Stericycle®

2020 Q4 Incineration Report

Stericycle, ULC
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January 26th, 2021

District Manager
Ministry of the Environment, Conservation and Parks
Halton-Peel District Office
300-4145 North Service Road
Burlington, ON
L7L 6A3

Dear District Manger,

> **Re:** **Stericycle, ULC.**
> **Certificate of Approval for a Waste Disposal Site No. A680324**

As required by Condition 52 of the above-mentioned Certificate of Approval, please find attached the incinerator quarterly report for the fourth quarter of 2020.

During October 2020 there were 14 occurrences of the 4-hour CO alarm & 6 occurrences of the 12-hour CO alarm. In November 2020 there were 19 occurrences of the 4-hour CO alarm and 1 occurrence of the 12-hour CO alarm. In December 2020 there were 11 occurrences of the 4-hour CO alarm and 3 occurrences of the 12-hour CO alarm. Stericycle will continue to work with the incinerator operators to further reduce the number of CO alarms.

There was 1 occurrence of the 24-hour NOX alarm in December 2020.

Details on the above noted alarms are available in the body of the attached report.

FOURTH QUARTER 2020
INCINERATOR QUARTERLY REPORT - SUPPLEMENTAL INFORMATION

- The Emergency Bypass stack was used three (3) times during Q4 2020.

- Throughout the quarter, minor issues with either the waste feed or the proper operation of certain pieces of equipment caused alarm conditions. In all cases, the problems were fixed, and normal operations resumed. Corrective actions included adjustments to the waste feed mix and rate and corrective maintenance on affected systems.

- Throughout the fourth quarter of 2020, the incinerator was run by trained Stericycle operators Emilio Perez, Gyasi Krobea, Said M. Said & John Amissiah.

- There were no complaints received regarding the operation of the incinerator during the fourth quarter of 2020.

- Stericycle Inc. operated the incinerator on the following days during the fourth quarter:

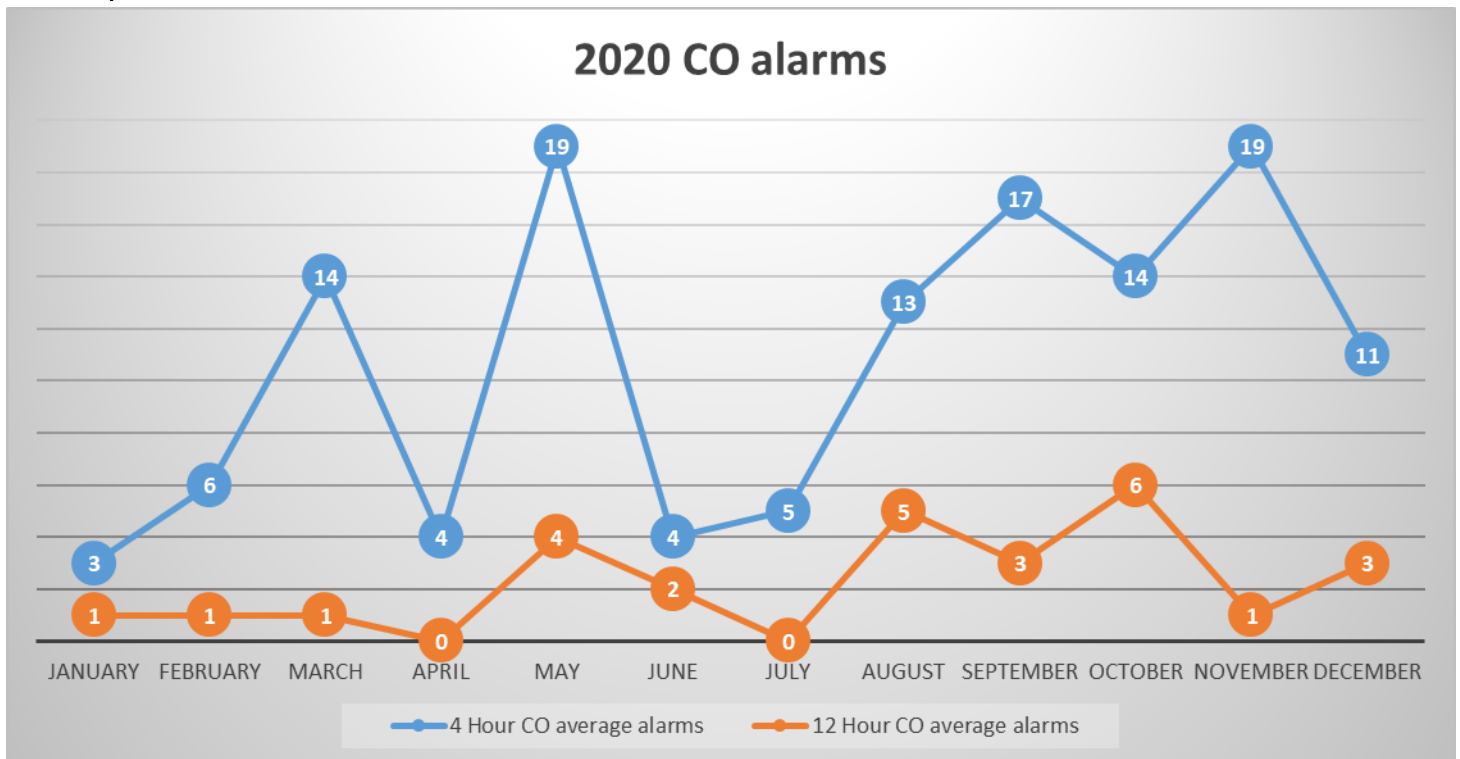| Start-up	Shut Down
9/24/2020 @ 17:17	9/30/2020 @ 18:58
10/03/2020 @ 17:43	10/05/2020 @ 08:53
10/05/2020 @ 13:00	10/21/2020 @ 18:20
10/21/2020 @ 20:55	10/26/2020 @ 08:58
10/26/2020 @ 12:59	10/29/2020 @ 09:24
10/29/2020 @ 13:25	10/30/2020 @ 10:45
10/30/2020 @ 14:48	11/05/2020 @ 14:13
11/05/2020 @ 19:01	11/22/2020 @ 09:49
11/22/2020 @ 21:49	11/23/2020 @ 20:27
11/25/2020 @ 23:37	12/24/2020 @ 19:02
12/27/2020 @ 05:20	12/31/2020 @ 20:57

During Q4 of 2020 routine maintenance was performed on the incinerator during the scheduled shutdowns.

Q4 2020 Emergency Bypass Summary						
Date	Start Time	End Time	Duration	Emission Volume (m³)	Reason	Corrective Action
10/5/2020	21:45	23:24	1:39	360.94	Sudden failure of the quench tank water supply line caused the operator to shut-down the APC system & open the emergency bypass.	Maintenance repaired the quench tank water supply line. The APC system was restarted and the emergency bypass stack cap was closed.
10/21/2020	17:00	21:00	4:00	875.00	Failure of the quench tower water supply pump caused the ACP system to go into Emergency Bypass to prevent damage to the system and for safety of the workers in the plant.	The incinerator was brought to a controlled shut down. The quench tower water supply pump was replaced by Stericycle's maintenance team. Once the repair was complete, the APC system and the incinerator were restarted.
12/31/2020	21:10	21:12	0:02	7.29	Operator error - TM was shutting down the incinerator and accidentally held the shutdown button causing the incinerator to go off instead of going into a 4 hour shutdown.	After realizing what had happened, TM restarted the machine and proceeded with a proper 4 hour shutdown

CO Alarm Chart Q4 2020

Month	4 Hour CO average alarms	12 Hour CO average alarms
January	3	1
February	6	1
March	14	1
April	4	0
May	19	4
June	4	2
July	5	0
August	13	5
September	17.	3
October	14	6
November	19	1
December	11	3

2020 CO alarms

Stericycle warrants that it has exercised best efforts to adhere to all the applicable Terms & Conditions of its Waste Disposal Site Certificate of Approval including all inspection and reporting requirements through Q4 of 2020.

Stericycle is very committed to the full compliance with all conditions of its Provisional Certificate of Approval, throughout the year, whenever a situation of possible non-compliance was identified; immediate actions were taken to ensure full compliance. Stericycle has mechanisms in place to ensure full compliance at all times. Employees are aware of their responsibilities and are trained appropriately.

Stericycle believes that the current monitoring program is sufficient and enables both Stericycle and the MECP to have a good understanding of the Site operations and to assess its compliance with the Certificate of Approval and all the relevant regulations.

However, Stericycle is very committed to looking for ways to improve its operations through better procedures, training, inspections and monitoring programs and will continue to do so.

I trust that this is the information required and that it meets with your approval. Should you have any questions or require additional information, please do not hesitate to contact me accordingly.

Regards,

Dan Kokol
ESH Specialist
Phone: 905-595-8532
Email: dkokol@stericycle.com

October 2020 Incineration Averages Ranges

TheDate		OX6min	COmin	NOXmin	PrimTemp°C	SecTemp°C	SNCR	DemTemp°C	CarbTemp°C	DiffTemp°C	IDFanTemp°C	QunchPH	CondPH	AtomPH	AtomA	AtomB	HEPADP	Operating Mode
10/1/2020	Average	20.2	2.1	-1.8	272.7	159.5	6.7	35.9	19.7	-16.2	17.8	11.2	10.8	6.9	0.0	0.0	0.0	Off
	Min	20.0	0.0	-13.2	120.3	76.7	6.5	30.3	16.8	-24.7	15.3	10.7	9.6	6.8	0.0	0.0	0.0	
	Max	20.4	92.4	0.0	561.3	326.5	7.0	49.5	24.9	-9.0	22.3	12.3	12.2	6.9	0.1	0.0	0.0	
10/2/2020	Average	20.3	0.0	0.0	71.3	53.8	6.0	45.1	41.1	-4.0	19.7	12.4	12.4	6.9	0.0	0.0	0.0	Off
	Min	20.1	0.0	0.0	46.0	40.3	5.0	32.7	24.7	-28.1	16.2	10.7	12.2	6.8	0.0	0.0	0.0	
	Max	20.4	0.0	0.0	120.2	76.7	6.7	55.0	49.5	12.2	23.1	12.9	12.7	6.9	0.1	0.0	0.0	
10/3/2020	Average	18.1	0.6	11.1	94.1	261.6	5.3	49.1	36.9	-12.2	21.1	12.6	11.5	6.9	7.7	7.3	0.0	Off/Start-up
	Min	10.3	0.0	-13.2	36.1	31.7	4.8	29.9	23.7	-28.4	11.2	12.4	8.2	6.9	0.1	0.0	0.0	
	Max	20.4	377.1	65.6	413.3	1000.4	6.6	58.3	52.0	21.5	41.6	12.8	12.4	6.9	39.9	38.4	0.0	
10/4/2020	Average	11.2	4.4	81.4	923.3	1032.2	6.6	36.3	51.7	15.4	45.2	11.8	7.7	6.8	39.4	37.8	0.2	Start-up/On
	Min	5.9	0.0	25.3	413.7	989.8	6.6	32.2	51.3	10.1	41.5	11.4	7.5	6.8	39.2	37.6	0.0	
	Max	14.6	589.8	215.2	1051.0	1069.8	6.6	41.3	52.0	19.8	48.0	12.4	8.3	6.9	39.5	38.2	1.0	
10/5/2020	Average	12.9	5.2	42.2	882.6	1007.1	6.6	35.0	51.2	16.2	41.3	9.5	7.7	6.8	38.5	37.3	0.5	Start-up/On/Off/Start-up/On
	Min	7.5	0.0	-14.3	508.4	724.3	6.0	29.5	43.3	0.8	20.0	7.6	7.1	6.8	14.1	13.5	0.0	
	Max	20.3	1158.3	162.4	1018.3	1083.9	6.7	42.5	52.1	21.8	49.0	11.4	10.9	6.9	42.4	41.3	1.0	
10/6/2020	Average	11.4	2.9	46.0	990.7	1037.9	6.6	34.3	51.3	16.9	44.1	8.2	7.1	6.8	41.7	41.1	0.9	Start-up/On
	Min	9.7	0.0	11.4	884.5	1016.7	6.5	29.4	49.8	10.3	35.9	8.0	6.9	6.8	32.1	31.4	0.0	
	Max	14.7	477.0	179.5	1037.2	1081.5	6.6	39.6	51.6	22.0	48.4	8.5	8.1	6.9	42.3	41.7	1.0	
10/7/2020	Average	11.4	4.3	45.7	1015.4	1034.9	6.6	31.2	51.4	20.2	43.8	8.2	7.1	6.8	42.0	41.6	1.0	On
	Min	8.5	0.0	15.8	950.4	1015.7	6.6	29.1	51.2	14.0	41.4	8.0	6.9	6.8	41.8	41.5	1.0	
	Max	14.7	582.5	199.1	1072.0	1154.0	6.6	37.4	51.6	22.5	48.3	8.4	7.2	6.9	42.3	41.7	1.0	
10/8/2020	Average	11.6	2.3	66.8	1034.5	1035.2	6.6	34.2	51.5	17.3	44.4	8.0	7.0	6.8	42.0	41.5	1.0	On
	Min	9.7	0.0	17.8	990.8	1015.9	6.6	30.8	51.2	12.6	41.7	7.5	6.8	6.8	41.9	41.3	1.0	
	Max	15.2	452.0	155.1	1078.1	1065.3	6.6	38.9	51.7	20.6	47.1	8.6	7.4	6.8	42.2	41.6	1.0	
10/9/2020	Average	11.4	2.8	84.8	1003.1	1038.7	6.6	31.5	51.0	19.6	42.5	7.8	7.0	6.8	42.3	41.6	1.0	On
	Min	9.6	0.0	28.5	965.5	1017.4	6.6	27.5	50.6	15.3	39.8	7.5	6.8	6.8	42.2	41.4	1.0	
	Max	13.7	859.6	207.7	1081.4	1067.9	6.6	36.1	51.5	23.4	44.8	7.9	7.3	6.8	42.4	41.7	1.0	
10/10/2020	Average	11.3	1.0	82.7	963.9	1038.1	6.7	29.7	50.5	20.8	43.0	7.5	7.0	6.8	42.3	41.4	1.2	On
	Min	8.8	0.0	34.2	916.0	1017.7	6.6	25.0	49.1	16.9	39.4	7.4	6.8	6.8	42.1	40.9	1.0	
	Max	13.5	448.9	220.3	1011.6	1076.4	7.1	34.4	51.4	24.3	46.3	7.7	7.3	6.9	42.4	41.6	2.0	
10/11/2020	Average	11.7	1.8	89.8	986.8	1038.6	6.6	30.2	50.3	20.1	41.7	7.5	6.9	6.8	42.1	41.0	1.8	On
	Min	9.9	0.0	38.8	935.4	1017.9	6.6	25.0	49.0	17.5	39.3	7.4	6.7	6.8	42.0	40.8	1.0	
	Max	13.2	453.1	195.2	1027.9	1062.9	6.6	33.2	50.7	24.1	43.2	7.6	7.1	6.9	42.2	41.5	2.0	
10/12/2020	Average	11.6	0.5	79.4	969.2	1038.2	6.6	29.3	50.2	21.0	41.2	7.5	6.7	6.8	42.2	40.9	1.9	On
	Min	9.7	0.0	37.5	917.7	1017.7	6.6	26.1	49.6	18.4	38.8	7.4	6.5	6.8	42.1	40.8	1.0	
	Max	12.9	104.1	173.2	1032.4	1065.3	6.6	32.1	50.7	23.7	42.7	7.6	6.9	6.8	42.3	41.0	2.0	
10/13/2020	Average	11.5	0.6	78.5	950.0	1037.9	6.6	29.9	50.6	20.7	41.9	7.4	6.8	6.8	42.1	40.8	2.1	On
	Min	9.8	0.0	29.1	917.0	1018.1	6.6	24.6	49.3	16.8	39.2	7.3	6.6	6.8	42.0	40.7	1.0	
	Max	13.1	231.7	153.9	1011.8	1061.8	6.6	34.2	51.2	26.3	44.8	7.5	7.0	6.8	42.3	40.9	3.0	
10/14/2020	Average	11.2	2.7	76.2	954.1	1036.3	6.6	30.5	51.0	20.5	40.6	7.3	6.8	6.8	42.1	40.7	1.5	On
	Min	7.1	0.0	17.0	935.6	1017.3	6.6	25.1	49.5	17.0	36.9	7.2	6.7	6.8	42.0	40.6	1.0	
	Max	13.7	705.4	355.6	996.4	1055.9	6.6	34.2	51.4	24.4	43.8	7.4	7.0	6.8	42.1	40.8	3.0	
10/15/2020	Average	11.3	4.6	95.4	979.3	1039.7	6.6	33.8	51.1	17.4	41.9	7.2	6.8	6.8	42.1	40.6	0.9	On
	Min	9.1	0.0	39.1	949.7	999.9	6.6	28.6	50.7	13.7	39.5	7.2	6.7	6.8	42.0	40.4	0.0	
	Max	14.7	744.6	182.3	1021.1	1074.0	6.6	37.6	51.4	22.1	48.0	7.3	6.9	6.8	42.3	40.9	2.0	
10/16/2020	Average	11.9	2.4	76.0	930.9	1029.9	6.6	31.5	51.1	19.6	40.9	7.2	6.9	6.8	42.0	40.5	1.0	On
	Min	8.7	0.0	27.0	684.5	1008.6	6.6	28.3	49.1	14.8	39.1	7.2	6.7	6.8	41.9	40.3	0.0	
	Max	14.9	749.4	185.4	1042.5	1068.1	6.6	36.5	51.4	23.1	43.1	7.3	7.1	6.8	42.2	40.6	1.0	
10/17/2020	Average	11.7	2.5	85.7	994.4	1040.6	6.6	34.8	51.3	16.4	43.2	7.2	6.9	6.8	42.2	40.7	1.2	On
	Min	9.6	0.5	23.1	941.9	1015.7	6.6	28.1	49.1	13.5	39.5	7.2	6.8	6.8	42.0	40.6	1.0	
	Max	15.1	198.4	190.0	1017.4	1075.4	6.6	38.0	51.6	23.1	45.5	7.3	7.1	6.8	42.4	40.9	2.0	
10/18/2020	Average	11.7	4.4	68.9	903.6	1028.2	6.6	31.0	51.4	20.4	42.7	7.3	6.8	6.8	42.3	40.8	1.1	On
	Min	8.4	0.0	30.5	673.6	997.4	6.6	28.3	51.1	14.6	39.5	7.2	6.6	6.8	42.1	40.6	1.0	
	Max	15.1	611.6	146.7	1035.1	1100.1	6.6	36.8	51.8	22.8	46.6	7.4	7.0	6.8	42.6	41.0	2.0	

October 2020 Incineration Averages Ranges

TheDate		OX6min	COmin	NOXmin	PrimTemp°C	SecTemp°C	SNCR	DemTemp°C	CarbTemp°C	DiffTemp°C	IDFanTemp°C	QunchPH	CondPH	AtomPH	AtomA	AtomB	HEPADP	Operating Mode
10/19/2020	Average	11.6	3.2	89.6	978.6	1036.4	6.6	33.7	51.3	17.6	41.5	7.2	6.9	6.8	42.0	40.7	0.8	On
	Min	9.3	0.3	26.5	946.5	1016.0	6.6	29.8	51.1	14.5	38.7	7.2	6.7	6.8	41.9	40.6	0.0	
	Max	14.9	579.2	227.1	994.6	1068.2	6.6	36.8	51.6	21.7	45.4	7.4	7.1	6.8	42.2	40.8	2.0	
10/20/2020	Average	11.5	5.4	91.5	992.3	1044.4	6.6	35.4	51.3	15.9	43.2	7.2	6.9	6.8	41.8	40.6	0.9	On
	Min	9.4	0.6	22.7	955.5	1017.7	6.6	31.0	50.9	12.7	40.3	7.2	6.7	6.8	41.7	40.5	0.0	
	Max	14.0	668.2	203.8	1014.3	1086.8	6.6	38.6	51.5	20.3	45.2	7.3	7.1	6.8	42.0	40.7	1.0	
10/21/2020	Average	13.9	9.0	54.7	956.2	987.0	6.4	38.0	46.5	8.5	37.4	7.3	7.1	6.8	32.3	31.4	0.8	On/Shut-down/Start-up
	Min	10.0	0.9	-1.1	589.7	677.6	5.6	30.8	22.7	-25.0	13.4	7.2	6.7	6.8	0.1	0.0	0.0	
	Max	20.0	569.0	192.0	1064.5	1064.7	6.7	59.4	51.6	20.5	45.7	7.9	8.2	6.8	42.0	40.8	1.0	
10/22/2020	Average	17.1	18.3	15.0	446.8	801.8	6.0	36.0	29.7	-6.3	20.8	7.7	8.1	6.9	13.4	13.0	0.3	Start-up/On
	Min	9.0	0.7	-1.1	248.6	578.6	5.6	22.4	19.3	-19.0	12.0	7.2	6.8	6.8	0.0	0.0	0.0	
	Max	20.0	513.5	119.0	787.0	1060.6	6.6	38.7	51.4	25.2	45.5	8.0	9.1	6.9	42.3	41.4	1.0	
10/23/2020	Average	12.0	6.6	53.9	883.9	1039.7	6.8	37.8	51.2	13.3	44.0	7.3	7.0	6.8	41.9	40.6	1.0	Start-up/On
	Min	10.3	0.0	17.3	787.4	1003.6	6.6	32.9	49.7	9.8	41.0	7.2	6.8	6.8	41.1	40.2	0.0	
	Max	16.1	647.3	155.0	974.1	1065.3	7.1	41.5	51.8	18.8	47.3	7.4	7.3	6.9	42.1	40.8	2.0	
10/24/2020	Average	12.6	7.6	46.4	926.0	1037.3	6.6	37.6	51.1	13.5	40.8	7.3	6.9	6.8	39.8	40.1	0.6	On
	Min	11.0	2.1	22.2	812.3	1014.0	6.6	32.2	50.8	10.1	37.0	7.2	6.7	6.8	39.4	40.0	0.0	
	Max	15.0	299.6	119.7	973.7	1064.8	6.8	41.1	51.3	18.7	45.2	7.4	7.0	6.8	41.1	40.4	1.0	
10/25/2020	Average	12.9	5.8	65.9	838.9	1030.5	6.6	35.4	51.1	15.7	42.1	7.3	6.8	6.8	39.8	40.5	0.2	On
	Min	10.3	1.8	18.3	770.2	1014.3	6.6	32.7	51.0	9.7	38.8	7.2	6.6	6.8	39.6	40.0	0.0	
	Max	13.9	616.8	167.2	973.4	1058.5	6.6	41.6	51.4	18.3	45.3	7.4	7.1	6.8	40.1	40.8	1.0	
10/26/2020	Average	12.7	21.6	45.1	737.4	1021.9	6.6	33.9	50.9	16.9	44.9	7.3	6.8	6.8	40.1	40.8	0.1	On/Shut-down/Start-up
	Min	9.4	0.0	0.0	549.5	643.3	6.6	29.5	45.8	8.2	42.8	7.2	6.7	6.8	39.8	40.4	0.0	
	Max	20.0	1117.6	445.2	932.2	1050.5	6.6	39.8	53.4	22.0	48.4	7.4	7.0	6.8	40.5	41.2	1.0	
10/27/2020	Average	13.1	4.2	49.8	864.4	1017.1	6.6	37.8	49.4	11.6	42.3	7.4	7.1	6.8	37.5	37.5	0.6	Start-up/On
	Min	9.0	0.0	-3.3	645.3	550.7	6.6	28.9	31.5	-10.2	13.8	7.2	6.6	6.8	5.2	5.0	0.0	
	Max	20.3	576.9	140.9	978.4	1058.0	6.7	41.7	51.8	23.0	49.1	8.0	8.7	6.9	42.7	41.6	1.0	
10/28/2020	Average	11.8	4.5	43.1	928.8	1037.3	6.6	36.2	51.0	14.8	44.8	7.3	7.0	6.8	42.3	41.6	0.7	On
	Min	10.1	0.0	14.9	756.5	965.9	6.6	28.4	50.7	10.2	40.7	7.2	6.7	6.8	40.9	40.4	0.0	
	Max	16.1	487.7	135.1	1002.8	1064.2	6.6	40.9	51.3	22.8	48.2	7.4	7.2	6.9	43.0	44.7	1.0	
10/29/2020	Average	12.0	27.4	47.5	781.5	1003.3	6.6	33.6	50.7	17.1	42.4	7.2	6.9	6.9	42.5	43.5	0.4	On/Shut-down/Start-up/On
	Min	5.2	0.0	0.0	326.7	595.7	6.1	28.2	44.5	8.9	22.8	7.1	6.6	6.8	41.8	39.3	0.0	
	Max	20.0	2400.2	267.3	1015.7	1083.5	6.8	42.0	51.2	22.6	48.1	7.4	7.2	7.0	43.1	45.0	1.0	
10/30/2020	Average	14.9	7.0	26.6	730.4	734.4	6.4	37.5	41.3	3.7	33.2	7.5	7.3	6.9	28.5	26.7	0.4	Normal/Shut-down/Off/Start-up
	Min	9.6	0.0	-9.9	315.0	106.0	5.9	28.9	13.4	-16.9	3.5	7.2	6.7	6.8	0.1	0.0	0.0	
	Max	20.2	2136.6	124.3	957.7	1767.8	6.6	46.6	51.3	20.6	51.3	8.3	8.4	6.9	42.2	39.4	1.0	
10/31/2020	Average	19.4	7.4	6.4	143.4	109.2	5.8	34.4	22.5	-11.9	10.0	8.3	8.7	6.9	1.3	1.2	0.0	Start-up
	Min	12.7	0.0	0.0	64.8	32.9	5.7	27.2	10.2	-22.8	1.0	7.5	7.6	6.9	0.0	0.0	0.0	
	Max	20.0	393.8	46.9	314.5	800.9	6.3	45.0	43.5	11.0	28.1	8.4	8.9	7.0	29.3	28.2	0.0	

October 2020 Incineration Feed Data

TheDate	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DailySum	Comment
10/1/2020	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10/2/2020	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10/3/2020	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10/4/2020	71.4	507.9	506.1	504.8	502.3	509.7	0	513.9	500.3	509.1	504.2	507	504.1	518.1	406	514.3	503.1	427.7	507	502.5	514.6	267	198.8	0	10000	
10/5/2020	471.7	455.7	443.4	515.3	444.2	309.2	305.2	0	0	0	0	0	0	0	0	519	526.7	574.5	570.5	501.8	475.7	431.1	68.2	231.9	6844	
10/6/2020	643.9	404.7	554.4	358	506	541.3	229.3	481.2	499	493.8	493.4	497.1	500.4	465.8	469.4	494.2	481.6	490.4	192	506	502.3	0	0	194.3	9999	
10/7/2020	510.8	507.1	164.6	502.4	493.1	18	316.3	279.5	0	270.4	500	453.9	493.8	500	301.4	503.9	504.4	506.3	218.9	460.6	492.3	55.2	364.5	500.6	8918	
10/8/2020	330	504.7	101	384.7	434.4	506.7	476.3	0	0	501.1	521.2	502.3	513.1	511.9	510.7	518.3	505.6	507	458.8	505.6	592.8	597.4	264.3	251.3	9999	
10/9/2020	630.1	513.4	559.9	447.8	323.1	562.1	270	511.7	504.5	501.9	503.5	518.1	510.1	506.6	424.3	515.6	429.5	266.1	514.4	246	317.8	326.6	96.9	0	10000	
10/10/2020	609.3	636.8	482.8	288.6	546	516.4	195.7	511.9	481.1	500.9	502.5	502.4	494.8	498.5	495.2	495.8	496.6	416.8	204.3	500	504.4	102.5	0	0	9983	
10/11/2020	501.9	500.6	518.4	516.8	507.3	509	207.6	396.1	461.7	486.4	462.6	507	306.7	507.5	471.8	505.8	496	457.4	63.5	502.8	511.9	506.7	0	0	9906	
10/12/2020	506.6	504.4	513.7	504.7	503	574.9	232.2	308.2	492.4	480.6	499.8	502.6	483	485.1	448.9	439.6	440	427.9	204.2	504.2	506	0	345.4	81.5	9989	
10/13/2020	500.4	510.8	517.8	517.1	506.1	503.8	58.7	502.5	529.7	466.7	500	511.8	452.9	496.5	503.7	502.5	520.4	458.7	423.4	372.4	200	348.8	96.3	0	10001	
10/14/2020	462	342.4	542.3	442.7	670	295.9	335.3	64	500.9	0	0	0	0	345.1	503.6	511.9	507.1	401	570.6	502.5	300.4	312.2	69.5	0	7679	
10/15/2020	399.3	551.4	557.8	550	400.8	268	316.2	429.4	486.3	499.3	473	475.6	495	484.4	460.8	490	475	424	107.2	508.3	504.5	509.1	100.2	0	9966	
10/16/2020	508.4	508.2	519.9	502.8	506.3	508.8	0	449.5	485.2	0	0	0	68.6	0	0	153	295.7	256.6	503.3	507.6	395.2	130	507.3	6806	201056
10/17/2020	501.4	508.8	508.5	506.4	510.4	625.2	0	537	509.3	515.6	508	509.2	510.7	507.5	507.2	519.3	480.3	365.6	436.9	282.1	535.5	115	0	0	10000	
10/18/2020	509.4	502.8	272.5	522.7	506.5	452.9	0	0	0	0	0	0	0	521.3	501.8	520	478.5	516.4	511.2	500.1	506.2	304.3	0		7127	
10/19/2020	472.6	379.5	575	455.8	584.9	663.1	370.8	506.7	524.9	502.6	514.4	507.6	510.5	543.1	202.1	377.9	522.2	453.6	432.2	0	0	50.4	41.6	254.3	9446	
10/20/2020	500.6	458.3	489.8	422	461.4	499	329	480.2	354.9	490.3	534	485.9	502.1	496.9	456.1	480	472.7	480.8	173.9	501.2	519.6	180.8	206.2	23.6	9999	
10/21/2020	506.4	508.4	468.1	551.6	0	503.6	126.8	456.2	484.6	477	493.4	545.4	489.7	472.2	454.3	483.3	483	0	0	0	0	0	0	0	7504	
10/22/2020	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	383	465.6	0	0	221	1070	
10/23/2020	450.2	488.4	472.7	559.5	481.2	461.2	505.6	522.9	522.7	521.8	508.1	0	506.9	0	0	0	0	0	0	260.1	0	510.7	252.8	124.4	7149	
10/24/2020	476.6	277.2	0	660.7	572	126.5	102.8	0	0	0	0	0	463	488.5	483.5	490.1	494.5	501.7	144.2	181.4	0	0	0	0	5463	
10/25/2020	6	0	0	0	0	0	0	352.7	494.4	477.1	449.2	478.2	0	0	0	0	0	0	0	0	0	0	0	0	2258	
10/26/2020	171.9	303.8	190.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	308.5	0	453.1	0	554.8	198.9	432.5	2614	
10/27/2020	489.6	471.5	83	318.4	664.3	114.1	8.6	520.3	163.3	0	0	0	0	0	0	0	0	151.8	110.1	514.5	504.6	507.6	401	171.9	5195	
10/28/2020	451.1	665.5	622.8	447.1	634.9	185	230.7	0	0	0	0	0	0	341.6	105.7	516.1	516.2	519.7	541.4	296.1	0	209.5	344.3	312.3	6940	
10/29/2020	335	67.5	623	473.1	0	222.8	119.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	531	531.6	2904	
10/30/2020	536.2	541.5	534.9	0	184.5	0	167.2	300.7	556.3	477.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3299	
10/31/2020	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

October 2020 CEM Calibration Log

TheDate	COSpanRes	CO Calgas	COSpan%Drift	NOxSpanRes	NOX Calgas	NOxSpan%drift	O2SpanRes	O2 Calgas	O2SpanDrift	COZeroRes	COZero%Drift	NOxZeroRes	NOxZero%Drift	O2ZeroRes	O2 Zerogas	O2ZeroDrift	Comment
10/14/2020 6:49	0	90.4	0	0	750	0	0	8.08	0	0	0	0	0	-0.1	0	0.1	
10/14/2020 6:53	91	90.4	6.00E-02	0	750	0	0	8.08	0	0	0	0	0	0	0	0	
10/14/2020 6:57	0	90.4	0	0	750	0	8.1	8.08	2.00E-02	0	0	0	0	0	0	0	
10/14/2020 7:02	0	90.4	0	756	750	0.6	0	8.08	0	0	0	0	0	0	0	0	
10/26/2020 10:56	0	90.4	0	0	750	0	0	8.08	0	0	0	0	0	0	0	0	
10/26/2020 10:59	89	88.1	9.00E-02	0	750	0	0	8.08	0	0	0	0	0	0	0	0	
10/26/2020 11:03	0	88.1	0	0	750	0	8.3	8.08	0.2200003	0	0	0	0	0	0	0	
10/26/2020 11:20	0	88.1	0	940	776	16.4	0	8.08	0	0	0	0	0	0	0	0	
10/26/2020 11:26	0	88.1	0	779	776	0.3	0	8.08	0	0	0	0	0	0	0	0	

Carbon Monoxide > 8ppm 4 hour alarm

Stericycle
Protecting People. Reducing Risk.

Date	Start Time	Stop Time	Duration	Op. Mode	Stack CO @ 11% O2	Stack CO as mg/m^3	Explanation	Actions Taken
10/7/2020	5:30	12:00	6:30	Normal	8.8	10.2	Large movement in the waste in incinerator caused release of excess volatile gasses	Operator monitored levels and continued feeding.
10/14/2020	1:00	5:00	4:00	Normal	8.2	9.5	Large movement in the waste in incinerator caused release of excess volatile gasses	Operator monitored levels and continued feeding.
10/15/2020	4:00	9:00	5:00	Normal	9.1	10.5	Large movement in the waste in incinerator caused release of excess volatile gasses	Operator monitored levels and continued feeding.
10/16/2020	0:00	5:00	5:00	Normal	8.9	10.3	Large movement in the waste in incinerator caused release of excess volatile gasses	Operator monitored levels and continued feeding.
10/18/2020	1:00	12:00	11:00	Normal	8.4	9.7	Large movement in the waste in incinerator caused release of excess volatile gasses	Operator monitored levels and continued feeding.
10/20/2020	17:00	2:00	9:00	Normal	8.1	9.3	Large movement in the waste in incinerator caused release of excess volatile gasses	Operator monitored levels and continued feeding.
10/21/2020	17:00	21:00	4:00	Normal/Shut-Down	17.2	19.8	Failure of the quench tower water supply pump caused the ACP system to go into Emergency Bypass to prevent damage to the system and for safety of the workers in the plant.	The incinerator was brought to a controlled shut down. The quench tower water supply pump was replaced by Stericycle's maintenance team. Once the repair was complete, the APC system and the incinerator were restarted.
10/24/2020	2:00	6:00	4:00	Normal	13.1	15.1	High CO level caused by multiple small CO spikes in the previous hours.	The operator monitored the CO levels and suspended feeding waste untilt he CO levels returned to the normal operating range.

Carbon Monoxide > 8ppm 4 hour alarm

10/24/2020	19:00	23:00	4:00	Normal	14.6	16.8	Pile of waste fell into ash pit	The operator monitored the CO levels and suspended feeding waste untilt he CO levels returned to the normal operating range.
10/25/2020	11:30	15:30	4:00	Normal	19.1	22.0	High CO levels caused by multiple CO spikes between 11:00 & 12:00 caused by volitile waste fed into the incinerator.	The operator monitored the CO levels and suspended feeding waste untilt he CO levels returned to the normal operating range.
10/26/2020	5:00	9:00	4:00	Normal	120.7	139.3	Fire Door failure prevented sealing of primary chamber and ability to maintain draft.	The incinerator was brought to a controlled shut-down. No waste was fed during this period.
10/28/2020	5:00	10:00	5:00	Normal	14.2	16.4	Pile of waste fell into ash pit	The operator monitored the CO levels and suspended feeding waste untilt he CO levels returned to the normal operating range.
10/29/2020	0:30	6:30	6:00	Normal	12.3	14.2	Pile of waste fell into ash pit	The operator monitored the CO levels and suspended feeding waste untilt he CO levels returned to the normal operating range.
10/30/2020	11:00	15:00	4:00	Normal	31	35.8	High CO average caused by CO spikes that occurred as the internal rams cycled during the controlled shut-down.	No waste was fed during this period. The incinerator was brought to a controlled shut-down.

Carbon Monoxide > 8ppm 12 hour alarm

Stericycle Protecting People. Reducing Risk.

Carbon Monoxide > 8ppm 12 hour alarm

Date	Start Time	Stop Time	Duration	Op. Mode	Stack CO @ 11% O2	Stack CO as mg/m³	Explanation	Actions Taken
10/21/2020	4:00	5:00	1:00	normal	8.04	9.3	High CO level occurred due to two (2) CO spikes that lasted 1 minute each.	No waste was fed during this time.
10/23/2020	13:00	17:00	4:00	normal	9.5	11.0	High CO level caused by CO spikes during start-up.	Maitenance adjusted the draft settings, no waste was fed during this period.
10/24/2020	7:00	10:00	3:00	normal	8.47	9.8	High CO level caused by multiple small CO spikes in the previous hours.	The operator monitored the CO levels and suspended feeding waste untilt he CO levels returned to the normal operating range.
10/25/2020	12:00	0:00	12:00	normal	8.6	9.9	High CO levels caused by multiple CO spikes between 11:00 & 12:00 caused by volitile waste fed into the incinerator.	The operator monitored the CO levels and suspended feeding waste untilt he CO levels returned to the normal operating range.
10/26/2020	5:00	13:00	8:00	Normal/Shut-down	42.6	49.2	Fire Door failure prevented sealing of primary chamber and ability to maintain draft.	The incinerator was brought to a controlled shut-down. No waste was fed during this period.
10/30/2020	11:00	15:00	4:00	Shut-Down	12.33	14.2	High CO average caused by CO spikes that occurred as the internal rams cycled during the controlled shut-down.	No waste was fed during this period. The incinerator was brought to a controlled shut-down.

Secondary Chamber Temperature < 1000°C

Date	Start Time	Stop Time	Duration	Op. Mode	Temp. °C	Explanation	Actions Taken
10/21/2020	18:52	20:53	2:01	Shut-Down	926	Failure of the quench tower water supply pump caused the ACP system to go into Emergency Bypass to prevent damage to the system and for safety of the workers in the plant.	The incinerator was brought to a controlled shut down. The quench tower water supply pump was replaced by Stericycle's maintenance team. Once the repair was complete, the APC system and the incinerator were restarted.
10/26/2020	3:03	3:38	0:35	Normal	986	Machine was having difficulty maintaining upper temp	Upper burner setpoint adjusted
10/26/2020	3:58	5:02	1:04	Normal	832	Machine was having difficulty maintaining upper temp	Upper burner setpoint adjusted

Quench pH out of Range (<6.4pH / >10.4pH)

Date	Start Time	Stop Time	Duration	Op. Mode	Quench pH	Explanation	Action Taken
10/5/2020	6:38	8:54	2:16	Normal	11.13	Anti syphon valve failed allowing caustic to slowly siphon into quench tank	Replaced valve

Atomizer Amps < 36

Date	Start Time	Stop Time	Duration	Op. Mode	Atom. A amps	Atom. B amps	Explanation	Action Taken
10/21/2020	17:01:00	20:57:00	3:56:00	Normal/Shut-down	0.3	0.2	Failure of the quench tower water supply pump caused the ACP system to go into Emergency Bypass to prevent damage to the system and for safety of the workers in the plant.	The incinerator was brought to a controlled shut down. The quench tower water supply pump was replaced by Stericycle's maintenance team. Once the repair was complete, the APC system and the incinerator were restarted.

Differential from Demister < 10 C

Differential from Demister < 10°C

Date	Start Time	Stop Time	Duration	Op. Mode	Differential Temp Outlet °C	Explanation	Actions Taken
10/21/2020	17:26	20:57	3:31	Normal/Shut-Down	-13	Failure of the quench tower water supply pump caused the ACP system to go into Emergency Bypass to prevent damage to the system and for safety of the workers in the plant.	The incinerator was brought to a controlled shut down. The quench tower water supply pump was replaced by Stericycle's maintenance team. Once the repair was complete, the APC system and the incinerator were restarted.

November 2020 Incineration Averages Ranges

TheDate		OX6min	COmin	NOXmin	PrimTemp°C	SecTemp°C	SNCR	DemTemp°C	CarbTemp°C	DiffTemp°C	IDFanTemp°C	QunchPH	CondPH	AtomPH	AtomA	AtomB	HEPADP	Op Mode
11/1/2020	Average	10.9	1.9	50.5	741.6	981.0	6.6	33.3	50.8	17.5	43.0	7.3	6.8	6.8	42.5	41.4	0.1	Start-up/On
	Min	4.2	0.0	14.0	191.5	801.4	6.3	30.4	43.7	6.9	28.3	7.2	6.6	6.8	29.6	28.4	0.0	
	Max	13.2	535.2	120.0	1043.9	1067.6	6.6	36.8	51.3	19.8	44.9	7.5	7.6	6.9	43.0	41.8	1.0	
11/2/2020	Average	10.7	1.2	55.8	1011.4	1036.6	6.6	34.1	51.1	17.0	43.9	7.2	6.8	6.8	42.9	41.8	0.3	On
	Min	8.1	0.0	13.3	983.6	1017.8	6.6	31.1	50.8	9.0	41.7	7.2	6.7	6.8	42.8	41.6	0.0	
	Max	12.5	570.5	114.2	1046.6	1169.8	6.6	42.0	51.3	20.1	48.3	7.2	7.0	6.9	43.1	42.0	1.0	
11/3/2020	Average	11.0	0.4	48.0	977.1	1029.5	6.6	34.2	51.2	17.0	44.7	7.1	6.8	6.8	42.8	41.6	0.3	On
	Min	8.3	0.0	19.1	836.0	1015.9	6.6	30.6	50.9	9.6	42.2	5.5	5.7	6.7	42.7	41.5	0.0	
	Max	14.5	43.3	102.1	1048.5	1098.4	6.6	41.6	51.4	20.6	48.5	8.0	7.1	6.8	43.0	41.8	1.0	
11/4/2020	Average	10.5	2.9	60.4	994.1	1032.5	6.6	34.9	51.4	16.5	45.3	8.1	6.7	6.8	42.8	41.5	0.6	On
	Min	7.6	0.0	0.0	968.8	1015.9	6.6	29.7	51.3	12.6	43.1	7.8	6.6	6.8	42.7	41.0	0.0	
	Max	14.2	622.6	159.7	1017.7	1124.0	6.6	38.9	51.6	21.8	47.0	8.4	6.9	6.8	42.9	41.8	1.0	
11/5/2020	Average	11.6	10.4	41.4	954.3	1004.2	6.6	31.9	51.2	19.3	44.8	7.7	6.9	6.8	42.9	41.4	0.5	On/Shut-down/Off/Start-up/On
	Min	6.6	0.0	0.0	745.3	531.5	6.6	27.8	50.3	14.2	43.2	7.3	6.7	6.8	42.7	41.0	0.0	
	Max	20.4	3527.7	150.7	1049.1	1090.1	6.6	37.1	51.5	23.5	47.1	8.2	7.3	6.8	43.1	41.7	1.0	
11/6/2020	Average	10.6	3.8	76.1	980.1	1027.7	6.6	32.0	51.2	19.2	45.0	7.5	6.7	6.8	42.7	41.5	1.0	On
	Min	7.5	0.0	8.2	779.8	1015.3	6.6	28.4	51.0	13.7	43.2	7.3	6.6	6.8	42.6	41.4	1.0	
	Max	14.9	566.8	171.3	1049.3	1073.3	6.6	37.4	51.3	22.7	47.3	7.8	7.0	6.9	43.0	41.7	1.0	
11/7/2020	Average	10.7	3.6	42.6	1007.9	1031.7	6.6	31.1	51.1	20.1	44.7	7.7	6.8	6.8	42.7	41.6	1.0	On
	Min	7.6	0.0	8.1	927.6	1015.5	6.6	26.5	50.5	12.7	43.0	7.3	6.6	6.8	42.6	41.5	1.0	
	Max	14.3	538.7	180.5	1058.2	1108.4	6.6	38.7	51.4	24.2	48.7	8.2	6.9	6.9	42.9	41.6	1.0	
11/8/2020	Average	10.7	1.4	29.0	983.9	1026.4	6.6	30.4	51.1	20.7	44.8	8.1	6.8	6.9	42.6	41.5	1.1	On
	Min	7.3	0.0	-2.2	893.4	1015.4	6.6	27.2	50.8	12.2	42.8	7.6	6.7	6.8	42.3	41.3	1.0	
	Max	20.0	376.9	179.0	1027.8	1078.6	6.6	39.1	51.5	23.7	49.4	8.4	6.9	6.9	42.8	41.7	2.0	
11/9/2020	Average	11.0	1.7	73.7	1011.3	1037.0	6.6	34.4	51.1	16.7	43.3	8.0	7.3	6.9	42.6	41.5	0.6	On
	Min	7.8	0.0	0.0	895.7	1017.4	6.6	27.4	50.8	10.2	39.4	7.6	6.7	6.8	42.5	41.3	0.0	
	Max	14.8	265.7	346.6	1056.9	1129.2	6.6	40.9	51.5	23.6	46.5	8.4	7.9	6.9	42.7	41.7	2.0	
11/10/2020	Average	11.4	5.9	37.3	1009.3	1025.7	6.6	36.2	51.6	15.3	42.3	7.7	7.9	6.8	42.6	41.4	0.0	On
	Min	8.9	0.0	11.5	917.8	1015.0	6.6	32.9	51.2	8.5	39.2	7.4	7.9	6.8	42.4	41.2	0.0	
	Max	14.7	600.2	129.4	1052.4	1077.7	6.9	42.8	52.0	18.6	45.1	8.2	8.1	6.9	42.7	41.6	0.0	
11/11/2020	Average	11.5	4.6	37.5	962.1	1022.7	6.6	37.8	52.0	14.1	45.4	7.9	8.3	6.8	42.7	41.2	0.0	On
	Min	7.4	0.0	0.2	819.3	1000.1	6.6	34.5	51.0	9.0	42.1	7.4	8.1	6.8	42.4	40.9	0.0	
	Max	14.7	564.7	344.6	1046.3	1049.4	6.6	43.2	52.5	17.2	49.6	8.5	8.9	6.8	43.2	41.7	0.0	
11/12/2020	Average	11.3	4.5	53.0	995.7	1025.0	6.6	40.6	52.0	11.4	46.0	7.8	9.0	6.8	42.8	42.2	0.0	On
	Min	7.4	0.0	0.2	811.5	1000.1	6.6	34.1	48.5	5.8	42.1	7.4	8.1	6.7	42.4	40.9	0.0	
	Max	15.0	564.7	344.6	1072.3	1073.7	6.6	45.4	53.1	18.5	49.6	8.5	9.0	6.8	43.5	45.0	0.0	
11/13/2020	Average	11.1	4.1	73.0	1002.7	1027.0	6.6	38.1	52.1	14.0	45.0	7.8	9.0	6.8	42.7	45.1	0.0	On
	Min	8.7	0.7	17.1	963.2	1012.9	6.6	31.0	51.4	8.3	41.0	7.5	9.0	6.8	42.5	44.9	0.0	
	Max	15.0	547.6	180.8	1058.4	1078.6	6.6	44.2	52.8	20.6	49.4	8.1	9.1	6.9	43.0	45.5	0.0	
11/14/2020	Average	11.0	3.7	46.9	992.7	1022.1	6.6	36.1	52.0	15.8	45.5	7.7	9.1	6.8	42.7	44.9	0.0	On
	Min	8.2	0.9	16.9	832.6	980.2	6.6	33.0	51.4	11.8	43.2	7.5	9.1	6.8	42.5	42.8	0.0	
	Max	15.9	363.7	110.6	1050.3	1042.8	6.6	40.4	52.3	18.8	47.5	8.3	9.2	6.9	42.9	45.3	0.0	
11/15/2020	Average	10.6	2.9	62.9	1043.2	1027.0	6.6	40.6	52.4	11.8	47.3	7.4	9.3	6.8	42.9	42.2	0.0	On
	Min	8.7	0.0	17.5	994.0	1015.6	6.6	35.7	51.7	7.6	44.1	7.3	9.2	6.8	42.7	41.8	0.0	
	Max	14.4	435.3	142.7	1064.9	1079.7	6.6	45.6	53.9	16.6	50.8	7.5	9.3	6.8	43.1	42.8	0.0	
11/16/2020	Average	11.5	3.3	64.7	926.9	1022.0	6.4	40.6	51.9	11.3	46.5	7.7	9.3	6.8	42.8	42.1	0.1	On
	Min	7.2	0.8	26.7	770.6	992.7	6.0	33.6	50.9	5.9	42.4	7.3	9.2	6.8	42.6	41.8	0.0	
	Max	14.6	532.0	131.5	1060.8	1067.3	6.6	47.2	53.6	18.2	50.8	8.1	9.3	6.8	43.1	42.5	1.0	
11/17/2020	Average	10.7	4.8	83.8	1058.0	1030.2	6.0	39.6	52.1	12.6	46.9	7.5	9.1	6.8	42.6	42.4	0.2	On
	Min	8.5	0.0	-0.1	1031.2	1001.3	5.6	32.9	51.6	6.0	42.4	7.3	8.9	6.8	41.4	41.7	0.0	
	Max	13.8	539.0	308.7	1081.3	1077.9	6.0	46.8	53.0	18.9	52.0	7.8	9.2	6.8	42.8	42.7	1.0	
11/18/2020	Average	11.5	6.1	60.8	1021.2	1025.6	5.5	37.7	52.6	14.9	46.3	7.4	8.8	6.8	42.0	43.2	0.3	On
	Min	8.2	0.0	24.6	812.4	988.9	5.5	31.3	51.5	8.1	42.1	7.3	8.7	6.8	41.4	42.3	0.0	
	Max	15.5	714.1	281.9	1083.6	1067.6	5.6	44.8	54.4	20.6	51.6	7.8	8.9	6.9	42.1	43.6	1.0	
11/19/2020	Average	11.1	2.5	45.2	886.7	1016.7	5.5	39.6	51.8	12.2	47.6	7.6	8.7	6.8	42.1	43.5	0.5	On
	Min	7.9	0.0	17.7	768.4	977.7	5.5	34.1	50.0	6.1	44.2	7.3	8.6	6.8	42.0	43.2	0.0	
	Max	14.1	510.8	118.5	1018.1	1057.9	5.5	44.0	53.4	18.2	50.1	7.9	8.7	6.9	42.2	43.8	1.0	

November 2020 Incineration Averages Ranges

TheDate		OX6min	COmin	NOXmin	PrimTemp°C	SecTemp°C	SNCR	DemTemp°C	CarbTemp°C	DiffTemp°C	IDFanTemp°C	QunchPH	CondPH	AtomPH	AtomA	AtomB	HEPADP	Op Mode
11/20/2020	Average	10.4	6.1	56.8	993.6	1027.8	5.5	40.0	53.2	13.2	48.5	7.5	8.6	6.9	42.1	43.4	0.1	On
	Min	6.4	0.0	11.6	855.2	1015.7	5.5	33.6	51.0	8.8	43.8	7.4	8.6	6.8	42.0	43.3	0.0	
	Max	14.1	520.6	161.7	1070.1	1071.7	5.7	47.0	56.2	18.3	53.5	7.9	8.6	6.9	42.3	43.6	1.0	
11/21/2020	Average	11.9	1.8	41.0	910.1	1017.8	5.5	45.0	54.7	9.7	50.9	7.7	8.6	6.8	41.9	43.2	0.4	On
	Min	7.7	0.0	10.9	786.8	995.8	5.5	35.1	51.0	6.0	44.3	7.4	8.6	6.8	41.6	42.9	0.0	
	Max	14.5	597.7	341.5	1086.5	1046.0	5.5	52.4	58.5	16.3	56.3	8.1	8.7	6.9	42.1	43.5	1.0	
11/22/2020	Average	11.5	0.0	95.0	621.9	642.0	5.4	40.4	48.9	8.5	43.1	9.0	8.8	6.8	38.3	39.1	0.2	On/Shut-down/Off/Start-up
	Min	11.5	0.0	95.0	246.6	41.1	5.1	16.1	20.6	-44.4	20.1	7.6	8.7	6.8	0.1	0.0	0.0	
	Max	11.5	0.0	95.0	873.7	1030.2	5.5	65.6	57.0	25.3	53.2	11.6	9.1	6.9	43.1	43.5	1.0	
11/23/2020	Average	11.5	0.0	95.0	92.8	28.8	5.5	48.8	18.5	-30.2	17.0	9.0	9.3	6.9	0.1	0.0	0.0	Start-up/Shut-down
	Min	11.5	0.0	95.0	46.1	25.0	5.2	28.9	17.5	-48.6	15.2	2.4	9.1	6.9	0.0	0.0	0.0	
	Max	11.5	0.0	95.0	246.3	41.1	5.8	68.2	20.6	-10.6	20.7	11.6	9.5	7.0	0.1	0.0	0.0	
11/24/2020	Average	11.5	0.0	95.0	32.6	23.1	5.9	28.8	16.9	-11.9	16.3	1.9	9.6	6.9	0.0	0.0	0.0	Shut-down/Off
	Min	11.5	0.0	95.0	24.3	20.1	5.8	26.3	16.1	-15.5	15.7	1.2	9.5	6.8	0.0	0.0	0.0	
	Max	11.5	0.0	95.0	46.1	27.2	5.9	33.8	18.6	-9.9	17.3	2.5	9.7	6.9	0.1	0.0	0.0	
11/25/2020	Average	11.5	0.0	95.0	21.9	22.6	6.0	30.4	16.3	-14.1	15.1	1.1	9.7	6.8	0.0	0.0	0.0	Off/Start-up
	Min	11.5	0.0	95.0	20.5	19.4	5.9	26.9	14.7	-16.1	12.9	1.1	9.7	2.3	0.0	0.0	0.0	
	Max	11.5	0.0	95.0	25.4	469.0	6.0	32.1	17.2	-10.2	16.6	1.2	9.8	7.0	0.1	0.0	0.0	
11/26/2020	Average	11.4	2.4	79.0	358.8	840.3	6.0	24.3	24.6	0.3	18.2	3.0	9.4	1.9	11.1	11.6	0.0	Off/Start-up/On
	Min	8.0	0.0	14.4	25.9	477.0	5.5	17.0	13.7	-15.1	10.3	1.0	7.0	0.0	0.0	0.0	0.0	
	Max	14.5	662.2	102.6	796.9	1062.8	6.0	34.0	51.2	23.7	37.7	8.7	11.4	6.9	40.9	43.0	0.0	
11/27/2020	Average	12.5	5.2	49.1	932.4	1022.2	6.0	31.7	50.6	19.0	39.0	7.5	6.9	6.9	40.7	42.4	0.1	ON
	Min	9.2	0.0	-0.1	683.9	960.4	6.0	26.7	50.2	8.4	37.4	7.2	6.8	6.9	40.6	42.3	0.0	
	Max	15.6	714.6	348.0	1035.0	1119.6	6.1	42.6	51.4	23.6	43.3	8.0	7.1	6.9	40.8	42.6	1.0	
11/28/2020	Average	12.7	4.7	51.9	906.2	1009.2	6.0	31.7	51.0	19.3	41.2	7.3	6.9	6.9	40.8	42.3	0.0	ON
	Min	9.4	0.0	21.0	702.0	923.3	6.0	28.2	50.4	15.4	39.4	7.2	6.7	6.8	40.7	42.0	0.0	
	Max	16.1	603.5	296.6	1082.1	1079.6	6.0	35.8	51.4	22.4	42.9	7.3	7.2	6.9	40.9	42.5	0.0	
11/29/2020	Average	11.9	4.2	56.8	1062.7	1028.2	6.0	29.7	50.6	20.8	41.2	7.2	6.8	6.9	40.8	42.3	0.3	ON
	Min	9.6	0.0	22.0	948.4	988.7	6.0	27.2	50.0	17.4	39.9	7.2	6.6	6.9	40.7	42.2	0.0	
	Max	15.8	508.4	326.2	1124.7	1064.2	6.0	33.5	51.0	23.1	43.2	7.3	7.0	6.9	40.9	42.5	1.0	
11/30/2020	Average	11.9	3.5	74.0	1055.6	1028.3	6.0	30.4	50.6	20.2	41.0	7.3	6.7	6.9	40.6	42.1	1.0	ON
	Min	8.8	0.0	33.6	908.7	957.3	6.0	28.6	50.3	18.0	40.2	7.2	6.6	6.9	40.5	42.0	1.0	
	Max	15.9	439.9	357.8	1138.4	1076.4	6.0	32.6	50.8	21.9	41.8	7.3	6.9	6.9	40.8	42.3	1.0	

November 2020 Incinerator Feed Data

TheDate	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DailySum	Monthly Total
11/1/2020	0	0	0	0	0	0	0	0	517	543.5	537.3	526.9	523.2	534.8	504.3	517	509.5	515.8	508.4	503.8	503.6	272.1	255.1	222.8	7495	
11/2/2020	457.8	511.8	470.6	524.1	347.2	416.6	289.8	507	528.1	506.3	533.3	511	506.5	318.3	519.2	515.8	442.7	107.4	528.4	406.6	466.4	461.3	36.4	0	9913	
11/3/2020	548.2	501.7	552.3	576	425.2	246.8	0	0	414.8	0	0	0	410.6	500.2	502.4	511.4	505.7	490.2	201.2	521.4	525.6	505.7	318.1	532.4	8790	
11/4/2020	523.6	547.7	0	536.2	521.9	575.1	535.5	537.4	499.4	0	513.9	502.9	504.8	453.6	517	565.6	506	506	234	507.2	524.8	0	302	0	9915	
11/5/2020	538.6	529.9	538.7	525.9	545.8	575.1	364.7	436.3	503.4	499.6	515.4	532.5	501.8	199.3	0	0	0	0	0	0	0	0	0	81.5	6889	
11/6/2020	476.7	529.1	528	434.7	550.6	236.4	433.4	517.2	166	242.2	514.6	264.9	160.7	516.9	506.4	501.8	514.7	524.8	506.7	500.3	453.8	558.3	201	158.6	9998	
11/7/2020	437.1	494.9	596	474.6	480.4	537	337	481.8	505.2	495	498.1	498.3	499.4	499.3	624.3	367.3	500.8	500	0	275.3	527.6	101.8	0	206.6	9938	
11/8/2020	530.8	517	0	555.2	266.6	129	437.4	306	500.4	500.2	500.3	605	597	591.8	492.4	493.1	498.9	501.1	0	506.5	0	0	486.3	426.4	9441	
11/9/2020	430.7	531.4	68.5	417	574	263.3	0	244.6	469.4	456.9	482.9	490.1	556.7	541	484.6	485.2	482.9	484.3	108.4	226.9	402.2	214.4	515.8	541.3	9473	
11/10/2020	539.5	561.1	123.6	561.6	571.9	556	267.9	0	0	509.6	532.4	513.4	514.7	507	504	497.9	359	513.7	373.2	306.5	170.7	0	0	0	8484	
11/11/2020	0	360.4	25.8	335.2	0	0	456.4	514.7	525.7	516.9	512.4	506.2	344.1	557.3	540	263.6	504.3	0	204.2	206.8	0	0	0	0	6374	
11/12/2020	0	403	0	557.2	607.8	405	347.8	395.2	0	249.2	434.5	509.7	499.7	499.3	174.6	306.7	310	306.2	275.5	323.7	470.1	151.9	343.1	117	7687	
11/13/2020	201.8	554.2	293.6	588	528.2	0	64.4	498.8	501.4	500	309.4	409.4	501.6	390.7	503	502.2	501.2	502.4	0	572.2	0	19.8	380.4	504.4	8827	
11/14/2020	339	545.3	200.9	241.3	78.7	0	0	595.6	504.2	516.8	515.1	513.4	519.3	516.2	533.9	510.4	552	521.9	534.4	286.8	0	511	106.8	40.2	8683	
11/15/2020	560.3	544.8	96	571.3	563.6	572.1	304.5	0	0	512.1	555	551	511.8	446.1	501.5	535.8	0	110.7	509	559	596.2	0	0	0	8601	209059
11/16/2020	456	454.5	435.3	388.4	504.4	0	0	0	0	0	0	0	0	0	0	0	539.4	507.8	540.6	506.7	505.4	595.4	477.7	0	5912	
11/17/2020	670	407.9	531.3	333.4	336.5	453.4	317.4	316	507.6	460.7	642.7	528.2	513.9	478	509	430.6	301.8	60.2	251.5	519.8	509.4	10.6	314.8	216.4	9621	
11/18/2020	505.1	505.4	107.6	507.7	257.4	418.6	103.2	510	512.9	509.2	500	510.7	493	0	0	452	430	567	252.7	119.9	21	113	0	0	7396	
11/19/2020	0	0	0	0	0	155.6	19.5	0	0	185.6	590.8	503	571.9	536.9	505.9	546.7	531	507.9	328.8	511.7	397	508.5	266	0	6667	
11/20/2020	594.5	516.1	300	429.7	458	392.9	0	520.8	534.3	204.6	18	0	164	177.7	561.9	542.1	547.4	465.3	531.8	139.2	141.8	336.4	101.7	0	7678	
11/21/2020	0	0	0	441.3	440.8	0	360.3	0	309.8	365.5	311.2	0	0	0	0	267	0	315.2	0	0	0	0	0	0	2811	
11/22/2020	0	0	0	521.7	506.8	521.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1550	
11/23/2020	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11/24/2020	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11/25/2020	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11/26/2020	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	236.6	395.2	450.1	302.5	1384	
11/27/2020	597.3	617.4	619.9	628.2	526.3	524.4	287.6	507.5	513.1	531.3	152.7	504.2	335.1	508.4	162.7	0	515.2	200.1	0	0	0	0	0	244	7975	
11/28/2020	660.9	634.3	572.1	430.4	506.5	471.8	168.9	507.7	180.1	0	0	0	115	554.8	514.4	143.7	0	31.5	0	510.4	512	517.2	0	530.2	7562	
11/29/2020	541.2	546.6	52.5	497.6	503.2	408.3	0	510.4	535.7	511.5	543.8	532.6	524.7	532.4	523.5	519.4	0	562.3	467.8	524.5	555.4	561.2	44.6	0	9999	
11/30/2020	548.3	521.8	338.9	0	0	595	637.5	615.6	527.3	354.5	508.4	501.4	518.8	504.8	301.9	542.6	503.9	532.7	503.8	552.2	502.8	384.4	0	0	9997	

November 2020 CEM Calibration Log

TheDate	COSpanRes	CO Calgas	COSpan%Drift	NOxSpanRes	NOX Calgas	NOxSpan%drift	O2SpanRes	O2 Calgas	O2SpanDrift	COZeroRes	COZero%Drift	NOxZeroRes	NOxZero%Drift	O2ZeroRes	O2 Zerogas	O2ZeroDrift	Comment
11/4/2020 22:59	88	88.1	1.00E-02	0	776	0	0	8.08	0	0	0	0	0	0	0	0	
11/4/2020 23:04	0	88.1	0	762	776	1.4	0	8.08	0	0	0	0	0	0	0	0	
11/4/2020 23:08	0	88.1	0	0	776	0	8.3	8.08	0.2200003	0	0	0	0	0	0	0	
11/8/2020 19:52	88	88.1	1.00E-02	0	776	0	0	8.08	0	0	0	0	0	0	0	0	
11/8/2020 19:56	0	88.1	0	-1	776	77.7	0	8.08	0	0	0	0	0	0	0	0	
11/8/2020 22:12	0	88.1	0	404	776	37.2	0	8.08	0	0	0	0	0	0	0	0	
11/8/2020 22:16	0	88.1	0	0	776	0	8.4	8.08	0.3199997	0	0	0	0	0	0	0	
11/9/2020 9:11	0	88.1	0	0	776	0	0	8.08	0	0	0	0	0	0.1	0	0.1	
11/9/2020 9:15	88	88.1	1.00E-02	0	776	0	0	8.08	0	0	0	0	0	0	0	0	
11/9/2020 9:18	0	88.1	0	0	776	0	8.4	8.08	0.3199997	0	0	0	0	0	0	0	
11/9/2020 9:22	0	88.1	0	729	776	4.7	0	8.08	0	0	0	0	0	0	0	0	
11/9/2020 15:47	0	88.1	0	0	776	0	0	8.08	0	0	0	-1	-0.1	0.1	0	0.1	
11/9/2020 15:51	89	88.1	9.00E-02	0	776	0	0	8.08	0	0	0	0	0	0	0	0	
11/11/2020 6:35	0	88.1	0	0	776	0	0	8.08	0	0	0	0	0	0	0	0	
11/11/2020 6:39	89	88.1	9.00E-02	0	776	0	0	8.08	0	0	0	0	0	0	0	0	
11/11/2020 6:42	0	88.1	0	0	776	0	8.2	8.08	0.1199999	0	0	0	0	0	0	0	
11/11/2020 6:53	0	88.1	0	729	776	4.7	0	8.08	0	0	0	0	0	0	0	0	
11/11/2020 22:29	90	88.1	0.1900001	0	776	0	0	8.08	0	0	0	0	0	0	0	0	
11/11/2020 22:32	0	88.1	0	0	776	0	8.3	8.08	0.2200003	0	0	0	0	0	0	0	
11/11/2020 22:37	0	88.1	0	728	776	4.8	0	8.08	0	0	0	0	0	0	0	0	
11/17/2020 22:11	0	88.1	0	0	776	0	0	8.08	0	0	0	0	0	0.1	0	0.1	
11/17/2020 22:15	89	88.1	9.00E-02	0	776	0	0	8.08	0	0	0	0	0	0	0	0	
11/17/2020 22:19	0	88.1	0	0	776	0	8.4	8.08	0.3199997	0	0	0	0	0	0	0	
11/17/2020 22:24	0	88.1	0	744	776	3.2	0	8.08	0	0	0	0	0	0	0	0	
11/18/2020 21:13	88	88.1	1.00E-02	0	776	0	0	8.08	0	0	0	0	0	0	0	0	
11/18/2020 21:17	0	88.1	0	0	776	0	8.4	8.08	0.3199997	0	0	0	0	0	0	0	
11/18/2020 21:21	0	88.1	0	726	776	5	0	8.08	0	0	0	0	0	0	0	0	
11/21/2020 21:06	88	88.1	1.00E-02	0	776	0	0	8.08	0	0	0	0	0	0	0	0	
11/21/2020 21:10	0	88.1	0	718	776	5.8	0	8.08	0	0	0	0	0	0	0	0	
11/27/2020 16:09	0	88.1	0	0	776	0	0	8.08	0	0	0	-1	-0.1	0	0	0	
11/27/2020 16:12	89	88.1	9.00E-02	0	776	0	0	8.08	0	0	0	0	0	0	0	0	
11/27/2020 16:16	0	88.1	0	0	776	0	8.2	8.08	0.1199999	0	0	0	0	0	0	0	
11/27/2020 16:20	0	88.1	0	771	776	0.5	0	8.08	0	0	0	0	0	0	0	0	
11/27/2020 19:34	89	88.1	9.00E-02	0	776	0	0	8.08	0	0	0	0	0	0	0	0	
11/27/2020 19:38	0	88.1	0	0	776	0	8.1	8.08	2.00E-02	0	0	0	0	0	0	0	
11/27/2020 19:43	0	88.1	0	754	776	2.2	0	8.08	0	0	0	0	0	0	0	0	
11/28/2020 23:08	89	88.1	9.00E-02	0	776	0	0	8.08	0	0	0	0	0	0	0	0	
11/28/2020 23:12	0	88.1	0	0	776	0	8.1	8.08	2.00E-02	0	0	0	0	0	0	0	
11/28/2020 23:15	0	88.1	0	763	776	1.3	0	8.08	0	0	0	0	0	0	0	0	
11/29/2020 23:05	89	88.1	9.00E-02	0	776	0	0	8.08	0	0	0	0	0	0	0	0	
11/29/2020 23:08	0	88.1	0	0	776	0	8.9	8.08	0.8199997	0	0	0	0	0	0	0	
11/29/2020 23:13	0	88.1	0	772	776	0.4	0	8.08	0	0	0	0	0	0	0	0	
11/30/2020 22:05	89	88.1	9.00E-02	0	776	0	0	8.08	0	0	0	0	0	0	0	0	
11/30/2020 22:09	0	88.1	0	0	776	0	8.9	8.08	0.8199997	0	0	0	0	0	0	0	
11/30/2020 22:13	0	88.1	0	798	776	2.2	0	8.08	0	0	0	0	0	0	0	0	

Carbon Monoxide > 8ppm 4 hour alarm

Stericycle — Protecting People. Reducing Risk.

Date	Start Time	Stop Time	Duration	Op. Mode	Stack CO @ 11% O2	Stack CO as mg/m³	Explanation	Actions Taken
11/4/2020	6:00	7:00	1:00	Normal	8.5	9.8	Large movement in the waste in incinerator caused release of excess volatile gasses	Operator monitored levels and continued feeding.
11/5/2020	12:00	13:00	1:00	Normal	8.2	9.5	Large movement in the waste in incinerator caused release of excess volatile gasses	Operator monitored levels and continued feeding.
11/7/2020	21:00	1:00	4:00	Normal	10.5	12.1	Large movement in the waste in incinerator caused release of excess volatile gasses	Operator monitored levels and continued feeding.
11/10/2020	7:00	11:00	4:00	Normal	8.7	10.0	Large movement in the waste in incinerator caused release of excess volatile gasses	Operator monitored levels and continued feeding.
11/10/2020	19:00	20:00	1:00	Normal	8.7	10.0	Large movement in the waste in incinerator caused release of excess volatile gasses	Operator monitored levels and continued feeding.
11/10/2020	21:00	22:00	1:00	Normal	10.2	11.8	Large movement in the waste in incinerator caused release of excess volatile gasses	Operator monitored levels and continued feeding.
11/11/2020	14:00	15:00	1:00	Normal	9.8	11.3	Large movement in the waste in incinerator caused release of excess volatile gasses	Operator monitored levels and continued feeding.
11/12/2020	21:00	1:00	4:00	Normal	8.9	10.3	Large movement in the waste in incinerator caused release of excess volatile gasses	Operator monitored levels and continued feeding.
11/13/2020	20:00	22:00	2:00	Normal	12	13.8	Large movement in the waste in incinerator caused release of excess volatile gasses	Operator monitored levels and continued feeding.
11/17/2020	8:00	10:00	2:00	Normal	8.6	9.9	Large movement in the waste in incinerator caused release of excess volatile gasses	Operator monitored levels and continued feeding.
11/18/2020	19:00	23:00	4:00	Normal	18.7	21.6	Spike caused by change in flameport setpoints attempting to decrease differential temp.	No waste was fed during this period. Setpoints were readjusted.

Carbon Monoxide > 8ppm 4 hour alarm

11/20/2020	20:00	21:00	1:00	Normal	9	10.4	Pile of waste fell into ash pit	Operator monitored levels and continued feeding.
11/20/2020	22:00	23:00	1:00	Normal	8.9	10.3	Pile of waste fell into ash pit	Operator monitored levels and continued feeding.
11/21/2020	0:00	1:00	1:00	Normal	8.8	10.2	Large movement in the waste in incinerator caused release of excess volatile gasses	Operator monitored levels and continued feeding.
11/27/2020	12:00	14:00	2:00	Normal	12.6	14.5	Large movement in the waste in incinerator caused release of excess volatile gasses	Operator monitored levels and continued feeding.
11/27/2020	15:00	16:00	1:00	Normal	9.9	11.4	Large movement in the waste in incinerator caused release of excess volatile gasses	Operator monitored levels and continued feeding.
11/27/2020	17:00	19:00	2:00	Normal	8.6	9.9	Large movement in the waste in incinerator caused release of excess volatile gasses	Operator monitored levels and continued feeding.
11/28/2020	8:00	12:00	4:00	Normal	9.7	11.2	Large movement in the waste in incinerator caused release of excess volatile gasses	Operator monitored levels and continued feeding.
11/30/2020	3:00	6:00	3:00	Normal	9.4	10.8	Large movement in the waste in incinerator caused release of excess volatile gasses	Operator monitored levels and continued feeding.

Carbon Monoxide > 8ppm 12 hour alarm

Stericycle
Protecting People. Reducing Risk.

Date	Start Time	Stop Time	Duration	Op. Mode	Stack CO @ 11% O2	Stack CO as mg/m^3	Explanation	Actions Taken
11/18/2020	19:00	23:00	4:00	Normal	8.3	9.6	Spike caused by change in flameport setpoints attempting to decrease differential temp.	No waste was fed during this period. Setpoints were readjusted.

Secondary Chamber Temperature < 1000°C

Date	Start Time	Stop Time	Duration	Op. Mode	Temp. °C	Explanation	Actions Taken
11/19/2020	2:53	3:57	1:04	Normal	993	Machine was having difficulty maintaining upper temp	Upper burner setpoint adjusted
11/19/2020	6:42	8:34	1:52	Normal	985	Machine was having difficulty maintaining upper temp	Upper burner setpoint adjusted
11/22/2020	11:02	13:47	2:45	Shut-Down	966	Machine was having difficulty maintaining upper temp	Upper burner setpoint adjusted
11/27/2020	19:42	22:48	3:06	Normal	997	Machine was having difficulty maintaining upper temp	Upper burner setpoint adjusted
11/28/2020	10:07	13:10	3:03	Normal	966	Machine was having difficulty maintaining upper temp	Upper burner setpoint adjusted
11/28/2020	16:06	19:29	3:23	Normal	947	Machine was having difficulty maintaining upper temp	Upper burner setpoint adjusted
11/30/2020	4:02	5:10	1:08	Normal	980	Machine was having difficulty maintaining upper temp	Upper burner setpoint adjusted

Quench pH out of Range (<6.4pH / >10.4pH)

Stericycle
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Date	Start Time	Stop Time	Duration	Op. Mode	Quench pH	Explanation	Action Taken
11/23/2020	20:27	0:26	3:59	Shut-Down	2.5	False alarm. Incinerator was already shutdown. Machine was put back into shutdown to help cooling by running UFA and FPA fans	False alarm. Incinerator was already shutdown. Machine was put back into shutdown to help cooling by running UFA and FPA fans

Condenser pH out of range (<6.4pH / >10.4pH)

Date	Start Time	Stop Time	Duration	Op. Mode	Condenser pH	Explanation	Action Taken
11/3/2020	4:44	7:44	3:00	Normal	5.9	Waste caused a sudden drop in water PH	Auto caustic system brought PH back to limits

Differential from Demister < 10 C

Date	Start Time	Stop Time	Duration	Op. Mode	Differential Temp Outlet °C	Explanation	Actions Taken
11/11/2020	23:36	3:21	3:45	Normal	8	Heat exchanger build up prevented proper cooling of process water	No waste fed until back in range. Setpoints were adjusted to compensate.
11/16/2020	3:05	15:06	12:01	Normal	8	Heat exchanger build up prevented proper cooling of process water	No waste fed until back in range. Setpoints were adjusted to compensate.
11/18/2020	23:20	6:23	7:03	Normal	7	Heat exchanger build up prevented proper cooling of process water	No waste fed until back in range. Setpoints were adjusted to compensate.
11/21/2020	10:19	3:09	16:50	Normal	8	Heat exchanger build up prevented proper cooling of process water	No waste fed until back in range. Setpoints were adjusted to compensate.
11/22/2020	5:53	14:08	8:15	Normal	8	Heat exchanger build up prevented proper cooling of process water	Plates were cleaned and seals replaced on shutdown.

Stericycle

December 2020 Incineration Averages Ranges

TheDate		OX6min	COmin	NOXmin	PrimTemp°C	SecTemp°C	SNCR	DemTemp°C	CarbTemp°C	DiffTemp	IDFanTemp°C	QunchPH	CondPH	AtomPH	AtomA	AtomB	HEPADP	OpMode
12/1/2020	Average	12.3	4.0	70.3	1035.3	1025.9	6.0	28.6	50.5	21.8	40.7	7.3	6.7	6.9	40.5	42.0	1.7	
	Min	9.9	0.0	25.3	927.3	980.4	6.0	26.8	50.0	19.7	39.5	7.2	6.5	6.9	40.5	41.9	1.0	On
	Max	15.7	469.7	148.9	1122.9	1044.9	6.0	31.2	50.9	23.3	42.2	7.3	6.8	6.9	40.7	42.2	2.0	
12/2/2020	Average	12.1	3.9	62.4	1003.8	1025.1	6.0	29.0	50.4	21.4	41.8	7.3	6.8	6.9	40.7	42.1	2.2	
	Min	5.64	0.0	14.2	832.6	967.7	6.0	25.0	48.9	18.2	38.9	7.2	6.7	6.9	40.5	41.9	2.0	On
	Max	15.7	524.0	347.9	1091.6	1066.5	6.0	32.6	51.0	23.9	44.0	7.4	7.1	6.9	41.3	42.4	3.0	
12/3/2020	Average	9.0	4.7	27.2	903.1	1013.5	6.0	29.8	45.3	15.4	37.3	7.3	7.1	6.9	40.5	42.0	0.1	
	Min	5.55	0.0	1.0	714.0	928.1	6.0	28.6	28.7	0.1	28.6	7.1	6.9	6.9	40.5	41.6	0.0	On
	Max	11.5	456.1	182.8	1047.1	1042.0	6.0	32.6	50.9	21.9	40.7	7.6	7.3	6.9	40.7	42.2	2.0	
12/4/2020	Average	10.6	4.7	32.7	834.6	1026.6	6.0	27.9	50.1	22.2	40.8	7.2	7.0	6.9	40.5	41.8	0.0	
	Min	6.93	0.0	3.2	729.5	971.4	6.0	24.1	48.3	17.1	40.1	7.1	6.9	6.8	40.4	41.4	0.0	On
	Max	15.5	586.9	95.0	1027.2	1071.1	6.0	33.7	50.9	24.4	42.3	7.3	7.1	6.9	40.6	42.1	0.0	
12/5/2020	Average	11.7	5.9	72.0	832.5	1054.6	6.0	27.0	50.1	23.1	41.0	7.4	6.8	6.9	41.5	42.1	0.0	
	Min	7.73	0.0	0.2	691.9	1021.7	6.0	24.5	48.6	22.0	40.1	7.2	6.6	6.9	40.5	41.8	0.0	On
	Max	14.4	655.5	149.4	1008.8	1077.4	6.0	28.6	50.8	24.3	41.5	7.6	7.0	6.9	42.1	42.2	0.0	
12/6/2020	Average	11.7	1.0	86.4	941.9	1064.8	6.0	31.0	50.5	19.4	42.2	7.5	6.7	6.9	42.1	42.1	0.0	
	Min	9.75	0.0	13.7	844.9	1030.3	6.0	24.9	48.7	14.7	40.2	7.2	6.6	6.8	41.9	41.9	0.0	On
	Max	13.8	220.1	213.0	1033.6	1170.8	6.0	36.8	51.5	23.8	43.6	7.7	6.9	6.9	42.2	42.2	0.0	
12/7/2020	Average	11.4	2.7	56.3	919.6	1051.0	6.0	30.4	50.5	20.1	41.6	7.3	6.7	6.9	42.2	42.1	0.6	
	Min	8.66	0.0	13.1	859.4	1020.9	6.0	22.7	46.9	16.5	38.9	7.2	6.6	6.8	42.0	41.9	0.0	On
	Max	12.7	615.4	167.6	1037.0	1119.4	6.0	34.7	51.3	24.2	42.7	7.3	6.8	6.9	42.4	42.3	1.0	
12/8/2020	Average	14.7	630.1	46.5	817.1	803.2	6.0	19.9	44.8	25.0	36.8	7.3	7.0	6.9	42.4	42.1	0.0	
	Min	8.27	0.0	8.9	471.5	131.1	5.7	16.3	41.7	24.3	34.3	7.2	6.7	6.9	41.9	42.0	0.0	On
	Max	20.0	3396.8	161.7	1041.7	1052.3	6.0	22.6	46.9	25.5	38.8	7.5	7.5	6.9	43.2	42.3	0.0	
12/9/2020	Average	12.2	2.9	59.9	736.8	1038.4	6.0	23.7	47.4	23.7	38.3	7.5	6.9	6.9	42.5	42.2	0.6	
	Min	7.85	0.0	18.1	535.8	951.5	5.9	20.0	44.7	20.4	35.7	7.3	6.7	6.9	42.3	42.0	0.0	On
	Max	15.9	676.5	352.3	936.9	1113.4	6.0	30.1	50.5	25.1	41.9	7.8	7.2	6.9	42.8	42.3	1.0	
12/10/2020	Average	11.9	2.1	52.6	892.5	1048.3	6.0	27.2	49.3	22.1	39.1	7.4	6.9	6.8	42.3	42.2	1.0	
	Min	7.85	0.0	0.2	856.6	1034.5	6.0	20.1	44.6	19.6	35.2	7.2	6.7	6.8	42.1	42.1	0.0	On
	Max	14.2	506.0	363.9	939.9	1142.5	6.0	31.3	51.0	24.6	42.7	7.9	7.3	6.9	42.6	42.4	2.0	
12/11/2020	Average	11.8	4.3	49.0	946.5	1059.0	6.0	25.6	48.4	22.8	38.2	7.6	7.1	6.9	42.2	42.2	0.0	
	Min	8.62	0.0	0.0	893.0	1035.6	6.0	20.1	44.5	19.7	35.3	7.3	6.9	6.9	42.1	42.0	0.0	On
	Max	13.9	562.2	290.1	992.3	1109.3	6.0	31.2	50.9	24.6	40.2	8.1	7.7	6.9	42.4	42.3	0.0	
12/12/2020	Average	11.9	1.6	67.2	918.9	1066.3	6.0	28.2	50.4	22.2	39.5	7.4	6.8	6.8	42.2	42.1	0.0	
	Min	8.63	0.0	20.8	886.2	1059.8	6.0	25.8	49.4	20.6	38.7	7.3	6.8	6.8	42.1	42.0	0.0	On
	Max	13.1	41.2	348.7	984.0	1081.0	6.0	30.2	50.9	23.6	40.3	7.5	6.9	6.9	42.3	42.2	0.0	
12/13/2020	Average	11.3	2.3	45.8	950.8	1067.6	6.0	25.5	48.4	23.0	39.6	7.3	6.8	6.9	42.2	42.0	0.0	
	Min	9.01	0.0	18.6	918.0	1056.6	6.0	20.0	44.4	20.1	37.0	7.2	6.8	6.8	42.1	41.9	0.0	On
	Max	13.0	552.3	118.0	1005.4	1130.2	6.0	30.7	50.8	26.1	41.0	7.4	6.8	6.9	42.3	42.1	0.0	
12/14/2020	Average	11.3	2.0	49.6	946.0	1073.9	6.0	23.5	47.0	23.5	38.5	7.2	6.8	6.9	42.2	42.1	0.4	
	Min	8.66	0.0	19.6	882.9	1059.7	6.0	20.2	45.1	20.4	36.6	7.2	6.8	6.9	42.1	41.9	0.0	On
	Max	13.1	591.2	353.9	1010.0	1195.3	6.0	30.4	50.8	26.2	42.1	7.4	6.9	6.9	42.3	42.2	1.0	
12/15/2020	Average	11.8	3.3	48.9	887.3	1065.1	6.0	24.7	47.8	23.2	38.2	7.3	6.8	6.9	42.0	41.9	0.8	
	Min	9.68	0.0	17.4	842.7	1058.0	6.0	20.3	44.8	20.5	35.9	7.2	6.8	6.9	41.7	41.4	0.0	On
	Max	12.8	722.0	108.8	945.2	1077.2	6.0	30.3	50.8	24.7	41.5	7.6	6.8	6.9	42.1	42.1	1.0	
12/16/2020	Average	11.7	1.8	63.2	877.8	1068.7	6.0	29.9	50.5	20.6	42.0	7.3	6.8	6.9	41.9	42.0	0.8	
	Min	9.02	0.0	1.8	812.7	1059.4	6.0	22.8	48.5	17.4	38.3	7.3	6.8	6.9	41.7	41.8	0.0	On
	Max	13.1	365.6	280.4	972.8	1132.6	6.0	33.8	51.3	26.9	43.6	7.3	6.8	6.9	42.0	42.0	1.0	
12/17/2020	Average	11.8	2.9	51.5	953.5	1065.5	6.0	28.2	49.8	21.6	41.2	7.3	6.8	6.9	41.9	42.0	0.8	
	Min	8.35	0.0	18.3	911.9	1057.8	6.0	22.3	46.7	16.9	38.1	7.2	6.8	6.8	41.8	41.9	0.0	On
	Max	12.7	431.1	349.0	1028.4	1080.2	6.0	34.4	51.3	26.8	43.9	7.3	6.8	6.9	42.0	42.1	1.0	
12/18/2020	Average	11.8	1.8	60.2	913.4	1065.8	6.0	30.5	48.1	17.6	39.9	7.3	6.8	6.8	41.9	42.0	0.5	
	Min	8.32	0.0	9.3	886.9	1057.7	6.0	22.9	31.4	5.8	30.4	7.2	6.8	6.8	41.8	41.9	0.0	On
	Max	14.5	249.3	198.6	942.0	1112.8	6.0	35.5	51.3	24.7	44.0	7.4	6.8	6.9	42.0	42.1	2.0	

Stericycle

December 2020 Incineration Averages Ranges

TheDate		OX6min	COmin	NOXmin	PrimTemp°C	SecTemp°C	SNCR	DemTemp°C	CarbTemp°C	DiffTemp	IDFanTemp°C	QunchPH	CondPH	AtomPH	AtomA	AtomB	HEPADP	OpMode
12/19/2020	Average	11.5	3.9	35.6	940.6	1061.8	6.0	26.8	49.5	22.7	41.2	7.2	6.8	6.9	42.1	42.1	0.0	On
	Min	8.15	0.0	11.7	854.4	1037.6	6.0	22.9	47.2	19.8	38.6	7.2	6.8	6.9	42.0	42.0	0.0	
	Max	13.4	633.0	328.8	1034.3	1073.3	6.0	31.5	51.4	24.8	42.9	7.3	6.8	6.9	42.3	42.4	0.0	
12/20/2020	Average	12.2	0.2	23.3	703.2	1065.5	6.0	24.1	48.0	23.9	40.2	7.4	6.8	6.9	42.0	42.0	0.0	On
	Min	8.22	0.0	12.3	469.5	1061.1	6.0	20.6	45.1	19.8	38.2	7.2	6.8	6.9	41.9	41.8	0.0	
	Max	13.4	15.9	353.9	913.0	1068.9	6.0	31.5	51.3	24.7	42.8	7.8	6.8	6.9	42.1	42.1	0.0	
12/21/2020	Average	11.4	0.2	42.3	774.1	1072.1	6.0	30.2	49.9	19.8	43.3	7.6	6.8	6.9	41.9	42.1	0.0	On
	Min	8.44	0.0	12.1	529.7	1048.9	6.0	23.1	47.3	13.7	40.3	7.3	6.7	6.8	41.8	42.0	0.0	
	Max	13.3	14.9	353.4	918.9	1163.2	6.0	37.6	51.5	24.3	46.2	7.7	6.8	6.9	42.0	42.2	0.0	
12/22/2020	Average	11.6	0.5	62.6	904.4	1070.1	6.0	33.1	51.2	18.1	44.0	7.3	6.7	6.8	41.9	42.2	0.0	On
	Min	9.27	0.0	18.1	860.2	1059.7	6.0	31.7	51.0	14.6	43.4	7.2	6.7	6.8	41.8	42.1	0.0	
	Max	12.7	22.8	171.0	926.3	1185.0	6.0	36.7	51.4	19.5	45.4	7.3	6.8	6.9	42.0	42.3	0.0	
12/23/2020	Average	11.2	1.9	53.1	920.7	1067.7	6.0	30.0	50.2	20.3	42.5	7.2	6.8	6.8	41.9	42.1	0.6	On
	Min	7.93	0.0	12.5	883.4	1059.8	6.0	23.2	47.3	14.9	39.6	7.2	6.7	6.8	41.8	42.0	0.0	
	Max	12.6	610.7	347.3	962.4	1113.0	6.0	36.4	51.3	24.2	44.3	7.3	6.8	6.9	42.1	42.2	1.0	
12/24/2020	Average	11.3	2.4	66.9	924.9	1050.6	6.0	25.3	47.9	22.6	39.8	7.3	6.8	6.9	41.5	41.7	0.9	On/Shut-down/Off
	Min	8.52	0.0	0.0	866.4	514.5	6.0	21.1	42.9	14.8	30.4	7.2	6.8	6.9	27.9	27.9	0.0	
	Max	20.4	698.5	244.3	988.5	1122.9	6.3	33.1	51.2	24.5	43.1	7.4	6.8	6.9	41.9	42.1	1.0	
12/25/2020	Average	20.2	0.0	0.0	385.8	67.5	6.0	19.0	19.7	0.7	9.6	7.9	6.9	7.0	1.2	1.1	0.0	Off
	Min	20.1	0.0	0.0	100.2	27.2	5.4	16.2	16.7	-2.2	5.0	7.4	6.8	6.9	0.0	0.0	0.0	
	Max	20.4	0.0	0.0	919.5	511.7	6.9	30.4	42.8	14.6	30.2	8.0	6.9	7.0	27.6	27.7	1.0	
12/26/2020	Average	20.3	0.0	0.0	64.2	18.1	5.2	12.9	14.8	1.9	12.8	8.0	6.9	7.0	0.0	0.0	0.0	Off
	Min	20.1	0.0	0.0	42.6	12.2	5.1	9.4	12.0	0.6	8.5	7.9	6.9	7.0	0.0	0.0	0.0	
	Max	20.4	0.0	0.0	100.1	27.8	5.4	16.2	17.3	3.3	16.1	8.0	6.9	7.0	0.0	0.0	0.0	
12/27/2020	Average	20.1	1.1	1.5	235.0	599.4	5.1	14.8	15.1	0.3	10.0	7.3	6.8	7.0	0.0	0.0	0.0	Off/Start-up
	Min	20.0	0.0	-2.2	36.1	14.6	5.1	12.3	13.9	-0.5	5.2	7.1	6.7	7.0	0.0	0.0	0.0	
	Max	20.4	40.7	7.7	454.3	858.9	5.3	17.0	16.9	1.9	13.8	8.0	6.9	7.0	0.0	0.0	0.0	
12/28/2020	Average	11.5	1.5	66.3	772.6	1033.0	5.9	30.0	47.3	17.3	40.8	7.1	6.7	6.9	37.9	36.8	0.1	Start-up/On
	Min	5.8	0.0	-4.4	421.5	818.1	5.2	15.7	14.6	-7.5	7.1	5.5	6.7	6.9	0.0	0.0	0.0	
	Max	20.0	582.8	349.7	913.4	1093.1	6.0	34.8	52.3	25.1	46.1	7.7	6.8	7.0	42.5	41.3	1.0	
12/29/2020	Average	11.6	0.7	75.6	871.9	1065.9	6.0	33.4	51.1	17.8	44.5	8.3	6.7	6.9	42.3	41.1	1.0	On
	Min	8.8	0.0	29.2	799.2	1060.4	6.0	31.0	51.0	15.5	44.2	6.1	6.7	6.9	42.2	41.0	1.0	
	Max	12.5	21.8	337.0	915.6	1073.2	6.0	35.6	51.3	20.1	45.4	8.7	6.7	6.9	42.5	41.2	1.0	
12/30/2020	Average	11.6	0.4	70.4	896.6	1066.9	6.0	32.8	51.0	18.2	43.9	8.2	6.7	6.9	42.5	41.2	1.3	On
	Min	9.9	0.0	19.2	850.3	1061.6	6.0	29.8	50.0	15.5	41.6	7.9	6.7	6.9	42.4	41.1	0.0	
	Max	14.2	8.3	169.0	932.7	1092.6	6.0	35.8	51.3	21.3	44.8	8.5	6.7	6.9	42.5	41.2	3.0	
12/30/2020	Average	10.9	2.8	78.4	892.0	1065.1	6.0	29.3	50.2	20.8	43.0	8.0	6.7	6.9	42.3	40.9	0.0	On/Shut-down
	Min	8.6	0.0	9.9	857.3	1058.0	6.0	22.9	47.1	15.8	39.5	7.7	6.6	6.9	41.1	39.9	0.0	
	Max	17.5	359.4	313.5	926.8	1085.4	6.0	35.6	51.4	24.2	45.5	8.2	6.8	6.9	42.6	41.5	0.0	

December 2020 Incinerator Feed Data

TheDate	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DailySum	Monthly Total
12/1/2020	0	337.5	112.2	431.4	0	0	318.8	452.8	499.8	241.8	241	501.8	499.6	507.4	508.4	504.1	502.8	504.8	278.7	580.4	536.2	205.8	0	0	7765.3	
12/2/2020	0	0	312.2	557.4	561.6	576.3	523.1	500.7	497.3	513.8	491.5	501.8	503.2	497	503.8	494.2	493.4	498.4	161.1	541	285.9	0	0	158.8	9172.5	
12/3/2020	432.4	513.5	576	507.8	0	0	0	516.5	525.6	531.3	509.5	0	0	0	0	335.1	536	519.8	509	503.1	503.7	411.9	210.7	0	7641.9	
12/4/2020	0	376.6	0	0	58.3	0	0	0	0	0	0	0	515.5	367.6	281.4	0	528.2	566.4	533.3	0	0	0	0	0	3227.3	
12/5/2020	0	0	418.8	428.8	0	0	0	0	0	0	0	0	0	0	535.4	668.4	453.8	475.3	415.1	323.2	543.3	559.7	518	507	5846.8	
12/6/2020	504.2	181.4	169.2	543.3	308.7	139.5	198.8	475.5	647.4	617.8	492.3	608.6	406.6	643.2	640.2	406	492.7	630.8	617.1	85.2	0	117.9	64.5	215.6	9206.5	
12/7/2020	541.7	522.4	444	481.3	502.8	559.6	268.5	505.5	546.5	503.9	510.8	514.4	503.6	508.6	511.2	508.2	511.6	502	247	359.5	405.6	0	0	0	9958.7	
12/8/2020	531.4	316.8	270.1	400.2	0	0	0	0	513.3	81.6	485.5	511.5	0	0	0	0	0	0	0	0	0	0	0	0	3110.4	
12/9/2020	0	0	0	0	0	0	0	0	0	0	281	580	524.5	535.7	616	559.8	526.6	0	0	0	503.8	581.2	339.2	41.2	5089	
12/10/2020	642.4	559.4	607.8	490.9	418.5	582.9	326.6	503.9	504.9	501.2	502.6	501.6	507.6	507.8	494.6	495	493.5	404.3	92.4	531.5	304.6	0	0	0	9974	
12/11/2020	509.6	516.4	0	0	452.8	550.9	0	0	0	502	455.4	460.9	455	455.2	453.7	458.2	451.8	499.2	413.5	330.6	515	168.6	558.2	541.2	8748.2	
12/12/2020	562.7	555.3	301.3	488.3	534.1	174	586.2	582.6	570.1	621.2	515.4	537.9	576.6	486.5	549.9	423.9	420.5	414.7	338.6	454.4	297.6	0	0	0	9991.8	
12/13/2020	577.8	466.7	657.8	455	508.3	413.8	333.8	505	477.6	492.8	434.2	485.9	482.2	453.7	482	465.9	483.3	300.5	338	453.7	452.1	279.9	0	0	10000	229407.2
12/14/2020	655	664.3	615.3	478	449.5	438	0	463.4	461.8	497.8	451.9	485.1	470.3	54.6	138	372.4	450.6	491.3	377.6	463.7	451.6	462.2	453.5	153.2	9999.1	
12/15/2020	439.3	469	405.2	0	0	449.8	0	439	436	470	474.3	541.2	451.6	453.3	455.4	460	458.6	450.3	213.8	548.6	565.9	541.9	564	551.7	9838.9	
12/16/2020	540.3	543	531	553.3	551.5	575.6	215.7	460.4	452.5	214	452	453.8	453.6	453.8	450.3	453.7	454.4	452.8	254	543.5	548	392.8	0	0	10000	
12/17/2020	543.9	532.4	128.8	527.3	506.2	65.7	209.6	0	118.4	486.5	0	488.5	489.3	498.7	450.7	490.4	510.8	523.5	508.4	360	460.6	461.8	463.4	65.5	8890.4	
12/18/2020	571.3	579.4	552.7	424	0	584.3	405	475.9	475.9	451	466.3	485.8	474.3	420.2	623.4	521.2	515	210	0	479.4	321.2	0	0	0	9036.3	
12/19/2020	647.8	0	594.2	67	603.6	297.6	186.7	354.4	0	0	0	0	0	58.4	471.1	452.2	459.8	469.7	273	550.1	522.8	403.9	504.5	347.9	7264.7	
12/20/2020	0	0	0	445.4	59.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	504.8	
12/21/2020	0	0	0	0	0	0	0	98.4	539.1	375	443.8	459.2	454.6	479.2	471	495	458.8	461.2	445.4	548.9	563.6	564	547.7	560.2	7965.1	
12/22/2020	548.8	555.5	0	546	553.3	567.8	0	458.5	470.6	490.2	475.8	478	470.8	488	454.8	472.7	472	456	408.9	440.7	453.8	492.6	245.2	0	10000	
12/23/2020	442.8	509.3	638.8	587.4	310.9	440.8	490.2	486.4	469.2	475.4	461.2	484.8	452.3	460.7	500.8	429.1	457.4	338.3	471.7	444.4	315.5	269.6	56.3	0	9993.3	
12/24/2020	616.2	413.9	448.1	465.3	403.4	625.1	232.4	265.6	12.7	0	457.8	515.5	509.2	313.9	506	511.2	508.5	510.5	120.7	0	0	0	0	0	7436	
12/25/2020	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12/26/2020	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12/27/2020	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12/28/2020	0	0	0	340.2	381.8	321.6	0	482	473.3	473.7	487.4	465.6	461.9	468.2	493.3	404.5	476.2	454.6	504.7	323	465	458.2	573.9	341.3	8850.4	
12/29/2020	455.9	464.6	319.8	315.1	615.5	445.4	355.4	453.2	459	451.3	454.7	452.6	450.8	490.1	455.3	458.3	453.3	452.2	315.2	523.6	558.4	316.9	203.7	0	9920.3	
12/30/2020	553.7	550.3	562.1	540.2	546.8	554.4	505.8	401.4	403.4	409.8	485.6	481.3	410.8	12.8	451	458.8	455.2	403.9	0	551.8	565.4	566.1	105	0	9975.6	
12/31/2020	534.3	570.6	566.9	555.3	540	522.7	220.4	452.5	459.8	467.4	461.8	462.5	492.4	519.2	474.1	476.8	528.9	561.9	504.4	533.6	94.4	0	0	0	9999.9	

December 2020 CEM Calibration Log

TheDate	COSpanRes	CO Calgas	COSpan%Drift	NOxSpanRes	NOX Calgas	NOxSpan%drift	O2SpanRes	O2 Calgas	O2SpanDrift	COZeroRes	COZero%Drift	NOxZeroRes	NOxZero%Drift	O2ZeroRes	O2 Zerogas	O2ZeroDrift	Comment
12/2/2020 22:07	89	88.1	9.00E-02	0	776	0	0	8.08	0	0	0	0	0	0	0	0	
12/2/2020 22:10	0	88.1	0	0	776	0	12.1	8.08	4.02	0	0	0	0	0	0	0	
12/2/2020 22:16	0	88.1	0	774	776	0.2	0	8.08	0	0	0	0	0	0	0	0	
12/2/2020 22:20	0	88.1	0	0	776	0	9.8	8.08	1.72	0	0	0	0	0	0	0	
12/2/2020 22:25	0	88.1	0	0	776	0	8.7	8.08	0.6199999	0	0	0	0	0	0	0	
12/3/2020 0:14	0	88.1	0	0	776	0	9.1	8.08	1.02	0	0	0	0	0	0	0	
12/3/2020 23:15	89	88.1	9.00E-02	0	776	0	0	8.08	0	0	0	0	0	0	0	0	
12/3/2020 23:19	0	88.1	0	0	776	0	9.1	8.08	1.02	0	0	0	0	0	0	0	
12/3/2020 23:23	0	88.1	0	1	776	77.5	0	8.08	0	0	0	0	0	0	0	0	
12/4/2020 13:55	0	88.1	0	0	776	0	9.3	8.08	1.22	0	0	0	0	0	0	0	
12/4/2020 14:03	0	88.1	0	0	776	0	8.1	8.08	2.00E-02	0	0	0	0	0	0	0	
12/5/2020 13:19	0	88.1	0	0	776	0	0	8.08	0	1	0.3333333	1	0.1	0.1	0	0.1	
12/9/2020 19:28	88	88.1	1.00E-02	0	776	0	0	8.08	0	0	0	0	0	0	0	0	
12/9/2020 19:31	0	88.1	0	0	776	0	8.1	8.08	2.00E-02	0	0	0	0	0	0	0	
12/10/2020 22:29	89	88.1	9.00E-02	0	776	0	0	8.08	0	0	0	0	0	0	0	0	
12/10/2020 22:33	0	88.1	0	0	776	0	8.2	8.08	0.1199999	0	0	0	0	0	0	0	
12/10/2020 22:38	0	88.1	0	772	776	0.4	0	8.08	0	0	0	0	0	0	0	0	
12/11/2020 6:58	89	88.1	9.00E-02	0	776	0	0	8.08	0	0	0	0	0	0	0	0	
12/11/2020 7:01	0	88.1	0	0	776	0	8.2	8.08	0.1199999	0	0	0	0	0	0	0	
12/11/2020 7:05	0	88.1	0	736	776	4	0	8.08	0	0	0	0	0	0	0	0	
12/12/2020 23:41	89	88.1	9.00E-02	0	776	0	0	8.08	0	0	0	0	0	0	0	0	
12/12/2020 23:44	0	88.1	0	0	776	0	8.1	8.08	2.00E-02	0	0	0	0	0	0	0	
12/12/2020 23:49	0	88.1	0	735	776	4.1	0	8.08	0	0	0	0	0	0	0	0	
12/14/2020 0:05	88	88.1	1.00E-02	0	776	0	0	8.08	0	0	0	0	0	0	0	0	
12/14/2020 0:09	0	88.1	0	0	776	0	8.2	8.08	0.1199999	0	0	0	0	0	0	0	
12/14/2020 0:14	0	88.1	0	740	776	3.6	0	8.08	0	0	0	0	0	0	0	0	
12/14/2020 22:04	88	88.1	1.00E-02	0	776	0	0	8.08	0	0	0	0	0	0	0	0	
12/14/2020 22:08	0	88.1	0	0	776	0	8.2	8.08	0.1199999	0	0	0	0	0	0	0	
12/14/2020 22:13	0	88.1	0	750	776	2.6	0	8.08	0	0	0	0	0	0	0	0	
12/16/2020 23:06	89	88.1	9.00E-02	0	776	0	0	8.08	0	0	0	0	0	0	0	0	
12/16/2020 23:10	0	88.1	0	0	776	0	8.2	8.08	0.1199999	0	0	0	0	0	0	0	
12/16/2020 23:15	0	88.1	0	710	776	6.6	0	8.08	0	0	0	0	0	0	0	0	
12/17/2020 23:14	88	88.1	1.00E-02	0	776	0	0	8.08	0	0	0	0	0	0	0	0	
12/17/2020 23:18	0	88.1	0	0	776	0	8.2	8.08	0.1199999	0	0	0	0	0	0	0	
12/17/2020 23:22	0	88.1	0	735	776	4.1	0	8.08	0	0	0	0	0	0	0	0	
12/19/2020 0:09	88	88.1	1.00E-02	0	776	0	0	8.08	0	0	0	0	0	0	0	0	
12/19/2020 0:12	0	88.1	0	0	776	0	8.3	8.08	0.2200003	0	0	0	0	0	0	0	
12/19/2020 0:17	0	88.1	0	694	776	8.2	0	8.08	0	0	0	0	0	0	0	0	
12/19/2020 2:15	88	88.1	1.00E-02	0	776	0	0	8.08	0	0	0	0	0	0	0	0	
12/19/2020 2:19	0	88.1	0	0	776	0	8.3	8.08	0.2200003	0	0	0	0	0	0	0	
12/19/2020 2:22	0	88.1	0	690	776	8.6	0	8.08	0	0	0	0	0	0	0	0	
12/20/2020 20:04	88	88.1	1.00E-02	0	776	0	0	8.08	0	0	0	0	0	0	0	0	
12/20/2020 20:08	0	88.1	0	0	776	0	8.2	8.08	0.1199999	0	0	0	0	0	0	0	
12/20/2020 20:13	0	88.1	0	750	776	2.6	0	8.08	0	0	0	0	0	0	0	0	
12/21/2020 23:35	88	88.1	1.00E-02	0	776	0	0	8.08	0	0	0	0	0	0	0	0	
12/21/2020 23:38	0	88.1	0	0	776	0	8.1	8.08	2.00E-02	0	0	0	0	0	0	0	
12/21/2020 23:43	0	88.1	0	742	776	3.4	0	8.08	0	0	0	0	0	0	0	0	
12/23/2020 0:29	88	88.1	1.00E-02	0	776	0	0	8.08	0	0	0	0	0	0	0	0	
12/23/2020 0:33	0	88.1	0	0	776	0	8.3	8.08	0.2200003	0	0	0	0	0	0	0	
12/23/2020 0:38	0	88.1	0	706	776	7	0	8.08	0	0	0	0	0	0	0	0	
12/23/2020 23:32	88	88.1	1.00E-02	0	776	0	0	8.08	0	0	0	0	0	0	0	0	
12/23/2020 23:35	0	88.1	0	0	776	0	8.1	8.08	2.00E-02	0	0	0	0	0	0	0	
12/23/2020 23:39	0	88.1	0	736	776	4	0	8.08	0	0	0	0	0	0	0	0	

December 2020 CEM Calibration Log

TheDate	COSpanRes	CO Calgas	COSpan%Drift	NOxSpanRes	NOX Calgas	NOxSpan%drift	O2SpanRes	O2 Calgas	O2SpanDrift	COZeroRes	COZero%Drift	NOxZeroRes	NOxZero%Drift	O2ZeroRes	O2 Zerogas	O2ZeroDrift	Comment
12/28/2020 23:45	88	88.1	1.00E-02	0	776	0	0	8.08	0	0	0	0	0	0	0	0	
12/28/2020 23:48	0	88.1	0	0	776	0	8.3	8.08	0.2200003	0	0	0	0	0	0	0	
12/28/2020 23:54	0	88.1	0	738	776	3.8	0	8.08	0	0	0	0	0	0	0	0	
12/29/2020 23:23	89	88.1	9.00E-02	0	776	0	0	8.08	0	0	0	0	0	0	0	0	
12/29/2020 23:27	0	88.1	0	0	776	0	8.3	8.08	0.2200003	0	0	0	0	0	0	0	
12/29/2020 23:32	0	88.1	0	716	776	6	0	8.08	0	0	0	0	0	0	0	0	

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O2 6 minute average < 7.5

O2 < 7.5

Date	Start Time	Stop Time	Duration	Op. Mode	Stack O2 %	Explanation	Actions Taken
12/2/2020	23:50	0:10	0:20	Normal	6.1	Low flameport setpointcaused O2 to drop while trying to troubleshoot difficulties keeping upper chamber temp.	No waste was fed until o2 was in range.
12/3/2020	1:15	1:19	0:04	Normal	7.4	Low flameport setpointcaused O2 to drop while trying to troubleshoot difficulties keeping upper chamber temp.	No waste was fed until o2 was in range.
12/3/2020	1:31	1:34	0:03	Normal	7.3	Low flameport setpointcaused O2 to drop while trying to troubleshoot difficulties keeping upper chamber temp.	No waste was fed until o2 was in range.
12/3/2020	6:48	6:49	0:01	Normal	7.3	Low flameport setpointcaused O2 to drop while trying to troubleshoot difficulties keeping upper chamber temp.	No waste was fed until o2 was in range.
12/3/2020	7:18	7:22	0:04	Normal	7.4	Low flameport setpointcaused O2 to drop while trying to troubleshoot difficulties keeping upper chamber temp.	No waste was fed until o2 was in range.
12/3/2020	7:31	7:32	0:01	Normal	7.4	Low flameport setpointcaused O2 to drop while trying to troubleshoot difficulties keeping upper chamber temp.	No waste was fed until o2 was in range.
12/3/2020	9:07	9:09	0:02	Normal	7.2	Low flameport setpointcaused O2 to drop while trying to troubleshoot difficulties keeping upper chamber temp.	No waste was fed until o2 was in range.

Stericycle®   O2 6 minute average < 7.5

Date	Start Time	Stop Time	Duration	Op. Mode	Stack O2 %	Explanation	Actions Taken
12/3/2020	9:24	9:25	0:01	Normal	7.4	Low flameport setpointcaused O2 to drop while trying to troubleshoot difficulties keeping upper chamber temp.	No waste was fed until o2 was in range.
12/3/2020	10:36	10:52	0:16	Normal	7.3	Low flameport setpointcaused O2 to drop while trying to troubleshoot difficulties keeping upper chamber temp.	No waste was fed until o2 was in range.
12/3/2020	10:54	11:06	0:12	Normal	7.3	Low flameport setpointcaused O2 to drop while trying to troubleshoot difficulties keeping upper chamber temp.	No waste was fed until o2 was in range.
12/3/2020	11:11	11:15	0:04	Normal	7.3	Low flameport setpointcaused O2 to drop while trying to troubleshoot difficulties keeping upper chamber temp.	No waste was fed until o2 was in range.
12/3/2020	15:28	15:32	0:04	Normal	7.2	Low flameport setpointcaused O2 to drop while trying to troubleshoot difficulties keeping upper chamber temp.	No waste was fed until o2 was in range.
12/3/2020	17:08	17:15	0:07	Normal	7.1	Low flameport setpointcaused O2 to drop while trying to troubleshoot difficulties keeping upper chamber temp.	No waste was fed until o2 was in range.
12/3/2020	18:16	18:21	0:05	Normal	7.2	Low flameport setpointcaused O2 to drop while trying to troubleshoot difficulties keeping upper chamber temp.	No waste was fed until o2 was in range.
12/3/2020	19:14	19:22	0:08	Normal	7.2	Low flameport setpointcaused O2 to drop while trying to troubleshoot difficulties keeping upper chamber temp.	No waste was fed until o2 was in range.

Stericycle® O2 6 minute average < 7.5

Date	Start Time	Stop Time	Duration	Op. Mode	Stack O2 %	Explanation	Actions Taken
12/3/2020	19:38	19:43	0:05	Normal	7.3	Low flameport setpointcaused O2 to drop while trying to troubleshoot difficulties keeping upper chamber temp.	No waste was fed until o2 was in range.
12/3/2020	19:49	19:54	0:05	Normal	7.2	Low flameport setpointcaused O2 to drop while trying to troubleshoot difficulties keeping upper chamber temp.	No waste was fed until o2 was in range.
12/3/2020	20:01	20:19	0:18	Normal	7.1	Low flameport setpointcaused O2 to drop while trying to troubleshoot difficulties keeping upper chamber temp.	No waste was fed until o2 was in range.
12/3/2020	20:31	20:38	0:07	Normal	7.2	Low flameport setpointcaused O2 to drop while trying to troubleshoot difficulties keeping upper chamber temp.	No waste was fed until o2 was in range.
12/3/2020	20:58	20:59	0:01	Normal	7.4	Low flameport setpointcaused O2 to drop while trying to troubleshoot difficulties keeping upper chamber temp.	No waste was fed until o2 was in range.
12/3/2020	21:13	21:17	0:04	Normal	7.3	Low flameport setpointcaused O2 to drop while trying to troubleshoot difficulties keeping upper chamber temp.	No waste was fed until o2 was in range.
12/3/2020	21:23	21:27	0:04	Normal	7.3	Low flameport setpointcaused O2 to drop while trying to troubleshoot difficulties keeping upper chamber temp.	No waste was fed until o2 was in range.
12/3/2020	23:26	23:31	0:05	Normal	6.2	Low flameport setpointcaused O2 to drop while trying to troubleshoot difficulties keeping upper chamber temp.	Burner linkage adjusted. No waste fed until O2 was in range.

Stericycle® O2 6 minute average < 7.5

Date	Start Time	Stop Time	Duration	Op. Mode	Stack O2 %	Explanation	Actions Taken
12/4/2020	0:14	0:15	0:01	Normal	7.4	Drop on 02 % was caused by a CO spike that occurred after the operator charged a load into the incinerator.	No waste was fed until the O2 % returned to the normal operating range.
12/4/2020	11:47	11:52	0:05	Normal	7.1	Drop on 02 % was caused by a CO spike that occurred after the operator charged a load into the incinerator.	No waste was fed until the O2 % returned to the normal operating range.
12/4/2020	12:26	12:27	0:01	Normal	7.4	Drop on 02 % was caused by a CO spike that occurred after the operator charged a load into the incinerator.	No waste was fed until the O2 % returned to the normal operating range.

Carbon Monoxide > 8ppm 4 hour alarm

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Carbon Monoxide > 8ppm 4 hour alarm

Date	Start Time	Stop Time	Duration	Op. Mode	Stack CO @ 11% O2	Stack CO as mg/m³	Explanation	Actions Taken
12/1/2020	22:00	1:00	3:00	Normal	8.7	10.0	Large movement in the waste in incinerator caused release of excess volatile gasses	Operator monitored levels and continued feeding.
12/2/2020	14:00	15:00	1:00	Normal	8.7	10.0	Large movement in the waste in incinerator caused release of excess volatile gasses	Operator monitored levels and continued feeding.
12/3/2020	22:00	5:00	7:00	Normal	10.1	11.7	Hydraulic cylinder on the feed door blew a wiper seal causing the door to close slowly and hydraulic fluid to leak in to the primary chamber.	No waste was fed during this time. Stericycle maintenance replaced the feed door cylinder.
12/4/2020	14:00	19:00	5:00	Normal	12.5	14.4	Hydraulic cylinder on the feed door blew a wiper seal causing the door to close slowly and hydraulic fluid to leak in to the primary chamber.	No waste was fed during this time. Stericycle maintenance replaced the feed door cylinder.
12/5/2020	4:00	8:00	4:00	Normal	17.5	20.2	High CO levels occurred due to CO spikes that occurred while maintenance staff made changes to the burner percentages before a bed of waste was esblished in the primary chamber.	Stericycle maintenance made further adjustments to the burner percentages to bring the CO levels back into control. No waste was fed during this period.
12/5/2020	19:00	23:00	4:00	Normal	8.7	10.0	Large movement in the waste in incinerator caused release of excess volatile gasses	Operator monitored levels and continued feeding.
12/7/2020	23:00	3:00	4:00	Normal	8.9	10.3	High CO levels were caused by low upper chamber temperature that were the result of the incinerator sitting idle due to a roof fire.	No waste was fed during this period. When the fire department left the scene Stericycle maintenance reset the systems and brought this incinerator back to the normal operating parameters.

Carbon Monoxide > 8ppm 4 hour alarm

12/9/2020	9:00	15:00	6:00	Normal		10.8	12.5	Large movement in the waste in incinerator caused release of excess volatile gasses	Operator monitored levels and continued feeding.
12/11/2020	2:00	6:00	4:00	Normal		10.4	12.0	Large movement in the waste in incinerator caused release of excess volatile gasses	Operator monitored levels and continued feeding.
12/15/2020	8:00	12:00	4:00	Normal		11.1	12.8	Large movement in the waste in incinerator caused release of excess volatile gasses	Operator monitored levels and continued feeding.
12/19/2020	2:00	6:00	4:00	Normal		12.2	14.1	Large movement in the waste in incinerator caused release of excess volatile gasses	Operator monitored levels and continued feeding.

Carbon Monoxide > 8ppm 12 hour alarm

Date	Start Time	Stop Time	Duration	Op. Mode	Stack CO @ 11% O2	Stack CO as mg/m^3	Explanation	Actions Taken
12/4/2020	1:00	4:00	3:00	normal	8.1	9.3	Hydraulic cylinder on the feed door blew a wiper seal causing the door to close slowly and hydraulic fluid to leak in to the primary chamber.	No waste was fed during this time. Stericycle maintenance replaced the feed door cylinder.
12/5/2020	4:00	6:00	2:00	normal	8.28	9.6	High CO levels occurred due to CO spikes that occurred while maintenance staff made changes to the burner percentages before a bed of waste was esblished in the primary chamber.	Stericycle maintenance made further adjustments to the burner percentages to bring the CO levels back into control. No waste was fed during this period.
12/8/2020	14:00	9:00	19:00	Normal	754.4	870.6	High CO levels were caused by low upper chamber temperature that were the result of the incinerator sitting idle due to a roof fire.	No waste was fed during this period. When the fire department left the scene Stericycle maintenance reset the systems and brought this incinerator back to the normal operating parameters.

Oxides of Nitrogen > 98ppm 24 hr average

Date	Start Time	Stop Time	Duration	Op. Mode	Stack NOx @ 11% O2	Stack NOx as mg/m^3	Explanation	Actions Taken
12/6/2020	19:00	20:00	1:00	Normal	98.02		an ice build up on the cooling tower (which the ammonia line goes around) which weighed down the ammonia line and caused it to break off the SNCR nozzle.	The line was repaired within 5 hours of it happening but the subsequent NOx that happened caused a higher NOx value 9 hours later causing an exceedance.
			0:00					

Secondary Chamber Temperature < 1000°C

Date	Start Time	Stop Time	Duration	Op. Mode	Temp. °C	Explanation	Actions Taken
12/3/2020	12:23	15:25	3:02	Normal	973	Machine was having difficulty maintaining upper temp	Upper burner setpoint adjusted
12/4/2020	6:17	8:31	2:14	Normal	987	Machine was having difficulty maintaining upper temp	Upper burner setpoint adjusted
12/4/2020	15:35	16:23	0:48	Normal	986	Machine was having difficulty maintaining upper temp	Upper burner setpoint adjusted
12/8/2020	12:35	23:04	10:29	Normal	514	Low uper chamber temperatures levels were caused by the incinerator sitting idle due to a roof fire.	No waste was fed during this period. When the fire department left the scene Stericycle maintenance reset the systems and brought this incinerator back to the normal operating parameters.