



Nick Fish, Commissioner
David G. Shaff, Administrator
1120 SW 5th Avenue, Room 600
Portland, Oregon 97204-1926
Information: 503-823-7404
www.portlandoregon.gov/water



An Equal Opportunity Employer

DATE: February 3, 2015

WQ 0.10.14.4

TO: Oregon Health Authority
Drinking Water Services

**SUBJECT: Monthly Report for January 2015
Bull Run Treatment Variance
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 January. Monitoring for *Cryptosporidium* at the Bull Run intake is done to comply with the conditions of Portland's Bull Run Treatment Variance (OHA Final Order, March 14, 2012). PWB is currently in Observation Monitoring. Compliance turbidity readings at the intake for the reporting month were not greater than 2.0 NTU.

Analytical Services, Inc. completed the analysis for *Cryptosporidium* (see attached report). A summary of the results for the reporting month and the previous eleven months is shown in the table below:

***Cryptosporidium* Data Summary for the Reporting Month and the Previous Eleven Months.**

Date Range		Total Field Samples	Total Field Sample Volume (L)	Total No. Oocysts Counted in Field Samples	Total Matrix Spikes	Average Matrix Spike Recovery (%)
Reporting Month:	01/01/2015-01/31/2015	8	400.1	0	1	12.1
Previous 11 Months:	02/01/2014-12/31/2014	233	4999.8	0	29	31.5

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

Sincerely,

Ann Richter
Environmental Program Manager

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



Microbiological Testing, Research & Consulting
130 Allen Brook Ln., Williston VT 05495

Cryptosporidium Laboratory Analysis Report

<u>Water System Information</u>		<u>Sample Information</u>	
PWS ID:	OR4100657	Collection Month & Year:	January 2015
PWS Name:	Portland Water Bureau 1900 N Interstate Avenue Portland, Oregon 97227	Report Date:	January 30, 2015
County:	Multnomah	Monitoring Regime:	Observation
		Source Water:	Bull Run Intake - WTP-A

Analytical Services, Inc. (ASI)

PWB Sample ID	Loc ID	Sample Collection Date	Sample Type	Sample Volume Filtered (L)	No. of Oocysts Spiked	No. of Oocysts Counted	No. Oocysts per Liter	Matrix Spike Recovery (%)	Analysis Method
BB47818	2P	1/4/2015	Field	50.0	0	0	0.00		EPA 1623
BB47866	2P	1/6/2015	Field	50.0	0	0	0.00		EPA 1623
BB47867	2P	1/6/2015	MS	50.7	99	12	0.24	12.1	EPA 1623
BB47971	2P	1/11/2015	Field	50.0	0	0	0.00		EPA 1623
BB48005	2P	1/13/2015	Field	50.1	0	0	0.00		EPA 1623
BB48163	2P	1/18/2015	Field	50.0	0	0	0.00		EPA 1623
BB48167	2P	1/20/2015	Field	50.0	0	0	0.00		EPA 1623
BB48259	2P	1/25/2015	Field	50.0	0	0	0.00		EPA 1623
BB48294	2P	1/27/2015	Field	50.0	0	0	0.00		EPA 1623

Notes: None

ASI Data Quality Statement:

All data reported above, unless otherwise noted, were generated in accordance with EPA Method 1623.

Reviewed by PS Jordan

Date Reviewed: January 30, 2015



Nick Fish, Commissioner
David G. Shaff, Administrator
1120 SW 5th Avenue, Room 600
Portland, Oregon 97204-1926
Information: 503-823-7404
www.portlandoregon.gov/water



An Equal Opportunity Employer

DATE: March 6, 2015

WQ 0.10.14.4

TO: Oregon Health Authority
Drinking Water Services

**SUBJECT: Monthly Report for February 2015
Bull Run Treatment Variance
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 February. Monitoring for *Cryptosporidium* at the Bull Run intake is done to comply with the conditions of Portland's Bull Run Treatment Variance (OHA Final Order, March 14, 2012). PWB is currently in Observation Monitoring. Compliance turbidity readings at the intake for the reporting month were not greater than 2.0 NTU.

Analytical Services, Inc. completed the analysis for *Cryptosporidium* (see attached report). A summary of the results for the reporting month and the previous eleven months is shown in the table below:

***Cryptosporidium* Data Summary for the Reporting Month and the Previous Eleven Months.**

Date Range		Total Field Samples	Total Field Sample Volume (L)	Total No. Oocysts Counted in Field Samples	Total Matrix Spikes	Average Matrix Spike Recovery (%)
Reporting Month:	02/01/2015-02/28/2015	8	400.0	0	1	49.5
Previous 11 Months:	03/01/2014-01/31/2015	233	4999.9	0	29	30.9

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

Sincerely,

Ann Richter
Environmental Program Manager

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



Microbiological Testing, Research & Consulting
130 Allen Brook Ln., Williston VT 05495

Cryptosporidium Laboratory Analysis Report

<u>Water System Information</u>		<u>Sample Information</u>	
PWS ID:	OR4100657	Collection Month & Year:	February 2015
PWS Name:	Portland Water Bureau 1900 N Interstate Avenue Portland, Oregon 97227	Report Date:	March 3, 2015
County:	Multnomah	Monitoring Regime:	Observation
		Source Water:	Bull Run Intake - WTP-A

Analytical Services, Inc. (ASI)

PWB Sample ID	Loc ID	Sample Collection Date	Sample Type	Sample Volume Filtered (L)	No. of Oocysts Spiked	No. of Oocysts Counted	No. Oocysts per Liter	Matrix Spike Recovery (%)	Analysis Method
BB48441	2P	2/1/2015	Field	50.0	0	0	0.00		EPA 1623
BB48505	2P	2/3/2015	Field	50.0	0	0	0.00		EPA 1623
BB48506	2P	2/3/2015	MS	50.8	99	49	0.96	49.5	EPA 1623
BB48657	2P	2/8/2015	Field	50.0	0	0	0.00		EPA 1623
BB48687	2P	2/10/2015	Field	50.0	0	0	0.00		EPA 1623
BB48848	2P	2/15/2015	Field	50.0	0	0	0.00		EPA 1623
BB48870	2P	2/17/2015	Field	50.0	0	0	0.00		EPA 1623
BB48966	2P	2/22/2015	Field	50.0	0	0	0.00		EPA 1623
BB49000	2P	2/24/2015	Field	50.0	0	0	0.00		EPA 1623

Notes: None

ASI Data Quality Statement:

All data reported above, unless otherwise noted, were generated in accordance with EPA Method 1623.

Reviewed by PS Jordan

Date Reviewed: March 3, 2015



Nick Fish, Commissioner
David G. Shaff, Administrator
1120 SW 5th Avenue, Room 600
Portland, Oregon 97204-1926
Information: 503-823-7404
www.portlandoregon.gov/water



An Equal Opportunity Employer

DATE: April 9, 2015 WQ 0.10.14.4
TO: Oregon Health Authority
Drinking Water Services

**SUBJECT: Monthly Report for March 2015
Bull Run Treatment Variance
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 March. Monitoring for *Cryptosporidium* at the Bull Run intake is done to comply with the conditions of Portland's Bull Run Treatment Variance (OHA Final Order, March 14, 2012). PWB is currently in Observation Monitoring. Compliance turbidity readings at the intake for the reporting month were not greater than 2.0 NTU.

Analytical Services, Inc. completed the analysis for *Cryptosporidium* (see attached report). A summary of the results for the reporting month and the previous eleven months is shown in the table below:

***Cryptosporidium* Data Summary for the Reporting Month and the Previous Eleven Months.**

Date Range		Total Field Samples	Total Field Sample Volume (L)	Total No. Oocysts Counted in Field Samples	Total Matrix Spikes	Average Matrix Spike Recovery (%)
Reporting Month:	03/01/2015-03/31/2015	10	500.1	0	2	23.8
Previous 11 Months:	04/01/2014-02/28/2015	232	4949.9	0	29	30.3

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

Sincerely,

Ann Richter
Environmental Program Manager

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



Microbiological Testing, Research & Consulting
130 Allen Brook Ln., Williston VT 05495

Cryptosporidium Laboratory Analysis Report

Water System Information		Sample Information	
PWS ID:	OR4100657	Collection Month & Year:	March 2015
PWS Name:	Portland Water Bureau 1900 N Interstate Avenue Portland, Oregon 97227	Report Date:	April 6, 2015
County:	Multnomah	Monitoring Regime:	Observation
		Source Water:	Bull Run Intake - WTP-A

Analytical Services, Inc. (ASI)

PWB Sample ID	Loc ID	Sample Collection Date	Sample Type	Sample Volume Filtered (L)	No. of Oocysts Spiked	No. of Oocysts Counted	No. Oocysts per Liter	Matrix Spike Recovery (%)	Analysis Method
BB49164	2P	3/1/2015	Field	50.0	0	0	0.00		EPA 1623
BB49133	2P	3/3/2015	Field	50.0	0	0	0.00		EPA 1623
BB49134	2P	3/3/2015	MS	50.6	99	41	0.81	41.4	EPA 1623
BB49337	2P	3/8/2015	Field	50.0	0	0	0.00		EPA 1623
BB49371	2P	3/10/2015	Field	50.1	0	0	0.00		EPA 1623
BB49528	2P	3/15/2015	Field	50.0	0	0	0.00		EPA 1623
BB49568	2P	3/17/2015	Field	50.0	0	0	0.00		EPA 1623
BB49649	2P	3/22/2015	Field	50.0	0	0	0.00		EPA 1623
BB49676	2P	3/24/2015	Field	50.0	0	0	0.00		EPA 1623
BB49844	2P	3/29/2015	Field	50.0	0	0	0.00		EPA 1623
BB49878	2P	3/31/2015	Field	50.0	0	0	0.00		EPA 1623
BB49879	2P	3/31/2015	MS	51.1	99	6	0.12	6.1	EPA 1623

Notes: None

ASI Data Quality Statement:

All data reported above, unless otherwise noted, were generated in accordance with EPA Method 1623.

Reviewed by PSunder

Date Reviewed: April 6, 2015



Nick Fish, Commissioner
David G. Shaff, Administrator

1120 SW 5th Avenue, Room 600
Portland, Oregon 97204-1926
Information: 503-823-7404
www.portlandoregon.gov/water



An Equal Opportunity Employer

DATE: May 7, 2015

WQ 0.10.14.4

TO: Oregon Health Authority
Drinking Water Services

**SUBJECT: Monthly Report for April 2015
Bull Run Treatment Variance and LT2ESWTR Round 2
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 conditions of Portland's Bull Run Treatment Variance (OHA Final Order, March 14, 2012). PWB is currently in Observation Monitoring. Compliance turbidity readings at the intake for the reporting month were not greater than 2.0 NTU.

This data is also being submitted to meet the requirements for the second round of monitoring for the Long Term 2 Enhanced Surface Water Treatment Rule. The sample collected on April 28, 2015 is designated as the "LT2 Round 2" sample, in accordance with PWB's LT2 Round 2 source water monitoring plan submitted to OHA on December 12, 2014.

Analytical Services, Inc. completed the analysis for *Cryptosporidium* (see attached report). A summary of the results for the reporting month and the previous eleven months is shown in the table below:

***Cryptosporidium* Data Summary for the Reporting Month and the Previous Eleven Months.**

Date Range		Total Field Samples	Total Field Sample Volume (L)	Total No. Oocysts Counted in Field Samples	Total Matrix Spikes	Average Matrix Spike Recovery (%)
Reporting Month:	04/01/2015-04/30/2015	8	400.0	0	1	7.1
Previous 11 Months:	05/01/2014-03/31/2015	233	5000.0	0	29	28.2

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

Sincerely,

Ann Richter
Environmental Program Manager

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



Microbiological Testing, Research & Consulting
130 Allen Brook Ln., Williston VT 05495

Cryptosporidium Laboratory Analysis Report

<u>Water System Information</u>		<u>Sample Information</u>	
PWS ID:	OR4100657	Collection Month & Year:	April 2015
PWS Name:	Portland Water Bureau 1900 N Interstate Avenue Portland, Oregon 97227	Report Date:	May 5, 2015
County:	Multnomah	Monitoring Regime:	Observation
		Source Water:	Bull Run Intake - WTP-A

Analytical Services, Inc. (ASI)

PWB Sample ID	Loc ID	Sample Collection Date	Sample Type	Sample Volume Filtered (L)	No. of Oocysts Spiked	No. of Oocysts Counted	No. Oocysts per Liter	Matrix Spike Recovery (%)	Analysis Method
BB49978	2P	4/5/2015	Field	50.0	0	0	0.00		EPA 1623
BB50021	2P	4/7/2015	Field	50.0	0	0	0.00		EPA 1623
BB50149	2P	4/12/2015	Field	50.0	0	0	0.00		EPA 1623
BB50212	2P	4/14/2015	Field	50.0	0	0	0.00		EPA 1623
BB50442	2P	4/19/2015	Field	50.0	0	0	0.00		EPA 1623
BB50471	2P	4/21/2015	Field	50.0	0	0	0.00		EPA 1623
BB50715	2P	4/26/2015	Field	50.0	0	0	0.00		EPA 1623
BB50744	2P	4/28/2015	Field	50.0	0	0	0.00		EPA 1623
BB50745	2P	4/28/2015	MS	51.0	99	7	0.14	7.1	EPA 1623

Notes: None

ASI Data Quality Statement:

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 PSulander

Date Reviewed: May 5, 2015



Nick Fish, Commissioner
David G. Shaff, Administrator
1120 SW 5th Avenue, Room 600
Portland, Oregon 97204-1926
Information: 503-823-7404
www.portlandoregon.gov/water



An Equal Opportunity Employer

DATE: June 9, 2015

WQ 0.10.14.4

TO: Oregon Health Authority
Drinking Water Services

**SUBJECT: Monthly Report for May 2015
Bull Run Treatment Variance and LT2ESWTR Round 2
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 May. Monitoring for *Cryptosporidium* at the Bull Run intake is done to comply with the conditions of Portland's Bull Run Treatment Variance (OHA Final Order, March 14, 2012). PWB is currently in Observation Monitoring. Compliance turbidity readings at the intake for the reporting month were not greater than 2.0 NTU.

This data is also being submitted to meet the requirements for the second round of monitoring for the Long Term 2 Enhanced Surface Water Treatment Rule. The sample collected on May 26, 2015 is designated as the "LT2 Round 2" sample, in accordance with PWB's LT2 Round 2 source water monitoring plan submitted to OHA on December 12, 2014.

Analytical Services, Inc. completed the analysis for *Cryptosporidium* (see attached report). A summary of the results for the reporting month and the previous eleven months is shown in the table below:

***Cryptosporidium* Data Summary for the Reporting Month and the Previous Eleven Months.**

Date Range		Total Field Samples	Total Field Sample Volume (L)	Total No. Oocysts Counted in Field Samples	Total Matrix Spikes	Average Matrix Spike Recovery (%)
Reporting Month:	05/01/2015-05/31/2015	9	450.0	0	2	17.2
Previous 11 Months:	06/01/2014-04/30/2015	233	5000.0	0	28	27.0

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

Sincerely,

Ann Richter
Environmental Program Manager

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



Microbiological Testing, Research & Consulting
130 Allen Brook Ln., Williston VT 05495

Cryptosporidium Laboratory Analysis Report

Water System Information		Sample Information	
PWS ID:	OR4100657	Collection Month & Year:	May 2015
PWS Name:	Portland Water Bureau 1900 N Interstate Avenue Portland, Oregon 97227	Report Date:	June 1, 2015
County:	Multnomah	Monitoring Regime:	Observation
		Source Water:	Bull Run Intake - WTP-A

Analytical Services, Inc. (ASI)

PWB Sample ID	Loc ID	Sample Collection Date	Sample Type	Sample Volume Filtered (L)	No. of Oocysts Spiked	No. of Oocysts Counted	No. Oocysts per Liter	Matrix Spike Recovery (%)	Analysis Method
BB50935	2P	5/3/2015	Field	50.0	0	0	0.00		EPA 1623
BB50983	2P	5/5/2015	Field	50.0	0	0	0.00		EPA 1623
BB51225	2P	5/10/2015	Field	50.0	0	0	0.00		EPA 1623
BB51228	2P	5/12/2015	Field	50.0	0	0	0.00		EPA 1623
BB51238	2P	5/12/2015	MS	50.9	99	19	0.37	19.2	EPA 1623
BB51431	2P	5/17/2015	Field	50.0	0	0	0.00		EPA 1623
BB51540	2P	5/19/2015	Field	50.0	0	0	0.00		EPA 1623
BB51740	2P	5/25/2015	Field	50.0	0	0	0.00		EPA 1623
BB51728	2P	5/26/2015	Field	50.0	0	0	0.00		EPA 1623
BB51729	2P	5/26/2015	MS	50.9	99	15	0.29	15.2	EPA 1623
BB51909	2P	5/31/2015	Field	50.0	0	0	0.00		EPA 1623

Notes: None

ASI Data Quality Statement:

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 PS Jordan

Date Reviewed: June 2, 2015



Nick Fish, Commissioner
David G. Shaff, Administrator
1120 SW 5th Avenue, Room 600
Portland, Oregon 97204-1926
Information: 503-823-7404
www.portlandoregon.gov/water



An Equal Opportunity Employer

DATE: July 8, 2015

WQ 0.10.14.4

TO: Oregon Health Authority
Drinking Water Services

**SUBJECT: Monthly Report for June 2015
Bull Run Treatment Variance and LT2ESWTR Round 2
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 June. Monitoring for *Cryptosporidium* at the Bull Run intake is done to comply with the conditions of Portland's Bull Run Treatment Variance (OHA Final Order, March 14, 2012). PWB is currently in Observation Monitoring. Compliance turbidity readings at the intake for the reporting month were not greater than 2.0 NTU.

This data is also being submitted to meet the requirements for the second round of monitoring for the Long Term 2 Enhanced Surface Water Treatment Rule. The sample collected on June 25, 2015 is designated as the "LT2 Round 2" sample, in accordance with PWB's LT2 Round 2 source water monitoring plan submitted to OHA on December 12, 2014. This sample was collected within the allowed 2-day window of the originally scheduled sample date of June 23, 2015.

Analytical Services, Inc. completed the analysis for *Cryptosporidium* (see attached report). A summary of the results for the reporting month and the previous eleven months is shown in the table below:

***Cryptosporidium* Data Summary for the Reporting Month and the Previous Eleven Months.**

Date Range		Total Field Samples	Total Field Sample Volume (L)	Total No. Oocysts Counted in Field Samples	Total Matrix Spikes	Average Matrix Spike Recovery (%)
Reporting Month:	06/01/2015-06/30/2015	9	450.0	0	1	40.0
Previous 11 Months:	07/01/2014-05/31/2015	232	4949.9	0	27	25.9

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

Sincerely,

Ann Richter
Environmental Program Manager

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



Microbiological Testing, Research & Consulting
 130 Allen Brook Ln., Williston VT 05495

Cryptosporidium Laboratory Analysis Report

Water System Information		Sample Information	
PWS ID:	OR4100657	Collection Month & Year:	June 2015
PWS Name:	Portland Water Bureau 1900 N Interstate Avenue Portland, Oregon 97227	Report Date:	July 7, 2015
County:	Multnomah	Monitoring Regime:	Observation
		Source Water:	Bull Run Intake - WTP-A

Analytical Services, Inc. (ASI)

PWB Sample ID	Loc ID	Sample Collection Date	Sample Type	Sample Volume Filtered (L)	No. of Oocysts Spiked	No. of Oocysts Counted	No. Oocysts per Liter	Matrix Spike Recovery (%)	Analysis Method
BB51934	2P	6/2/2015	Field	50.0	0	0	0.00		EPA 1623
BB52128	2P	6/9/2015	Field	50.0	0	0	0.00		EPA 1623
BB52155	2P	6/10/2015	Field	50.0	0	0	0.00		EPA 1623
BB52281	2P	6/14/2015	Field	50.0	0	0	0.00		EPA 1623
BB52315	2P	6/16/2015	Field	50.0	0	0	0.00		EPA 1623
BB52523	2P	6/21/2015	Field	50.0	0	0	0.00		EPA 1623
BB52662	2P	6/25/2015	Field	50.0	0	0	0.00		EPA 1623
BB52663	2P	6/25/2015	MS	50.6	100	40	0.79	40.0	EPA 1623
BB52727	2P	6/28/2015	Field	50.0	0	0	0.00		EPA 1623
BB52781	2P	6/30/2015	Field	50.0	0	0	0.00		EPA 1623

Notes: None

ASI Data Quality Statement:

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 *P. Swartz*

Date Reviewed: July 7, 2015



Nick Fish, Commissioner
David G. Shaff, Administrator

1120 SW 5th Avenue, Room 600
Portland, Oregon 97204-1926
Information: 503-823-7404
www.portlandoregon.gov/water



An Equal Opportunity Employer

DATE: August 7, 2015

WQ 0.10.14.4

TO: Oregon Health Authority
Drinking Water Services

**SUBJECT: Monthly Report for July 2015
Bull Run Treatment Variance and LT2ESWTR Round 2
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 July. Monitoring for *Cryptosporidium* at the Bull Run intake is done to comply with the conditions of Portland's Bull Run Treatment Variance (OHA Final Order, March 14, 2012). PWB is currently in Observation Monitoring. Compliance turbidity readings at the intake for the reporting month were not greater than 2.0 NTU.

This data is also being submitted to meet the requirements for the second round of monitoring for the Long Term 2 Enhanced Surface Water Treatment Rule. The sample collected on July 21, 2015 is designated as the "LT2 Round 2" sample, in accordance with PWB's LT2 Round 2 source water monitoring plan submitted to OHA on December 12, 2014.

Analytical Services, Inc. completed the analysis for *Cryptosporidium* (see attached report). A summary of the results for the reporting month and the previous eleven months is shown in the table below:

***Cryptosporidium* Data Summary for the Reporting Month and the Previous Eleven Months.**

Date Range		Total Field Samples	Total Field Sample Volume (L)	Total No. Oocysts Counted in Field Samples	Total Matrix Spikes	Average Matrix Spike Recovery (%)
Reporting Month:	07/01/2015-07/31/2015	8	400.0	0	1	19.2
Previous 11 Months:	08/01/2014-06/30/2015	232	4949.6	0	27	26.8

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

Sincerely,

Ann Richter
Environmental Program Manager

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



Microbiological Testing, Research & Consulting
130 Allen Brook Ln., Williston VT 05495

Cryptosporidium Laboratory Analysis Report

<u>Water System Information</u>		<u>Sample Information</u>	
PWS ID:	OR4100657	Collection Month & Year:	July 2015
PWS Name:	Portland Water Bureau 1900 N Interstate Avenue Portland, Oregon 97227	Report Date:	August 4, 2015
County:	Multnomah	Monitoring Regime:	Observation
		Source Water:	Bull Run Intake - WTP-A

Analytical Services, Inc. (ASI)

PWB Sample ID	Loc ID	Sample Collection Date	Sample Type	Sample Volume Filtered (L)	No. of Oocysts Spiked	No. of Oocysts Counted	No. Oocysts per Liter	Matrix Spike Recovery (%)	Analysis Method
BB53009	2P	7/5/2015	Field	50.0	0	0	0.00		EPA 1623
BB53060	2P	7/7/2015	Field	50.0	0	0	0.00		EPA 1623
BB53275	2P	7/12/2015	Field	50.0	0	0	0.00		EPA 1623
BB53448	2P	7/16/2015	Field	50.0	0	0	0.00		EPA 1623
BB53459	2P	7/21/2015	Field	50.0	0	0	0.00		EPA 1623
BB53460	2P	7/21/2015	MS	50.9	99	19	0.37	19.2	EPA 1623
BB53635	2P	7/22/2015	Field	50.0	0	0	0.00		EPA 1623
BB53700	2P	7/26/2015	Field	50.0	0	0	0.00		EPA 1623
BB53738	2P	7/28/2015	Field	50.0	0	0	0.00		EPA 1623

Notes: None

ASI Data Quality Statement:

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 PSchneider

Date Reviewed: August 4, 2015



Nick Fish, Commissioner
 Michael Stuhr, P.E., Administrator



1120 SW 5th Avenue, Room 600
 Portland, Oregon 97204-1926
 Information: 503-823-7404
 www.portlandoregon.gov/water

DATE: September 8, 2015

WQ 0.10.14.4

TO: Oregon Health Authority
 Drinking Water Services

**SUBJECT: Monthly Report for August 2015
 Bull Run Treatment Variance and LT2ESWTR Round 2
 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 August. Monitoring for *Cryptosporidium* at the Bull Run intake is done to comply with the conditions of Portland's Bull Run Treatment Variance (OHA Final Order, March 14, 2012). PWB is currently in Observation Monitoring. Compliance turbidity readings at the intake for the reporting month were not greater than 2.0 NTU.

This data is also being submitted to meet the requirements for the second round of monitoring for the Long Term 2 Enhanced Surface Water Treatment Rule. The sample collected on August 18, 2015 is designated as the "LT2 Round 2" sample, in accordance with PWB's LT2 Round 2 source water monitoring plan submitted to OHA on December 12, 2014.

Analytical Services, Inc. completed the analysis for *Cryptosporidium* (see attached report). A summary of the results for the reporting month and the previous eleven months is shown in the table below:

***Cryptosporidium* Data Summary for the Reporting Month and the Previous Eleven Months.**

Date Range		Total Field Samples	Total Field Sample Volume (L)	Total No. Oocysts Counted in Field Samples	Total Matrix Spikes	Average Matrix Spike Recovery (%)
Reporting Month:	08/01/2015-08/31/2015	41	497.4	0	4	29.3
Previous 11 Months:	09/01/2014-07/31/2015	204	4948.4	0	24	27.3

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

Sincerely,

Ann Richter
 Environmental Program Manager

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



Microbiological Testing, Research & Consulting
130 Allen Brook Ln., Williston VT 05495

Cryptosporidium Laboratory Analysis Report

<u>Water System Information</u>		<u>Sample Information</u>	
PWS ID:	OR4100657	Collection Month & Year:	August 2015
PWS Name:	Portland Water Bureau 1900 N Interstate Avenue Portland, Oregon 97227	Report Date:	September 3, 2015
County:	Multnomah	Monitoring Regime:	Observation
		Source Water:	Bull Run Intake - WTP-A

Analytical Services, Inc. (ASI)

PWB Sample ID	Loc ID	Sample Collection Date	Sample Type	Sample Volume Filtered (L)	No. of Oocysts Spiked	No. of Oocysts Counted	No. Oocysts per Liter	Matrix Spike Recovery (%)	Analysis Method
BB53942	Headworks	8/2/2015	Field	50.0	0	0	0.00		EPA 1623
BB54000	Headworks	8/4/2015	Field	11.3	0	0	0.00		EPA 1623 Precoat
BB54001	Headworks	8/4/2015	MS	11.3	99	33	2.92	33.3	EPA 1623 Precoat
BB54002	Headworks	8/4/2015	Field	11.3	0	0	0.00		EPA 1623 Precoat
BB54003	Headworks	8/4/2015	Field	11.4	0	0	0.00		EPA 1623 Precoat
BB54004	Headworks	8/4/2015	Field	11.2	0	0	0.00		EPA 1623 Precoat
BB54005	Headworks	8/4/2015	Field	11.3	0	0	0.00		EPA 1623 Precoat
BB54199	Headworks	8/9/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB54200	Headworks	8/9/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB54203	Headworks	8/9/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB54259	Headworks	8/11/2015	Field	11.2	0	0	0.00		EPA 1623 Precoat
BB54260	Headworks	8/11/2015	Field	11.3	0	0	0.00		EPA 1623 Precoat
BB54261	Headworks	8/11/2015	Field	11.2	0	0	0.00		EPA 1623 Precoat
BB54262	Headworks	8/11/2015	Field	11.2	0	0	0.00		EPA 1623 Precoat
BB54263	Headworks	8/11/2015	Field	11.2	0	0	0.00		EPA 1623 Precoat
BB54264	Headworks	8/11/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB54385	Headworks	8/12/2015	Field	11.0	0	0	0.00		EPA 1623 Precoat
BB54386	Headworks	8/12/2015	MS	10.9	99	29	2.65	29.3	EPA 1623 Precoat
BB54429	Headworks	8/16/2015	Field	11.3	0	0	0.00		EPA 1623 Precoat
BB54430	Headworks	8/16/2015	Field	11.3	0	0	0.00		EPA 1623 Precoat
BB54431	Headworks	8/16/2015	Field	11.3	0	0	0.00		EPA 1623 Precoat
BB54502	Headworks	8/18/2015	Field	11.0	0	0	0.00		EPA 1623 Precoat
BB54503	Headworks	8/18/2015	MS	11.0	99	35	3.18	35.4	EPA 1623 Precoat
BB54504	Headworks	8/18/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB54505	Headworks	8/18/2015	Field	11.2	0	0	0.00		EPA 1623 Precoat
BB54506	Headworks	8/18/2015	Field	11.2	0	0	0.00		EPA 1623 Precoat
BB54507	Headworks	8/18/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB54562	Headworks	8/19/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB54563	Headworks	8/19/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB54660	Headworks	8/23/2015	Field	11.0	0	0	0.00		EPA 1623 Precoat
BB54661	Headworks	8/23/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB54662	Headworks	8/23/2015	Field	11.0	0	0	0.00		EPA 1623 Precoat
BB54663	Headworks	8/23/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB54664	Headworks	8/23/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB54711	Headworks	8/25/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat

BB54712	Headworks	8/25/2015	MS	11.3	99	19	1.69	19.2	EPA 1623 Precoat
BB54713	Headworks	8/25/2015	Field	11.3	0	0	0.00		EPA 1623 Precoat
BB54714	Headworks	8/25/2015	Field	11.3	0	0	0.00		EPA 1623 Precoat
BB54715	Headworks	8/25/2015	Field	11.2	0	0	0.00		EPA 1623 Precoat
BB54716	Headworks	8/25/2015	Field	11.3	0	0	0.00		EPA 1623 Precoat
BB54925	Headworks	8/30/2015	Field	11.2	0	0	0.00		EPA 1623 Precoat
BB54926	Headworks	8/30/2015	Field	11.2	0	0	0.00		EPA 1623 Precoat
BB54927	Headworks	8/30/2015	Field	11.2	0	0	0.00		EPA 1623 Precoat
BB54928	Headworks	8/30/2015	Field	11.3	0	0	0.00		EPA 1623 Precoat
BB54929	Headworks	8/30/2015	Field	11.3	0	0	0.00		EPA 1623 Precoat

Notes: None

ASI Data Quality Statement:

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 PSulander

Date Reviewed: September 3, 2015



Nick Fish, Commissioner
 Michael Stuhr, P.E., Administrator



1120 SW 5th Avenue, Room 600
 Portland, Oregon 97204-1926
 Information: 503-823-7404
 www.portlandoregon.gov/water

DATE: October 8, 2015

WQ 0.10.14.4

TO: Oregon Health Authority
 Drinking Water Services

**SUBJECT: Monthly Report for September 2015
 Bull Run Treatment Variance and LT2ESWTR Round 2
 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 September. Monitoring for *Cryptosporidium* at the Bull Run intake is done to comply with the conditions of Portland's Bull Run Treatment Variance (OHA Final Order, March 14, 2012). PWB is currently in Observation Monitoring. Compliance turbidity readings at the intake for the reporting month were not greater than 2.0 NTU.

This data is also being submitted to meet the requirements for the second round of monitoring for the Long Term 2 Enhanced Surface Water Treatment Rule. The sample collected on September 15, 2015 is designated as the "LT2 Round 2" sample, in accordance with PWB's LT2 Round 2 source water monitoring plan submitted to OHA on December 12, 2014.

Analytical Services, Inc. completed the analysis for *Cryptosporidium* (see attached report). A summary of the results for the reporting month and the previous eleven months is shown in the table below:

***Cryptosporidium* Data Summary for the Reporting Month and the Previous Eleven Months.**

Date Range		Total Field Samples	Total Field Sample Volume (L)	Total No. Oocysts Counted in Field Samples	Total Matrix Spikes	Average Matrix Spike Recovery (%)
Reporting Month:	09/01/2015-09/30/2015	45	500.8	0	5	30.8
Previous 11 Months:	10/01/2014-08/31/2015	195	4893.5	0	23	28.8

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

Sincerely,

Ann Richter
 Environmental Program Manager

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



Microbiological Testing, Research & Consulting
130 Allen Brook Ln., Williston VT 05495

Cryptosporidium Laboratory Analysis Report

<u>Water System Information</u>		<u>Sample Information</u>	
PWS ID:	OR4100657	Collection Month & Year:	September 2015
PWS Name:	Portland Water Bureau 1900 N Interstate Avenue Portland, Oregon 97227	Report Date:	October 5, 2015
County:	Multnomah	Monitoring Regime:	Observation
		Source Water:	Bull Run Intake - WTP-A

Analytical Services, Inc. (ASI)

PWB Sample ID	Loc ID	Sample Collection Date	Sample Type	Sample Volume Filtered (L)	No. of Oocysts Spiked	No. of Oocysts Counted	No. Oocysts per Liter	Matrix Spike Recovery (%)	Analysis Method
BB54992	Headworks	9/1/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB54993	Headworks	9/1/2015	MS	11.1	99	29	2.62	29.3	EPA 1623 Precoat
BB54994	Headworks	9/1/2015	Field	11.2	0	0	0.00		EPA 1623 Precoat
BB54995	Headworks	9/1/2015	Field	11.2	0	0	0.00		EPA 1623 Precoat
BB54996	Headworks	9/1/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB54997	Headworks	9/1/2015	Field	11.2	0	0	0.00		EPA 1623 Precoat
BB55128	Headworks	9/7/2015	Field	11.0	0	0	0.00		EPA 1623 Precoat
BB55129	Headworks	9/7/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB55130	Headworks	9/7/2015	Field	11.0	0	0	0.00		EPA 1623 Precoat
BB55131	Headworks	9/7/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB55132	Headworks	9/7/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB55170	Headworks	9/8/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB55171	Headworks	9/8/2015	MS	11.2	99	16	1.43	16.2	EPA 1623 Precoat
BB55172	Headworks	9/8/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB55173	Headworks	9/8/2015	Field	11.2	0	0	0.00		EPA 1623 Precoat
BB55174	Headworks	9/8/2015	Field	11.2	0	0	0.00		EPA 1623 Precoat
BB55175	Headworks	9/8/2015	Field	11.2	0	0	0.00		EPA 1623 Precoat
BB55329	Headworks	9/13/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB55330	Headworks	9/13/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB55331	Headworks	9/13/2015	Field	11.3	0	0	0.00		EPA 1623 Precoat
BB55332	Headworks	9/13/2015	Field	11.2	0	0	0.00		EPA 1623 Precoat
BB55333	Headworks	9/13/2015	Field	11.3	0	0	0.00		EPA 1623 Precoat
BB55413	Headworks	9/15/2015	Field	11.0	0	0	0.00		EPA 1623 Precoat
BB55414	Headworks	9/15/2015	MS	11.0	99	35	3.17	35.4	EPA 1623 Precoat
BB55417	Headworks	9/15/2015	Field	11.2	0	0	0.00		EPA 1623 Precoat
BB55418	Headworks	9/15/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB55415	Headworks	9/15/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB55416	Headworks	9/15/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB55576	Headworks	9/20/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB55577	Headworks	9/20/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB55578	Headworks	9/20/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB55579	Headworks	9/20/2015	Field	11.0	0	0	0.00		EPA 1623 Precoat
BB55580	Headworks	9/20/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB55627	Headworks	9/22/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB55628	Headworks	9/22/2015	MS	11.2	99	24	2.14	24.2	EPA 1623 Precoat
BB55629	Headworks	9/22/2015	Field	11.3	0	0	0.00		EPA 1623 Precoat
BB55630	Headworks	9/22/2015	Field	11.2	0	0	0.00		EPA 1623 Precoat

BB55631	Headworks	9/22/2015	Field	11.3	0	0	0.00		EPA 1623 Precoat
BB55632	Headworks	9/22/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB55811	Headworks	9/27/2015	Field	11.2	0	0	0.00		EPA 1623 Precoat
BB55812	Headworks	9/27/2015	Field	11.2	0	0	0.00		EPA 1623 Precoat
BB55813	Headworks	9/27/2015	Field	11.3	0	0	0.00		EPA 1623 Precoat
BB55814	Headworks	9/27/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB55815	Headworks	9/27/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB55874	Headworks	9/29/2015	Field	11.0	0	0	0.00		EPA 1623 Precoat
BB55875	Headworks	9/29/2015	MS	11.0	100	49	4.44	49.0	EPA 1623 Precoat
BB55876	Headworks	9/29/2015	Field	11.0	0	0	0.00		EPA 1623 Precoat
BB55877	Headworks	9/29/2015	Field	11.0	0	0	0.00		EPA 1623 Precoat
BB55878	Headworks	9/29/2015	Field	11.0	0	0	0.00		EPA 1623 Precoat
BB55879	Headworks	9/29/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat

Notes: None

ASI Data Quality Statement:

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 PSulander

Date Reviewed: October 5, 2015



Nick Fish, Commissioner
 Michael Stuhr, P.E., Administrator



1120 SW 5th Avenue, Room 600
 Portland, Oregon 97204-1926
 Information: 503-823-7404
 www.portlandoregon.gov/water

DATE: November 6, 2015

WQ 0.10.14.4

TO: Oregon Health Authority
 Drinking Water Services

**SUBJECT: Monthly Report for October 2015
 Bull Run Treatment Variance and LT2ESWTR Round 2
 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 October. Monitoring for *Cryptosporidium* at the Bull Run intake is done to comply with the conditions of Portland’s Bull Run Treatment Variance (OHA Final Order, March 14, 2012). PWB is currently in Observation Monitoring. Compliance turbidity readings at the intake for the reporting month were not greater than 2.0 NTU.

This data is also being submitted to meet the requirements for the second round of monitoring for the Long Term 2 Enhanced Surface Water Treatment Rule. The sample collected on October 13, 2015 is designated as the “LT2 Round 2” sample, in accordance with PWB’s LT2 Round 2 source water monitoring plan submitted to OHA on December 12, 2014.

Analytical Services, Inc. completed the analysis for *Cryptosporidium* (see attached report). A summary of the results for the reporting month and the previous eleven months is shown in the table below:

***Cryptosporidium* Data Summary for the Reporting Month and the Previous Eleven Months.**

Date Range		Total Field Samples	Total Field Sample Volume (L)	Total No. Oocysts Counted in Field Samples	Total Matrix Spikes	Average Matrix Spike Recovery (%)
Reporting Month:	10/01/2015-10/31/2015	40	443.7	0	3	27.3
Previous 11 Months:	11/01/2014-09/30/2015	200	4948.9	0	24	29.1

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

Sincerely,

Ann Richter
 Environmental Program Manager

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



Microbiological Testing, Research & Consulting
130 Allen Brook Ln., Williston VT 05495

Cryptosporidium Laboratory Analysis Report

<u>Water System Information</u>		<u>Sample Information</u>	
PWS ID:	OR4100657	Collection Month & Year:	October 2015
PWS Name:	Portland Water Bureau 1900 N Interstate Avenue Portland, Oregon 97227	Report Date:	November 2, 2015
County:	Multnomah	Monitoring Regime:	Observation
		Source Water:	Bull Run Intake - WTP-A

Analytical Services, Inc. (ASI)

PWB Sample ID	Loc ID	Sample Collection Date	Sample Type	Sample Volume Filtered (L)	No. of Oocysts Spiked	No. of Oocysts Counted	No. Oocysts per Liter	Matrix Spike Recovery (%)	Analysis Method
BB56042	Headworks	10/4/2015	Field	11.0	0	0	0.00		EPA 1623 Precoat
BB56043	Headworks	10/4/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB56044	Headworks	10/4/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB56045	Headworks	10/4/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB56046	Headworks	10/4/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB56091	Headworks	10/6/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB56092	Headworks	10/6/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB56093	Headworks	10/6/2015	Field	11.0	0	0	0.00		EPA 1623 Precoat
BB56094	Headworks	10/6/2015	Field	11.0	0	0	0.00		EPA 1623 Precoat
BB56095	Headworks	10/6/2015	Field	10.9	0	0	0.00		EPA 1623 Precoat
BB56270	Headworks	10/11/2015	Field	11.2	0	0	0.00		EPA 1623 Precoat
BB56271	Headworks	10/11/2015	Field	11.2	0	0	0.00		EPA 1623 Precoat
BB56272	Headworks	10/11/2015	Field	11.3	0	0	0.00		EPA 1623 Precoat
BB56273	Headworks	10/11/2015	Field	11.2	0	0	0.00		EPA 1623 Precoat
BB56274	Headworks	10/11/2015	Field	11.2	0	0	0.00		EPA 1623 Precoat
BB56328	Headworks	10/13/2015	MS	11.1	99	25	2.26	25.3	EPA 1623 Precoat
BB56327	Headworks	10/13/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB56329	Headworks	10/13/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB56330	Headworks	10/13/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB56331	Headworks	10/13/2015	Field	11.0	0	0	0.00		EPA 1623 Precoat
BB56364	Headworks	10/13/2015	Field	10.7	0	0	0.00		EPA 1623 Precoat
BB56428	Headworks	10/18/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB56429	Headworks	10/18/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB56430	Headworks	10/18/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB56431	Headworks	10/18/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB56432	Headworks	10/18/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB56481	Headworks	10/20/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB56482	Headworks	10/20/2015	MS	11.2	99	27	2.41	27.3	EPA 1623 Precoat
BB56483	Headworks	10/20/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB56484	Headworks	10/20/2015	Field	11.2	0	0	0.00		EPA 1623 Precoat
BB56485	Headworks	10/20/2015	Field	11.2	0	0	0.00		EPA 1623 Precoat
BB56486	Headworks	10/20/2015	Field	11.2	0	0	0.00		EPA 1623 Precoat
BB56673	Headworks	10/25/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB56674	Headworks	10/25/2015	Field	11.2	0	0	0.00		EPA 1623 Precoat
BB56675	Headworks	10/25/2015	Field	11.2	0	0	0.00		EPA 1623 Precoat
BB56676	Headworks	10/25/2015	Field	11.0	0	0	0.00		EPA 1623 Precoat
BB56677	Headworks	10/25/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB56718	Headworks	10/27/2015	Field	11.0	0	0	0.00		EPA 1623 Precoat
BB56719	Headworks	10/27/2015	MS	11.0	99	29	2.63	29.3	EPA 1623 Precoat
BB56720	Headworks	10/27/2015	Field	11.0	0	0	0.00		EPA 1623 Precoat
BB56721	Headworks	10/27/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB56722	Headworks	10/27/2015	Field	11.0	0	0	0.00		EPA 1623 Precoat
BB56723	Headworks	10/27/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat

Notes: None

ASI Data Quality Statement:

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 PS Jordan

Date Reviewed: November 2, 2015



Nick Fish, Commissioner
Michael Stuhr, P.E., Administrator

1120 SW 5th Avenue, Room 600
Portland, Oregon 97204-1926
Information: 503-823-7404
www.portlandoregon.gov/water



DATE: December 8, 2015

WQ 0.10.14.4

TO: Oregon Health Authority
Drinking Water Services

**SUBJECT: Monthly Report for November 2015
Bull Run Treatment Variance and LT2ESWTR Round 2
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 November. Monitoring for *Cryptosporidium* at the Bull Run intake is done to comply with the conditions of Portland's Bull Run Treatment Variance (OHA Final Order, March 14, 2012). PWB is currently in Observation Monitoring. During the reporting month, compliance turbidity readings at the intake were greater than 2.0 NTU on November 2, 2015 and November 18, 2015, requiring the collection of turbidity-based samples (see attached report).

This data is also being submitted to meet the requirements for the second round of monitoring for the Long Term 2 Enhanced Surface Water Treatment Rule. The sample collected on November 10, 2015 is designated as the "LT2 Round 2" sample, in accordance with PWB's LT2 Round 2 source water monitoring plan submitted to OHA on December 12, 2014.

Analytical Services, Inc. completed the analysis for *Cryptosporidium* (see attached report). Please note that PWB switched back to EPA Method 1623 with no modifications on November 10, 2015. A summary of the results for the reporting month and the previous eleven months is shown in the table below:

***Cryptosporidium* Data Summary for the Reporting Month and the Previous Eleven Months.**

Date Range		Total Field Samples	Total Field Sample Volume (L)	Total No. Oocysts Counted in Field Samples	Total Matrix Spikes	Average Matrix Spike Recovery (%)
Reporting Month:	11/01/2015-11/30/2015	27	571.9	0	2	33.9
Previous 11 Months:	12/01/2014-10/31/2015	194	4842.1	0	23	27.3

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

Sincerely,

Ann Richter
Environmental Program Manager

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



Microbiological Testing, Research & Consulting
130 Allen Brook Ln., Williston VT 05495

Cryptosporidium Laboratory Analysis Report

Water System Information		Sample Information	
PWS ID:	OR4100657	Collection Month & Year:	November 2015
PWS Name:	Portland Water Bureau 1900 N Interstate Avenue Portland, Oregon 97227	Report Date:	December 3, 2015
County:	Multnomah	Monitoring Regime:	Observation
		Source Water:	Bull Run Intake - WTP-A

Analytical Services, Inc. (ASI)

PWB Sample ID	Loc ID	Sample Collection Date	Sample Type	Sample Volume Filtered (L)	No. of Oocysts Spiked	No. of Oocysts Counted	No. Oocysts per Liter	Matrix Spike Recovery (%)	Analysis Method
BB56883	Intake 2P	11/1/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB56884	Intake 2P	11/1/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB56885	Intake 2P	11/1/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB56886	Intake 2P	11/1/2015	Field	11.2	0	0	0.00		EPA 1623 Precoat
BB56887	Intake 2P	11/1/2015	Field	11.2	0	0	0.00		EPA 1623 Precoat
BB56932	Intake 2P	11/2/2015	Field	10.8	0	0	0.00		EPA 1623 Precoat
BB56934	Intake 2P	11/2/2015	Field	10.8	0	0	0.00		EPA 1623 Precoat
BB56935	Intake 2P	11/2/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB56936	Intake 2P	11/2/2015	Field	10.9	0	0	0.00		EPA 1623 Precoat
BB56836	Intake 2P	11/2/2015	Field	10.9	0	0	0.00		EPA 1623 Precoat
BB56943	Intake 2P	11/3/2015	Field	11.0	0	0	0.00		EPA 1623 Precoat
BB56944	Intake 2P	11/3/2015	MS	11.1	99	30	2.70	30.3	EPA 1623 Precoat
BB56945	Intake 2P	11/3/2015	Field	11.2	0	0	0.00		EPA 1623 Precoat
BB56946	Intake 2P	11/3/2015	Field	11.2	0	0	0.00		EPA 1623 Precoat
BB56947	Intake 2P	11/3/2015	Field	11.3	0	0	0.00		EPA 1623 Precoat
BB56948	Intake 2P	11/3/2015	Field	11.2	0	0	0.00		EPA 1623 Precoat
BB57190	Intake 2P	11/8/2015	Field	11.0	0	0	0.00		EPA 1623 Precoat
BB57191	Intake 2P	11/8/2015	Field	11.2	0	0	0.00		EPA 1623 Precoat
BB57192	Intake 2P	11/8/2015	Field	11.2	0	0	0.00		EPA 1623 Precoat
BB57193	Intake 2P	11/8/2015	Field	11.2	0	0	0.00		EPA 1623 Precoat
BB57194	Intake 2P	11/8/2015	Field	11.1	0	0	0.00		EPA 1623 Precoat
BB57223	Intake 2P	11/10/2015	Field	50.0	0	0	0.00		EPA 1623
BB57224	Intake 2P	11/10/2015	MS	51.2	99	37	0.72	37.4	EPA 1623
BB57407	Intake 2P	11/15/2015	Field	50.0	0	0	0.00		EPA 1623
BB57479	Intake 2P	11/17/2015	Field	50.1	0	0	0.00		EPA 1623
BB57590	Intake 2P	11/18/2015	Field	50.0	0	0	0.00		EPA 1623
BB57674	Intake 2P	11/22/2015	Field	50.0	0	0	0.00		EPA 1623
BB57676	Intake 2P	11/23/2015	Field	50.0	0	0	0.00		EPA 1623
BB57802	Intake 2P	11/29/2015	Field	50.0	0	0	0.00		EPA 1623

Notes: None

ASI Data Quality Statement:

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 PSWarden

Date Reviewed: December 3, 2015

Bull Run Treatment Variance Turbidity Report

PWS Name: Portland Water Bureau

ID #: OR4100657

Month/Year: 10/2012

DAY	Highest Compliance Reading (NTU)	Sample Required?	Sample ID
11/1/2015	1.28	No	N/A
11/2/2015	2.63	Yes	BB56836, BB56932, BB56934, BB56935, BB56936
11/3/2015	1.44	No	N/A
11/4/2015	1.44	No	N/A
11/5/2015	1.36	No	N/A
11/6/2015	1.23	No	N/A
11/7/2015	1.15	No	N/A
11/8/2015	1.13	No	N/A
11/9/2015	1.05	No	N/A
11/10/2015	0.98	No	N/A
11/11/2015	0.95	No	N/A
11/12/2015	0.87	No	N/A
11/13/2015	0.80	No	N/A
11/14/2015	0.74	No	N/A
11/15/2015	0.74	No	N/A
11/16/2015	0.65	No	N/A
11/17/2015	1.01	No	N/A
11/18/2015	2.04	Yes	BB57590
11/19/2015	1.43	No	N/A
11/20/2015	1.46	No	N/A
11/21/2015	1.24	No	N/A
11/22/2015	1.31	No	N/A
11/23/2015	1.38	No	N/A
11/24/2015	1.38	No	N/A
11/25/2015	1.39	No	N/A
11/26/2015	1.29	No	N/A
11/27/2015	1.24	No	N/A
11/28/2015	1.20	No	N/A
11/29/2015	1.17	No	N/A
11/30/2015	1.11	No	N/A



DATE: January 7, 2016

WQ 0.10.14.4

TO: Oregon Health Authority
Drinking Water Services

**SUBJECT: Monthly Report for December 2015
Bull Run Treatment Variance and LT2ESWTR Round 2
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 December. Monitoring for *Cryptosporidium* at the Bull Run intake is done to comply with the conditions of Portland's Bull Run Treatment Variance (OHA Final Order, March 14, 2012). PWB is currently in Observation Monitoring. During the reporting month, compliance turbidity readings at the intake were greater than 2.0 NTU on December 9-13, 2015, requiring the collection of turbidity-based samples (see attached report).

This data is also being submitted to meet the requirements for the second round of monitoring for the Long Term 2 Enhanced Surface Water Treatment Rule. The sample collected on December 8, 2015 is designated as the "LT2 Round 2" sample, in accordance with PWB's LT2 Round 2 source water monitoring plan submitted to OHA on December 12, 2014.

Analytical Services, Inc. completed the analysis for *Cryptosporidium* (see attached report). A summary of the results for the reporting month and the previous eleven months is shown in the table below:

***Cryptosporidium* Data Summary for the Reporting Month and the Previous Eleven Months.**

Date Range		Total Field Samples	Total Field Sample Volume (L)	Total No. Oocysts Counted in Field Samples	Total Matrix Spikes	Average Matrix Spike Recovery (%)
Reporting Month:	12/01/2015-12/31/2015	13	650.1	0	1	56.6
Previous 11 Months:	01/01/2015-11/30/2015	213	5014	0	23	27.4

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

Sincerely,



Ann Richter
Environmental Program Manager

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



Microbiological Testing, Research & Consulting
130 Allen Brook Ln., Williston VT 05495

Cryptosporidium Laboratory Analysis Report

Water System Information		Sample Information	
PWS ID:	OR4100657	Collection Month & Year:	December 2015
PWS Name:	Portland Water Bureau 1900 N Interstate Avenue Portland, Oregon 97227	Report Date:	December 31, 2015
County:	Multnomah	Monitoring Regime:	Observation
		Source Water:	Bull Run Intake - WTP-A

Analytical Services, Inc. (ASI)

PWB Sample ID	Loc ID	Sample Collection Date	Sample Type	Sample Volume Filtered (L)	No. of Oocysts Spiked	No. of Oocysts Counted	No. Oocysts per Liter	Matrix Spike Recovery (%)	Analysis Method
BB57832	Intake 2P	12/1/2015	Field	50.0	0	0	0.00		EPA Method 1623
BB58053	Intake 2P	12/6/2015	Field	50.0	0	0	0.00		EPA Method 1623
BB58066	Intake 2P	12/8/2015	Field	50.0	0	0	0.00		EPA Method 1623
BB58067	Intake 2P	12/8/2015	MS	50.8	99	56	1.10	56.6	EPA Method 1623
BB58129	Intake 2P	12/9/2015	Field	50.1	0	0	0.00		EPA Method 1623
BB58144	Intake 2P	12/10/2015	Field	50.0	0	0	0.00		EPA Method 1623
BB58152	Intake 2P	12/11/2015	Field	50.0	0	0	0.00		EPA Method 1623
BB58196	Intake 2P	12/12/2015	Field	50.0	0	0	0.00		EPA Method 1623
BB58192	Intake 2P	12/13/2015	Field	50.0	0	0	0.00		EPA Method 1623
BB58226	Intake 2P	12/15/2015	Field	50.0	0	0	0.00		EPA Method 1623
BB58397	Intake 2P	12/20/2015	Field	50.0	0	0	0.00		EPA Method 1623
BB58399	Intake 2P	12/21/2015	Field	50.0	0	0	0.00		EPA Method 1623
BB 58488	Intake 2P	12/27/2015	Field	50.0	0	0	0.00		EPA Method 1623
BB58490	Intake 2P	12/28/2015	Field	50.0	0	0	0.00		EPA Method 1623

Notes: None

ASI Data Quality Statement:

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 P. Swindan

Date Reviewed: December 31, 2015

Bull Run Treatment Variance Turbidity Report

PWS Name: Portland Water Bureau

ID #: OR4100657

Month/Year: 12/2015

DAY	Highest Compliance Reading (NTU)	Sample Required?	Sample ID
12/1/2015	1.07	No	N/A
12/2/2015	1.01	No	N/A
12/3/2015	0.97	No	N/A
12/4/2015	1.03	No	N/A
12/5/2015	0.91	No	N/A
12/6/2015	0.89	No	N/A
12/7/2015	0.82	No	N/A
12/8/2015	1.94	No	N/A
12/9/2015	2.76	Yes	BB58129
12/10/2015	2.99	Yes	BB58144
12/11/2015	2.84	Yes	BB58152
12/12/2015	2.32	Yes	BB58196
12/13/2015	2.16	Yes	BB58192
12/14/2015	1.70	No	N/A
12/15/2015	1.41	No	N/A
12/16/2015	1.28	No	N/A
12/17/2015	1.41	No	N/A
12/18/2015	1.28	No	N/A
12/19/2015	1.26	No	N/A
12/20/2015	1.22	No	N/A
12/21/2015	1.17	No	N/A
12/22/2015	1.06	No	N/A
12/23/2015	1.08	No	N/A
12/24/2015	1.01	No	N/A
12/25/2015	0.95	No	N/A
12/26/2015	0.92	No	N/A
12/27/2015	0.90	No	N/A
12/28/2015	0.86	No	N/A
12/29/2015	0.80	No	N/A
12/30/2015	0.79	No	N/A
12/31/2015	0.75	No	N/A