

Monthly Operating Reports

May 2019

The following May 2019 operating report was sent to the Ministry of Environment and Climate Change Strategy on July 4, 2019.



Metro Vancouver - Waste-to-Energy Facility

CONTINUOUS EMISSION MONITORING SYSTEM

May 2019

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	33.3	40.5	44.3
SO ₂	200	24 hr	107.9	120.7	118.1
NOx	190	24 hr	130.2	146.1	146.5
THC	10	24 hr	0.42	0.12	0.38
			Monthly Average (mg/dscm)		
			Unit 1	Unit 2	Unit 3
Opacity			0.52	1.07	0.77
CO			24.7	28.3	33.2
THC			0.25	0.06	0.27
SO ₂			70.9	72.7	70.7
NOx			123.5	128.4	133.6

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
	Reason/Action Taken			

2.b. Response Limit Exceedances

Compliance Parameter: Carbon Monoxide

Response Limit: 100 mg/dscm 1/2 hour average

Unit No. 1

Date / Time	Duration	Exceedance (mg/dscm)	Action Taken
1-May 16:30	30 min	130.4	Adjusted airflow, modified feed rate.
12-May 16:30	30 min	182.5	Feeder hang up, adjusted airflow, modified feed rate, cleared hang up.
15-May 10:00	30 min	162.9	Feeder hang up, adjusted airflow, modified feed rate, cleared hang up.
16-May 07:00	30 min	125.3	Feeder hang up, started gas burners, adjusted airflow, modified feed rate, cleared hang up.

Compliance Parameter: Carbon Monoxide
Response Limit: 100 mg/dscm 1/2 hour average
Unit No. 2

Date / Time	Duration	Exceedance (mg/dscm)	Action Taken
3-May 10:30	30 min	116.7	Adjusted airflow, modified feed rate.
6-May 09:30	30 min	100.6	Adjusted airflow, modified feed rate.
15-May 10:00	30 min	184.8	Feeder hang up, adjusted airflow, modified feed rate, cleared hang up.
17-May 10:00	30 min	116.9	Feeder hang up, adjusted airflow, modified feed rate, cleared hang up.
29-May 17:00	30 min	123.5	Started gas burners, adjusted airflow, modified feed rate.
29-May 18:30	30 min	145.5	Started gas burners, adjusted airflow, modified feed rate.
30-May 08:00	30 min	104.0	Started gas burners, adjusted airflow, modified feed rate.
30-May 18:30	30 min	134.5	Started gas burners, adjusted airflow.

Compliance Parameter: Carbon Monoxide
Response Limit: 100 mg/dscm 1/2 hour average
Unit No. 3

Date / Time	Duration	Exceedance (mg/dscm)	Action Taken
3-May 11:00	30 min	196.4	Volatile fuel, adjusted airflow, modified feed rate.
3-May 12:00	30 min	113.1	Adjusted airflow, modified feed rate.
11-May 18:30	30 min	148.3	Started gas burners, adjusted airflow.
14-May 01:00	30 min	140.4	Feeder hang up, adjusted airflow, modified feed rate, cleared hang up.
15-May 10:00	30 min	152.8	Feeder hang up, adjusted airflow, modified feed rate, cleared hang up.
17-May 20:30	30 min	127.7	Adjusted airflow, modified feed rate, checked analyzer.
23-May 10:00	30 min	189.5	Adjusted airflow, not able to determine cause.
30-May 06:30	30 min	116.8	Started gas burners, adjusted airflow, modified feed rate.
30-May 18:30	30 min	132.8	Started gas burners, adjusted airflow, modified feed rate.

Compliance Parameter: Nitrogen Oxides
Response Limit: 350 mg/dscm 1/2 hour average
Unit No. 2

Date / Time	Duration	Exceedance (mg/dscm)	Action Taken
10-May 06:00	30 min	564.0	Checked aqueous ammonia flow and low NOx system air flow. Inspected instrumentation, found and repaired leak in CEMS O2 monitor; this leak impacted NOx measurement.

Compliance Parameter: Opacity
Response Limit: 5% 1/2 hour average
Unit No. 3

Date / Time	Duration	Exceedance (mg/dscm)	Action Taken
17-May 20:30	30 min	14.1	Visually inspected stack, purple plume, dissipated within 15 min.

3. CEMS Availability

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	98	99
CO	90	Hour	99	98	99
SO ₂	90	Hour	99	98	99
NOx	90	Hour	99	98	99
THC	90	Hour	99	98	99
Stack Flow	90	Hour	98	97	97

4. Shutdown Report

Unit 1

Duration in Hours	Reason	Date
0.47	BC Hydro power outage	May 14

Unit 2

Duration in Hours	Reason	Date
0.37	BC Hydro power outage	May 14

Unit 3

Duration in Hours	Reason	Date
0.33	Fabric filter baghouse inspection	May 6
0.37	BC Hydro power outage	May 14
0.18	Boiler trip on high drum level following turbogenerator trip	May 24

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	22,407		
Waste Processed	tonnes/day	261	256	262
Maximum Waste Processed	tonnes/day	266	261	267
Units 1, 2, and 3				
Natural Gas Consumed	m ³ /day	514		
	m ³ /month	15,934		
Fly ash disposed	tonnes	923		
Bottom ash disposed	tonnes	3,907		

7. Complaints and Responses

Date/Time	Complaint	Action Taken
21-May 17:02	Observed purple smoke emitting from the stack on evening of May 17, 2019.	Summarized response actions taken by Covanta. Situation was brief, and was resolved without intervention.

May 2019 - Monthly CEMS Data

Date	Boiler #1								Boiler #2								Boiler #3							
	Stack Temp	O ₂ (%)	SO ₂ (mg/m ³)	NO _x (mg/m ³)	CO (mg/m ³)	THC (mg/m ³)	Opacity (%)	Furnace Temp	Stack Temp	O ₂ (%)	SO ₂ (mg/m ³)	NO _x (mg/m ³)	CO (mg/m ³)	THC (mg/m ³)	Opacity (%)	Furnace Temp	Stack Temp	O ₂ (%)	SO ₂ (mg/m ³)	NO _x (mg/m ³)	CO (mg/m ³)	THC (mg/m ³)	Opacity (%)	Furnace Temp
5/1/19	147	9.4	75.9	126.2	21.3	0.19	0.60	955	155	9.6	81.3	129.4	22.8	0.05	0.82	892	147	9.6	87.3	132.7	29	0.25	0.85	924
5/2/19	152	9.2	72.4	124.5	22.8	0.20	0.53	943	155	9.6	75.5	127.9	25.4	0.12	0.86	887	147	9.2	65.7	135.2	32.6	0.38	0.88	926
5/3/19	152	10.1	68.6	129.6	26.6	0.25	0.54	946	154	9.3	61.8	127	28.3	0.07	0.57	907	148	9.5	80.2	133.5	34.5	0.22	0.88	935
5/4/19	151	10.4	82.8	130.2	21.9	0.22	0.54	946	152	9	69.6	129.2	22	0.03	0.47	918	147	9.6	80.9	133.9	24.5	0.25	0.83	935
5/5/19	151	10	78.2	128.8	18.7	0.19	0.50	938	152	9.1	67.3	129.4	20.8	0.05	0.30	924	149	9.5	83.2	133.8	21.8	0.19	0.80	932
5/6/19	152	9.5	62.1	128.6	19.1	0.20	0.50	938	154	9	57.7	130.4	26.7	0.03	0.30	905	148	9.2	62.2	133	29.5	0.25	0.73	923
5/7/19	148	9.1	63.8	126.9	12.2	0.20	0.49	970	156	9.1	65.1	128.8	27.4	0.07	0.40	905	148	9.2	68.7	133.9	25	0.23	0.69	940
5/8/19	150	9.5	73.7	126.3	16.8	0.23	0.51	969	155	9.2	103.6	129	20.3	0.06	0.27	915	147	9.1	81.7	130.6	23.7	0.22	0.64	965
5/9/19	151	9.8	64.4	125	23.2	0.21	0.48	948	154	8.9	68.9	127	22.3	0.06	0.16	904	146	9.2	80.9	131	29.5	0.26	0.60	959
5/10/19	152	10.1	73.6	125.9	28.2	0.27	0.47	940	154	10.6	67.3	146.1	32.1	0.11	0.25	905	146	9.1	75.7	131.9	38	0.25	0.58	956
5/11/19	150	9.5	72.4	124.1	20.2	0.22	0.48	958	153	9.3	76.3	127.4	25.9	0.06	0.88	900	147	9.2	77.3	135.7	39.7	0.30	0.62	967
5/12/19	152	9.7	94.1	126.6	25.5	0.35	0.47	930	153	9	92.9	125.7	21.6	0.03	1.53	901	149	9.4	86.9	133.2	34.9	0.31	0.80	950
5/13/19	151	9.6	75.9	127.1	25.6	0.20	0.48	946	154	8.8	74.5	127.4	29.9	0.12	1.39	892	149	8.9	80.1	133.2	33.7	0.36	0.81	959
5/14/19	152	10.3	54.5	126.2	27.6	0.20	0.51	936	151	9.4	60.7	130.2	26.2	0.03	1.38	902	146	9.4	58.3	132.8	35.9	0.30	0.81	946
5/15/19	151	10.1	51.8	128	28.2	0.20	0.53	932	151	9.2	47.2	129.9	37.4	0.06	0.97	903	145	9.4	47.1	132.8	42.5	0.26	0.75	944
5/16/19	150	9.7	54.7	122.3	26.9	0.28	0.47	939	154	9.1	51.6	135.3	29.3	0.07	0.97	898	147	9.4	62.6	137.2	33.5	0.27	0.72	938
5/17/19	150	9.7	60.3	99.6	26.3	0.31	0.46	944	154	9.5	66.5	119	29.8	0.05	1.37	900	150	9.8	61.5	146.5	37.8	0.27	1.12	934
5/18/19	151	9.3	66.9	104.5	20.1	0.20	0.51	956	154	9	69.3	123.5	26.5	0.05	1.19	913	149	9.2	58.5	143.6	32.4	0.26	0.80	958
5/19/19	155	9.7	71.4	110.7	23.3	0.25	0.52	936	155	8.9	65.9	118.6	29.3	0.04	1.14	912	151	8.8	64.6	141.9	30	0.29	0.76	959
5/20/19	153	9.8	83.3	109.4	27.4	0.20	0.46	911	156	8.7	85	120.9	24.2	0.04	1.90	906	150	8.7	70.1	129.7	33.3	0.25	0.89	938
5/21/19	151	9.6	36.9	117.4	21.6	0.20	0.47	923	156	9.1	42.2	126.7	29.9	0.02	0.95	897	150	8.9	37.6	132.8	38	0.26	0.82	929
5/22/19	153	9.5	75	119	22.8	0.25	0.44	935	153	9	70.2	128.1	29.8	0.04	0.66	911	147	9.1	58.2	130.4	34	0.26	0.72	928
5/23/19	152	9.5	76	125.9	27.3	0.26	0.40	936	154	8.9	76.8	127.1	31.3	0.08	1.15	911	146	9	69.8	130.5	35.3	0.32	0.68	939
5/24/19	151	10	64.5	119.6	28.5	0.42	0.45	925	152	9	80.5	130.2	39.8	0.07	1.46	912	144	9	64.5	131.4	34.3	0.23	0.71	939
5/25/19	153	10.3	76.9	128.8	27.4	0.31	0.44	912	156	9.2	86.8	129.1	24.5	0.07	2.05	908	148	9.3	79.1	131.6	31.8	0.27	0.88	937
5/26/19	153	10.2	71.4	128.8	25.2	0.29	0.50	913	159	9.5	90.5	129.9	28.8	0.06	1.48	908	150	9.4	83.2	132.5	28.4	0.24	0.80	933
5/27/19	153	9.6	61.5	127.6	29.9	0.27	0.54	929	156	8.9	63.5	128.9	27.9	0.06	0.86	906	147	9.1	61.9	131.9	31	0.27	0.56	942
5/28/19	153	9.8	100.7	128.2	31	0.28	0.64	925	154	8.6	86.3	128.9	26.3	0.04	1.50	917	146	9.1	67.1	132.2	34.9	0.26	0.74	939
5/29/19	153	9.7	107.9	128.1	28.8	0.29	0.71	943	154	8.7	120.7	131.6	40.5	0.10	2.01	899	148	8.8	118.1	131.1	38.6	0.26	0.86	926
5/30/19	153	9.8	61.1	128.5	28.6	0.33	0.70	936	155	9	61.7	128.6	40.2	0.05	1.92	900	146	8.9	58.3	130.6	44.3	0.28	0.79	931
5/31/19	154	10.1	65.7	125.8	33.3	0.29	0.69	919	155	8.5	66.6	128.4	31.2	0.05	1.90	917	147	8.9	61.1	131.8	38.1	0.30	0.80	941
Average	151.6	9.8	70.9	123.5	24.7	0.25	0.52	938.0	154.2	9.1	72.7	128.4	28.3	0.06	1.07	905.6	147.6	9.2	70.7	133.6	33.2	0.27	0.77	941.0
Min	147.0	9.1	36.9	99.6	12.2	0.19	0.40	911.0	151.0	8.5	42.2	118.6	20.3	0.02	0.16	887.0	144.0	8.7	37.6	129.7	21.8	0.19	0.56	923.0
Max	155.0	10.4	107.9	130.2	33.3	0.42	0.71	970.0	159.0	10.6	120.7	146.1	40.5	0.12	2.05	924.0	151.0	9.8	118.1	146.5	44.3	0.38	1.12	967.0
St Dev	1.65	0.33	14.03	7.62	4.55	0.06	0.08	14.77	1.66	0.39	16.01	4.74	5.42	0.03	0.57	8.32	1.65	0.27	14.74	3.86	5.30	0.04	0.11	12.44

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 24-hr average.