

Monthly Operating Reports

December 2023

The following December 2023 operating report was sent to the Ministry of Environment and Climate Change Strategy on February 12, 2024.

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

December 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	43.6	36.6	30.0
SO ₂	200	24 hr	69.2	71.3	55.6
NOx	190	24 hr	130.9	134.8	139.5
THC	10	24 hr	0.17	0.06	0.75
			Monthly Average (mg/dscm)		
			Unit 1	Unit 2	Unit 3
Opacity (%)			0.81	0.48	1.57
CO			30.9	27.4	24.6
THC			0.07	0.02	0.31
SO ₂			29.8	48.6	35.8
NOx			127.4	129.0	128.1

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

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
4-Dec 08:30	30 min	102.6	Online wash. Started gas burners, adjusted airflow, modified feed rate.
4-Dec 10:00	30 min	162.8	Online wash. Started gas burners, adjusted airflow, modified feed rate.
5-Dec 14:00	30 min	243.6	Volatile fuel. Started gas burners, adjusted airflow, modified feed rate.
16-Dec 09:30	30 min	101.0	Poor fuel quality. Started gas burners, adjusted airflow, modified feed rate.
23-Dec 19:00	30 min	151.0	Adjusted airflow, modified feed rate, checked instrumentation.
24-Dec 14:30	30 min	124.9	Started gas burners, adjusted airflow, modified feed rate.
26-Dec 22:30	30 min	102.0	Poor fuel. Started gas burners, adjusted airflow, modified feed rate.
30-Dec 12:30	30 min	118.0	Volatile fuel. Started gas burners, adjusted airflow, modified feed rate, checked instrumentation.

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

Date / Time	Duration	Exceedance (mg/dscm)	Action Taken
15-Dec 21:00	30 min	117.7	Adjusted airflow, modified feed rate.
19-Dec 05:00	30 min	111.9	Started gas burners, adjusted airflow, modified feed rate.
21-Dec 10:30	30 min	261.9	Started gas burners, adjusted airflow, modified feed rate, checked instrumentation.
28-Dec 17:30	30 min	142.7	Adjusted airflow.
29-Dec 16:00	30 min	114.7	Wet fuel. Started gas burners, adjusted airflow, modified feed

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-Dec 12:00	30 min	261.6	Adjusted airflow, modified feed rate.
14-Dec 23:00	30 min	100.7	Started gas burners, adjusted airflow, modified feed rate.
20-Dec 09:30	30 min	300.4	Volatile fuel. Adjusted airflow.
22-Dec 09:30	30 min	107.6	Started gas burners, adjusted airflow, modified feed rate.
23-Dec 04:30	30 min	101.9	Adjusted airflow, modified feed rate, checked instrumentation.
27-Dec 16:00	30 min	195.2	Wet fuel. Started gas burners, adjusted airflow, modified feed
30-Dec 19:30	30 min	116.8	Started gas burners, adjusted airflow, modified feed rate, checked 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

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

4. Shutdown Report

Unit 1

Duration in Hours	Reason	Date
1.95	Poor refuse quality	December 10
7.98	Fabric filter plugged	December 13
3.67	CEMS maintenance	December 14
2.23	Fabric filter baghouse maintenance	December 20
0.08	Fabric filter baghouse maintenance	December 20
0.28	Fabric filter inspection	December 25
0.72	Ash Discharger plugged	December 27

Unit 2

Duration in Hours	Reason	Date
2.33	Poor refuse quality	December 10
0.47	Forced draft fan trip	December 14
14.58	Fabric filter bag replacement	December 17
9.63	CEMS maintenance	December 18
3.05	Fabric filter bag replacement	December 22
1.07	Ash discharger plugged	December 27
4.15	Boiler inspection	December 29

Unit 3

Duration in Hours	Reason	Date
0.60	Ash discharger plug	December 27
1.23	Fabric filter bag replacement	December 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	23,573		
Waste Processed	tonnes/day	232	232	252
Maximum Waste Processed	tonnes/day	280	263	271
Natural Gas Consumed	m ³ /day	9,174		
	m ³ /month	284,386		
Fly ash disposed	tonnes	325		
Bottom ash disposed	tonnes	3,267		

7. Complaints and Responses

Date/Time	Complaint	Action Taken

December 2023 - Monthly CEMS Data

	Boiler #1								Boiler #2								Boiler #3							
	Stack	O ₂	SO ₂	NO _x	CO	THC	Opacity	Furnace	Stack	O ₂	SO ₂	NO _x	CO	THC	Opacity	Furnace	Stack	O ₂	SO ₂	NO _x	CO	THC	Opacity	Furnace
Date	Temp	(%)	(mg/m ³)	(mg/m ³)	(mg/m ³)	(mg/m ³)	(%)	Temp	Temp	(%)	(mg/m ³)	(mg/m ³)	(mg/m ³)	(mg/m ³)	(%)	Temp	Temp	(%)	(mg/m ³)	(mg/m ³)	(mg/m ³)	(mg/m ³)	(%)	Temp
12/1/23	145	10.2	36.7	125.6	28.0	0.12	0.54	954	148	10.2	57.2	130.0	27.3	0.00	0.49	894	149	9.0	53.9	133.9	25.0	0.45	1.59	902
12/2/23	145	10.1	38.0	124.5	24.1	0.13	0.59	933	148	10.1	58.4	129.7	29.7	0.02	0.49	899	152	8.8	49.1	132.0	27.3	0.46	1.65	907
12/3/23	147	10.3	49.3	126.3	23.4	0.11	0.61	923	148	10.3	62.5	128.9	33.2	0.02	0.49	895	151	9.3	55.6	128.8	25.4	0.28	1.76	892
12/4/23	147	10.1	28.7	124.6	38.5	0.15	0.62	953	148	10.7	63.8	129.0	27.9	0.00	0.43	896	152	9.2	46.3	134.5	24.5	0.40	1.83	891
12/5/23	148	10.4	37.4	128.3	43.6	0.11	0.61	937	149	10.8	51.3	128.1	25.7	0.00	0.37	885	154	9.1	37.5	126.3	26.6	0.75	1.83	893
12/6/23	149	10.2	33.2	127.6	35.6	0.11	0.59	929	148	10.8	40.3	127.2	29.5	0.06	0.40	873	155	9.3	34.9	127.3	24.9	0.41	1.89	888
12/7/23	148	10.4	38.7	129.8	35.4	0.08	0.68	934	148	10.8	44.2	128.2	30.2	0.00	0.42	885	151	8.8	43.5	129.0	26.0	0.42	1.42	905
12/8/23	148	10.2	38.0	128.3	36.7	0.00	0.80	959	150	10.4	45.1	129.0	26.9	0.00	0.48	910	151	9.4	37.1	19.6	25.7	0.00	1.63	896
12/9/23	148	10.1	41.2	128.4	31.2	0.00	0.85	972	148	10.7	47.7	128.6	25.9	0.00	0.48	905	152	9.5	46.5	129.4	23.0	0.00	1.76	900
12/10/23	150	10.6	35.5	129.7	33.0	0.00	0.84	923	148	11.2	35.3	131.7	25.0	0.00	0.45	870	155	10.2	29.9	126.8	27.7	0.00	1.93	863
12/11/23	150	10.6	38.7	128.1	39.5	0.12	1.08	930	144	11.0	45.1	124.6	32.8	0.03	0.42	872	152	9.1	35.2	127.8	26.1	0.70	1.42	887
12/12/23	150	10.2	69.2	130.0	31.3	0.14	1.80	949	143	11.3	43.4	127.0	29.4	0.00	0.45	888	151	9.1	50.5	126.9	25.2	0.46	1.78	903
12/13/23									149	10.9	45.9	132.6	25.0	0.01	0.46	893	152	9.2	36.3	130.3	24.1	0.25	2.15	9.3
12/14/23	151	10.1	26.6	127.5	29.9	0.08	0.97	948	152	10.7	71.3	132.5	31.6	0.05	0.48	892	153	9.2	40.8	133.0	28.8	0.37	2.48	909
12/15/23	153	10.5	25.8	127.3	30.9	0.04	1.03	947	154	10.8	40.6	127.2	28.8	0.01	0.50	912	155	8.7	45.1	139.5	16.6	0.18	2.00	946
12/16/23	153	10.8	36.0	130.9	35.0	0.05	1.14	938	155	10.0	0.7	130.6	28.4	0.01	0.47	904	153	8.8	54.9	133.1	19.6	0.24	1.12	945
12/17/23	151	10.3	31.3	128.8	21.5	0.12	0.74	968									157	9.2	48.8	135.9	23.7	0.38	1.39	923
12/18/23	152	10.9	15.0	127.2	23.5	0.06	0.88	958									153	9.3	15.3	137.3	19.2	0.34	1.34	922
12/19/23	150	11.2	43.4	127.7	30.6	0.11	0.76	926	148	11.1	56.5	132.3	36.6	0.01	0.38	899	150	9.8					1.29	895
12/20/23	149	11.1	26.0	130.6	28.6	0.12	0.68	929	147	10.9	56.8	134.8	31.8	0.01	0.35	894	152	9.3	26.8	134.5	28.6	0.30	1.27	918
12/21/23	151	10.5	28.3	127.1	25.4	0.02	0.64	933	148	10.9	60.4	129.7	31.3	0.06	0.37	888	153	9.3	27.3	132.3	23.8	0.14	1.30	919
12/22/23	152	10.7	19.0	127.8	21.3	0.01	0.80	939	149	10.7	54.7	126.7	18.9	0.00	1.57	892	154	9.5	21.2	131.8	19.9	0.44	1.36	916
12/23/23	153	9.9	27.3	126.2	28.8	0.06	0.85	963	153	10.8	62.8	126.2	29.4	0.03	0.49	893	158	9.7	30.6	134.6	24.4	0.41	1.40	908
12/24/23	155	10.7	13.2	127.9	33.1	0.05	0.94	946	152	11.3	41.9	125.6	25.5	0.02	0.52	880	156	10.0	18.9	129.4	25.4	0.58	1.40	894
12/25/23	155	10.2	22.4	128.0	18.2	0.01	0.87	958	152	10.8	47.9	126.5	22.5	0.00	0.46	920	154	9.8	23.5	135.8	18.3	0.35	1.37	902
12/26/23	153	10.6	15.2	127.7	35.7	0.00	0.75	924	153	11.1	41.3	127.0	26.5	0.00	0.42	897	157	9.8	23.7	130.8	28.8	0.00	1.36	891
12/27/23	152	11.0	8.6	126.5	33.8	0.00	0.72	913	150	11.1	40.4	126.9	30.6	0.00	0.41	898	157	9.5	20.4	129.2	30.0	0.00	1.44	911
12/28/23	151	10.1	14.2	125.3	29.6	0.00	0.71	949	149	11.0	41.9	133.4	27.2	0.00	0.40	921	156	9.4	28.8	135.2	23.1	0.00	1.55	933
12/29/23	153	10.2	22.9	123.9	32.6	0.09	0.74	942	152	11.0	46.1	130.2	0.3	0.06	0.38	901	155	9.3	30.2	137.8	24.7	0.34	1.41	915
12/30/23	155	10.9	18.2	124.2	35.9	0.17	0.74	919	153	10.6	49.3	128.7	31.7	0.05	0.40	929	154	9.3	29.2	131.1	27.4	0.15	1.29	925
12/31/23	149	10.5	16.3	124.9	31.0	0.14	0.74	930	151	10.3	57.5	127.6	26.3	0.01	0.39	936	152	9.1	31.6	129.0	24.6	0.64	1.20	929
Average	150	10.5	29.8	127.4	30.9	0.07	0.81	941	150	10.8	48.6	129.0	27.4	0.02	0.48	897	153	9.3	35.8	128.1	24.6	0.31	1.57	879
Min	145	9.9	8.6	123.9	18.2	0.00	0.54	913	143	10.0	0.7	124.6	0.3	0.00	0.35	870	149	8.7	15.3	19.6	16.6	0.00	1.12	9
Max	155	11.2	69.2	130.9	43.6	0.17	1.80	972	155	11.3	71.3	134.8	36.6	0.06	1.57	936	158	10.2	55.6	139.5	30.0	0.75	2.48	946
St Dev	2.7	0.3	12.8	1.9	5.9	0.05	0.24	15.3	2.8	0.3	12.8	2.5	6.3	0.02	0.22	15.8	2.3	0.4	11.5	20.8	3.2	0.21	0.31	162.3

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.