

Monthly Operating Reports

January 2018

The following January 2018 operating report was sent to the Ministry of Environment and Climate Change Strategy on March 8, 2018.

Metro Vancouver - Waste-to-Energy Facility

CONTINUOUS EMISSION MONITORING SYSTEM

January 2018

1. MONTHLY SUMMARY REPORT

Parameter	Compliance Limit (mg/dscm)	Compliance Period	Maximum Measurement (mg/dscm)		
			Unit 1	Unit 2	Unit 3
CO	50	24 hr	38.6	39.0	51.2
SO ₂	200	24 hr	48.6	70.0	60.5
NOx	190	24 hr	131.2	140.2	137.7
			Monthly Average (mg/dscm)		
			Unit 1	Unit 2	Unit 3
Opacity			0.40	0.20	0.50
CO			27.6	28.8	38.6
SO ₂			35.8	47.0	45.6
NOx			127.8	132.5	131.4

Interim Discharge Limits will apply until and including the following dates, at which point the Discharge Limits and Response Limits will apply

a. THC – December 31, 2018

c. SO₂ – December 31, 2022

b. HCl – December 31, 2022

2. MONTHLY EXCEEDANCE REPORT

2.a. Discharge Limit Exceedances

Unit	Compliance Parameter	Discharge Limit (mg/dscm)	Date	Exceedance Level
Unit 3	CO 24-hr average	50	1/29/18	51.2
Reason/Action Taken				
Unit 3 experienced high CO at 0700 and 1900 with the combustion of wet refuse. In both instances the operator put the natural gas burners on and modified the boiler air flow to address elevated CO. The unit was also shutdown at 1018 for 26 minutes due to a BC Hydro power outage and at 1956 for 2.3 hours to clear a plugged ash discharger. The 24-hr CO discharge average for the day was 51.2 mg/dscm as compared to the 24-hr average discharge limit of 50 mg/dscm.				

2.b. Response Limit Exceedances

Unit	Compliance Parameter	Response Limit (mg/dscm)	Duration / Cumulative Duration	Date / Time	Exceedance Level
Reason/Action Taken					

2.c. Transient Conditions - Furnace Temperature Below 800°C

Unit	Duration	Date/Time	Average Temperature (°C)	Cause
	Action Taken to Restore Steady State Conditions			

Analyzer	Required Availability (% hours per quarter)	Averaging Period	Monthly Availability		
			Unit 1	Unit 2	Unit 3
Opacity	90	Hour	100	100	100
Oxygen	90	Hour	99	99	98
CO	90	Hour	99	99	98
SO ₂	90	Hour	99	99	98
NOx	90	Hour	99	99	98
Stack Flow	90	Hour	100	100	97

4. Shutdown Report

Unit 1

Duration in Hours	Reason	Date
0.25	BC Hydro power interruption	January 2
0.27	BC Hydro power interruption	January 2
0.33	BC Hydro power interruption	January 3
0.50	BC Hydro power interruption	January 7
0.02	Forced draft fan trip	January 7
2.07	Poor refuse quality	January 8-9
2.12	Poor refuse quality	January 9
0.33	BC Hydro power interruption	January 9
0.52	Economizer elbow inspection	January 10
6.08	Economizer elbow wash	January 11
0.48	Hopper inspection	January 13
1.42	Poor refuse quality	January 15
0.32	Ash discharger plug	January 16
0.22	BC Hydro power interruption	January 21
0.17	Induced draft fan trip	January 23
2.00	Feed chute plug	January 26
0.32	BC Hydro power interruption	January 29
8.75	Ash discharger plug	January 29-30

Unit 2

Duration in Hours	Reason	Date
0.43	BC Hydro power interruption	January 2
0.48	BC Hydro power interruption	January 2
0.32	BC Hydro power interruption	January 3
0.43	BC Hydro power interruption	January 7
0.42	BC Hydro power interruption	January 9
1.37	CEMS issue	January 13
0.28	BC Hydro power interruption	January 21
0.32	BC Hydro power interruption	January 29
10.57	Ash discharger plug	January 29-30

Unit 3

Duration in Hours	Reason	Date
0.42	BC Hydro power interruption	January 2
0.38	BC Hydro power interruption	January 2
0.28	Induced draft fan trip	January 2
0.30	BC Hydro power interruption	January 3
0.27	BC Hydro power interruption	January 7
0.52	BC Hydro power interruption	January 8
2.32	Poor refuse quality	January 9
0.42	BC Hydro power interruption	January 9
0.02	Induced draft fan trip	January 9
0.92	Induced draft fan trip	January 12
0.30	Induced draft fan trip	January 12
2.05	Lime bin feeder bearing replacement	January 13
0.53	Induced draft fan trip	January 16
0.55	Induced draft fan trip	January 17
0.43	Economizer inspection	January 17
0.28	Economizer inspection	January 18
31.22	Primary economizer tube leak	January 18-19
0.28	BC Hydro power interruption	January 21
0.03	BC Hydro power interruption	January 21
0.07	Induced draft fan trip	January 22
0.28	Economizer inspection	January 22
36.77	Primary economizer tube leak	January 23-24
1.20	Forced draft fan trip	January 24
0.55	Induced draft fan trip	January 25
0.62	BC Hydro power interruption	January 29
2.30	Ash discharger plug	January 29
0.43	BC Hydro power interruption	January 29
0.33	Induced draft fan trip	January 30

5. Facility Bypass and Emergency/spill Event Report

Date/Time	Cause	Duration
	Action Taken	

6. Other Data

		UNIT 1	UNIT 2	UNIT 3
Waste Received	tonnes/day	779		
Waste Processed	tonnes/day	256	262	240
Maximum Waste Processed	tonnes/day	275	271	281
		Units 1, 2, and 3		
Natural Gas Consumed	m ³ /day	2,208		
	m ³ /month	68,442		
Fly ash disposed	tonnes	911		
Bottom ash disposed	tonnes	3,798		

7. Complaints and Responses

Date/Time	Complaint	Action Taken

January 2018 - Monthly CEMS Data

Date	Boiler #1							Boiler #2							Boiler #3						
	Stack Temp	O2 (%)	SO2 (mg/m³)	NOx (mg/m³)	CO (mg/m³)	Opacity (%)	Furnace Temp	Stack Temp	O2 (%)	SO2 (mg/m³)	NOx (mg/m³)	CO (mg/m³)	Opacity (%)	Furnace Temp	Stack Temp	O2 (%)	SO2 (mg/m³)	NOx (mg/m³)	CO (mg/m³)	Opacity (%)	Furnace Temp
1/1/18	151	9.9	31.7	128.9	22.3	0.48	1030	151	8.9	37.8	128.4	30.8	0.65	999	145	9.6	49.5	130.9	38.2	0.5	929
1/2/18	151	9.9	29.8	126.2	28.5	0.55	1022	148	8.7	34.8	129.9	38.3	0.66	996	145	9.6	44.2	131.6	46.6	0.52	920
1/3/18	151	9.8	25.2	130	24.8	0.51	1047	150	8.2	38.7	127.5	30.9	0.66	1022	143	9.2	38.3	133.8	40	0.52	930
1/4/18	152	10.3	34.8	131.2	19.5	0.48	1040	151	8.5	42	126.7	26.5	0.59	1022	141	9.2	48.6	132.1	40	0.49	940
1/5/18	151	9.7	32.3	127.5	19.4	0.5	1033	152	8.6	42.4	129.5	25.8	0.46	1030	141	9.4	40.9	130.9	31.8	0.44	929
1/6/18	151	9.9	42	130.1	19.1	0.42	1015	153	9.1	45.9	132.4	22.9	0.4	1021	142	9.4	48.6	131	45.7	0.43	919
1/7/18	150	9.7	41.7	130.6	24	0.4	1012	149	8.7	44.5	127.9	30.2	0.36	1005	141	9	45.3	130.1	42.7	0.47	915
1/8/18	153	10.7	34.7	128.9	38.6	0.43	969	151	8.8	39.1	126.8	31.9	0.33	986	143	9.7	36.1	131.8	48.4	0.47	886
1/9/18	152	9.3	33.7	125.5	23.6	0.47	1019	153	8.6	38.6	132.2	31.2	0.18	978	142	9	36.1	132.6	30.5	0.43	915
1/10/18	150	9.6	39	128.2	24.3	0.49	1020	150	8.5	38.6	133.5	27.3	0.12	1019	141	9.3	45.8	134.1	39.2	0.48	924
1/11/18								153	8.5	40.1	131.2	30.2	0.15	1006	142	9.5	45.9	133.3	34.5	0.5	910
1/12/18	152	9.6	48.6	127.1	24.4	0.45	1010	150	8.7	43.5	129.2	31.4	0.12	1011	142	9.7	60.5	137.7	35.4	0.52	902
1/13/18	153	9.4	41.4	129.2	21.3	0.5	1008	152	9.1	49.9	132.7	31.4	0.19	1003	138	9.9	40.6	133.8	37.7	0.51	916
1/14/18	152	8.9	39.6	125.5	26.2	0.42	1018	150	9	53.3	131.6	29.6	0.14	1021	141	9.2	51.1	131.9	32.3	0.51	954
1/15/18	154	9	35.4	129.5	30.9	0.45	998	151	8.9	44.4	136.5	39	0.11	981	141	9.1	39	131.4	43.7	0.52	930
1/16/18	152	9.1	40.2	128	33.4	0.5	999	149	8.9	53.7	133.2	37.7	0.02	1002	139	9.1	44.3	131.3	37.7	0.47	924
1/17/18	153	9.6	34.8	127.3	32.7	0.5	979	149	8.8	51.8	134.6	25.8	0.01	1015	147	9.3	50.8	130.1	34.3	0.52	927
1/18/18	152	9.3	46.1	128.1	28.2	0.46	994	151	8.8	49.5	132.4	26.9	0.04	1010							
1/19/18	152	9.3	28.8	126.4	31.7	0.42	997	148	8.9	45.6	130.7	29.7	0.08	1001							
1/20/18	154	9.1	40.8	128	26	0.43	1006	150	8.7	68.7	131	29.4	0.1	1004	146	9.8	53.4	130.3	40.3	0.53	917
1/21/18	154	9.2	38.5	127.4	26.3	0.44	1003	150	8.5	50	139.8	21.5	0.02	1007	142	9.6	42.7	129.6	41.8	0.48	912
1/22/18	154	9.3	42.4	125	26.7	0.42	1003	151	8.3	65.1	134.1	22.3	0.1	1019	136	9.4	22	128.4	35.3	0.5	941
1/23/18	152	9.3	35.6	127.3	28.6	0.42	1003	150	8.4	47	135	25.1	0.13	1011							
1/24/18	152	9.3	31.4	126.3	34.6	0.45	989	151	8.5	44.4	139.1	26.6	0.1	1004							
1/25/18	153	9.6	32.2	125.7	30.8	0.38	994	151	8.5	40.3	132.3	27.8	0.08	1020	144					0.54	899
1/26/18	152	9.7	30.2	125.5	36.7	0.46	990	152	8.4	43.9	133.6	29.3	0.17	1014	145	9.7	49	129.8	37.8	0.53	918
1/27/18	152	9.6	32	127.7	29.7	0.41	1013	153	8.3	50.6	135.3	26.5	0.32	1032	146	9.7	52.2	132.4	35.8	0.56	935
1/28/18	153	9.8	39.5	128.1	26.1	0.42	1019	153	8.6	48.7	134.7	29.5	0.41	1021	148	9.8	57.8	129.5	33.3	0.57	942
1/29/18	153	9.9	21.6	128.3	36.1	0.46	973								145	9.9	37.3	128.1	51.2	0.51	893
1/30/18	157					0.41	994	154	8.4	70	140.2	22.2	0.34	1017	147	9.4	54.9	130.6	31.9	0.51	907
1/31/18	156	9.3	33.8	127.7	24.5	0.32	992	151	8.7	48.5	134.3	25.9	0.35	1014	146	9.7	50.6	129.1	38.6	0.53	914
Average	152.5	9.6	35.8	127.8	27.6	0.4	1006.3	150.9	8.7	47.0	132.5	28.8	0.2	1009.7	142.9	9.5	45.6	131.4	38.6	0.5	920.3
Min	150.0	8.9	21.6	125.0	19.1	0.3	969.0	148.0	8.2	34.8	126.7	21.5	0.0	978.0	136.0	9.0	22.0	128.1	30.5	0.4	886.0
Max	157.0	10.7	48.6	131.2	38.6	0.6	1047.0	154.0	9.1	70.0	140.2	39.0	0.7	1032.0	148.0	9.9	60.5	137.7	51.2	0.6	954.0
St Dev	1.55	0.39	6.05	1.62	5.27	0.05	18.42	1.54	0.24	8.64	3.56	4.37	0.20	13.10	2.91	0.28	8.13	2.06	5.37	0.04	15.50

Blank days have less than 18 hours of valid data due to unit shut downs.

According to standard guidelines used by Metro Vancouver Air Quality Policy and Environment Division, a minimum of 18 hours of valid data is required to generate a valid 24hr average.