ATTACHMENT 1

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

May 2021

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	39.0	27.3	36.3
SO_2	200	24 hr	91.0	97.4	154.3
NOx	190	24 hr	132.8	144.6	142.0
THC	10	24 hr	0.18	0.49	0.38
			Monthly Average (mg/dscm)		
			Unit 1	Unit 2	Unit 3
Opacity (%)			1.05	0.27	0.74
CO			22.0	19.1	30.5
THC			0.05	0.06	0.27
SO_2			58.1	69.4	85.8
NOx			128.6	130.4	134.8

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. SO_2 – 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-May 13:00	30 min	244.7	Induced draft fan tripped, started gas burners, adjusted airflow, modified feed rate.
5-May 18:30	30 min	118.7	Started gas burners, adjusted airflow, modified feed rate.
28-May 11:30	30 min	159.4	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
2-May 19:00	30 min	120.1	Volatile fuel, adjusted airflow.
25-May 10:00	30 min	129.4	Started gas burners, adjusted airflow, modified feed rate.
27-May 12:30	30 min	141.0	Turbine trip, adjusted airflow.
28-May 11:30	30 min	107.9	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
3-May 06:00	30 min	201.0	Adjusted airflow, shut down unit.
28-May 11:30	30 min	129.1	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	
#1	22 minutes	2-May-21	09:31-9:53	

Cause

Auxiliary burners on unit 1 were unavailable to maintain the secondary combustion zone temperature during boiler shutdown period.

Unit 1 was placed in shutdown mode at 2021-05-02 09:31 due to an induced draft fan trip. The Provincial Boiler Vessel Safety Act and the Provincial Gas Act require a boiler purge following the restart of the combustion fans. The auxiliary burners were unavailable for a period of 22 minutes between 2021-05-02 09:31 and 2021-05-02 9:53.

Action Taken to Restore Steady State Conditions

Covanta restarted the induced draft fan at 2021-05-02 09:36 and the forced draft fan at 2021-05-02 09:38. The natural gas burners were back online at 2021-05-02 09:53. The shutdown was completed at 2021-05-02 10:12.

Remedial Action Planned and/or Taken

Covanta is working to determine cause of the induced draft fan trip.

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

Unit	Duration	Date	Time	
#2	39 minutes	2-May-21	22:13-22:52	

Cause

Auxiliary burners on unit 2 were unavailable to maintain the secondary combustion zone temperature during boiler shutdown period.

Unit 1 was placed in shutdown mode at 2021-05-02 22:10 due to an ash discharger plug. During shutdown, the induced draft fan tripped due to low steam drum water level. The Provincial Boiler Vessel Safety Act and the Provincial Gas Act require a boiler purge following the restart of the combustion fans. The auxiliary burners were unavailable for a period of 39 minutes between 2021-05-02 22:13 and 2021-05-02 22:52.

Action Taken to Restore Steady State Conditions

Covanta started the induced draft fan at 2021-05-02 22:21 and the forced draft fan at 2021-05-02 22:41. The natural gas burners were back online at 2021-05-02 22:52. The shutdown was completed at 2021-05-02 23:04.

Remedial Action Planned and/or Taken

Covanta to develop new training procedure to remind boiler operators to watch steam drum water level while in shutdown to prevent tripping the induced draft fans.

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

Unit	Duration	Date	Time	
#1	23 minutes	5-May-21	13:01-13:24	

Cause

Auxiliary burners on unit 1 were unavailable to maintain the secondary combustion zone temperature during boiler shutdown period.

Unit 1 was placed in shutdown mode at 2021-05-05 13:01 due to an induced draft fan trip. The Provincial Boiler Vessel Safety Act and the Provincial Gas Act require a boiler purge following the restart of the combustion fans. The auxiliary burners were unavailable for a period of 23 minutes between 2021-05-05 13:01 and 2021-05-05 13:24.

Action Taken to Restore Steady State Conditions

Covanta restarted the induced draft fan at 2021-05-05 13:08 and the forced draft fan at 2021-05-05 13:09. The natural gas burners were back online at 2021-05-05 13:24. The shutdown was completed at 2021-05-05 13:41.

Remedial Action Planned and/or Taken

Covanta is working to determine cause of the induced draft fan trip.

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

Unit	Duration	Date	Time	
#1	38 minutes	5-May-21	13:47-14:25	

Cause

Auxiliary burners on unit 1 were unavailable to maintain the secondary combustion zone temperature during boiler shutdown period.

Unit 1 was placed in shutdown mode at 2021-05-05 13:47 due to an induced draft fan trip. The Provincial Boiler Vessel Safety Act and the Provincial Gas Act require a boiler purge following the restart of the combustion fans. The auxiliary burners were unavailable for a period of 38 minutes between 2021-05-05 13:47 and 2021-05-05 14:25.

Action Taken to Restore Steady State Conditions

Covanta restarted the induced draft fan at 2021-05-05 14:05 and the forced draft fan at 2021-05-05 14:10. The natural gas burners were back online at 2021-05-05 14:25. The shutdown was completed at 2021-05-05 14:56.

Remedial Action Planned and/or Taken

Covanta is working to determine cause of the induced draft fan trip.

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

Unit	Duration	Date	Time	
#1	21 minutes	28-May-21	11:55-12:16	

Cause

Auxiliary burners on unit 1 were unavailable to maintain the secondary combustion zone temperature during boiler shutdown period.

Unit 1 was placed in shutdown mode at 2021-05-28 11:55 due to BC Hydro power failure which impacted all three boilers. The Provincial Boiler Vessel Safety Act and the Provincial Gas Act require a boiler purge following the restart of the combustion fans. The auxiliary burners were unavailable for a period of 21 minutes between 2021-05-28 11:55 and 2021-05-28 12:16.

Action Taken to Restore Steady State Conditions

Covanta restarted the induced draft fan and forced draft fan at 2021-05-28 11:50. The natural gas burners were back online at 2021-05-28 12:16. The shutdown was completed at 2021-05-28 12:37.

Remedial Action Planned and/or Taken

None

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

Unit	Duration	Date	Time	
#2	21 minutes	28-May-21	11:55-12:16	

Cause

Auxiliary burners on unit 2 were unavailable to maintain the secondary combustion zone temperature during boiler shutdown period.

Unit 2 was placed in shutdown mode at 2021-05-28 11:55 due to BC Hydro power failure which impacted all three boilers. The Provincial Boiler Vessel Safety Act and the Provincial Gas Act require a boiler purge following the restart of the combustion fans. The auxiliary burners were unavailable for a period of 21 minutes between 2021-05-28 11:55 and 2021-05-28 12:16.

Action Taken to Restore Steady State Conditions

Covanta restarted the induced draft fan and forced draft fan at 2021-05-28 11:55. The natural gas burners were back online at 2021-05-28 12:16. The shutdown was completed at 2021-05-28 12:46.

Remedial Action Planned and/or Taken

None

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

Unit	Duration	Date	Time	
#3	17 minutes	28-May-21	11:55-12:12	

Cause

Auxiliary burners on unit 3 were unavailable to maintain the secondary combustion zone temperature during boiler shutdown period.

Unit 3 was placed in shutdown mode at 2021-05-28 11:55 due to BC Hydro power failure which impacted all three boilers. The Provincial Boiler Vessel Safety Act and the Provincial Gas Act require a boiler purge following the restart of the combustion fans. The auxiliary burners were unavailable for a period of 17 minutes between 2021-05-28 11:55 and 2021-05-28 12:12.

Action Taken to Restore Steady State Conditions

Covanta restarted the induced draft fan and forced draft fan at 2021-05-28 11:55. The natural gas burners were back online at 2021-05-28 12:12. The shutdown was completed at 2021-05-28 12:40.

Remedial Action Planned and/or Taken

None

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

Unit	Duration	Date	Time	
#1	35 minutes	29-May-21	21:10-21:45	

Cause

Auxiliary burners on unit 1 were unavailable to maintain the secondary combustion zone temperature during boiler shutdown period.

Unit 1 was placed in shutdown mode at 2021-05-29 21:10 due to BC Hydro power failure which impacted all three boilers. The Provincial Boiler Vessel Safety Act and the Provincial Gas Act require a boiler purge following the restart of the combustion fans. The auxiliary burners were unavailable for a period of 35 minutes between 2021-05-29 21:10 and 2021-05-29 21:45.

Action Taken to Restore Steady State Conditions

Covanta restarted the induced draft fan at 2021-05-29 21:27 and forced draft fan at 2021-05-29 21:30. The natural gas burners were back online at 2021-05-29 21:45. The shutdown was completed at 2021-05-29 22:09.

Remedial Action Planned and/or Taken

None

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

Unit	Duration	Date	Time	
#2	29 minutes	29-May-21	21:10-21:39	

Cause

Auxiliary burners on unit 2 were unavailable to maintain the secondary combustion zone temperature during boiler shutdown period.

Unit 2 was placed in shutdown mode at 2021-05-29 21:10 due to BC Hydro power failure which impacted all three boilers. The Provincial Boiler Vessel Safety Act and the Provincial Gas Act require a boiler purge following the restart of the combustion fans. The auxiliary burners were unavailable for a period of 29 minutes between 2021-05-29 21:10 and 2021-05-29 21:39.

Action Taken to Restore Steady State Conditions

Covanta restarted the induced draft fan and forced draft fan at 2021-05-29 21:26. The natural gas burners were back online at 2021-05-29 21:39. The shutdown was completed at 2021-05-29 22:05.

Remedial Action Planned and/or Taken

None

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

Unit	Duration	Date	Time	
#3	47 minutes	29-May-21	21:10-21:57	

Cause

Auxiliary burners on unit 3 were unavailable to maintain the secondary combustion zone temperature during boiler shutdown period.

Unit 3 was placed in shutdown mode at 2021-05-29 21:10 due to BC Hydro power failure which impacted all three boilers. The Provincial Boiler Vessel Safety Act and the Provincial Gas Act require a boiler purge following the restart of the combustion fans. The auxiliary burners were unavailable for a period of 47 minutes between 2021-05-29 21:10 and 2021-05-29 21:57.

Action Taken to Restore Steady State Conditions

Covanta restarted the induced draft fan at 2021-05-29 21:32 and forced draft fan at 2021-05-29 21:33. The natural gas burners were back online at 2021-05-29 21:57. The shutdown was completed at 2021-05-29 22:23.

Remedial Action Planned and/or Taken

None

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

Unit	Duration	Date	Time	
#1	20 minutes	30-May-21	04:05-04:25	

Cause

Auxiliary burners on unit 1 were unavailable to maintain the secondary combustion zone temperature during boiler shutdown period.

Unit 1 was placed in shutdown mode at 2021-05-30 04:05 due to BC Hydro power failure which impacted all three boilers. The Provincial Boiler Vessel Safety Act and the Provincial Gas Act require a boiler purge following the restart of the combustion fans. The auxiliary burners were unavailable for a period of 20 minutes between 2021-05-30 04:05 and 2021-05-30 04:25.

Action Taken to Restore Steady State Conditions

Covanta restarted the induced draft fan at 2021-05-30 04:07 and forced draft fan at 2021-05-30 04:10. The natural gas burners were back online at 2021-05-30 04:25. The shutdown was completed at 2021-05-30 04:48.

Remedial Action Planned and/or Taken

None

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

Unit	Duration	Date	Time	
#2	18 minutes	30-May-21	04:05-04:23	

Cause

Auxiliary burners on unit 2 were unavailable to maintain the secondary combustion zone temperature during boiler shutdown period.

Unit 2 was placed in shutdown mode at 2021-05-30 04:05 due to BC Hydro power failure which impacted all three boilers. The Provincial Boiler Vessel Safety Act and the Provincial Gas Act require a boiler purge following the restart of the combustion fans. The auxiliary burners were unavailable for a period of 18 minutes between 2021-05-30 04:05 and 2021-05-30 04:23.

Action Taken to Restore Steady State Conditions

Covanta restarted the induced draft fan at 2021-05-30 04:08 and forced draft fan at 2021-05-30 04:09. The natural gas burners were back online at 2021-05-30 04:23. The shutdown was completed at 2021-05-30 04:48.

Remedial Action Planned and/or Taken

None

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

Unit	Duration	Date	Time	
#3	20 minutes	30-May-21	04:05-04:25	

Cause

Auxiliary burners on unit 3 were unavailable to maintain the secondary combustion zone temperature during boiler shutdown period.

Unit 3 was placed in shutdown mode at 2021-05-30 04:05 due to BC Hydro power failure which impacted all three boilers. The Provincial Boiler Vessel Safety Act and the Provincial Gas Act require a boiler purge following the restart of the combustion fans. The auxiliary burners were unavailable for a period of 20 minutes between 2021-05-30 04:05 and 2021-05-30 04:25.

Action Taken to Restore Steady State Conditions

Covanta restarted the induced draft fan at 2021-05-30 04:08 and forced draft fan at 2021-05-30 04:10. The natural gas burners were back online at 2021-05-30 04:25. The shutdown was completed at 2021-05-30 04:48.

Remedial Action Planned and/or Taken

None

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	97	98	99
CO	90	Hour	97	98	99
SO_2	90	Hour	97	98	99
NOx	90	Hour	97	98	99
THC	90	Hour	97	98	99
Stack Flow	90	Hour	96	99	94

4. Shutdown Report

Unit 1

Duration in Hours	Reason	Date
0.65	Induced draft fan trip	May 2
0.68	Induced draft fan trip	May 2
0.30	Induced draft fan trip	May 4
0.62	Induced draft fan trip	May 5
0.87	Induced draft fan trip	May 5
0.15	Induced draft fan trip	May 22
0.33	Induced draft fan trip	May 23
0.28	Induced draft fan trip	May 24
0.28	Induced draft fan trip	May 28
0.70	BC Hydro power interruption	May 28
0.38	Induced draft fan trip	May 28
0.73	Induced draft fan trip	May 28
0.27	Induced draft fan trip	May 28
0.98	BC Hydro power interruption	May 29
0.72	BC Hydro power interruption	May 30

Unit 2

Duration in Hours	Reason	Date
0.90	Ash discharger plug	May 2
26.79	Secondary economizer tube leak	May 4-5
9.63	Fabric filter baghouse plug	May 6
0.38	Induced draft fan trip	May 24
0.82	BC Hydro power interruption	May 24
0.67	Induced draft fan trip	May 28
0.85	BC Hydro power interruption	May 28
0.92	BC Hydro power interruption	May 29
0.72	BC Hydro power interruption	May 30

Unit 3

Duration in Hours	Reason	Date
22.48	Primary economizer tube leak	May 3-4
1.85	Fabric filter baghouse plug	May 11
5.50	Ash discharger plug	May 12
0.52	Fabric filter baghouse bag replacement	May 18
1.22	Fabric filter baghouse bag replacement	May 19
0.33	BC Hydro power interruption	May 24
0.53	Induced draft fan trip	May 28
0.75	BC Hydro power interruption	May 28
1.22	BC Hydro power interruption	May 29
0.72	BC Hydro power interruption	May 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	**20,757**		
Waste Processed	tonnes/day	**235**	**223**	**226**
Maximum Waste Processed	tonnes/day	**250**	**246**	**251**
		Units 1, 2, and 3		
Natural Gas Consumed	m^3/day	**1,406**		
	m^3/month	**43,583**		
Fly ash disposed	tonnes	**987**		
Bottom ash disposed	tonnes	**3,759**		

7. Complaints and Responses

Date/Time	Complaint	Action Taken

ATTACHMENT 2

May 2021 - 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
5/1/21	154	10	56.5	129.6	33.6	0.10	0.94	933	149	8.6	61.4	131.1	16.1	0.06	0.40	956	149	9.9	90.3	131.5	30.1	0.37	0.77	938
5/2/21	155	10.3	83.5	130.7	24.8	0.18	0.98	922	149	8.4	76	133	16.5	0.11	0.82	954	148	10	109.4	133	30.5	0.37	0.76	914
5/3/21	153	10.4	59.7	125.8	25.2	0.18	0.97	933	146	8.5	48.3	129.2	21.4	0.02	1.24	956								
5/4/21	151	10.5	45.2	127.4	39	0.15	0.98	930									155	10.6	154.3	135.6	36.3	0.37	0.44	892
5/5/21	154	10.2	52	128.9	30.4	0.08	0.97	940									154	9.9	91.4	132.7	32.9	0.31	0.47	913
5/6/21	154	12	48.2	127.6	22.4	0.10	0.96	958									156	9.5	85.8	137.7	30.5	0.27	0.48	926
5/7/21	154	12.2	44.4	126.8	18.9	0.03	0.97	955	154	9.2	71.3	135.1	14.3	0.05	0.11	948	156	9.6	73.5	137.4	30.3	0.26	0.50	925
5/8/21	156	10.4	58.4	128.8	16	0.12	1.00	962	154	9.1	79.5	137.6	14.5	0.01	0.26	970	156	9.8	95.4	139.3	33.9	0.24	0.50	922
5/9/21	155	10.1	78	128.2	21.9	0.17	0.99	955	154	8.7	95.6	144.6	18.3	0.07	0.27	975	156	9.7	129.4	141.7	23.1	0.26	0.54	913
5/10/21	156	10.1	43.6	128.9	19.5	0.06	0.98	938	156	8.6	82.4	136.4	13.3	0.05	0.27	974	157	9.6	77.6	135.2	22.8	0.17	0.77	921
5/11/21	156	10.5	91	128.7	22.7	0.10	1.04	953	154	9.1	96.8	135	15	0.02	0.18	967	159	10	105.6	135.9	27.8	0.22	0.86	923
5/12/21	156	9.9	54.5	126.1	24	0.09	1.04	945	155	8.9	69.3	132.4	16.9	0.03	0.14	957	157	9.9	91.1	140.9	33.1	0.25	0.91	922
5/13/21	156	9.1	58.2	128.1	22.5	0.06	1.03	956	156	10.9	78.6	130.6	20.2	0.49	0.08	953	157	10	88.4	138.4	28.3	0.25	0.89	922
5/14/21	155	8.8	57.2	126.4	21.4	0.00	1.06	972	154	9	78	130.5	20	0.04	0.11	959	156	9.3	93.6	134.1	34.6	0.24	0.83	936
5/15/21	156	9.2	63.7	131.1	16.5	0.00	1.17	960	154	8.9	85.3	129.7	20.7	0.03	0.13	983	156	9.7	90.5	138.4	34.5	0.27	0.84	930
5/16/21	156	8.9	54.7	127.9	22.4	0.00	1.36	957	154	8.7	69.3	128.9	16	0.03	0.06	985	159	10	85.4	142	32.3	0.30	0.83	953
5/17/21	157	8.7	83	128.2	16.5	0.00	1.59	972	153	9	97.4	129.1	16.6	0.04	0.06	954	159	9.9	110.1	137.8	33	0.25	0.89	941
5/18/21	157	9.1	52.5	129.1	18	0.00	2.17	967	154	9.3	52.8	128.7	19.5	0.03	0.09	958	153	10.5	64.8	135.5	30.8	0.18	0.94	897
5/19/21	157	9.3	51.6	132.8	18.8	0.00	1.50	947	154	9.4	61	129.3	20.1	0.07	0.35	951	158	11	111.1	137.7	27.6	0.27	0.87	927
5/20/21	156	9.1	53.3	127.3	20.6	0.00	0.87	956	154	9.1	61.2	128.6	15.9	0.05	0.31	963	154	9.9	72.1	133.5	26	0.26	0.79	936
5/21/21	156	9	49.5	128.2	22.3	0.00	0.88	949	155	9	55.6	128.4	18.4	0.02	0.16	962	155	9.8	70.9	134.4	31.9	0.23	0.81	932
5/22/21	155	8.9	53.2	128	16.4	0.00	0.86	960	154	8.7	72.3	126.4	23.6	0.09	0.17	986	155	9.8	84.8	134.6	34.3	0.27	0.82	936
5/23/21	155	8.9	52.7	129.1	21.4	0.00	0.91	948	153	8.7	64.9	127.1	26.3	0.05	0.11	980	151	9.4	65.4	133.3	30	0.25	0.78	948
5/24/21	158	9.1	51.2	128.6	21.1	0.00	0.88	949	156	8.7	55	126.6	21.7	0.04	0.32	965	152	9.5	54.4	131.7	27.7	0.23	0.81	934
5/25/21	157	9.1	89.8	131.1	17.9	0.00	0.91	967	154	9	74.4	129.9	26.6	0.02	0.26	968	151	9.6	77.7	131.2	31.3	0.30	0.74	925
5/26/21	158	9.1	40.5	127.9	26.9	0.00	0.89	968	153	8.8	53.4	126.7	27.3	0.04	0.30	976	151	9.6	50.7	128.8	29.5	0.38	0.75	932
5/27/21	155	8.9	53.5	125.9	22.3	0.00	0.91	954	152	8.9	63.4	126.4	22.1	0.03	0.45	973	152	9.5	71.3	129.3	26.6	0.20	0.81	928
5/28/21	154	9	45.7	129.2	25.3	0.02	0.91	939	152	9.1	57.3	128.7	22.4	0.04	0.14	961	152	9.6	60.9	130.1	33.4	0.25	0.74	924
5/29/21	153	8.6	61.9	127.2	18.5	0.00	0.87	943	152	8.6	61.1	125.3	15.9	0.01	0.35	967	153	9.6	75.7	130.8	31.8	0.30	0.80	917
5/30/21	154	8.8	63.9	131.8	18.3	0.00	0.90	938	154	8.8	67.3	128.7	15.6	0.01	0.17	949	154	9.4	82.1	132.1	27.8	0.32	0.81	914
5/31/21	156	8.7	49.1	129.8	16.1	0.01	0.96	935	153	8.7	53	128.5	19	0.06	0.22	959	155	9.5	60.8	130	32.9	0.29	0.42	914
Average	155	9.6	58.1	128.6	22.0	0.05	1.05	950	153.3	8.9	69.4	130.4	19.1	0.06	0.27	964.6	154.5	9.8	85.8	134.8	30.5	0.27	0.74	925.2
Min	151	8.6	40.5	125.8	16.0	0.00	0.86	922	146.0	8.4	48.3	125.3	13.3	0.01	0.06	948.0	148.0	9.3	50.7	128.8	22.8	0.17	0.42	892.0
Max	158	12.2	91.0	132.8	39.0	0.18	2.17	972	156.0	10.9	97.4	144.6	27.3	0.49	1.24	986.0	159.0	11.0	154.3	142.0	36.3	0.38	0.94	953.0
St Dev	1.5	0.92	13.41	1.69	5.17	0.06	0.27	13.0	2.19	0.45	13.75	4.16	3.84	0.09	0.25	11.05	2.87	0.37	22.26	3.71	3.32	0.05	0.15	13.07

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