



Fulcrum Environmental

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

RE: KSD Drinking Water - Chinook MS

Work Order Number: 1708167

August 16, 2017

Attention Ryan Mathews:

Fremont Analytical, Inc. received 17 sample(s) on 8/16/2017 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: KSD Drinking Water - Chinook MS
Work Order: 1708167

Work Order Sample Summary

| Lab Sample ID | Client Sample ID | Date/Time Collected | Date/Time Received |
|---------------|------------------|---------------------|--------------------|
| 1708167-001 | CHK81517-P-CF-06 | 08/15/2017 7:30 AM | 08/16/2017 9:26 AM |
| 1708167-002 | CHK81517-S-CF-06 | 08/15/2017 7:30 AM | 08/16/2017 9:26 AM |
| 1708167-003 | CHK81517-T-CF-06 | 08/15/2017 7:30 AM | 08/16/2017 9:26 AM |
| 1708167-004 | CHK81517-P-KF-20 | 08/15/2017 7:30 AM | 08/16/2017 9:26 AM |
| 1708167-005 | CHK81517-S-KF-20 | 08/15/2017 7:30 AM | 08/16/2017 9:26 AM |
| 1708167-006 | CHK81517-T-KF-20 | 08/15/2017 7:30 AM | 08/16/2017 9:26 AM |
| 1708167-007 | CHK81517-P-CF-24 | 08/15/2017 7:30 AM | 08/16/2017 9:26 AM |
| 1708167-008 | CHK81517-S-CF-24 | 08/15/2017 7:30 AM | 08/16/2017 9:26 AM |
| 1708167-009 | CHK81517-T-CF-24 | 08/15/2017 7:30 AM | 08/16/2017 9:26 AM |
| 1708167-010 | CHK81517-P-WC-31 | 08/15/2017 7:30 AM | 08/16/2017 9:26 AM |
| 1708167-011 | CHK81517-S-WC-31 | 08/15/2017 7:30 AM | 08/16/2017 9:26 AM |
| 1708167-012 | CHK81517-T-WC-31 | 08/15/2017 7:30 AM | 08/16/2017 9:26 AM |
| 1708167-013 | CHK81517-P-OF-34 | 08/15/2017 7:30 AM | 08/16/2017 9:26 AM |
| 1708167-014 | CHK81517-S-OF-34 | 08/15/2017 7:30 AM | 08/16/2017 9:26 AM |
| 1708167-015 | CHK81517-T-OF-34 | 08/15/2017 7:30 AM | 08/16/2017 9:26 AM |
| 1708167-016 | CHK81517-P-WC-35 | 08/15/2017 7:30 AM | 08/16/2017 9:26 AM |
| 1708167-017 | CHK81517-P-WC-36 | 08/15/2017 7:30 AM | 08/16/2017 9:26 AM |

CLIENT: Fulcrum Environmental
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WorkOrder Narrative:

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Prep Sample Comments:

1708167-001A 231898: Prep Comments for EPA200.8, Sample 1708167-001A: Turbidity: 0.57 NTU
1708167-004A 231902: Prep Comments for EPA200.8, Sample 1708167-004A: Turbidity: 0.01 NTU
1708167-007A 231903: Prep Comments for EPA200.8, Sample 1708167-007A: Turbidity: 0.06 NTU
1708167-010A 231904: Prep Comments for EPA200.8, Sample 1708167-010A: Turbidity: 0.01 NTU
1708167-013A 231905: Prep Comments for EPA200.8, Sample 1708167-013A: Turbidity: 0.18 NTU
1708167-016A 231906: Prep Comments for EPA200.8, Sample 1708167-016A: Turbidity: 0.01 NTU
1708167-017A 231907: Prep Comments for EPA200.8, Sample 1708167-017A: 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: KSD Drinking Water - Chinook MS

Lab ID: 1708167-001 **Collection Date:** 8/15/2017 7:30:00 AM
Client Sample ID: CHK81517-P-CF-06 **Matrix:** Drinking Water

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

Drinking Water Metals by EPA Method 200.8

Batch ID: 17922 Analyst: TN

| | | | | | | |
|--------|-----|-------|--|------|---|----------------------|
| Copper | 173 | 0.500 | | µg/L | 1 | 8/16/2017 2:49:38 PM |
|--------|-----|-------|--|------|---|----------------------|

Lab ID: 1708167-004 **Collection Date:** 8/15/2017 7:30:00 AM
Client Sample ID: CHK81517-P-KF-20 **Matrix:** Drinking Water

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

Drinking Water Metals by EPA Method 200.8

Batch ID: 17922 Analyst: TN

| | | | | | | |
|--------|------|-------|--|------|---|----------------------|
| Copper | 85.9 | 0.500 | | µg/L | 1 | 8/16/2017 2:33:32 PM |
|--------|------|-------|--|------|---|----------------------|

Lab ID: 1708167-007 **Collection Date:** 8/15/2017 7:30:00 AM
Client Sample ID: CHK81517-P-CF-24 **Matrix:** Drinking Water

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

Drinking Water Metals by EPA Method 200.8

Batch ID: 17922 Analyst: TN

| | | | | | | |
|--------|-----|-------|--|------|---|----------------------|
| Copper | 409 | 0.500 | | µg/L | 1 | 8/16/2017 2:53:39 PM |
|--------|-----|-------|--|------|---|----------------------|



CLIENT: Fulcrum Environmental
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Lab ID: 1708167-010 **Collection Date:** 8/15/2017 7:30:00 AM
Client Sample ID: CHK81517-P-WC-31 **Matrix:** Drinking Water

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

Drinking Water Metals by EPA Method 200.8

Batch ID: 17922 Analyst: TN

| | | | | | | |
|--------|------|-------|--|------|---|----------------------|
| Copper | 74.7 | 0.500 | | µg/L | 1 | 8/16/2017 3:05:44 PM |
|--------|------|-------|--|------|---|----------------------|

Lab ID: 1708167-013 **Collection Date:** 8/15/2017 7:30:00 AM
Client Sample ID: CHK81517-P-OF-34 **Matrix:** Drinking Water

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

Drinking Water Metals by EPA Method 200.8

Batch ID: 17922 Analyst: TN

| | | | | | | |
|--------|-----|-------|--|------|---|----------------------|
| Copper | 295 | 0.500 | | µg/L | 1 | 8/16/2017 3:09:46 PM |
|--------|-----|-------|--|------|---|----------------------|

Lab ID: 1708167-016 **Collection Date:** 8/15/2017 7:30:00 AM
Client Sample ID: CHK81517-P-WC-35 **Matrix:** Drinking Water

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

Drinking Water Metals by EPA Method 200.8

Batch ID: 17922 Analyst: TN

| | | | | | | |
|--------|----|-------|--|------|---|----------------------|
| Copper | ND | 0.500 | | µg/L | 1 | 8/16/2017 3:13:47 PM |
|--------|----|-------|--|------|---|----------------------|



CLIENT: Fulcrum Environmental
Project: KSD Drinking Water - Chinook MS

Lab ID: 1708167-017

Collection Date: 8/15/2017 7:30:00 AM

Client Sample ID: CHK81517-P-WC-36

Matrix: Drinking Water

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

Drinking Water Metals by EPA Method 200.8

Batch ID: 17922

Analyst: TN

| | | | | | | |
|--------|-------|-------|--|------|---|----------------------|
| Copper | 1,400 | 0.500 | | µg/L | 1 | 8/16/2017 3:17:49 PM |
|--------|-------|-------|--|------|---|----------------------|

Work Order: 1708167
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QC SUMMARY REPORT
Drinking Water Metals by EPA Method 200.8

| | | | | | | | | | | | |
|---------------------------|------------------------|---------------------------------|-----------------------------|---------------------|------|----------|-----------|-------------|------|----------|------|
| Sample ID MB-17922 | SampType: MBLK | Units: µg/L | Prep Date: 8/16/2017 | RunNo: 38041 | | | | | | | |
| Client ID: MBLKW | Batch ID: 17922 | Analysis Date: 8/16/2017 | SeqNo: 731139 | | | | | | | | |
| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |

Copper ND 0.500

| | | | | | | | | | | | |
|----------------------------|------------------------|---------------------------------|-----------------------------|---------------------|------|----------|-----------|-------------|------|----------|------|
| Sample ID LCS-17922 | SampType: LCS | Units: µg/L | Prep Date: 8/16/2017 | RunNo: 38041 | | | | | | | |
| Client ID: LCSW | Batch ID: 17922 | Analysis Date: 8/16/2017 | SeqNo: 731140 | | | | | | | | |
| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |

Copper 103 0.500 100.0 0 103 85 115

| | | | | | | | | | | | |
|------------------------------------|------------------------|---------------------------------|-----------------------------|---------------------|------|----------|-----------|-------------|------|----------|------|
| Sample ID 1708167-004ADUP | SampType: DUP | Units: µg/L | Prep Date: 8/16/2017 | RunNo: 38041 | | | | | | | |
| Client ID: CHK81517-P-KF-20 | Batch ID: 17922 | Analysis Date: 8/16/2017 | SeqNo: 731142 | | | | | | | | |
| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |

Copper 82.4 0.500 85.90 4.11 30

| | | | | | | | | | | | |
|------------------------------------|------------------------|---------------------------------|-----------------------------|---------------------|------|----------|-----------|-------------|------|----------|------|
| Sample ID 1708167-004AMS | SampType: MS | Units: µg/L | Prep Date: 8/16/2017 | RunNo: 38041 | | | | | | | |
| Client ID: CHK81517-P-KF-20 | Batch ID: 17922 | Analysis Date: 8/16/2017 | SeqNo: 731143 | | | | | | | | |
| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |

Copper 290 0.500 200.0 85.90 102 70 130

| | | | | | | | | | | | |
|------------------------------------|------------------------|---------------------------------|-----------------------------|---------------------|------|----------|-----------|-------------|------|----------|------|
| Sample ID 1708167-004AMSD | SampType: MSD | Units: µg/L | Prep Date: 8/16/2017 | RunNo: 38041 | | | | | | | |
| Client ID: CHK81517-P-KF-20 | Batch ID: 17922 | Analysis Date: 8/16/2017 | SeqNo: 731144 | | | | | | | | |
| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |

Copper 279 0.500 200.0 85.90 96.4 70 130 290.1 4.03 30

