



January 15, 2020

Mr. Randall Bailey
Oregon Department of Environmental Quality
Northwest Region
700 NE Multnomah St., Suite 600
Portland, OR 97232

**Re: Fourth Quarter 2019 Characterization Monitoring Report
NW Natural Source Control Groundwater Treatment Facility
7900 NW St. Helens Road, Portland
NPDES Permit Number 103061 (permit renewal pending with DEQ)**

Dear Mr. Bailey:

Attached is the Quarterly Characterization Monitoring Report for October-December 2019. The data are reported as prescribed in the NPDES permit and the June 2013 DEQ document "Completing Discharge Monitoring Reports (DMRs)" as follows:

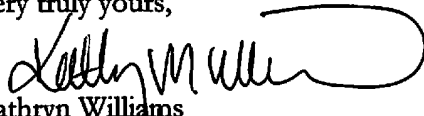
- Sample results at or below the detection level are reported as "< detection level."
- Sample results above the detection level but below quantitation level have a data code denomination "e" next to the result on the "Raw Data" Worksheet. These data were converted to the "Final" Worksheet as follows:
 - If the sample result was greater than detection limit, but less than the quantitation limit, the value of the detection limit was substituted.

All samples were taken at the designated discharge point. Internal process samples taken by Severson Environmental Services for process optimization, but not taken at the designated sample point are not reported.

Note that the November 20, 2019 characterization sample results show a dissolved zinc concentration of 110 ug/L, though total zinc is less than 2 ug/L at an MDL of 2 ug/L. In addition, we have reviewed the past 6 years of quarterly reports for similar readings for dissolved zinc. While there are some detections of dissolved zinc during that period, none were near the level of the November 20 reading. For these reasons, we believe that the dissolved zinc value is a laboratory error. The November 20 sample is out of date and further analysis is not possible. Severson will track dissolved zinc on future quarterly submittals to verify the presence or absence of dissolved zinc.

If you have questions about this package, please contact Terry Driscoll at Aponowich, Driscoll & Associates, Inc, (404) 641-8107, tpdriscoll@mindspring.com.

Very truly yours,


Kathryn Williams
Vice President of Public Affairs
NW Natural

Attachment:
Fourth Quarter 2019 Effluent Characterization Tables

NW Natural Source Control Treatment Plant Effluent Flow and Temperature Data

Permit Number 103061

File Number 120589

	Total Flow	Average Daily Temp	Maximum Daily Temp	Maximum Temp 7-day Moving Average
Date	Gals/Day	deg F	deg F	deg F
1-Oct-2019	306786	58.8	60.0	60.3
2-Oct-2019	331684	59.0	60.0	60.0
3-Oct-2019	299808	59.2	60.0	59.9
4-Oct-2019	329670	59.2	60.0	59.9
5-Oct-2019	312301	59.5	61.0	60.0
6-Oct-2019	329319	59.7	61.0	60.3
7-Oct-2019	313434	59.8	61.0	60.4
8-Oct-2019	311072	59.6	60.0	60.4
9-Oct-2019	310030	58.6	60.0	60.4
10-Oct-2019	308651	58.5	60.0	60.4
11-Oct-2019	303231	58.9	60.0	60.4
12-Oct-2019	303604	58.9	60.0	60.3
13-Oct-2019	320021	59.4	60.0	60.1
14-Oct-2019	311304	58.9	60.0	60.0
15-Oct-2019	312940	59.0	60.0	60.0
16-Oct-2019	301652	59.0	60.0	60.0
17-Oct-2019	232761	59.0	60.0	60.0
18-Oct-2019	325535	58.6	60.0	60.0
19-Oct-2019	325310	58.5	59.0	59.9
20-Oct-2019	320811	58.4	59.0	59.7
21-Oct-2019	305949	59.2	61.0	59.9
22-Oct-2019	327946	60.0	61.0	60.0
23-Oct-2019	319318	58.7	60.0	60.0
24-Oct-2019	310574	58.9	60.0	60.0
25-Oct-2019	306108	59.2	60.0	60.0
26-Oct-2019	314126	58.5	60.0	60.1
27-Oct-2019	327932	58.2	59.0	60.1
28-Oct-2019	311691	57.5	59.0	59.9
29-Oct-2019	320402	56.9	58.0	59.4
30-Oct-2019	318458	56.9	58.0	59.1
31-Oct-2019	315787	57.0	58.0	58.9
1-Nov-2019	322824	57.5	59.0	58.7
2-Nov-2019	312506	57.9	59.0	58.6
3-Nov-2019	351561	58.2	59.0	58.6
4-Nov-2019	319995	57.8	58.0	58.4
5-Nov-2019	319707	57.7	58.0	58.4
6-Nov-2019	320418	58.2	59.0	58.6
7-Nov-2019	307078	58.0	59.0	58.7
8-Nov-2019	301744	58.4	59.0	58.7
9-Nov-2019	294599	58.2	59.0	58.7
10-Nov-2019	310788	58.5	59.0	58.7
11-Nov-2019	306420	58.7	59.0	58.9
12-Nov-2019	306055	58.1	59.0	59.0
13-Nov-2019	300816	58.1	59.0	59.0
14-Nov-2019	313495	58.1	59.0	59.0
15-Nov-2019	295024	58.4	60.0	59.1

25-Sep-2019	62.0
26-Sep-2019	61.0
27-Sep-2019	60.0
28-Sep-2019	60.0
29-Sep-2019	59.0
30-Sep-2019	60.0

16-Nov-2019	306200	58.4	59.0	59.1
17-Nov-2019	321162	58.8	59.0	59.1
18-Nov-2019	309204	59.0	59.0	59.1
19-Nov-2019	313270	58.5	59.0	59.1
20-Nov-2019	272546	59.3	83.0	62.6
21-Nov-2019	329658	57.2	58.0	62.4
22-Nov-2019	318452	56.6	58.0	62.1
23-Nov-2019	320320	57.0	57.0	61.9
24-Nov-2019	333947	57.6	58.0	61.7
25-Nov-2019	312306	57.3	58.0	61.6
26-Nov-2019	312156	57.0	57.0	61.3
27-Nov-2019	318505	57.1	58.0	57.7
28-Nov-2019	318251	56.9	58.0	57.7
29-Nov-2019	319013	56.7	59.0	57.9
30-Nov-2019	319567	56.4	57.0	57.9
1-Dec-2019	327292	56.1	57.0	57.7
2-Dec-2019	312825	56.6	57.0	57.6
3-Dec-2019	331880	56.6	58.0	57.7
4-Dec-2019	309070	57.7	58.0	57.7
5-Dec-2019	306383	57.7	58.0	57.7
6-Dec-2019	305289	57.6	59.0	57.7
7-Dec-2019	303697	57.7	58.0	57.9
8-Dec-2019	316838	58.0	58.0	58.0
9-Dec-2019	307867	58.0	58.0	58.1
10-Dec-2019	284269	57.3	59.0	58.3
11-Dec-2019	303550	57.2	58.0	58.3
12-Dec-2019	282471	58.0	58.0	58.3
13-Dec-2019	301219	57.2	58.0	58.1
14-Dec-2019	306299	57.5	59.0	58.3
15-Dec-2019	312719	57.5	58.0	58.3
16-Dec-2019	313764	57.2	58.0	58.3
17-Dec-2019	314781	57.0	57.0	58.0
18-Dec-2019	302747	56.4	57.0	57.9
19-Dec-2019	322411	56.5	57.0	57.7
20-Dec-2019	297592	58.1	59.0	57.9
21-Dec-2019	305978	58.0	58.0	57.7
22-Dec-2019	299963	57.4	58.0	57.7
23-Dec-2019	310381	57.0	57.0	57.6
24-Dec-2019	317071	57.0	57.0	57.6
25-Dec-2019	314198	57.1	58.0	57.7
26-Dec-2019	321336	56.8	57.0	57.7
27-Dec-2019	313011	56.9	58.0	57.6
28-Dec-2019	323284	57.7	59.0	57.7
29-Dec-2019	326439	57.0	57.0	57.6
30-Dec-2019	324007	57.3	58.0	57.7
31-Dec-2019	318816	57.6	58.0	57.9
October Average	312,523	58.8	59.8	60.0
October Maximum	331,684	60.0	61.0	60.4
November Average	313,586	57.9	59.4	59.4
November Maximum	351,561	59.3	83.0	62.6

Decemberr Average	310,885	57.3	57.9	57.9
December Maximum	331,880	58.1	59.0	58.3
4th Quarter Average	312,318	58.0	59.0	59.1
4th Quarter Maximum	351,561	60.0	83.0	62.6

NW Natural Source Control Treatment Plant Effluent Data

Permit Number 103061
 File Number 120589
 Sample Type

Grab/Composite (Total Cadmium and Chromium and Dissolved Cadmium results are taken from the Fremont Laboratory report. Inorganic Arsenic result is taken from the Brooks Laboratory report. For VOCs and Cyanide, 6 discrete samples composited at the laboratory).

Date of Sample 20-Nov-19

	Code ¹	Result	MDL	RL	UNITS	
Hardness		56	NR	0.46	mg CaCO3/L	
Metals						
Arsenic (Inorganic)		0.64	0.03	0.10	ug/L	BR
Chromium III (Total)		NA				
Chromium III (Dissolved)		NA				
Chromium VI (Total)		NA				
Chromium VI (Dissolved)		NA				
Cadmium (Total)		<0.14	0.14	0.20 *	ug/L	FR
Chromium (Total)		<0.41	0.41	1.00 *	ug/L	FR
Nickel (Total)		<0.50	0.50	1.00	ug/L	
Selenium (Total)		<0.50	0.50	1.00	ug/L	
Silver (Total)		<0.10	0.10	0.20	ug/L	
Zinc (Total)		<2.0	2.0	4.0	ug/L	
Cadmium (Dissolved)		<0.14	0.14	0.20 *	ug/L	FR
Nickel (Dissolved)		<0.50	0.50	1.00	ug/L	
Silver (Dissolved)		<0.10	0.10	0.20	ug/L	
Zinc (Dissolved)		110	2.0	4.0	ug/L	
PAHs and Phenols						
Acenaphthene		<0.04	0.04	0.04	ug/L	
Acenaphthylene		<0.04	0.04	0.04	ug/L	
Anthracene		<0.04	0.04	0.04	ug/L	
Benzo(b)fluoranthene		<0.04	0.04	0.04	ug/L	
Benzo(k)fluoranthene		<0.04	0.04	0.04	ug/L	
Benzo(g,h,i)perylene		<0.04	0.04	0.04	ug/L	
Carbazole		<0.04	0.04	0.04	ug/L	
Chrysene		<0.04	0.04	0.04	ug/L	
Dibenzofuran		<0.04	0.04	0.04	ug/L	
Fluoranthene		<0.04	0.04	0.04	ug/L	
Fluorene		<0.04	0.04	0.04	ug/L	
2-Methylnaphthalene		<0.04	0.04	0.04	ug/L	
Naphthalene		<0.04	0.04	0.04	ug/L	
Phenanthrene		<0.04	0.04	0.04	ug/L	
Pyrene		<0.04	0.04	0.04	ug/L	
2-Chlorophenol		<0.50	0.50	0.50	ug/L	
2,4-Dichlorophenol		<0.50	0.50	0.50	ug/L	
2,4-Dimethylphenol		<0.50	0.50	0.50	ug/L	
4,6-Dinitro-2-methylphenol		<0.59	0.59	0.59	ug/L	
2-Methylphenol		<0.50	0.50	0.50	ug/L	
2-Nitrophenol		<0.50	0.50	0.50	ug/L	
4-Nitrophenol		<0.50	0.50	0.50	ug/L	
2,4,5-Trichlorophenol		<0.50	0.50	0.50	ug/L	
2,4,6-Trichlorophenol		<0.50	0.50	0.50	ug/L	
Pentachlorophenol (PCP)		<0.40	0.40	0.40	ug/L	
Phenol		<0.50	0.50	0.50	ug/L	
VOCs						
Acetone		<10	10	20	ug/L	
Benzene		<0.13	0.13	0.25	ug/L	
2-Butanone (MEK)		<5.0	5.0	10	ug/L	
1,1-Dichloroethene		<0.25	0.25	0.50	ug/L	

Raw Data

NW Natural Source Control Treatment Plant Effluent Data					
Permit Number		103061			
File Number		120589			
Sample Type	Grab/Composite (Total Cadmium and Chromium and Dissolved Cadmium results are taken from the Fremont Laboratory report. Inorganic Arsenic result is taken from the Brooks Laboratory report. For VOCs and Cyanide, 6 discrete samples composited at the laboratory).				
Date of Sample		20-Nov-19			
	Code¹	Result	MDL	RL	UNITS
Hardness		56.2	NR	0.456	mg CaCO3/L
METALS					
Arsenic (Inorganic)		0.645	0.032	0.100	ug/L
Chromium III (Total)		NA			
Chromium III (Dissolved)		NA			
Chromium VI (Total)		NA			
Chromium VI (Dissolved)		NA			
Cadmium (Total)		<0.0135	0.0135	0.200 *	ug/L
Chromium (Total)		<0.408	0.408	1.00 *	ug/L
Nickel (Total)		<0.500	0.500	1.00	ug/L
Selenium (Total)		<0.500	0.500	1.00	ug/L
Silver (Total)		<0.100	0.100	0.200	ug/L
Zinc (Total)		<2.00	2.00	4.00	ug/L
Cadmium (Dissolved)		<0.0136	0.0136	0.200 *	ug/L
Nickel (Dissolved)		<0.500	0.500	1.00	ug/L
Silver (Dissolved)		<0.100	0.100	0.200	ug/L
Zinc (Dissolved)		111	2.00	4.00	ug/L
PAHs and PHENOLS					
Acenaphthene		<0.0396	0.0396	0.0396	ug/L
Acenaphthylene		<0.0396	0.0396	0.0396	ug/L
Anthracene		<0.0396	0.0396	0.0396	ug/L
Benzo(b)fluoranthene		<0.0396	0.0396	0.0396	ug/L
Benzo(k)fluoranthene		<0.0396	0.0396	0.0396	ug/L
Benzo(g,h,i)perylene		<0.0396	0.0396	0.0396	ug/L
Carbazole		<0.0396	0.0396	0.0396	ug/L
Chrysene		<0.0396	0.0396	0.0396	ug/L
Dibenzofuran		<0.0396	0.0396	0.0396	ug/L
Fluoranthene		<0.0396	0.0396	0.0396	ug/L
Fluorene		<0.0396	0.0396	0.0396	ug/L
2-Methylnaphthalene		<0.0396	0.0396	0.0396	ug/L
Naphthalene		<0.0396	0.0396	0.0396	ug/L
Phenanthrene		<0.0396	0.0396	0.0396	ug/L
Pyrene		<0.0396	0.0396	0.0396	ug/L
2-Chlorophenol		<0.495	0.495	0.495	ug/L
2,4-Dichlorophenol		<0.495	0.495	0.495	ug/L
2,4-Dimethylphenol		<0.495	0.495	0.495	ug/L
4,6-Dinitro-2-methylphenol		<0.594	0.594	0.594	ug/L
2-Methylphenol		<0.495	0.495	0.495	ug/L
2-Nitrophenol		<0.495	0.495	0.495	ug/L
4-Nitrophenol		<0.495	0.495	0.495	ug/L
2,4,5-Trichlorophenol		<0.495	0.495	0.495	ug/L
2,4,6-Trichlorophenol		<0.495	0.495	0.495	ug/L
Pentachlorophenol (PCP)		<0.396	0.396	0.396	ug/L
Phenol		<0.495	0.495	0.495	ug/L
NW Natural Source Control Treatment Plant Effluent Data					
Permit Number		103061			

Raw Data

File Number	120589				
Sample Type	Grabs				
Date of Sample	20-Nov-19				
VOCs and Cyanide					
Sample (3QRD-081419-23 Composite)					
Acetone		<10.0	10.0	20.0	ug/L
Benzene		<0.125	0.125	0.250	ug/L
2-Butanone (MEK)		<5.00	5.00	10.0	ug/L
1,1-Dichloroethene		<0.250	0.250	0.500	ug/L
trans-1,2-Dichloroethene		<0.250	0.250	0.500	ug/L
Ethylbenzene		<0.250	0.250	0.500	ug/L
Tetrachloroethene (PCE)		<0.250	0.250	0.500	ug/L
Toluene		<0.250	0.250	0.500	ug/L
Trichloroethene (TCE)		<0.250	0.250	0.500	ug/L
1,2,4-Trimethylbenzene		<0.500	0.500	1.00	ug/L
1,3,5-Trimethylbenzene		<0.500	0.500	1.00	ug/L
Vinyl chloride		<0.250	0.250	0.500	ug/L
Xylenes, total		<0.750	0.750	1.50	ug/L
Cyanide Analyses					
Cyanide, Available (ug/L)		8.19	1.00	2.00	ug/L
Cyanide, Free	e	3.61	2.50	5.00	ug/L
¹ Code shown is per June 2013 DEQ Document "Completing Discharge Monitoring Reports (DMRs) page 9 as follows:					
"e" Sample result is above detection limit but below the quantitation level.					
NR = None Reported by Laboratory					
NA = Not analyzed due to permit requirements (Table B2: Table B2 Notes/note 5).					
* RL from the Freemont report for dissolved and total metals are taken from the analysis of the Method Blank in order to correctly use the "e code".					