



Amanda Fritz, Commissioner
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DATE: May 15, 2019 WQ 0.10.14.4

TO: Oregon Health Authority, Drinking Water Services

**SUBJECT: Monthly Report for April 2019
Bilateral Compliance Agreement
Intake *Cryptosporidium* Results
PWS # 4100657**

To Whom It May Concern:

Enclosed are results of laboratory analyses for *Cryptosporidium* from the Bull Run raw water intake for April. Monitoring for *Cryptosporidium* at the Bull Run intake is done to comply with the interim measures of the Bilateral Compliance Agreement (Oregon Health Authority, December 18, 2017).

All analyses for *Cryptosporidium* and *Giardia* were performed by the PWB Laboratory. Attached are copies of the monthly turbidity and raw coliform reports previously submitted to OHA in compliance with the SWTR. Results for the reporting month are summarized below:

***Cryptosporidium*, *Giardia*, Turbidity and Fecal Coliforms Data Summary for the Reporting Month**

| <i>Cryptosporidium</i> and <i>Giardia</i> Field Samples | | | | <i>Cryptosporidium</i> Recoveries | | Fecal Coliforms | Turbidity |
|---|------------------|--|--------------------------------|-----------------------------------|-----------------------------------|----------------------------|-----------------------|
| No. of Samples | Total Volume (L) | Total No. <i>Cryptosporidium</i> Oocysts | Total No. <i>Giardia</i> Cysts | No. of Matrix Spikes | Average Matrix Spike Recovery (%) | Highest Count (CFU/100 mL) | Highest Reading (NTU) |
| 18 | 900 | 10 | 8 | 2 | 74.3 | 2 | 1.14 |

If you have any questions regarding these results, please contact me at 503-823-6135.

Sincerely,

Ann Levy
Senior Environmental Program Manager

Transmitted: Four pages (including this transmittal memo) emailed to dwp.dmce@state.or.us on this date.



Portland Water Bureau Laboratory
2010 N Interstate Ave, Portland, OR 97227

Cryptosporidium and Giardia Laboratory Analysis Report

| <u>Water System Information</u> | | | | <u>Sample Information</u> | | | |
|---------------------------------|---|--|--|-------------------------------------|--------------------------------|--|--|
| PWS ID: | OR4100657 | | | Collection Month & Year: | April 2019 | | |
| PWS Name: | Portland Water Bureau 1900 N Interstate Avenue Portland, Oregon 97227 | | | Report Date: | May 9, 2019 | | |
| County: | Multnomah | | | Monitoring Regime: | Bilateral Compliance Agreement | | |
| | | | | Source Water: | Bull Run Intake - WTP-A | | |

| PWB Sample ID | Loc ID | Sample Collection Date | Sample Type | Sample Volume Filtered (L) | Analysis Method | <u>Cryptosporidium</u> | | | <u>Giardia</u> | | |
|---------------|-------------|------------------------|-------------|----------------------------|-----------------|------------------------|------------------------|----------------------------------|---------------------|----------------------|--------------------------------|
| | | | | | | No. of Oocysts Spiked | No. of Oocysts Counted | Oocyst Matrix Spike Recovery (%) | No. of Cysts Spiked | No. of Cysts Counted | Cyst Matrix Spike Recovery (%) |
| BC20933 | Intake 2PIS | 4/1/2019 | Field | 50 | 1623.1 | 0 | 0 | | 0 | 0 | |
| BC20934 | Intake 2PIS | 4/2/2019 | Field | 50 | 1623.1 | 0 | 1 | | 0 | 1 | |
| BC20935 | Intake 2PIS | 4/2/2019 | MS | 50 | 1623.1 | 99 | 88 | 87.9 | 102 | 78 | 75.5 |
| BC20936 | Intake 2PIS | 4/3/2019 | Field | 50 | 1623.1 | 0 | 1 | | 0 | 0 | |
| BC21177 | Intake 2PIS | 4/7/2019 | Field | 50 | 1623.1 | 0 | 0 | | 0 | 0 | |
| BC21178 | Intake 2PIS | 4/8/2019 | Field | 50 | 1623.1 | 0 | 0 | | 0 | 0 | |
| BC21179 | Intake 2PIS | 4/9/2019 | Field | 50 | 1623.1 | 0 | 1 | | 0 | 1 | |
| BC21180 | Intake 2PIS | 4/10/2019 | Field | 50 | 1623.1 | 0 | 2 | | 0 | 1 | |
| BC21486 | Intake 2PIS | 4/14/2019 | Field | 50 | 1623.1 | 0 | 2 | | 0 | 1 | |
| BC21487 | Intake 2PIS | 4/15/2019 | Field | 50 | 1623.1 | 0 | 1 | | 0 | 1 | |
| BC21488 | Intake 2PIS | 4/16/2019 | Field | 50 | 1623.1 | 0 | 0 | | 0 | 1 | |
| BC21489 | Intake 2PIS | 4/17/2019 | Field | 50 | 1623.1 | 0 | 0 | | 0 | 1 | |
| BC21832 | Intake 2PIS | 4/21/2019 | Field | 50 | 1623.1 | 0 | 1 | | 0 | 1 | |
| BC21833 | Intake 2PIS | 4/22/2019 | Field | 50 | 1623.1 | 0 | 0 | | 0 | 0 | |
| BC21834 | Intake 2PIS | 4/23/2019 | Field | 50 | 1623.1 | 0 | 0 | | 0 | 0 | |
| BC21836 | Intake 2PIS | 4/24/2019 | Field | 50 | 1623.1 | 0 | 0 | | 0 | 0 | |
| BC22320 | Intake 2PIS | 4/28/2019 | Field | 50 | 1623.1 | 0 | 0 | | 0 | 0 | |
| BC22321 | Intake 2PIS | 4/29/2019 | Field | 50 | 1623.1 | 0 | 1 | | 0 | 0 | |
| BC22302 | Intake 2PIS | 4/30/2019 | Field | 50 | 1623.1 | 0 | 0 | | 0 | 0 | |
| BC22301 | Intake 2PIS | 4/30/2019 | MS | 51.25 | 1623.1 | 99 | 60 | 60.6 | 102 | 66 | 64.7 |

Unless otherwise noted, all data were generated in accordance with EPA Method 1623 and 100% of the filtered volume was examined for each sample.

Reviewed by Mark Long

Date Reviewed: 5/10/19

OHA - Drinking Water Services - Turbidity Monitoring Report Form

County: **Multnomah**

Slow Sand, Membrane, Diatomaceous Earth Filtration, or Unfiltered Systems

System Name: **Portland Water Bureau**

ID #: **OR 4100657**

WTP: **WTP- A**

Month/Year: **04/2019**

| DAY | 12 AM (NTU) | 4 AM (NTU) | 8 AM (NTU) | NOON (NTU) | 4 PM (NTU) | 8 PM (NTU) | Highest Reading (NTU) | Peak Hourly Flow (GPM) | | |
|-----|----------------|---------------|---------------|---------------|---------------|---------------|-----------------------------|------------------------|--------|--------|
| | | | | | | | | Cond 2 | Cond 3 | Cond 4 |
| 1 | 0.22 | 0.23 | 0.22 | 0.21 | 0.22 | 0.23 | 0.23 | 18726 | 26535 | 20771 |
| 2 | 0.22 | 0.20 | 0.22 | 0.22 | 0.20 | 0.20 | 0.22 | 18920 | 22542 | 20828 |
| 3 | 0.20 | 0.20 | 0.19 | 0.20 | 0.19 | 0.19 | 0.20 | 18948 | 20250 | 20943 |
| 4 | 0.20 | 0.21 | 0.20 | 0.20 | 0.20 | 0.19 | 0.21 | 17448 | 20344 | 19292 |
| 5 | 0.19 | 0.19 | 0.20 | 0.19 | 0.19 | 0.19 | 0.20 | 17201 | 20326 | 19271 |
| 6 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.19 | 0.20 | 17177 | 20347 | 19167 |
| 7 | 0.20 | 0.20 | 0.19 | 0.19 | 0.20 | 0.22 | 0.22 | 17142 | 20326 | 19271 |
| 8 | 0.22 | 0.25 | 0.27 | 0.29 | 0.39 | 0.41 | 0.41 | 17125 | 20267 | 19219 |
| 9 | 0.47 | 0.53 | 0.91 | 0.81 | 0.72 | 0.66 | 0.91 | 17142 | 20316 | 19286 |
| 10 | 0.69 | 0.66 | 0.72 | 0.77 | 0.82 | 0.89 | 0.89 | 17229 | 20267 | 19260 |
| 11 | 0.92 | 0.91 | 0.90 | 0.86 | 0.87 | 0.95 | 0.95 | 17122 | 20267 | 19427 |
| 12 | 0.98 | 1.05 | 1.08 | 1.14 | 1.12 | 1.11 | 1.14 | 17139 | 24128 | 19302 |
| 13 | 1.11 | 1.11 | 1.09 | 1.08 | 1.00 | 0.93 | 1.11 | 17139 | 24177 | 19469 |
| 14 | 0.90 | 0.91 | 0.85 | 0.91 | 0.79 | 0.82 | 0.91 | 17160 | 24139 | 19276 |
| 15 | 0.82 | 0.78 | 0.80 | 0.76 | 0.70 | 0.74 | 0.82 | 17146 | 24184 | 19234 |
| 16 | 0.73 | 0.75 | 0.69 | 0.67 | 0.66 | 0.64 | 0.75 | 17128 | 24153 | 19229 |
| 17 | 0.70 | 0.65 | 0.62 | 0.64 | 0.62 | 0.61 | 0.70 | 16101 | 19955 | 18250 |
| 18 | 0.59 | 0.59 | 0.65 | 0.66 | 0.59 | 0.62 | 0.66 | 18528 | 19774 | 20599 |
| 19 | 0.62 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 | 0.62 | 18458 | 23080 | 20547 |
| 20 | 0.60 | 0.59 | 0.59 | 0.60 | 0.57 | 0.58 | 0.60 | 18844 | 23566 | 20870 |
| 21 | 0.57 | 0.57 | 0.57 | 0.56 | 0.56 | 0.56 | 0.57 | 18694 | 23410 | 20589 |
| 22 | 0.54 | 0.54 | 0.55 | 0.55 | 0.55 | 0.54 | 0.55 | 18382 | 23090 | 20286 |
| 23 | 0.54 | 0.53 | 0.53 | 0.51 | 0.53 | 0.51 | 0.54 | 18302 | 22986 | 20224 |
| 24 | 0.50 | 0.51 | 0.51 | 0.50 | 0.50 | 0.50 | 0.51 | 18174 | 22872 | 20109 |
| 25 | 0.49 | 0.50 | 0.49 | 0.49 | 0.50 | 0.49 | 0.50 | 20497 | 22858 | 22302 |
| 26 | 0.49 | 0.50 | 0.50 | 0.50 | 0.49 | 0.50 | 0.50 | 19361 | 26580 | 21313 |
| 27 | 0.49 | 0.50 | 0.48 | 0.47 | 0.48 | 0.48 | 0.50 | 19292 | 26538 | 21286 |
| 28 | 0.45 | 0.50 | 0.48 | 0.47 | 0.48 | 0.48 | 0.50 | 19295 | 26542 | 21307 |
| 29 | 0.49 | 0.49 | 0.48 | 0.48 | 0.50 | 0.48 | 0.50 | 19135 | 26326 | 21281 |
| 30 | 0.47 | 0.50 | 0.49 | 0.44 | 0.45 | 0.45 | 0.50 | 19108 | 26344 | 20969 |

| Slow Sand/Membrane/DE Filtration/Unfiltered | | Monthly summary | |
|---|--------------------|---|--|
| 95% of daily turbidity readings ≤ 1 NTU? ¹ | CT's met everyday? | Chlorine residual at entry point always ≥ 0.2 mg/L? | Chlorine residual measured in 95% of distribution samples? |
| N/A | Yes | Yes | Yes |
| All daily turb readings ≤ 5 NTU? | Yes | Yes | Yes |

¹Filtered systems only

Printed Name: Anna Vosa, P.E.

Phone: (503) 823-7598

Signature: 

Date: 5/3/19

OHA Drinking Water Services - Raw Coliform Data (Unfiltered)

PWS Name: Portland Water Bureau

PWS ID#: OR 4100657

Month/Year: 4/2019

| Date | Fecal Coliform (CFU/100mL) | Comments |
|-----------|----------------------------|----------|
| 4/1/2019 | <1 | |
| 4/2/2019 | <1 | |
| 4/3/2019 | <1 | |
| 4/4/2019 | <1 | |
| 4/5/2019 | <1 | |
| 4/6/2019 | <1 | |
| 4/7/2019 | <1 | |
| 4/8/2019 | <1 | |
| 4/9/2019 | 2 | |
| 4/10/2019 | 2 | |
| 4/11/2019 | <1 | |
| 4/12/2019 | 1 | |
| 4/13/2019 | <1 | |
| 4/14/2019 | 1 | |
| 4/15/2019 | 1 | |
| 4/16/2019 | <1 | |
| 4/17/2019 | <1 | |
| 4/18/2019 | 1 | |
| 4/19/2019 | <1 | |
| 4/20/2019 | <1 | |
| 4/21/2019 | <1 | |
| 4/22/2019 | <1 | |
| 4/23/2019 | <1 | |
| 4/24/2019 | <1 | |
| 4/25/2019 | <1 | |
| 4/26/2019 | <1 | |
| 4/27/2019 | <1 | |
| 4/28/2019 | <1 | |
| 4/29/2019 | 1 | |
| 4/30/2019 | 1 | |

Note: Fecal Coliform sampled at active Headworks Raw Water Intake (either 2P or 2PIS)

Six Month Summary:

| | |
|----------------------------------|------|
| # of Samples For Fecal Coliform: | 178 |
| # of Samples > 20 CFU/100mL: | 0 |
| Percent: | 0.0% |