

OHA - Drinking Water Services - Turbidity Monitoring Report Form

County: Multnomah

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

Portland Water Bureau

ID #: OR 4100657


WTP-A

Month/Year: 05/2021

DAY	12 AM (NTU)	4 AM (NTU)	8 AM (NTU)	NOON (NTU)	4 PM (NTU)	8 PM (NTU)	Highest Reading (NTU)
1	0.25	0.25	0.26	0.25	0.25	0.25	0.26
2	0.25	0.25	0.24	0.25	0.25	0.27	0.27
3	0.26	0.26	0.25	0.24	0.25	0.25	0.26
4	0.25	0.24	0.24	0.27	0.24	0.24	0.27
5	0.23	0.24	0.23	0.23	0.24	0.25	0.25
6	0.24	0.25	0.24	0.24	0.24	0.24	0.25
7	0.24	0.25	0.24	0.24	0.26	0.24	0.26
8	0.24	0.23	0.23	0.24	0.24	0.25	0.25
9	0.24	0.24	0.23	0.23	0.23	0.23	0.24
10	0.24	0.23	0.23	0.23	0.24	0.27	0.27
11	0.24	0.24	0.23	0.23	0.24	0.24	0.24
12	0.24	0.23	0.24	0.23	0.26	0.24	0.26
13	0.24	0.26	0.24	0.24	0.24	0.24	0.26
14	0.26	0.24	0.23	0.25	0.24	0.25	0.26
15	0.25	0.24	0.24	0.24	0.24	0.25	0.25
16	0.26	0.24	0.24	0.23	0.25	0.24	0.26
17	0.25	0.23	0.25	0.24	0.24	0.24	0.25
18	0.24	0.25	0.25	0.24	0.20	0.23	0.25
19	0.20	0.20	0.23	0.20	0.20	0.22	0.23
20	0.24	0.20	0.22	0.20	0.20	0.20	0.24
21	0.22	0.21	0.21	0.20	0.19	0.20	0.22
22	0.21	0.20	0.20	0.19	0.21	0.20	0.21
23	0.19	0.20	0.19	0.19	0.21	0.20	0.21
24	0.19	0.19	0.19	0.19	0.18	0.20	0.20
25	0.19	0.19	0.19	0.22	0.20	0.20	0.22
26	0.20	0.20	0.19	0.20	0.20	0.20	0.20
27	0.20	0.20	0.20	0.19	0.21	0.21	0.21
28	0.23	0.22	0.21	0.21	0.22	0.22	0.23
29	0.22	0.22	0.22	0.22	0.22	0.22	0.22
30	0.22	0.22	0.20	0.22	0.22	0.22	0.22
31	0.22	0.22	0.20	0.23	0.22	0.22	0.23

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

¹Filtered systems only

Signature: 
 Anna Vosa, P.E.

Date: 6/4/21

OHA Drinking Water Services - Raw Coliform Data (Unfiltered)

Portland Water Bureau

ID#: OR 4100657

Month/Year: 05/2021

Date	Fecal Coliform (CFU/100mL)	Comments
5/1/2021	<1	
5/2/2021	<1	
5/3/2021	<1	
5/4/2021	1	
5/5/2021	<1	
5/6/2021	<1	
5/7/2021	<1	
5/8/2021	<1	
5/9/2021	<1	
5/10/2021	<1	
5/11/2021	1	
5/12/2021	<1	
5/13/2021	<1	
5/14/2021	<1	
5/15/2021	1	
5/16/2021	<1	
5/17/2021	<1	
5/18/2021	<1	
5/19/2021	1	
5/20/2021	<1	
5/21/2021	1	
5/22/2021	1	
5/23/2021	1	
5/24/2021	1	
5/25/2021	<1	
5/26/2021	<1	
5/27/2021	<1	
5/28/2021	1	
5/29/2021	1	
5/30/2021	<1	
5/31/2021	<1	

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

Six Month Summary:

# of Samples For Fecal Coliform:	179
# of Samples > 20 CFU/100mL:	0
Percent:	0.0%

OHA - Drinking Water Services

Surface Water Quality Data Conduit 2

Portland Water Bureau

ID#: OR 4100657

WTP-A

Month/Year: 05/2021

Date / Time	Peak Hourly Flow	Minimum Hourly Average Free Chlorine (C)	Contact Time (T)	Actual CT	Temp	pH	Req'd CT	CT Met?	Min. Hourly Average Total Chlorine at First User
	MGD	ppm or mg/L	min.	C x T	°C		Tables	Y/N	ppm or mg/L
1 / 9	25.75	2.17	258.1	559.7	8.2	6.69	122.8	Y	2.09
2 / 6	25.44	2.23	259.4	578.1	8.4	6.62	123.1	Y	2.12
3 / 6	24.84	2.23	267.1	596.2	8.6	6.60	121.6	Y	2.13
4 / 6	24.50	2.23	270.1	602.0	8.5	6.60	122.0	Y	2.13
5 / 23	24.92	2.20	265.8	584.3	9.4	6.61	109.4	Y	2.15
6 / 4	25.02	2.23	264.9	591.5	9.0	6.60	114.5	Y	2.16
7 / 19	25.49	2.24	260.5	582.5	8.9	6.61	122.1	Y	2.16
8 / 8	24.98	2.24	262.5	588.2	9.0	6.57	112.6	Y	2.13
9 / 7	24.43	2.23	270.4	603.6	8.9	6.58	120.6	Y	2.21
10 / 6	24.40	2.23	271.6	606.0	9.0	6.60	121.7	Y	2.18
11 / 6	24.43	2.23	271.5	606.2	9.3	6.58	113.7	Y	2.13
12 / 15	26.58	2.24	250.0	560.3	9.3	6.60	113.9	Y	2.10
13 / 17	28.47	2.25	234.3	526.3	9.3	6.58	113.0	Y	2.12
14 / 10	28.67	2.23	232.9	518.9	9.5	6.57	113.6	Y	2.07
15 / 20	29.62	2.22	225.7	501.3	9.4	6.59	114.9	Y	2.08
16 / 19	29.52	2.21	226.2	501.0	9.5	6.54	113.2	Y	2.39
17 / 0	28.68	2.20	228.5	502.7	9.7	6.57	115.5	Y	2.26
18 / 17	27.24	2.22	244.6	543.2	9.9	6.58	114.8	Y	2.17
19 / 6	27.24	2.25	244.8	551.1	9.9	6.59	112.7	Y	2.17
20 / 6	26.76	2.22	246.4	547.9	10.0	6.58	106.7	Y	2.19
21 / 19	26.76	2.22	248.8	551.3	10.1	6.58	107.3	Y	2.15
22 / 13	26.79	2.24	248.5	556.3	9.7	6.57	112.8	Y	2.13
23 / 6	26.64	2.24	250.1	560.1	10.0	6.57	105.1	Y	2.10
24 / 20	26.35	2.25	252.2	566.8	9.8	6.57	112.2	Y	2.11
25 / 21	28.74	2.20	232.7	511.7	9.9	6.57	107.6	Y	2.04
26 / 21	30.12	1.76	221.7	389.2	10.0	6.55	105.2	Y	1.40
27 / 11	30.17	2.27	221.5	503.0	9.9	6.56	109.8	Y	2.15
28 / 21	29.60	2.26	223.4	504.4	10.1	6.58	104.0	Y	2.13
29 / 8	29.59	2.24	227.2	509.4	10.4	6.55	104.2	Y	2.12
30 / 7	29.51	2.25	227.7	512.4	10.4	6.57	104.1	Y	2.10
31 / 23	35.36	2.26	188.3	425.4	10.4	6.55	102.8	Y	2.16

Notes for Conduit 2 (C2):

May 1 to 31, 2021: Conduit 2 out of service from Headworks to Hudsons Intertie; Conduit 4 feeding Conduit 2 at Hudsons Intertie, Conduit 2 in service from Hudsons through Lusted and on to town.

Signature: Anna Vosa
 Anna Vosa, P.E., Water Quality Engineer

Date: 6/4/21

OHA - Drinking Water Services

Surface Water Quality Data Conduit 3

Portland Water Bureau

ID#: OR 4100657

WTP-A

Month/Year: 05/2021

Date / Time	Peak Hourly Flow	Minimum Hourly Average Free Chlorine (C)	Contact Time (T)	Actual CT	Temp	pH	Req'd CT	CT Met?	Min. Hourly Average Total Chlorine at First User
	MGD	ppm or mg/L	min.	C x T	°C		Tables	Y/N	ppm or mg/L
1 / 9	44.70	2.14	220.0	470.3	8.2	6.66	123.6	Y	2.10
2 / 2	44.62	2.21	220.2	487.4	8.4	6.66	126.0	Y	2.15
3 / 5	49.31	2.21	199.2	440.0	8.6	6.70	128.3	Y	2.16
4 / 0	43.76	2.18	224.5	490.2	8.5	6.67	120.5	Y	2.14
5 / 10	38.36	2.18	256.1	558.4	9.4	6.71	115.0	Y	2.20
6 / 23	38.49	2.22	255.5	566.8	9.0	6.69	119.2	Y	2.21
7 / 20	44.32	2.21	221.6	489.7	8.9	6.67	127.1	Y	2.18
8 / 0	44.27	2.22	222.2	492.8	9.0	6.69	119.0	Y	2.13
9 / 21	53.42	2.21	183.9	407.2	8.9	6.62	124.2	Y	2.19
10 / 0	53.42	2.23	183.8	409.3	9.0	6.62	122.9	Y	2.22
11 / 23	58.95	2.22	166.6	370.2	9.3	6.62	116.1	Y	2.24
12 / 6	59.05	2.19	166.3	363.7	9.3	6.63	111.1	Y	2.12
13 / 0	58.66	2.20	167.4	368.0	9.3	6.64	110.5	Y	2.10
14 / 10	58.51	2.18	167.7	365.0	9.5	6.59	110.2	Y	2.05
15 / 23	60.34	2.18	162.7	355.4	9.4	6.66	112.7	Y	2.04
16 / 0	60.30	2.17	162.9	353.5	9.5	6.66	113.4	Y	2.24
17 / 0	60.09	2.17	163.4	354.6	9.7	6.65	113.2	Y	2.15
18 / 9	50.11	2.18	196.1	426.6	9.9	6.67	113.4	Y	2.09
19 / 1	44.52	2.18	220.8	482.4	9.9	6.68	113.1	Y	2.17
20 / 0	44.41	2.20	221.1	486.1	10.0	6.68	104.4	Y	2.11
21 / 4	43.82	2.19	224.2	491.0	10.1	6.61	102.2	Y	2.11
22 / 10	43.83	2.19	224.1	491.5	9.7	6.60	109.6	Y	2.11
23 / 23	48.50	2.21	202.5	447.2	10.0	6.61	108.7	Y	2.13
24 / 23	53.56	2.22	183.5	407.3	9.8	6.62	116.1	Y	2.11
25 / 10	55.85	2.21	175.8	388.7	9.9	6.63	117.4	Y	2.13
26 / 0	40.88	1.69	240.5	407.4	10.0	6.62	104.2	Y	1.36
27 / 20	34.47	2.21	285.0	631.1	9.9	6.54	113.0	Y	2.09
28 / 0	34.35	2.18	285.9	624.7	10.1	6.57	102.2	Y	2.05
29 / 21	44.40	2.18	221.3	483.5	10.4	6.56	101.8	Y	2.05
30 / 23	55.33	2.21	177.6	392.0	10.4	6.57	107.2	Y	2.08
31 / 0	55.30	2.24	177.6	397.8	10.4	6.57	105.2	Y	2.09

Notes for Conduit 3 (C3):

May 1 to 31, 2021: Conduit 3 in service from Headworks through Lusted and on to town.

Signature: Anna Vosa
 Anna Vosa, P.E., Water Quality Engineer

Date: 6/4/21

OHA - Drinking Water Services

Surface Water Quality Data Conduit 4

Portland Water Bureau

ID#: OR 4100657

WTP-A

Month/Year: 05/2021

Date / Time	Peak Hourly Flow	Minimum Hourly Average Free Chlorine (C)	Contact Time (T)	Actual CT	Temp	pH	Req'd CT	CT Met?	Min. Hourly Average Total Chlorine at First User
	MGD	ppm or mg/L	min.	C x T	°C		Tables	Y/N	ppm or mg/L
1 / 11	26.78	2.16	305.4	658.7	8.2	6.64	120.9	Y	2.12
2 / 6	26.37	2.20	307.7	678.1	8.4	6.61	124.3	Y	2.12
3 / 6	25.88	2.21	316.0	697.8	8.6	6.60	123.6	Y	2.13
4 / 21	25.67	2.20	318.9	703.0	8.5	6.60	123.8	Y	2.12
5 / 10	26.01	2.17	314.3	681.9	9.4	6.62	112.0	Y	2.11
6 / 21	26.04	2.21	313.6	692.6	9.0	6.59	115.7	Y	2.11
7 / 19	26.51	2.21	308.3	681.8	8.9	6.61	123.8	Y	2.13
8 / 8	26.02	2.22	311.1	689.6	9.0	6.58	115.0	Y	2.20
9 / 13	25.55	2.21	319.6	705.7	8.9	6.59	123.1	Y	2.15
10 / 8	25.58	2.21	320.4	707.7	9.0	6.56	121.3	Y	2.17
11 / 6	25.53	2.21	320.9	707.8	9.3	6.60	116.5	Y	2.21
12 / 18	27.43	2.21	296.9	655.1	9.3	6.61	116.8	Y	2.14
13 / 21	29.12	2.21	279.1	616.9	9.3	6.60	116.4	Y	2.09
14 / 10	29.26	2.19	277.7	609.2	9.5	6.59	109.1	Y	2.02
15 / 20	30.12	2.19	269.4	588.9	9.4	6.60	110.1	Y	2.10
16 / 21	30.03	2.19	270.0	590.7	9.5	6.60	109.9	Y	2.16
17 / 0	29.33	2.16	273.0	590.3	9.7	6.60	111.5	Y	2.06
18 / 7	28.12	2.15	290.3	625.0	9.9	6.61	112.6	Y	2.03
19 / 8	28.10	2.21	290.6	642.8	9.9	6.61	116.4	Y	2.12
20 / 7	27.59	2.20	293.1	644.1	10.0	6.55	100.9	Y	2.13
21 / 8	27.69	2.19	295.1	645.0	10.1	6.58	103.1	Y	2.04
22 / 13	27.72	2.21	294.7	651.5	9.7	6.56	114.3	Y	2.07
23 / 17	27.51	2.21	296.7	656.2	10.0	6.56	106.7	Y	2.11
24 / 11	27.31	2.21	298.9	661.5	9.8	6.56	114.3	Y	2.15
25 / 13	29.35	2.16	277.2	598.1	9.9	6.56	110.1	Y	2.08
26 / 21	30.19	1.77	266.3	470.3	10.0	6.48	101.6	Y	2.00
27 / 15	30.26	2.24	266.0	596.8	9.9	6.51	109.3	Y	2.12
28 / 14	29.70	2.23	268.6	598.2	10.1	6.51	103.5	Y	2.08
29 / 6	29.76	2.21	272.3	601.8	10.4	6.53	105.4	Y	2.09
30 / 9	29.65	2.22	273.0	606.4	10.4	6.52	104.1	Y	2.08
31 / 23	34.69	2.23	228.4	509.9	10.4	6.51	103.0	Y	2.09

Notes for Conduit 4 (C4):

May 1 to 31, 2021: Conduit 4 in service from Hudsons Intertie through Lusted and on to town; Conduit 4 feeding Conduit 2 at Hudsons Intertie.

Signature: 
 Anna Vosa, P.E., Water Quality Engineer

Date: 6/4/21



Mingus Mapps, Commissioner
Gabriel Solmer, Administrator



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

WQ 0.10.1.1

DATE: June 9, 2021

TO: Oregon Health Authority
Drinking Water Services

FROM: Anna Vosa, P.E.
Water Quality Engineer

SUBJECT: Monthly Report for May 2021
Surface Water Treatment Rule
PWS # OR 4100657

This monthly report includes the following information:

Description	Number of Pages
Transmittal Memorandum	1 page
Raw water turbidity data (OHA form)	1 page
Raw water coliform data (OHA form)	1 page
CT reports for conduits 2, 3, and 4 (OHA form)	3 pages
Transmitted	Total of 6 pages, including this transmittal memo

Remarks:

Portland Water Bureau (PWB) initially disinfects using free chlorine added to three individual conduits. There are two active conduit interties (Larsons and Hudsons) between chlorination at Headworks and the secondary treatment plant (chloramination and pH adjustment) at Lusted Hill. These potentially divide the conduits into three segments since water can be diverted between conduits at the interties.

Pursuant to recent conversations and correspondence with Carrie Gentry, OHA, PWB has revised how CT calculations are performed. In August 2020, PWB began using the daily maximum hourly average individual conduit flow rates between conduit segments, and the daily minimum hourly average free chlorine concentrations from the Lusted Inlet free chlorine analyzers, to calculate CT for the individual conduits. In addition, the reports have been revised to show the daily minimum hourly average total chlorine concentrations of finished water at our Lusted Outlet entry point for each conduit, which is not used for the CT calculation but is representative of the total chlorine residual at the first user, following chloramination.

Please contact me at 503-823-7598 if additional information is required.