

Monthly Operating Reports

April 2023

The following April 2023 operating report was sent to the Ministry of Environment and Climate Change Strategy on June 14, 2023.



Metro Vancouver - Waste-to-Energy Facility CONTINUOUS EMISSION MONITORING SYSTEM

April 2023

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	37.6	31.0	40.7
SO ₂	200	24 hr	105.3	76.3	121.2
NOx	190	24 hr	166.5	128.5	150.9
THC	10	24 hr	0.59	0.10	0.88
			Monthly Average (mg/dscm)		
			Unit 1	Unit 2	Unit 3
Opacity (%)			0.00*	1.07	1.36
CO			25.6	23.9	29.9
THC			0.14	0.02	0.31
SO ₂			59.6	55.3	71.8
NOx			129.3	126.9	138.1

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

a. HCl – March 3, 2025

b. SO₂ – March 3, 2025

* Metro Vancouver has confirmed with Covanta that the equipment is calibrated on a daily basis, and is within range.

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
2-Apr 15:00	30 min	161.0	Boiler plugged. Started gas burners, adjusted airflow, modified feed rate.
4-Apr 12:30	30 min	164.8	Started gas burners, adjusted airflow, modified feed rate, checked instrumentation.
4-Apr 23:00	30 min	134.3	Induced fan trip. Started gas burners.
5-Apr 09:00	30 min	113.8	Boiler plugged. Started gas burners, adjusted airflow, modified feed rate.
6-Apr 13:00	30 min	109.2	Boiler plugged. Started gas burners, adjusted airflow, modified feed rate, checked instrumentation.
10-Apr 14:30	30 min	129.4	Started gas burners, adjusted airflow, modified feed rate.
12-Apr 13:00	30 min	106.1	Started gas burners, adjusted airflow, modified feed rate.

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

Date / Time	Duration	Exceedance (mg/dscm)	Action Taken
19-Apr 04:00	30 min	138.7	Volatile fuel. 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
9-Apr 02:30	30 min	115.5	Started gas burners, adjusted airflow, modified feed rate.
13-Apr 15:00	30 min	113.1	Started gas burners, adjusted airflow.
18-Apr 14:30	30 min	132.9	Started gas burners, adjusted airflow.
23-Apr 10:00	30 min	146.9	No action required.
23-Apr 21:00	30 min	130.9	Feed chute hang up. Started gas burners, adjusted airflow, modified feed rate.
25-Apr 05:00	30 min	147.4	Volatile fuel. Started gas burners, adjusted airflow, modified feed rate.
25-Apr 02:00	30 min	103.7	Adjusted airflow, modified feed rate, checked instrumentation.
26-Apr 01:00	30 min	145.9	Started gas burners, adjusted airflow, modified feed rate.
30-Apr 14:00	30 min	147.1	Started gas burners, adjusted airflow, modified feed rate.

2.c. Transient Conditions

Gas burners unavailable during shutdown and furnace temperature average below 800C

Unit	Duration	Date	Time
Cause			
Action Taken to Restore Steady State Conditions			
Remedial Action Planned and/or Taken			

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	98	99	98
CO	90	Hour	98	99	98
SO ₂	90	Hour	98	99	98
NOx	90	Hour	98	99	98
THC	90	Hour	98	99	98
Stack Flow	90	Hour	100	100	100

4. Shutdown Report

Unit 1

Duration in Hours	Reason	Date
37.88	Economizer tube leak	April 2-4
4.10	Boiler plugged	April 5
0.25	Force draft fan trip	April 5
63.25	Boiler wash	April 6-9
173.78	Major outage	April 23-30

Unit 2

Duration in Hours	Reason	Date
0.42	BC Hydro power interruption	April 3
0.43	Induced draft fan trip	April 12
0.53	Tube inspection	April 19
24.46	Boiler wash	April 27-28

Unit 3

Duration in Hours	Reason	Date
0.48	Fabric filter bag change	April 2
0.43	BC Hydro power interruption	April 3
0.65	Tube inspection	April 4
34.41	Boiler wash	April 9-10
0.10	Tube inspection	April 19

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	18,791		
Waste Processed	tonnes/day	150	219	235
Maximum Waste Processed	tonnes/day	263	244	260
		Units 1, 2, and 3		
Natural Gas Consumed	m ³ /day	3,696		
	m ³ /month	110,875		
Fly ash disposed	tonnes	804		
Bottom ash disposed	tonnes	2,939		

7. Complaints and Responses

Date/Time	Complaint	Action Taken

April 2023 - 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
4/1/23	147	10.6	49.1	122.1	26.6	0.12	0.00	944	160	9.3	56.4	127.7	18.6	0.00	0.77	982	152	9.4	54.3	133.1	28.2	0.01	0.78	916
4/2/23	130	10.8	23.5	117.7	30	0.59	0.00	949	156.1	9.4	62.6	128.5	17.9	0.00	0.80	993	149	9.4	61.4	137	26.3	0.03	0.88	911
4/3/23									159	9.4	60.1	127.5	19.9	0.00	0.83	995	151	9.5	52.2	129.2	26.6	0.01	1.05	923
4/4/23									158	9.6	58.6	128	20.2	0.04	0.82	956	153	10.2	76.2	130.3	32.5	0.02	0.98	906
4/5/23	139	10.3	27.8	105.1	23	0.12	0.00	958	156	9.8	39.1	127.1	20.5	0.10	0.95	936	149	9.7	33	134.1	24.5	0.01	0.79	910
4/6/23									156	9.6	42.6	127.3	23.7	0.07	1.19	943	154	9.8	45.4	139.4	31.8	0.04	1.04	910
4/7/23									158	9.3	51.3	127.8	26.6	0.07	1.28	946	153	9.6	51.1	137.4	27.2	0.03	0.75	908
4/8/23									159	9.3	64.9	127.7	21.1	0.08	1.80	950	151	9.3	56.5	136.6	20.1	0.02	1.00	928
4/9/23	157	9.3	105.3	166.5	23.5	0.16	0.00	914	159	9.1	66.1	126.4	22.4	0.05	1.30	956								
4/10/23	158	9.6	100.2	139.5	25.8	0.07	0.00	910	160	9.5	56.3	127.7	29.1	0.06	0.79	932								
4/11/23	156	9.5	97.5	127.4	19.8	0.05	0.00	942	156	9.8	55.2	127.5	31	0.01	0.84	936	153	9.2	121.2	142.7	27.7	0.10	1.11	928
4/12/23	157	9.7	74.3	129	26.6	0.10	0.00	921	159	9.9	52.1	126.3	21.5	0.00	0.94	901	156	9.2	90.5	142.7	21.8	0.02	1.36	903
4/13/23	156	9.7	84.6	129	21.1	0.10	0.00	939	157	10.3	62.9	125.7	22.1	0.00	1.18	923	154						1.39	926
4/14/23	155	9.9	65.8	127	22	0.05	0.00	938	159	10.1	41.4	126.5	23.9	0.00	1.15	916	151	9.7	82.1	134.4	33.6	0.03	1.46	910
4/15/23	157	9.8	65.8	132.2	20.8	0.12	0.00	937	158	9.5	48.1	126.3	24.4	0.00	1.69	934	152	9.5	89.4	139.5	33.3	0.13	1.23	908
4/16/23	157	9.7	66.9	132.4	17.1	0.13	0.00	955	158	9.8	51	128.1	17.2	0.00	2.53	934	152	9.8	90.6	136.2	26.4	0.24	1.26	905
4/17/23	159	9.6	49.2	136.3	28.5	0.12	0.00	943	160						1.47	944	151	9.3	62.3	139.8	31.3	0.22	1.49	909
4/18/23	159	9.8	54	130	26.1	0.12	0.00	947	159	9.3	73.2	127.4	29.9	0.01	0.82	913	152	9.4	76.3	133.7	40.7	0.40	1.99	930
4/19/23	161	9.9	39	129	25.2	0.12	0.00	949	160	9.3	44.1	127.4	30.4	0.07	0.86	910	156	9.4	66.6	135.9	32.6	0.24	1.68	925
4/20/23	157	10	44.2	125.7	28.1	0.09	0.00	950	161	9.2	47.9	126.7	30.7	0.01	0.91	912	155	9.1	69.1	141.3	36.5	0.37	1.59	920
4/21/23	154	10.4	48.3	126.2	37.6	0.12	0.00	944	159	9.5	57	125.9	24.9	0.02	0.97	935	155	9.1	82.8	138.8	26.6	0.46	1.61	916
4/22/23	152	10.6	40.5	126.8	27.9	0.14	0.00	926	158	9.9	45.9	127.3	25.2	0.00	1.10	917	156	9.4	75	150.9	21	0.23	1.77	911
4/23/23	156	10.5	37.3	125	31.7	0.17	0.00	918	157	10	40.7	127.9	25	0.02	1.54	905	155	8.4	73.7	148.5	34.9	0.59	1.45	925
4/24/23									156	9.7	36.4	127.8	22.8	0.00	0.63	938	155	9	55.8	141.6	24.3	0.55	1.18	918
4/25/23									155	9.8	75.9	124.3	19.9	0.00	0.65	929	156	8.9	92.6	135.5	32.8	0.71	1.59	929
4/26/23									150	10.1	58.4	124.4	21.2	0.00	0.70	939	154	9.2	92.9	133	32.7	0.74	1.76	936
4/27/23																155	9.5	70.1	143.6	33.3	0.74	1.57	933	
4/28/23									154	9.8	60.4	125.6	26.2	0.00	0.79	936	181	8.9	73.3	136.7	33.2	0.88	1.65	929
4/29/23									153	9.8	76.3	127.1	29.5	0.02	0.81	919	154	8.9	80.3	138.9	31.9	0.78	1.70	915
4/30/23									154	10	64.4	125.9	22.2	0.00	0.83	943	157	8.6	64.5	137.1	35.4	0.81	1.83	922
Average	154	10.0	59.6	129.3	25.6	0.14	0.00	938	157.4	9.6	55.3	126.9	23.9	0.02	1.07	937.0	154.4	9.3	71.8	138.1	29.9	0.31	1.36	918.2
Min	130	9.3	23.5	105.1	17.1	0.05	0.00	910	150.0	9.1	36.4	124.3	17.2	0.00	0.63	901.0	149.0	8.4	33.0	129.2	20.1	0.01	0.75	903.0
Max	161	10.8	105.3	166.5	37.6	0.59	0.00	958	161.0	10.3	76.3	128.5	31.0	0.10	2.53	995.0	181.0	10.2	121.2	150.9	40.7	0.88	1.99	936.0
St Dev	7.8	0.44	24.69	11.84	4.83	0.12	0.00	14.3	2.48	0.31	10.91	1.07	4.07	0.03	0.42	23.41	5.65	0.39	18.38	4.95	5.06	0.31	0.35	9.56

Blank days have less than 18 hours of valid data due to unit shut downs or analyzer outage/maintenance.
 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.
 * Metro Vancouver has confirmed with Covanta that the equipment is calibrated on a daily basis, and is within range.