

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

April 2024

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	36.9	33.1	39.9
SO ₂	200	24 hr	146.6	104.5	98.3
NOx	190	24 hr	140.7	140.3	141.1
THC	10	24 hr	0.19	0.10	1.74
			Monthly Average (mg/dscm)		
			Unit 1	Unit 2	Unit 3
Opacity (%)			1.25	0.73	0.90
CO			29.0	25.1	29.1
THC			0.10	0.01	0.65
SO ₂			79.5	69.0	62.0
NOx			130.1	130.8	134.6

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
1-Apr 18:00	30 min	111.7	Started gas burners, adjusted airflow, modified feed rate, checked instrumentation.
2-Apr 12:30	30 min	120.7	Started gas burners, adjusted airflow, modified feed rate.
5-Apr 11:00	30 min	124.4	Started gas burners, adjusted airflow, modified feed rate, checked instrumentation.
6-Apr 04:00	30 min	113.1	Started gas burners, adjusted airflow, modified feed rate.
6-Apr 10:30	30 min	105.6	Started gas burners, adjusted airflow, modified feed rate.
20-Apr 10:00	30 min	105.9	Started gas burners, adjusted airflow, modified feed rate.
21-Apr 00:30	30 min	114.1	Feed chute hang up. Started gas burners, adjusted airflow, modified feed rate.
27-Apr 19:00	30 min	212.0	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
1-Apr 13:00	30 min	184.0	Started gas burners, adjusted airflow, modified feed rate.
8-Apr 08:00	30 min	108.3	Started gas burners, adjusted airflow, modified feed rate.
14-Apr 13:00	30 min	117.3	Started gas burners, adjusted airflow.
18-Apr 12:00	30 min	164.3	Volatile fuel. Started gas burners, adjusted airflow, modified feed rate, checked instrumentation.
23-Apr 13:00	30 min	110.8	Started gas burners, adjusted airflow, modified feed rate.

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

Date / Time	Duration	Exceedance (mg/dscm)	Action Taken
15-Apr 19:30	30 min	136.4	Started gas burners, adjusted airflow, modified feed rate.
17-Apr 05:30	30 min	108.3	Feed chute hang up. Started gas burners, adjusted airflow, modified feed rate.
17-Apr 10:30	30 min	173.4	Started gas burners, adjusted airflow, modified feed rate.
18-Apr 05:30	30 min	111.7	Started gas burners, adjusted airflow, modified feed rate.
18-Apr 12:30	30 min	115.2	Started gas burners, adjusted airflow, modified feed rate, checked instrumentation.
19-Apr 11:00	30 min	124.1	Started gas burners, adjusted airflow, modified feed rate.
24-Apr 10:00	30 min	100.3	Volatile fuel. Started gas burners, adjusted airflow.
24-Apr 09:30	30 min	150.8	Feed chute hang up. Started gas burners, adjusted airflow, modified feed rate.
25-Apr 20:00	30 min	101.0	Feed chute hang up. Started gas burners, adjusted airflow, modified feed rate.
28-Apr 16:00	30 min	113.7	Adjusted airflow.

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

Date / Time	Duration	Exceedance (%)	Action Taken
1-Apr 23:00	30 min	8.3	Visually inspected stack, closed fabric filter outlet dampers, shut down and inspected compartments, inspected instrumentation.

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

Analyser	Required Availability (% hours per quarter)	Averaging Period	Monthly Availability		
			Unit 1	Unit 2	Unit 3
Opacity	90	Hour	100	100	100
Oxygen	90	Hour	95	99	97
CO	90	Hour	95	99	97
SO ₂	90	Hour	95	99	97
NOx	90	Hour	94	98	97
THC	90	Hour	90	99	96
Stack Flow	90	Hour	100	100	100

4. Shutdown Report

Unit 1

Duration in Hours	Reason	Date
0.75	Boiler inspection	April 4
290.65	Major outage	April 7-19
0.58	Forced draft fan trip	April 26
1.38	Boiler inspection	April 30
11.65	Grate bar failure	April 30

Unit 2

Duration in Hours	Reason	Date
2.80	Fabric filter baghouse maintenance	April 1-2
0.50	Forced draft fan trip	April 2
6.37	Fabric filter baghouse maintenance	April 2
5.43	Fabric filter baghouse maintenance	April 4
0.93	Fabric filter baghouse maintenance	April 7

Unit 3

Duration in Hours	Reason	Date
0.20	Boiler visual inspection	April 4
0.70	Expansion joint repair	April 4
0.67	Refuse crane outage	April 16
0.50	Refuse crane outage	April 26

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	18,122		
Waste Processed	tonnes/day	143	246	254
Maximum Waste Processed	tonnes/day	262	263	264
		Units 1, 2, and 3		
Natural Gas Consumed	m ³ /day	2,225		
	m ³ /month	66,735		
Fly ash disposed	tonnes	861		
Bottom ash disposed	tonnes	3,104		

7. Complaints and Responses

Date/Time	Complaint	Action Taken

April 2024 - 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	
4/1/24	153	10.7	17.5	125.4	33.9	0.19	1.48	934	152	10.5	60.2	132.8	28.2	0.02	1.09	918	159	8.9	33.9	133.6	25.4	0.80	0.86	912	
4/2/24	149	10.5	35.3	127	31.7	0.14	1.75	943								158	8.9	62.4	137	24.5	0.90	0.86	914		
4/3/24	144	10.5	23.4	124.1	26.4	0.10	2.27	948	147	10.4	68.8	134.2	20.1	0.00	1.13	944	157	9	54	135.9	21.9	0.96	0.87	935	
4/4/24	145	10.6	30.6	128.4	31.6	0.12	1.43	940	145	10.6	63.6	130.3	28.4	0.04	1.34	940	155	8.5	56.1	139.4	23.1	0.78	0.88	943	
4/5/24	149	10.3	44.2	127.4	33.4	0.08	0.86	945	147	10.7	65.1	128.9	25.2	0.04	1.05	940	157	8.5	56	135.5	25.2	1.29	0.88	934	
4/6/24	150	10.1	42.6	126.7	32	0.08	0.90	969	148	10.2	67.7	129.5	26.8	0.01	1.50	952	156	8.3	55.5	130.6	23.8	0.78	0.90	943	
4/7/24									148	9.8	63.9	129	29.1	0.01	0.83	937	157	7.9	52.7	133.2	25.6	0.25	0.90	952	
4/8/24									149	10.7	48	127.7	32.8	0.00	0.59	932	156	8.8	42.4	141.1	26.3	0.00	0.93	931	
4/9/24									148	10.9	92.2	130.9	29.8	0.00	0.58	939	157	9.3	84.3	133	25.9	0.00	0.91	930	
4/10/24									148	10.3	82.3	131.4	22.8	0.00	0.61	953	157	9.5	60.3	135.4	25.8	0.00	0.94	920	
4/11/24									148	10.2	84.6	131.4	31.6	0.00	0.60	934	155	9.2	63.9	138.2	26.8	0.00	0.92	922	
4/12/24									148	10.3	69.8	129.3	33.1	0.01	0.54	951	156	9.3	63.1	135.3	27.3	0.58	0.88	929	
4/13/24									149	10.7	66.2	128.6	31.4	0.01	0.59	927	157	9.5	74.3	133.3	29.6	1.32	0.92	915	
4/14/24									149	9.8	55.2	134.2	24.2	0.02	0.64	963	157	9.6	57.8	129.2	33.1	0.05	0.93	913	
4/15/24									149	10	49.6	131.3	22.4	0.00	0.60	945	155	9.2	60.2	131.9	35.8	0.76	0.92	924	
4/16/24									147	10.2	66	129.5	23.7	0.00	0.66	956	155	9	65	131.9	30.8	0.61	0.93	935	
4/17/24									147	10.5	57.7	133.6	20.5	0.00	0.68	960	155	8.7	59.6	132.3	39.9	0.52	0.93	918	
4/18/24									146	10.5	62	132.6	27.2	0.10	0.71	945	155	8.7	73.6	134.4	36.2	0.51	0.94	924	
4/19/24									147	10.5	46.4	133.2	21.3	0.01	0.69	942	155	9.3	48.3	130.2	35.2	1.06	0.95	907	
4/20/24	148	9.8	106.2	140.7	36.9		1.00	869	148	10	70.3	134.9	18.9	0.01	0.64	958	156	8.9	20.8	134.7	27.3	1.63	0.94	911	
4/21/24	145							951	151	10.2	79.2	134.1	19.5	0.01	0.64	947	158						1.00	928	
4/22/24	150							942	149	10.3	49.3	127.3	20.9	0.02	0.63	951	156							0.94	923
4/23/24	153	10.1	127.8	136.7	25	0.15	1.11	920	147	10.5	82.2	140.3	21.3	0.02	0.65	945	156	9	98.3	139	28.8	1.32	0.89	905	
4/24/24	153	10.2	128.4	128.7	27.9	0.17	1.03	930	148	10.3	89.2	130.1	20.7	0.01	0.59	940	156	9	67.4	135.3	34.4	0.77	0.90	900	
4/25/24	153	10	146.6	127.7	30.3	0.18	1.07	923	147	10.1	104.5	130.9	28	0.02	0.58	954	156	9	85.2	137.9	36.3	1.74	0.93	920	
4/26/24	153	10.6	99.1	132	27	0.00	1.11	913	148	10.4	72.3	125.9	22.6	0.00	0.57	928	155	9.3	64.2	130.5	28.9	0.00	0.84	896	
4/27/24	154	10.2	118.2	134.6	23.6	0.00	1.10	963	150	10	94.3	130.8	23.3	0.00	0.58	948	157	8.7	80.1	136.7	26.7	0.00	0.83	918	
4/28/24	153	10.2	114.9	132	20	0.00	1.18	960	150	9.9	81.8	126.6	23.8	0.00	0.60	939	157	9	77.1	138.1	26.6	0.00	0.85	916	
4/29/24	153	10.5	78.5	130.4	25.6	0.14	1.22	939	150	10.4	55.2	127.3	25.7	0.02	0.65	935	157	8.8	48.3	133.8	28.4	0.62	0.85	909	
4/30/24									149	10.6	54	127.7	23.5	0.00	0.66	934	157	8.7	71.7	132.5	34.8	0.83	0.86	924	
Average	150	10.3	79.5	130.1	29.0	0.10	1.25	937	148.2	10.3	69.0	130.8	25.1	0.01	0.73	943.3	156.3	8.9	62.0	134.6	29.1	0.65	0.90	921.7	
Min	144	9.8	17.5	124.1	20.0	0.00	0.86	869	145.0	9.8	46.4	125.9	18.9	0.00	0.54	918.0	155.0	7.9	20.8	129.2	21.9	0.00	0.83	896.0	
Max	154	10.7	146.6	140.7	36.9	0.19	2.27	969	152.0	10.9	104.5	140.3	33.1	0.10	1.50	963.0	159.0	9.6	98.3	141.1	39.9	1.74	1.00	952.0	
St Dev	3.4	0.26	45.59	4.65	4.64	0.07	0.38	23.7	1.48	0.28	15.10	3.08	4.19	0.02	0.25	10.54	1.06	0.38	15.96	3.03	4.76	0.52	0.04	12.92	

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.