-DF/WC-09: Corridor adjacent Room 307	Drinking Fountain/ Water Cooler	<1.0	710
KHS122116-P-DF/WC-10: Corridor adjacent Room 716, right fixture	Drinking Fountain/ Water Cooler	<1.0	650
KHS122116-P-DF-11: Corridor adjacent Room 716, left fixture	Drinking Fountain	2	750
KHS122116-P-OF-12: Room between Room 705 and 707	Office Faucet	<1.0	580
<b>KHS122116-P-DF-13: Corridor adjacent Room 710</b>	<b>Drinking Fountain</b>	<b>2</b>	<b>1,300</b>
KHS122116-P-OF-14: Room 701, N.W. fixture	Office Faucet	<1.0	360
KHS122116-P-DF-15: Corridor adjacent Room 706	Drinking Fountain	<1.0	940
KHS122116-P-DF-16: Corridor adjacent Room 802	Drinking Fountain	<1.0	870
KHS122116-P-DF/WC-17: Corridor adjacent Room 409	Drinking Fountain/ Water Cooler	<1.0	330
KHS122116-P-CF-18: Room 408, leftmost fixture, adjacent entrance	Classroom Faucet	7	730
KHS122116-P-DF/WC-19: Corridor adjacent Room 300	Drinking Fountain/ Water Cooler	<1.0	550
KHS122116-P-DF/WC-20: Corridor adjacent Main Office	Drinking Fountain/ Water Cooler	<1.0	860
KHS122116-P-KF-21: Room 103, N. W. station	Kitchen Faucet	3	720
KHS122116-P-KF-22: Room 103, N. E. station	Kitchen Faucet	3	650
KHS122116-P-KF-23: Room 103, middle W. station	Kitchen Faucet	3	690
KHS122116-P-KF-24: Room 103, middle E. station	Kitchen Faucet	3	560
KHS122116-P-KF-25: Room 103, S. W. station	Kitchen Faucet	3	630
KHS122116-P-KF-26: Room 103, S. E. station	Kitchen Faucet	3	660
KHS122116-P-CF-27: Room 105	Classroom Faucet	8	1,000
KHS122116-P-OF-28: Teacher's Lounge in Main Office	Office Faucet	2	910
KHS122116-P-NF-29: Nurse's Office	Nurse's Faucet	<1.0	730
KHS122116-P-DF/WC-30: Corridor adjacent Room 104	Drinking Fountain/ Water Cooler	<1.0	290
KHS122116-P-DF/WC-31: Corridor adjacent Room 200	Drinking Fountain/ Water Cooler	<1.0	510
<b>KHS122116-P-CDF-32: Room 206</b>	<b>Classroom Drinking Fountain</b>	<b>3</b>	<b>1,500</b>
KHS122116-P-DF-33: Corridor adjacent Room 118	Drinking Fountain	<1.0	670
KHS122116-P-DF/WC-34: Corridor outside Auditorium, N. most fixture	Drinking Fountain/ Water Cooler	<1.0	630
KHS122116-P-DF/WC-35: Corridor outside Auditorium, S. bank, N. fixture	Drinking Fountain/ Water Cooler	<1.0	680
KHS122116-P-DF/WC-36: Corridor outside Auditorium, S. bank, middle fixture	Drinking Fountain/ Water Cooler	<1.0	340
KHS122116-P-DF/WC-37: Corridor outside Auditorium, S. bank, S. fixture	Drinking Fountain/ Water Cooler	<1.0	60
KHS122116-P-CF-38: Band and Music Room	Classroom Faucet	<1.0	670

Sample Identification and Location	Fixture Type	Lead Results (µg/L)	Copper Results (µg/L)
KHS122116-P-DF/WC-39: Band and Music Room	Drinking Fountain/ Water Cooler	<1.0	670
KHS122116-P-DF-40: West Gym	Drinking Fountain	<1.0	1,100
KHS122116-P-DF-41: Wrestling Room, S. fixture	Drinking Fountain	<1.0	840
KHS122116-P-DF-42: Wrestling Room, N. fixture	Drinking Fountain	<1.0	880
<b>KHS122116-P-DF-43: West end of corridor N. of West Gym</b>	<b>Drinking Fountain</b>	<b>15</b>	390
<b>KHS122116-P-OF-44: Office N. of West Gym</b>	<b>Office Faucet</b>	6	<b>1,400</b>
KHS122116-P-DF-45: E. East end of corridor N. of West Gym	Drinking Fountain	3	890
KHS122116-P-OF-46: South of West Gym	Drinking Fountain	4	1,000
KHS122116-P-DF-47: South end of New Gym, E. fixture	Drinking Fountain	<1.0	180
KHS122116-P-DF-48: South end of New Gym, W. fixture	Drinking Fountain	<1.0	190
KHS122116-P-DF-49: Weights Room	Drinking Fountain	3	1,100
<b>KHS122116-P-OF-50: Room 115</b>	<b>Office Faucet</b>	<1.0	<b>2,400</b>
KHS122116-P-CF-51: Room 120, W. fixture	Classroom Faucet	<1.0	570
KHS122116-P-CF-52: Room 120, E. fixture	Classroom Faucet	<1.0	470
KHS122116-P-KF-53: W. end of Room 304, S. fixture	Kitchen Faucet	2	450
KHS122116-P-KF-54: W. end of Room 304, N. fixture	Kitchen Faucet	1	490
KHS122116-P-CF-55: Room 409	Classroom Faucet	2	810
KHS122116-P-OF-56: Library Workroom	Office Faucet	<1.0	870
KHS122116-P-DF/WC-57: E. end of New Gym	Drinking Fountain/ Water Cooler	<1.0	570
KHS122116-P-OF-58: W. office in New Gym	Office Faucet	<1.0	860
KHS122116-P-KF-59: Room 103, main station	Kitchen Faucet	<1.0	640
<i>KHS122116-P-DF-60: Laboratory Blank</i>	<i>Distilled Water Blank</i>	<1.0	<10
<i>KHS122116-P-DF-61: Laboratory Spike</i>	<i>Lead and Copper Spike</i>	14	1,300
<b>EPA Action Level</b>		<b>15</b>	<b>1,300</b>

- 1 µg/L means microgram per liter or parts per billion (ppb).
- 2 Action levels based on the U.S. EPA's Lead and Copper Rule.  
 Results in **bold** indicate concentrations above the action levels of 15 µg/L for lead and 1,300 µg/L for copper  
 Results in *italics* are quality assurance spike and blank samples

**Table 2: pH and Temperature Data Summary**

Sample Number	Fixture Type	pH Flush	pH Sample	Temperature (°C) Flush	Temperature (°C) Sample
KHS122116-P-KF-04: Kitchen, W. wall	Kitchen Faucet	7.81	7.81	17.4	18.4
KHS122116-P-OF-08: Teacher workroom	Office Faucet	7.78	7.82	17.2	18.5
KHS122116-P-OF-12: E. of room 707	Office Faucet	7.86	7.90	16.1	18.7
KHS122116-P-DF-16: Outside room 802	Drinking Fountain	7.45	-	19.8	-
KHS122116-P-DF/WC-17: Outside room 409	Water Cooler Fountain	7.85	7.93	14.8	13.4
KHS122116-P-DF/WC-20: Outside main office	Water Cooler Fountain	7.54	8.47	16.5	13.7
KHS122116-P-KF-24: Room 103, middle E. fixture	Kitchen Faucet	7.76	7.79	20.6	17.6
KHS122116-P-OF-28: Main Office	Office Faucet	7.77	7.80	19.5	19.6
KHS122116-P-CDF-32: Room 206	Classroom Drinking Fountain	7.64	7.70	19.9	20.8

Sample Number	Fixture Type	pH Flush	pH Sample	Temperature (°C) Flush	Temperature (°C) Sample
KHS122116-P-DF/WC-36: Outside auditorium, S. bank, middle fixture	Water Cooler Fountain	7.74	8.15	16.7	14.6
HS122116-P-DF-40: West Gym	Drinking Fountain	7.65	7.85	19.2	20.1
KHS122116-P-OF-44: N. of West Gym	Office Faucet	7.80	7.88	19.0	19.4
KHS122116-P-DF-48: S. end of New Gym, W. fixture	Drinking Fountain	7.59	7.73	14.3	14.5
KHS122116-P-CF-52: Room 120, E. fixture	Classroom Faucet	7.83	7.84	18.4	18.2

**Table 3: Remedial Sampling Analytical Results Summary**

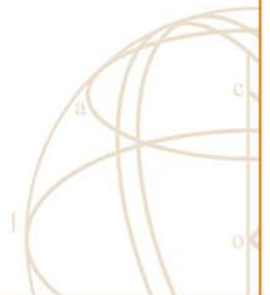
Sampling Event	Sample Identification					
	DF-13	CDF-32	OF-44	OF-50	Laboratory Blank (-60)	Laboratory Spike (-61)
Initial (12/21/16)	<b>1,300</b>	<b>1,500</b>	<b>1,400</b>	<b>2,400</b>	<10	<i>1,300</i>
Aggressive Flush (1/21/2017)	1,060	1,070	1,220	<b>1,550</b>	<0.5	-
3-Part Evaluation, First Draw (1/28/2017)	-	-	-	<b>1,730</b>	-	-
Second Draw (1/28/2017)	-	-	-	<b>1,500</b>	-	-
Third Draw (1/28/2017)	-	-	-	436	-	-
Aggressive Flush (4/7/2017)	-	-	-	670	<0.5	<i>1,390</i>
<b>EPA Action Level</b>	<b>1,300</b>	<b>1,300</b>	<b>1,300</b>	<b>1,300</b>	<b>1,300</b>	<b>1,300</b>

- 1 Results reported in micrograms per liter (µg/L) or parts per billion (ppb).
- 2 Action levels based on the U.S. EPA's Lead and Copper Rule.  
Results indicated in **bold** indicate concentrations above the action levels of 15 µg/L for lead  
Results indicated in *italics* are quality assurance spike and blank samples



**ATTACHMENT D**

Initial Analytical Results





RJ LeeGroup, Inc. | Columbia Basin Analytical Laboratories

2710 North 20th Avenue, Pasco WA 99301

Tel: (509) 545-4989 | Fax: (509) 544-6010

Fulcrum Environmental  
406 N. 2nd St.  
Yakima, WA 98901

### Subject: Chemical Analysis Report

Columbia Basin Analytical Laboratories received 61 sample(s) on 12/21/16 for analysis. These sample(s) have been assigned a login order number of W612102. Enclosed is the final report that consists of a summary report of the sample(s), and a copy of the chain of custody.

### General Lab Comments

The results provided in this report relate only to the items tested. Sample(s) were received in acceptable conditions unless otherwise noted in the comments above. Sample(s) have not been field blank corrected unless otherwise noted in the general set comments above. The sample(s) were prepared in accordance with EPA 200.8 and analyzed in compliance with EPA 200.8. This test report shall not be reproduced, except in full, without written approval of Columbia Basin Analytical Laboratories. Any questions, please contact our office.

*-Samples W612102-01 - 04 were analyzed on January 7, 2017 because they were analyzed on separate instrumentation runs. The following samples were analyzed on January 9, 2017 and samples requiring dilutions were analyzed on January 10, 2017.*

*- Samples have been analyzed and reported in numerical order of client's sample number. CBAL's sample login numbers have been rearranged to follow the numerical order of client's sample number.*

*All samples were diluted 1:10.*

*X - Samples that exceeded the instrument calibration range were rerun at a 1:100 dilution, necessitating a 10-fold increase in the PQL.*

Release of the data contained in the hard copy report has been authorized by the Laboratory Director or a designee as verified by the following signature. This report has been administratively reviewed by the following individual:

01/17/17

Project Coordinator II, M. Fernanda Pincheira

Date

If you have any questions please feel free to contact Fernanda Pincheira at [MPincheira@rjleegroup.com](mailto:MPincheira@rjleegroup.com).

Columbia Basin Analytical Laboratories | 2710 North 20th Avenue, Pasco WA 99301 | 509.545.4989

WWW.RJLEEGROUP.COM

Report Template: GenMetalReportFull\_v12.rpt

Approved: 01/17/17 13:09  
Report Time Stamp: 01/17/17 15:04



## Laboratory Report

Ryan Mathews

Fulcrum Environmental  
406 N. 2nd St.  
Yakima, WA 98901

Client Project:

Fulcrum Kennewick

RJ Lee Group No.: W612102

COC No.: Kennewick

Samples Received: 12/21/16

Analysis/Prep Date: 01/07/17

Report Date: 01/17/17

**Sample Name:** KHS122116-P-KF-01 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-01 **Date Analyzed:** 01/07/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.57	0.01	
Lead	EPA 200.8	0.009	0.001	

**Sample Name:** KHS122116-P-KF-02 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-02 **Date Analyzed:** 01/07/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.41	0.01	
Lead	EPA 200.8	0.002	0.001	

**Sample Name:** KHS122116-P-KF-03 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-03 **Date Analyzed:** 01/07/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.33	0.01	
Lead	EPA 200.8	< 0.0010	0.001	

**Sample Name:** KHS122116-P-KF-04 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-04 **Date Analyzed:** 01/07/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.44	0.01	
Lead	EPA 200.8	< 0.0010	0.001	

**Sample Name:** KHS122116-P-KF-05 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-05 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.38	0.01	
Lead	EPA 200.8	0.001	0.001	

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Report Template: GenMetalReportFull\_v12.rpt

Approved: 01/17/17 13:09  
Report Time Stamp: 01/17/17 15:04



**Sample Name:** KHS122116-P-CF-06 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-06 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.51	0.01	
Lead	EPA 200.8	0.010	0.001	

**Sample Name:** KHS122116-P-DF/WC-07 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-07 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.73	0.01	
Lead	EPA 200.8	< 0.0010	0.001	

**Sample Name:** KHS122116-P-OF-08 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-08 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.60	0.01	
Lead	EPA 200.8	0.003	0.001	

**Sample Name:** KHS122116-P-DF/WC-09 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-09 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.71	0.01	
Lead	EPA 200.8	< 0.0010	0.001	

**Sample Name:** KHS122116-P-DF/WC-10 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-10 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.65	0.01	
Lead	EPA 200.8	< 0.0010	0.001	

**Sample Name:** KHS122116-P-DF-11 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-11 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.75	0.01	
Lead	EPA 200.8	0.002	0.001	



**Sample Name:** KHS122116-P-OF-12 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-12 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.58	0.01	
Lead	EPA 200.8	< 0.0010	0.001	

**Sample Name:** KHS122116-P-OF-13 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-13 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	1.3	0.1	X
Lead	EPA 200.8	0.002	0.001	

**Sample Name:** KHS122116-P-OF-14 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-14 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.36	0.01	
Lead	EPA 200.8	< 0.0010	0.001	

**Sample Name:** KHS122116-P-DF-15 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-15 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.94	0.01	
Lead	EPA 200.8	< 0.0010	0.001	

**Sample Name:** KHS122116-P-DF-16 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-16 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.87	0.01	
Lead	EPA 200.8	< 0.0010	0.001	

**Sample Name:** KHS122116-P-DF/WC-17 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-17 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.33	0.01	
Lead	EPA 200.8	< 0.0010	0.001	





**Sample Name:** KHS122116-P-CF-18 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-18 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.73	0.01	
Lead	EPA 200.8	0.007	0.001	

**Sample Name:** KHS122116-P-DF/WC-19 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-19 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.55	0.01	
Lead	EPA 200.8	< 0.0010	0.001	

**Sample Name:** KHS122116-P-DF/WC-20 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-20 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.86	0.01	
Lead	EPA 200.8	< 0.0010	0.001	

**Sample Name:** KHS122116-P-KF-21 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-21 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.72	0.01	
Lead	EPA 200.8	0.003	0.001	

**Sample Name:** KHS122116-P-KF-22 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-22 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.65	0.01	
Lead	EPA 200.8	0.003	0.001	

**Sample Name:** KHS122116-P-KF-23 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-23 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.69	0.01	
Lead	EPA 200.8	0.003	0.001	



**Sample Name:** KHS122116-P-KF-24 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-24 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.56	0.01	
Lead	EPA 200.8	0.003	0.001	

**Sample Name:** KHS122116-P-KF-25 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-25 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.63	0.01	
Lead	EPA 200.8	0.003	0.001	

**Sample Name:** KHS122116-P-KF-26 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-26 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.66	0.01	
Lead	EPA 200.8	0.003	0.001	

**Sample Name:** KHS122116-P-CF-27 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-27 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	1.00	0.01	
Lead	EPA 200.8	0.008	0.001	

**Sample Name:** KHS122116-P-OF-28 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-28 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.91	0.01	
Lead	EPA 200.8	0.002	0.001	

**Sample Name:** KHS122116-P-NF-29 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-29 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.73	0.01	
Lead	EPA 200.8	< 0.0010	0.001	



**Sample Name:** KHS122116-P-DF/WC-30 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-30 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.29	0.01	
Lead	EPA 200.8	< 0.0010	0.001	

**Sample Name:** KHS122116-P-DF/WC-31 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-31 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.51	0.01	
Lead	EPA 200.8	< 0.0010	0.001	

**Sample Name:** KHS122116-P-CDF-32 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-32 **Date Analyzed:** 01/10/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	1.5	0.1	X
Lead	EPA 200.8	0.003	0.001	

**Sample Name:** KHS122116-P-DF-33 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-33 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.67	0.01	
Lead	EPA 200.8	< 0.0010	0.001	

**Sample Name:** KHS122116-P-DF/WC-34 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-34 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.63	0.01	
Lead	EPA 200.8	< 0.0010	0.001	

**Sample Name:** KHS122116-P-DF/WC-35 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-35 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.68	0.01	
Lead	EPA 200.8	< 0.0010	0.001	



**Sample Name:** KHS122116-P-DF/WC-36 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-36 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.34	0.01	
Lead	EPA 200.8	< 0.0010	0.001	

**Sample Name:** KHS122116-P-DF/WC-37 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-37 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.06	0.01	
Lead	EPA 200.8	< 0.0010	0.001	

**Sample Name:** KHS122116-P-CF-38 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-38 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.67	0.01	
Lead	EPA 200.8	< 0.0010	0.001	

**Sample Name:** KHS122116-P-DF/WC-39 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-39 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.67	0.01	
Lead	EPA 200.8	< 0.0010	0.001	

**Sample Name:** KHS122116-P-DF-40 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-40 **Date Analyzed:** 01/10/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	1.1	0.1	X
Lead	EPA 200.8	< 0.0010	0.001	

**Sample Name:** KHS122116-P-DF-41 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-41 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.84	0.01	
Lead	EPA 200.8	< 0.0010	0.001	



**Sample Name:** KHS122116-P-DF-42 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-42 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.88	0.01	
Lead	EPA 200.8	< 0.0010	0.001	

**Sample Name:** KHS122116-P-DF-43 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-43 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.39	0.01	
Lead	EPA 200.8	0.015	0.001	

**Sample Name:** KHS122116-P-OF-44 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-44 **Date Analyzed:** 01/10/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	1.4	0.1	X
Lead	EPA 200.8	0.006	0.001	

**Sample Name:** KHS122116-P-DF-45 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-45 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.89	0.01	
Lead	EPA 200.8	0.003	0.001	

**Sample Name:** KHS122116-P-OF-46 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-46 **Date Analyzed:** 01/10/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	1.0	0.1	X
Lead	EPA 200.8	0.004	0.001	

**Sample Name:** KHS122116-P-DF-47 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-47 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.18	0.01	
Lead	EPA 200.8	< 0.0010	0.001	





**Sample Name:** KHS122116-P-DF-48 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-48 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.19	0.01	
Lead	EPA 200.8	< 0.0010	0.001	

**Sample Name:** KHS122116-P-DF-49 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-49 **Date Analyzed:** 01/10/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	1.1	0.1	X
Lead	EPA 200.8	0.003	0.001	

**Sample Name:** KHS122116-P-OF-50 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-50 **Date Analyzed:** 01/10/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	2.4	0.1	X
Lead	EPA 200.8	< 0.0010	0.001	

**Sample Name:** KHS122116-P-CF-51 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-51 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.57	0.01	
Lead	EPA 200.8	< 0.0010	0.001	

**Sample Name:** KHS122116-P-CF-52 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-52 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.47	0.01	
Lead	EPA 200.8	< 0.0010	0.001	

**Sample Name:** KHS122116-P-KF-53 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-53 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.45	0.01	
Lead	EPA 200.8	0.002	0.001	



**Sample Name:** KHS122116-P-KF-54 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-54 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.49	0.01	
Lead	EPA 200.8	0.001	0.001	

**Sample Name:** KHS122116-P-CF-55 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-55 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.81	0.01	
Lead	EPA 200.8	0.002	0.001	

**Sample Name:** KHS122116-P-OF-56 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-56 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.87	0.01	
Lead	EPA 200.8	< 0.0010	0.001	

**Sample Name:** KHS122116-P-DF/WC-57 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-57 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.57	0.01	
Lead	EPA 200.8	< 0.0010	0.001	

**Sample Name:** KHS122116-P-OF-58 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-58 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.86	0.01	
Lead	EPA 200.8	< 0.0010	0.001	

**Sample Name:** KHS122116-P-KF-59 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-59 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.64	0.01	
Lead	EPA 200.8	< 0.0010	0.001	



**Sample Name:** KHS122116-P-DF-60 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-60 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	< 0.010	0.01	
Lead	EPA 200.8	< 0.0010	0.001	

**Sample Name:** KHS122116-P-DF-61 **Matrix:** Potable Water **Date Received:** 12/21/16  
**RJ Lee Grp. ID:** W612102-61 **Date Analyzed:** 01/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	1.3	0.1	X
Lead	EPA 200.8	0.014	0.001	

*Report Qualifiers:*

*A = Target Analyte media breakthrough suspect, see analytical report*

*D = Analyte analyzed in a dilution*

*E = Report concentration was above the instrument calibration range*

*J = Analyte detected below quantitation limits, concentration is estimated*

*P = Library spectrum match, rsd >90% w RT match*

*Q = Result out of method specific acceptance QC criteria*

*S = Spike Recovery outside accepted recovery limits*

*Z = Not ELAP accredited analyte*

*ND = Not Detected*

*B = Analyte detected in the associated blank*

*d = Data that exceeds the RSD criteria set by the SOP*

*H = Holding times for preparation or analysis exceeded*

*L = Sample condition at receipt out of compliance with method defined conditions*

*R = RPD (relative percent difference) outside accepted recovery limits*

*U = Analyte analyzed for but not detected*

*N/A = Not Applicable*

Scientist III J Grissmerson

*These results are submitted pursuant to RJ Lee Group's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions. No responsibility or liability is assumed for the manner in which the results are used or interpreted. Unless notified in writing to return the samples covered by this report, RJ Lee Group will store the samples for a period of ninety (90) days before discarding. A shipping and handling fee will be assessed for the return of any samples. Unless otherwise noted, samples were received in an acceptable condition. This laboratory operates in accordance with ISO 17025 guidelines, and holds limited scopes of accreditation under ORELAP Lab Code 4061 AIHA-LAP, LLC Lab ID 178656 EPA ID WA01195 and WA DOE Lab ID C859. This report may not be used to claim product endorsement by any laboratory accrediting agency. The results contained in this report relate only to the items tested or to the sample(s) as received by the laboratory. Any reproduction of this document must be in full for the report to be valid. Quality control data is available upon request.*

# Request for Environmental and IH Laboratory Analytical Services

W612102

ATTENTION TO: <b>RYAN MATHEWS</b>		Purchase Order No.: <b>162017</b>		Client Job No.: <b>162017</b>	
Lab Use Only	Project No.: Date Logged In: Logged In By:	Client No.:			
Report Results To	Name: Amanda Enbyusk, Ryan Mathews Company: Fulcrum Environmental Consulting Address: 406 North 2nd Street City, State, Zip: Yakima, WA, 98901 Phone: (509) 574-0839 Fax: (509) 575-8453 Call with Verbal Results: Email Results To: aenbyusk@fulcrum.net, CC: rmathews@fulcrum.net Fax Results To:	Turnaround Request	Standard: <b>Yes</b> No Sample Purpose: <b>Information X</b> Regulatory <input type="checkbox"/> Accreditation (please list below): System ID #: DOH Source #: Multiple Sources #:		
Send Invoice To	Name: Lorrie Boutillier Company: Fulcrum Environmental Address: 406 North 2nd Street City, State, Zip: Yakima, WA, 98901 Phone: (509) 574-0839 Fax: (509) 575-8453	Drinking Water	Preservation: A <input type="checkbox"/> B <input type="checkbox"/> Other <input type="checkbox"/> Matrix: WW=Wastewater GW=Groundwater S=Soil/Sediment E=Extract		
Special Instructions		Chemistry Analysis Key	Unpres H <sub>2</sub> SO <sub>4</sub> 4°C HCl HNO <sub>3</sub> NaOH Other Na <sub>2</sub> SO <sub>4</sub>	SW=Surface Water DW=Drinking Water O=Oil X=Other	Container: P=Plastic G=Glass W=Wipe A=Air (filter or tube)
Client Sample ID	Sample Description	Sample Date	Sample Time	Wipe Area / Air Volume	Analysis Requested
KHS122116-P-KF-01	Kitchen Faucet	12-21-16			Pres. Upon Receipt (Y/N)
KHS122116-P-KF-02					UNPR.
KHS122116-P-KF-03					DW
KHS122116-P-KF-04					
KHS122116-P-KF-05					
KHS122116-P-KF-06					
KHS122116-P-KF-07					
KHS122116-P-KF-08					
KHS122116-P-KF-09					
KHS122116-P-KF-10					
KHS122116-P-KF-11					
KHS122116-P-KF-12					
KHS122116-P-KF-13					
KHS122116-P-KF-14					
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KHS122116-P-KF-96					
KHS122116-P-KF-97					
KHS122116-P-KF-98					
KHS122116-P-KF-99					
KHS122116-P-KF-100					

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# Request for Environmental and IH Laboratory Analytical Services

W612102

ATTENTION TO: <b>RYAN MATHEWS</b>		Project No.:		Client Job No.:		Purchase Order No.:		16Z017	
Lab Use Only		Project No.:		Client Job No.:		Purchase Order No.:		16Z017	
Date Logged In:		Logged In By:		Standard: <b>Yes</b> No		If 'No', No. of Business Days:		Accreditation (please list below):	
Name: Amanda Ebybsk, Ryan Mathews		Company: Fulcrum Environmental Consulting		Sample Purpose: <b>Information X</b> Regulatory <input type="checkbox"/> Accreditation (please list below):		System ID #:		DOH Source #:	
Address: 406 North 2nd Street		City, State, Zip: Yakima, WA, 98901		Multiple Sources #s:		Sample Purpose: <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> Other <input type="checkbox"/>		Matrix:	
Phone: (509) 574-0839		Fax: (509) 575-8453		Preservation:		Unpres 4°C HNO <sub>3</sub> Other		H <sub>2</sub> SO <sub>4</sub> HCl NaOH Na <sub>2</sub> SO <sub>4</sub>	
Call with Verbal Results:		Email Results To: aenbybsk@fulcrum.net, CC: rmathews@fulcrum.net		Matrix:		WW=Wastewater GW=Groundwater S=Soil/Sludge E=Extract		SW=Surface Water DW=Drinking Water O=Oil X=Other	
Fax Results To:		Name: Lorrie Boutillier		Container:		P=Plastic G=Glass W=Wipe A=Air (filter or tube)		Pres. Upon Receipt (Y/N)	
Company: Fulcrum Environmental		Address: 406 North 2nd Street		City, State, Zip: Yakima, WA, 98901		Phone: (509) 574-0839		Fax: (509) 575-8453	
Send Invoice To		Sample Description		Sample Date		Sample Time		Wipe Area / Air Volume	
Special Instructions		Client Sample ID		Sample Date		Sample Time		Wipe Area / Air Volume	
KHS122116-P-0F-12		Between RM 707 & 705		12-21-16					
KHS122116-P-0F-13		Next to RM 710							
KHS122116-P-0F-14		RM-701							
KHS122116-P-0F-15		Next to RM 706							
KHS122116-P-0F-16		Westair's Alley							
KHS122116-P-0F-17		400 Wing							
KHS122116-P-0F-18		RM 408 Next to Entrance							
KHS122116-P-0F-19		South of RM 300							
KHS122116-P-0F-20		Main Entrance							
KHS122116-P-0F-21		North West Stairs							
KHS122116-P-0F-22		North East Stairs							
Chain of Custody		Relinquished By (Signature): <i>Nathan Bass</i>		Date: 12-21-16		Time: 3:25		Chain of Custody	
Relinquished By (Print Name): <i>Nathan Bass</i>		Company Name: <i>Fulcrum</i>		Date:		Time:		Received By (Signature): <i>A. J. [unclear]</i>	
Chain of Custody		Relinquished By (Signature): <i>Nathan Bass</i>		Date: 12-21-16		Time: 3:25		Chain of Custody	
Relinquished By (Print Name): <i>Nathan Bass</i>		Company Name: <i>Fulcrum</i>		Date:		Time:		Received By (Print Name): <i>A. J. [unclear]</i>	
Chain of Custody		Relinquished By (Signature): <i>Nathan Bass</i>		Date: 12-21-16		Time: 3:25		Chain of Custody	
Relinquished By (Print Name): <i>Nathan Bass</i>		Company Name: <i>Fulcrum</i>		Date:		Time:		Received By (Print Name): <i>A. J. [unclear]</i>	

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# Request for Environmental and IH Laboratory Analytical Services

W612102

Page 3 of 6

ATTENTION TO: <b>RYAN MATHEWS</b>		Client Job No.: <b>162017</b>	
Lab Use Only	Project No.: Date Logged In: Logged In By:	Turnaround Request	Standard: <b>Yes</b> No <input type="checkbox"/> If 'No,' No. of Business Days: _____
Report Results To	Name: Amanda Enbysk, Ryan Mathews Company: Fulcrum Environmental Consulting Address: 406 North 2nd Street City, State, Zip: Yakima, WA, 98901 Phone: (509) 574-0839 Fax: (509) 575-8453 Call with Verbal Results: Email Results To: aenbysk@fulcrum.net, CC: rmathews@fulcrum.net Fax Results To:	Drinking Water Sample Only	Sample Purpose: <b>Information X</b> Regulatory <input type="checkbox"/> Accreditation (please list below): System ID #: _____ DOH Source #: _____ Multiple Sources #: _____ Sample Purpose: A <input type="checkbox"/> B <input type="checkbox"/> Other <input type="checkbox"/>
Send Invoice To	Name: Lorrie Boutillier Company: Fulcrum Environmental Address: 406 North 2nd Street City, State, Zip: Yakima, WA, 98901 Phone: (509) 574-0839 Fax: (509) 575-8453	Chemistry Analysis Key	Preservation: Unpres <input type="checkbox"/> H <sub>2</sub> SO <sub>4</sub> 4°C <input type="checkbox"/> HCl <input type="checkbox"/> NaOH <input type="checkbox"/> HNO <sub>3</sub> <input type="checkbox"/> Na <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/> Other <input type="checkbox"/> Matrix: WW=Wastewater GW=Groundwater S=Soil/Sludge E=Extract Container: P=Plastic G=Glass W=Wipe A=Air (filter or tube)
Special Instructions		Analysis Requested	
Client Sample ID	Sample Description	Sample Date	Sample Time
		Start	Stop
		Wipe Area / Air Volume	
KHS122116-P-KR-23	West center station	5-21-16	
KHS122116-P-KR-24	East Center station		
KHS122116-P-KR-25	South West station		
KHS122116-P-KR-26	South East station		
KHS122116-P-CE-27	RM 105		
KHS122116-P-OF-28	Main Office lounge		
KHS122116-P-NF-29	Nurse's Office		
KHS122116-P-DFloc-30	Next to RM 107-Hallway		
KHS122116-P-DFloc-31	Next to RM 300-Hallway		
KHS122116-P-DF-32	RM-206		
KHS122116-P-DF-33	Next to RM 118		
Chain of Custody	Relinquished By (Signature): <i>Kevin K...</i> Relinquished By (Print Name): <i>Kevin K...</i> Company Name: <i>Fulcrum</i>	Chain of Custody	Received By (Signature): <i>[Signature]</i> Received By (Print Name): <i>[Name]</i> Company Name: _____
Chain of Custody	Relinquished By (Signature): _____ Relinquished By (Print Name): _____ Company Name: _____	Chain of Custody	Received By (Signature): _____ Received By (Print Name): _____ Company Name: _____
Date: 12-21-16	Time: 3:25	Date: DEC 21 2016	Time: 3:25
Method of Shipment:		Method of Shipment:	
Relinquished To:		Relinquished To:	
Method of Shipment:		Method of Shipment:	
Date:	Time:	Date:	Time:
Relinquished To:		Relinquished To:	
Method of Shipment:		Method of Shipment:	

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# Request for Environmental and IH Laboratory Analytical Services

W612102

ATTENTION TO: RYAN MATHEWS		Purchase Order No.: 162017		Client Job No.: 162017	
Lab Use Only	Project No.: Date Logged In:	Client No.: Logged In By:	Turnaround Request	Standard: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If 'No,' No. of Business Days:
Name: Amanda Enbysk, Ryan Mathews		Company: Fulcrum Environmental Consulting		Sample Purpose: <input checked="" type="checkbox"/> Information <input checked="" type="checkbox"/> Regulatory <input type="checkbox"/> Accreditation (please list below):	
Address: 406 North 2nd Street		City, State, Zip: Yakima, WA, 98901		System ID #:	
Phone: (509) 574-0839		Fax: (509) 575-8453		DOH Source #:	
Call with Verbal Results:		Email Results To: aenbysk@efulcrum.net, CC: rmathews@efulcrum.net		Multiple Sources #s:	
Fax Results To:		Name: Lorrie Boutilier		Preservation: <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> Other <input type="checkbox"/>	
Company: Fulcrum Environmental		Address: 406 North 2nd Street		Matrix: <input type="checkbox"/> WW=Wastewater <input type="checkbox"/> GW=Groundwater <input type="checkbox"/> S=Soil/Sludge <input type="checkbox"/> E=Extract	
City, State, Zip: Yakima, WA, 98901		Phone: (509) 574-0839		SW=Surface Water <input type="checkbox"/> DW=Drinking Water <input type="checkbox"/> O=Oil <input type="checkbox"/> X=Other	
Fax: (509) 575-8453		Email: lboutilier@efulcrum.net		Container: <input type="checkbox"/> P=Plastic <input type="checkbox"/> G=Glass <input type="checkbox"/> W=Wipe <input type="checkbox"/> A=Air (filter or tube)	
Send Invoice To		Special Instructions		Chemistry Analysis Key	
Client Sample ID		Sample Description		EPA 200.8: Pb, Cu	
Sample Date		Sample Time		Pres. Upon Receipt (Y/N)	
Start		Stop		Preservation	
Wipe Area / Air Volume		Matrix		Container Type	
Chain of Custody		Relinquished By (Print Name): Nathan Bas		pH	
Date: 12-21-16		Time: 3:25		No. Containers	
Relinquished To:		Date: DEC 21 2016		Time: 3:25	
Method of Shipment:		Received By (Signature):		Date:	
Company Name:		Received By (Print Name):		Time:	
Date:		Relinquished To:		Date:	
Time:		Method of Shipment:		Time:	
Method of Shipment:		Company Name:		Date:	
Date:		Received By (Signature):		Time:	
Time:		Received By (Print Name):		Date:	
Method of Shipment:		Company Name:		Time:	
Date:		Received By (Signature):		Date:	
Time:		Received By (Print Name):		Time:	
Method of Shipment:		Company Name:		Date:	
Date:		Received By (Signature):		Time:	
Time:		Received By (Print Name):		Date:	
Method of Shipment:		Company Name:		Time:	
Date:		Received By (Signature):		Date:	
Time:		Received By (Print Name):		Time:	
Method of Shipment:		Company Name:		Date:	
Date:		Received By (Signature):		Time:	
Time:		Received By (Print Name):		Date:	
Method of Shipment:		Company Name:		Time:	

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# Request for Environmental and IH Laboratory Analytical Services

W612102

ATTENTION TO: <b>RYAN MATHEWS</b>		Purchase Order No.:		Client Job No.:		<b>162017</b>	
Lab Use Only	Project No.:	Client No.:	Turnaround Request	Standard: <b>Yes</b> No	If 'No,' No. of Business Days:		
Report Results To	Date Logged In:	Logged In By:	Drinking Water Sample Only	Sample Purpose: <b>Information X</b> Regulatory <input type="checkbox"/> Accreditation (please list below):			
Send Invoice To	Name: Amanda Ebyusk, Ryan Mathews	Company: Fulcrum Environmental Consulting	System ID #:	Multiple Sources #:			
Special Instructions	Address: 406 North 2nd Street	City, State, Zip: Yakima, WA, 98901	DOH Source #:	Sample Purpose: A <input type="checkbox"/> B <input type="checkbox"/> Other <input type="checkbox"/>			
Client Sample ID	Phone: (509) 574-0839	Fax: (509) 575-8453	Chemistry Analysis Key	Preservation: Unpres H <sub>2</sub> SO <sub>4</sub> 4°C HCl NaOH HNO <sub>3</sub> Other Na <sub>2</sub> SO <sub>4</sub>	Matrix: WW=Wastewater GW=Groundwater S=Soil/Sludge E=Extract	Container: P=Plastic G=Glass W=Wipe A=Air (filter or tube)	
Sample Description	Company: Fulcrum Environmental	Email: lboutillier@fulcrum.net	Chemistry Analysis Key	Other: Na <sub>2</sub> SO <sub>4</sub>	E=Extract		
Sample Date	Address: 406 North 2nd Street	City, State, Zip: Yakima, WA, 98901	Chemistry Analysis Key	Other: Na <sub>2</sub> SO <sub>4</sub>	E=Extract		
Sample Start	Phone: (509) 574-0839	Fax: (509) 575-8453	Chemistry Analysis Key	Other: Na <sub>2</sub> SO <sub>4</sub>	E=Extract		
Sample Stop	Company: Fulcrum Environmental	Email: lboutillier@fulcrum.net	Chemistry Analysis Key	Other: Na <sub>2</sub> SO <sub>4</sub>	E=Extract		
Wipe Area / Air Volume	Address: 406 North 2nd Street	City, State, Zip: Yakima, WA, 98901	Chemistry Analysis Key	Other: Na <sub>2</sub> SO <sub>4</sub>	E=Extract		
Chain of Custody	Relinquished By (Signature): <i>Verhulst</i>	Date: 12-21-16	Chain of Custody	Received By (Signature): <i>Steph</i>	Date: DEC 21 2016	Time: 3:25	
Chain of Custody	Relinquished By (Print Name): <i>Nathan Bestrom</i>	Method of Shipment:	Chain of Custody	Received By (Print Name): <i>Steph</i>	Method of Shipment:		
Chain of Custody	Relinquished By (Signature):	Date:	Chain of Custody	Received By (Signature):	Date:	Time:	
Chain of Custody	Relinquished By (Print Name):	Method of Shipment:	Chain of Custody	Received By (Print Name):	Method of Shipment:		

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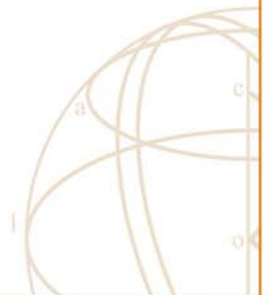
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**ATTACHMENT E**

Remedial Analytical Results







**Fulcrum Environmental**

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

**RE: Kennewick SD Drinking Water - Kennewick High School**  
**Work Order Number: 1701238**

January 24, 2017

**Attention Ryan Mathews:**

Fremont Analytical, Inc. received 5 sample(s) on 1/23/2017 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 - Kennewick  
**Work Order:** 1701238

---

**Work Order Sample Summary**

---

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Date/Time Collected</b>	<b>Date/Time Received</b>
1701238-001	KHS12117-P-DF-13	01/21/2017 12:00 PM	01/23/2017 12:25 PM
1701238-002	KHS12117-P-DF-32	01/21/2017 12:00 PM	01/23/2017 12:25 PM
1701238-003	KHS12117-P-OF-44	01/21/2017 12:00 PM	01/23/2017 12:25 PM
1701238-004	KHS12117-P-OF-50	01/21/2017 12:00 PM	01/23/2017 12:25 PM
1701238-005	KHS12117-P-DF-60	01/21/2017 12:00 PM	01/23/2017 12:25 PM

---

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

---

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:

1701238-001A 202848: Prep Comments for EPA200.8, Sample 1701238-001A: Turbidity: 0.04 NTU  
1701238-002A 202849: Prep Comments for EPA200.8, Sample 1701238-002A: Turbidity: 0.05 NTU  
1701238-003A 202850: Prep Comments for EPA200.8, Sample 1701238-003A: Turbidity: 0.02 NTU  
1701238-004A 202851: Prep Comments for EPA200.8, Sample 1701238-004A: Turbidity: 0.01 NTU  
1701238-005A 202852: Prep Comments for EPA200.8, Sample 1701238-005A: Turbidity: 0.01 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 - Kennewick High School

**Lab ID:** 1701238-001 **Collection Date:** 1/21/2017 12:00:00 PM  
**Client Sample ID:** KHS12117-P-DF-13 **Matrix:** Drinking Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b><u>Drinking Water Metals by EPA Method 200.8</u></b>				Batch ID: 15999		Analyst: TN
Copper	1,060	0.500		µg/L	1	1/23/2017 11:27:42 PM

**Lab ID:** 1701238-002 **Collection Date:** 1/21/2017 12:00:00 PM  
**Client Sample ID:** KHS12117-P-DF-32 **Matrix:** Drinking Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b><u>Drinking Water Metals by EPA Method 200.8</u></b>				Batch ID: 15999		Analyst: TN
Copper	1,070	0.500		µg/L	1	1/23/2017 11:31:18 PM

**Lab ID:** 1701238-003 **Collection Date:** 1/21/2017 12:00:00 PM  
**Client Sample ID:** KHS12117-P-OF-44 **Matrix:** Drinking Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b><u>Drinking Water Metals by EPA Method 200.8</u></b>				Batch ID: 15999		Analyst: TN
Copper	1,220	0.500		µg/L	1	1/23/2017 11:34:55 PM



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

**Lab ID:** 1701238-004      **Collection Date:** 1/21/2017 12:00:00 PM  
**Client Sample ID:** KHS12117-P-OF-50      **Matrix:** Drinking Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b><u>Drinking Water Metals by EPA Method 200.8</u></b>				Batch ID: 15999		Analyst: TN
Copper	1,550	0.500		µg/L	1	1/23/2017 11:38:31 PM

**Lab ID:** 1701238-005      **Collection Date:** 1/21/2017 12:00:00 PM  
**Client Sample ID:** KHS12117-P-DF-60      **Matrix:** Drinking Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b><u>Drinking Water Metals by EPA Method 200.8</u></b>				Batch ID: 15999		Analyst: TN
Copper	ND	0.500		µg/L	1	1/23/2017 11:42:08 PM

**Work Order:** 1701238  
**CLIENT:** Fulcrum Environmental  
**Project:** Kennewick SD Drinking Water - Kennewick

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

Sample ID <b>MB-15999</b>	SampType: <b>MBLK</b>	Units: <b>µg/L</b>	Prep Date: <b>1/23/2017</b>	RunNo: <b>34026</b>							
Client ID: <b>MBLKW</b>	Batch ID: <b>15999</b>		Analysis Date: <b>1/23/2017</b>	SeqNo: <b>647576</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-15999</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>	Prep Date: <b>1/23/2017</b>	RunNo: <b>34026</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>15999</b>		Analysis Date: <b>1/23/2017</b>	SeqNo: <b>647577</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper 93.6 0.500 100.0 0 93.6 85 115

Sample ID <b>1701236-014ADUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>	Prep Date: <b>1/23/2017</b>	RunNo: <b>34026</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>15999</b>		Analysis Date: <b>1/23/2017</b>	SeqNo: <b>647579</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper 1,730 0.500 1,728 0.181 30

Sample ID <b>1701236-014AMS</b>	SampType: <b>MS</b>	Units: <b>µg/L</b>	Prep Date: <b>1/23/2017</b>	RunNo: <b>34026</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>15999</b>		Analysis Date: <b>1/23/2017</b>	SeqNo: <b>647580</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper 1,910 0.500 200.0 1,728 91.9 70 130

Sample ID <b>1701236-014AMSD</b>	SampType: <b>MSD</b>	Units: <b>µg/L</b>	Prep Date: <b>1/23/2017</b>	RunNo: <b>34026</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>15999</b>		Analysis Date: <b>1/23/2017</b>	SeqNo: <b>647581</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper 1,960 0.500 200.0 1,728 115 70 130 1,912 2.39 30

Client Name: **FE**  
 Logged by: **Clare Griggs**

Work Order Number: **1701238**  
 Date Received: **1/23/2017 12:25:00 PM**

### Chain of Custody

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

### 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   
 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	8.3
Sample	9.2

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





**Fremont**  
Analytical

3600 Fremont Ave N.  
Seattle, WA 98103  
Tel: 206-352-3790  
Fax: 206-352-7178

Client: Fulcrum Environmental Consulting  
Address: 406 North Second Street  
City, State, Zip: Yakima, WA 98901  
Telephone: 509.574.0839 Fax: 509.545.8453

Project Name: Kennewick SD Drinking Water - Kennewick High School  
Project No: 162017  
Location: Kennewick HS, Kennewick WA  
Report To (PM): Ryan Mathews  
PM Email: rmathews@fulcrum.net; cc: aenbysk@fulcrum.net  
Date: 1/21/2017  
Page: 1 of 1  
Laboratory Project No (Internal): 1701238

Chain of Custody Record and Laboratory Services Agreement

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOCs (EPA 8260 / 624)	GW/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HClD)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8082 / 608)	PCBs (EPA 8270 / 625)	Metals** (EPA 6020 / 200.8)	Total (T)   Dissolved (D)	Anions (C)***	EDB (8011)	Comments
KHS12117-P-DF-13	1/17	1200	DW														
KHS12117-P-DF-32																	
KHS12117-P-DF-44																	
KHS12117-P-DF-50																	
KHS12117-P-DF-60																	

\*\*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): Nitrate Nitrite Chloride Sulfate Bromide Fluoride Nitrate+Nitrite Turn-around times for samples received after 4:00pm will begin on the following business day.

Sample Disposal:  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.)

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.

Relinquished: [Signature] Date/Time: 1/21/2017 Received: [Signature] Date/Time: 1/21/2017

Refrinquished: [Signature] Date/Time: 1/21/2017 Received: [Signature] Date/Time: 1/21/2017

TAT → SameDay^ NextDay^ 2 Day 3 Day STD

\*Please coordinate with the lab in advance



**Fulcrum Environmental**

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

**RE: Kennewick SD - Kennewick High School Follow-Up Sampling  
Work Order Number: 1702037**

February 07, 2017

**Attention Ryan Mathews:**

Fremont Analytical, Inc. received 5 sample(s) on 2/3/2017 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: 02/07/2017

---

**CLIENT:** Fulcrum Environmental  
**Project:** Kennewick SD - Kennewick High School Fol  
**Work Order:** 1702037

## Work Order Sample Summary

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Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1702037-001	KHS12817-P-CF-50	01/28/2017 11:30 AM	02/03/2017 3:12 PM
1702037-002	KHS12817-S-CF-50	01/28/2017 11:30 AM	02/03/2017 3:12 PM
1702037-003	KHS12817-T-CF-50	01/28/2017 11:30 AM	02/03/2017 3:12 PM
1702037-004	KHS12817-P-DF-60	01/28/2017 11:30 AM	02/03/2017 3:12 PM
1702037-005	KHS12817-P-DF-61	01/28/2017 11:30 AM	02/03/2017 3:12 PM

---

**CLIENT:** Fulcrum Environmental  
**Project:** Kennewick SD - Kennewick High School Follow-Up Sampling

---

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:

1702037-001A 205379: Prep Comments for EPA200.8, Sample 1702037-001A: Turbidity: 0.01 NTU  
1702037-002A 205383: Prep Comments for EPA200.8, Sample 1702037-002A: Turbidity: 0.01 NTU  
1702037-003A 205384: Prep Comments for EPA200.8, Sample 1702037-003A: Turbidity: 0.00 NTU  
1702037-004A 205385: Prep Comments for EPA200.8, Sample 1702037-004A: Turbidity: 0.02 NTU  
1702037-005A 205386: Prep Comments for EPA200.8, Sample 1702037-005A: Turbidity: 0.01 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 - Kennewick High School Follow-Up Sampling

**Lab ID:** 1702037-001

**Collection Date:** 1/28/2017 11:30:00 AM

**Client Sample ID:** KHS12817-P-CF-50

**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: 16139

Analyst: TN

Copper	1,730	0.500		µg/L	1	2/6/2017 3:32:50 PM
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**Lab ID:** 1702037-002

**Collection Date:** 1/28/2017 11:30:00 AM

**Client Sample ID:** KHS12817-S-CF-50

**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: 16139

Analyst: TN

Copper	1,500	0.500		µg/L	1	2/6/2017 3:54:32 PM
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**Lab ID:** 1702037-003

**Collection Date:** 1/28/2017 11:30:00 AM

**Client Sample ID:** KHS12817-T-CF-50

**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: 16139

Analyst: TN

Copper	436	0.500		µg/L	1	2/6/2017 3:58:08 PM
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**CLIENT:** Fulcrum Environmental

**Project:** Kennewick SD - Kennewick High School Follow-Up Sampling

**Lab ID:** 1702037-004

**Collection Date:** 1/28/2017 11:30:00 AM

**Client Sample ID:** KHS12817-P-DF-60

**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: 16139

Analyst: TN

Copper	ND	0.500		µg/L	1	2/6/2017 4:01:44 PM
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**Lab ID:** 1702037-005

**Collection Date:** 1/28/2017 11:30:00 AM

**Client Sample ID:** KHS12817-P-DF-61

**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: 16139

Analyst: TN

Copper	1,280	0.500		µg/L	1	2/6/2017 4:05:20 PM
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**Work Order:** 1702037  
**CLIENT:** Fulcrum Environmental  
**Project:** Kennewick SD - Kennewick High School Fol

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

Sample ID <b>MB-16139</b>	SampType: <b>MBLK</b>	Units: <b>µg/L</b>			Prep Date: <b>2/6/2017</b>	RunNo: <b>34291</b>					
Client ID: <b>MBLKW</b>	Batch ID: <b>16139</b>				Analysis Date: <b>2/6/2017</b>	SeqNo: <b>653797</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-16139</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>			Prep Date: <b>2/6/2017</b>	RunNo: <b>34291</b>					
Client ID: <b>LCSW</b>	Batch ID: <b>16139</b>				Analysis Date: <b>2/6/2017</b>	SeqNo: <b>653798</b>					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper 100 0.500 100.0 0 100 85 115

Sample ID <b>1702037-001ADUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>			Prep Date: <b>2/6/2017</b>	RunNo: <b>34291</b>					
Client ID: <b>KHS12817-P-CF-50</b>	Batch ID: <b>16139</b>				Analysis Date: <b>2/6/2017</b>	SeqNo: <b>653800</b>					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper 1,680 0.500 1,726 2.81 30

Sample ID <b>1702037-001AMS</b>	SampType: <b>MS</b>	Units: <b>µg/L</b>			Prep Date: <b>2/6/2017</b>	RunNo: <b>34291</b>					
Client ID: <b>KHS12817-P-CF-50</b>	Batch ID: <b>16139</b>				Analysis Date: <b>2/6/2017</b>	SeqNo: <b>653801</b>					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper 1,880 0.500 200.0 1,726 78.8 70 130

Sample ID <b>1702037-001AMSD</b>	SampType: <b>MSD</b>	Units: <b>µg/L</b>			Prep Date: <b>2/6/2017</b>	RunNo: <b>34291</b>					
Client ID: <b>KHS12817-P-CF-50</b>	Batch ID: <b>16139</b>				Analysis Date: <b>2/6/2017</b>	SeqNo: <b>653802</b>					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper 1,860 0.500 200.0 1,726 67.3 70 130 1,883 1.22 30 S

**NOTES:**

S - Outlying spike recovery(ies) observed. A duplicate analysis was performed and recovered within range.

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

Work Order Number: **1702037**  
 Date Received: **2/3/2017 3:12:00 PM**

### 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   
**Metals in water, preserved**  
 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   
 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	9.4
Sample	10.3

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





**Fulcrum Environmental**

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

**RE: Kennewick SD Drinking Water - Kennewick High School**  
**Work Order Number: 1704106**

April 10, 2017

**Attention Ryan Mathews:**

Fremont Analytical, Inc. received 5 sample(s) on 4/10/2017 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





Date: 04/10/2017

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**CLIENT:** Fulcrum Environmental  
**Project:** Kennewick SD Drinking Water - Kennewick  
**Work Order:** 1704106

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## Work Order Sample Summary

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Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1704106-001	KHS4717-P-OF-50	04/07/2017 9:00 AM	04/10/2017 9:55 AM
1704106-002	KHS4717-S-OF-50	04/07/2017 9:00 AM	04/10/2017 9:55 AM
1704106-003	KHS4717-T-OF-50	04/07/2017 9:00 AM	04/10/2017 9:55 AM
1704106-004	KHS4717-P-DF-60	04/07/2017 9:00 AM	04/10/2017 9:55 AM
1704106-005	KHS4717-P-DF-61	04/07/2017 9:00 AM	04/10/2017 9:55 AM

---

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

---

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:

1704106-001A 214895: Prep Comments for EPA200.8, Sample 1704106-001A: Turbidity: 0.01 NTU

1704106-004A 214896: Prep Comments for EPA200.8, Sample 1704106-004A: Turbidity: 0.01 NTU

1704106-005A 214897: Prep Comments for EPA200.8, Sample 1704106-005A: Turbidity: 0.04 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 - Kennewick High School

**Lab ID:** 1704106-001      **Collection Date:** 4/7/2017 9:00:00 AM  
**Client Sample ID:** KHS4717-P-OF-50      **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: 16741      Analyst: TN

Copper	670	0.500		µg/L	1	4/10/2017 2:09:51 PM
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**Lab ID:** 1704106-004      **Collection Date:** 4/7/2017 9:00:00 AM  
**Client Sample ID:** KHS4717-P-DF-60      **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: 16741      Analyst: TN

Copper	ND	0.500		µg/L	1	4/10/2017 2:13:52 PM
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**Lab ID:** 1704106-005      **Collection Date:** 4/7/2017 9:00:00 AM  
**Client Sample ID:** KHS4717-P-DF-61      **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: 16741      Analyst: TN

Copper	1,390	0.500		µg/L	1	4/10/2017 2:17:53 PM
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**Work Order:** 1704106  
**CLIENT:** Fulcrum Environmental  
**Project:** Kennewick SD Drinking Water - Kennewick

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

Sample ID <b>MB-16741</b>	SampType: <b>MBLK</b>	Units: <b>µg/L</b>			Prep Date: <b>4/10/2017</b>	RunNo: <b>35452</b>					
Client ID: <b>MBLKW</b>	Batch ID: <b>16741</b>				Analysis Date: <b>4/10/2017</b>	SeqNo: <b>679043</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-16741</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>			Prep Date: <b>4/10/2017</b>	RunNo: <b>35452</b>					
Client ID: <b>LCSW</b>	Batch ID: <b>16741</b>				Analysis Date: <b>4/10/2017</b>	SeqNo: <b>679046</b>					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper 99.3 0.500 100.0 0 99.3 85 115

Sample ID <b>1704105-001ADUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>			Prep Date: <b>4/10/2017</b>	RunNo: <b>35452</b>					
Client ID: <b>BATCH</b>	Batch ID: <b>16741</b>				Analysis Date: <b>4/10/2017</b>	SeqNo: <b>679048</b>					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper 167 0.500 168.0 0.767 30

Sample ID <b>1704105-001AMS</b>	SampType: <b>MS</b>	Units: <b>µg/L</b>			Prep Date: <b>4/10/2017</b>	RunNo: <b>35452</b>					
Client ID: <b>BATCH</b>	Batch ID: <b>16741</b>				Analysis Date: <b>4/10/2017</b>	SeqNo: <b>679049</b>					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper 351 0.500 200.0 168.0 91.7 70 130

Sample ID <b>1704105-001AMSD</b>	SampType: <b>MSD</b>	Units: <b>µg/L</b>			Prep Date: <b>4/10/2017</b>	RunNo: <b>35452</b>					
Client ID: <b>BATCH</b>	Batch ID: <b>16741</b>				Analysis Date: <b>4/10/2017</b>	SeqNo: <b>679050</b>					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper 349 0.500 200.0 168.0 90.6 70 130 351.3 0.592 30

Client Name: <b>FE</b>	Work Order Number: <b>1704106</b>
Logged by: <b>Clare Griggs</b>	Date Received: <b>4/10/2017 9:55:00 AM</b>

**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
12. Is there headspace in the VOA vials?      Yes       No       HNO3 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	2.4
Sample	1.1

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

