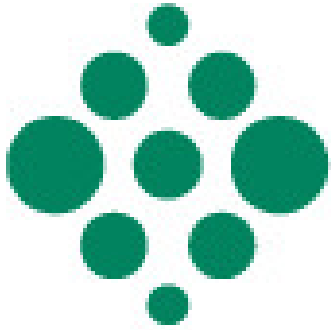




Stericycle®

Protecting People. Reducing Risk.™

Q1 2020

Incineration Report



April 29, 2020

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

Dear District Manager,

**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 first quarter of 2020.

This is the third quarterly incineration report under the new performance conditions. During January 2020 there were only 3 occurrences of the 4 hour CO alarm & 1 occurrence of the 12 hour CO alarm. In February 2020 there were 6 occurrences of the 4 hour CO alarm and 1 occurrence of the 12 hour CO alarm. In March 2020 there were 14 occurrences of the 4 hour CO alarm and 1 occurrence of the 12 hour CO alarm. Stericycle will continue to work with the incinerator operators to further reduce the number of CO alarms.

On January 20th 2020 the maintenance team at Stericycle removed one of the rotary atomizers due to a damaged gear box. The gear box was sent out to a 3rd party to rebuild it. The rotary atomizer was re-installed into the pollution control system on January 30th, 2020. .

At start up in Q1 2020 there was 1 alarm related to the 24 hour NOx average. This alarm was caused by a mechanical issue with the Urea feed system on the SNCR system. Maintenance corrected all the mechanical issues. There were no other NOX alarms in Q1 of 2020.

FIRST QUARTER 2020 INCINERATOR QUARTERLY REPORT - SUPPLEMENTAL INFORMATION

- The Emergency Bypass stack was not used during Q1 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 first quarter of 2020, the incinerator was run by trained Stericycle operators Emilio Perez, McLaren Henville, Shayne Lewis & John Amissiah.
- There were no complaints received regarding the operation of the incinerator during the first quarter of 2020.
- Stericycle Inc. operated the incinerator on the following days during the first quarter:

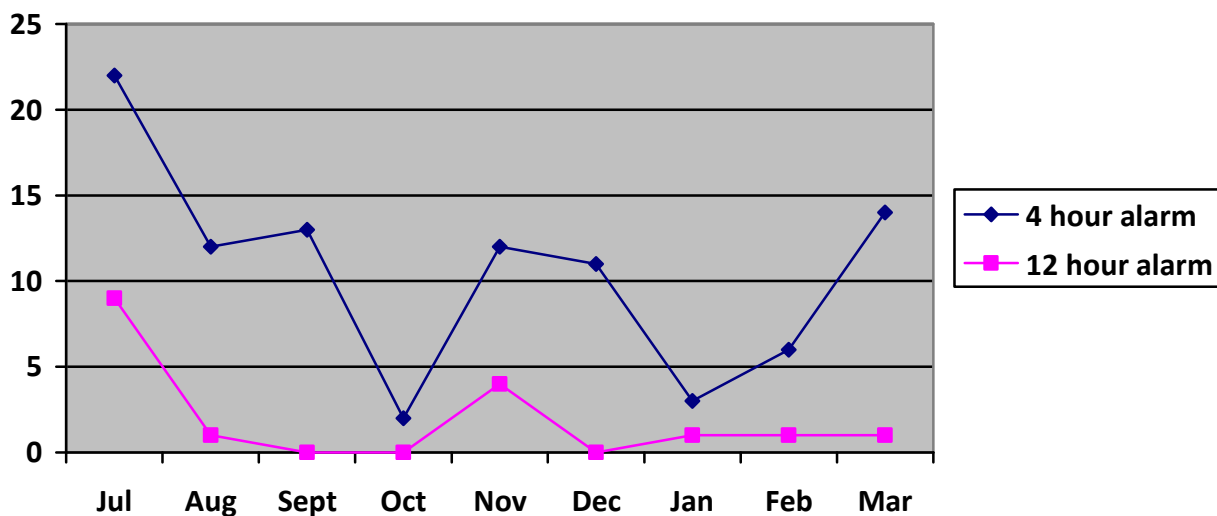
Start-up	Shut-Down
12/30/2019 @ 11:58	1/13/2020 @ 09:31
1/14/2020 @ 12:49	1/20/2020 @ 07:48
1/20/2020 @ 15:02	1/28/2020 @ 00:00
1/30/2020 @ 22:06	2/11/2020 @ 05:33
2/11/2020 @ 11:13	2/14/2020 @ 23:53
2/15/2020 @ 06:21	2/17/2020 @ 04:17
2/17/2020 @ 08:58	3/3/2020 @ 08:16
3/3/2020 @ 12:44	3/7/2020 @ 0:26
3/12/2020 @ 18:47	3/20/2020 @ 07:30
3/20/2020 @ 13:17	3/28/2020 @ 06:18
3/28/2020 @ 08:11	

During Q1 of 2020 routine maintenance was performed on the incinerator during the scheduled shut-downs along with the following additional repairs:

- Replacement of one atomizer gear box
- Repair to the refractory in the transfer stack.
- Repair to the quench tank

CO Alarm Chart Q1 2020

Month	4 Hour CO average alarms	12 Hour CO average alarms
July	22	9
August	12	1
September	13	0
October	2	0
November	12	4
December	11	0
January	3	1
February	6	1
March	14	1



Stericycle warrants that it has exercised best efforts to adhere to all of the applicable Terms & Conditions of its Waste Disposal Site Certificate of Approval including all inspection and reporting requirements through Q1 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,

A handwritten signature in black ink, appearing to be 'DK' with a large loop and a long horizontal stroke extending to the right.

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

TheDate		OX6min	COmin	NOXmin	Prime Temp °C	Sec Temp °C	SNCR	Dem Temp °C	Carb Temp °C	Diff Temp °C	ID fan Temp °C	QuenchPH	CondPH	AtomPH	AtomA	AtomB	HEPADP	OpMode
1/1/2020	average	11.1	3.0	62.4	1107	1029	6.60	27	50	23	42	7.9	8.5	7.1	42.8	40.5	1	Normal(ON)
	min	8.3	0.0	33.2	922	989	6.59	25	49	21	41	7.0	8.3	6.9	42.4	40.0	0	
	max	14.8	552.8	192.3	1180	1089	6.66	30	51	25	44	9.6	9.9	7.4	43.9	40.8	1	
1/2/2020	average	12.8	0.5	101.8	877	1016	6.60	31	47	16	41	7.9	8.7	7.1	42.3	40.3	1	Normal(ON)
	min	7.2	0.0	6.6	639	897	6.59	26	25	-1	32	7.4	8.4	7.0	42.2	40.0	0	
	max	15.3	38.5	282.9	1131	1149	6.61	36	51	22	47	8.4	9.1	7.3	42.5	40.5	1	
1/3/2020	average	11.4	1.5	80.0	1014	1028	6.60	30	51	21	42	8.0	8.8	7.1	43.0	40.8	1	Normal(ON)
	min	6.2	0.0	20.1	642	990	6.57	28	50	16	41	7.6	7.1	7.0	42.2	39.8	1	
	max	15.2	123.7	369.7	1158	1088	6.61	35	52	23	44	9.7	9.8	7.3	43.9	41.9	1	
1/4/2020	average	12.0	2.8	48.3	956	1023	6.6	29	50	21	42	7.9	9.6	7.2	44.2	41.9	1	Normal(ON)
	min	7.8	0.0	22.4	640	983	6.6	27	50	19	41	7.3	8.5	7.1	43.5	40.9	1	
	max	15.0	568.5	142.8	1161	1052	6.6	32	51	23	43	8.4	12.8	7.3	44.8	42.6	1	
1/5/2020	average	11.6	2.9	60.2	1110	1031	6.6	28	50	22	43	8.4	9.1	7.3	44.8	42.7	1	Normal(ON)
	min	7.7	0.0	21.3	988	1019	6.6	25	49	13	41	6.8	7.2	7.0	44.6	42.1	1	
	max	14.8	377.3	183.4	1191	1090	6.7	38	52	24	48	9.8	11.2	8.0	46.7	43.3	3	
1/6/2020	average	11.6	3.2	68.8	1099	1035	6.6	30	50	20	44	8.2	8.8	7.2	44.3	42.5	2	Normal(ON)
	min	9.2	0.0	24.2	987	1019	6.6	27	50	17	42	7.6	8.4	7.1	43.2	42.2	1	
	max	15.0	570.5	204.0	1174	1090	6.6	34	51	23	47	8.4	9.1	7.4	44.8	42.7	3	
1/7/2020	average	11.4	3.9	67.0	1110	1034	6.6	30	50	21	44	9.0	9.0	7.4	43.1	42.5	3	Normal(ON)
	min	9.1	0.0	31.9	987	1019	6.6	27	50	20	42	7.8	8.6	7.3	42.9	42.3	2	
	max	15.0	722.1	190.8	1153	1119	6.6	31	51	23	45	10.0	9.2	7.5	43.3	42.7	3	
1/8/2020	average	12.8	5.0	71.1	950	1028	6.6	30	50	20	40	9.9	9.1	7.5	43.0	42.7	3	Normal(ON)
	min	7.6	0.0	27.8	654	973	6.6	27	49	16	32	8.0	7.5	7.4	42.6	42.3	1	
	max	15.0	608.1	190.0	1133	1134	6.6	35	51	23	47	10.2	9.5	9.0	43.6	43.1	4	
1/9/2020	average	11.5	1.3	70.0	1052	1028	6.6	28	50	22	40	9.8	8.7	7.4	42.7	42.6	2	Normal(ON)
	min	8.9	0.0	27.7	640	966	6.6	27	50	19	38	9.5	8.4	7.3	42.6	42.4	1	
	max	15.1	17.7	189.9	1159	1058	6.6	31	51	23	41	10.1	9.4	7.7	42.7	42.8	2	
1/10/2020	average	12.7	5.4	64.8	1039	1023	6.6	29	50	21	42	10.0	9.0	7.5	42.9	43.0	3	Normal(ON)
	min	9.7	0.0	25.1	631	953	6.6	27	50	17	40	9.8	8.4	7.4	42.7	42.7	2	
	max	15.6	959.9	214.7	1188	1128	6.6	34	51	23	45	10.2	9.8	7.8	43.1	43.3	5	
1/11/2020	average	12.0	1.1	47.7	927	1000	6.6	31	51	20	37	9.8	9.0	7.5	42.8	43.1	3	Normal(ON)
	min	8.9	0.0	25.0	635	925	6.6	29	50	18	34	9.7	8.6	7.4	42.7	42.8	2	
	max	15.5	532.6	181.2	1147	1050	6.6	33	51	21	40	10.0	9.6	7.7	43.0	43.4	4	
1/12/2020	average	12.4	1.0	57.8	969	1021	6.6	30	51	21	38	9.8	11.4	7.8	42.6	42.8	2	Normal(ON)
	min	7.6	0.0	22.3	640	972	6.5	27	48	16	33	8.5	5.8	0.0	42.4	42.4	1	
	max	15.2	373.2	175.8	1182	1058	6.7	35	51	23	41	11.5	14.8	9.2	43.0	43.0	3	
1/13/2020	average	15.8	2.3	31.0	729	711	6.0	35	41	7	27	10.6	13.0	9.0	27.5	27.6	1	Normal(ON)/Shut-down/Off
	min	7.8	0.0	0.0	273	162	4.2	28	23	-18	6	9.4	9.9	7.8	0.0	0.0	0	
	max	20.4	428.3	149.7	1119	1065	6.6	44	51	22	41	12.4	14.8	10.8	42.5	42.7	2	
1/14/2020	average	18.3	5.3	2.4	269	424	4.6	36	25	-11	10	12.4	12.6	10.6	7.4	7.5	0	Off/Start-Up/Normal(ON)
	min	6.6	0.0	-34.1	97	68	3.8	25	14	-18	5	8.0	6.1	8.0	0.0	0.0	0	
	max	20.4	306.9	48.4	906	1025	6.7	41	52	23	34	13.9	14.3	11.7	41.2	41.3	1	
1/15/2020	average	10.4	3.1	65.0	1096	1029	6.6	28	51	22	35	8.2	8.4	8.0	41.6	41.5	1	Normal(On)
	min	6.3	0.0	15.1	909	1017	6.5	26	49	19	33	6.8	7.3	5.7	40.5	41.1	0	
	max	13.8	523.8	279.4	1135	1075	6.7	32	53	25	38	8.8	10.1	9.8	43.8	41.8	1	
1/16/2020	average	12.0	6.9	42.4	1071	1031	6.6	35	51	17	41	8.4	8.7	8.1	42.4	41.5	1	Normal(On)
	min	8.8	0.0	10.1	750	1005	6.6	30	51	10	38	8.1	8.4	8.0	40.7	41.2	1	
	max	15.0	566.8	132.3	1178	1088	6.6	41	52	21	45	8.8	9.1	8.3	44.0	42.0	1	
1/17/2020	average	12.1	3.6	50.6	985	1014	6.6	36	52	15	40	8.3	8.7	8.1	43.2	41.3	1	Normal(On)
	min	7.2	0.8	27.3	699	939	6.6	33	51	12	38	7.8	8.3	7.9	43.0	41.1	1	
	max	15.0	66.0	129.1	1161	1048	6.6	40	52	19	44	8.6	9.2	8.2	43.9	41.4	2	
1/18/2020	average	12.4	2.4	50.4	1030	1020	6.6	39	52	13	42	8.3	8.6	7.8	42.7	41.7	2	Normal(On)
	min	8.0	0.0	19.6	742	970	6.6	35	51	7	40	7.6	8.3	7.5	33.1	41.2	1	
	max	14.8	26.3	137.8	1150	1048	6.6	44	52	16	46	9.0	9.3	8.0	51.7	42.6	3	
1/19/2020	average	13.2	1.4	41.7	848	982	6.6	45	51	6	44	8.8	9.0	7.4	42.5	42.5	2	Normal(On)
	min	7.8	0.0	12.1	715	925	6.5	43	50	2	43	7.7	8.0	4.6	27.9	41.5	1	
	max	15.0	104.7	96.1	1064	1043	6.6	52	54	9	47	9.9	12.9	9.3	52.0	42.7	2	

TheDate		OX6min	COmin	NOXmin	Prime Temp °C	Sec Temp °C	SNCR	Dem Temp °C	Carb Temp °C	Diff Temp °C	ID fan Temp °C	QuenchPH	CondPH	AtomPH	AtomA	AtomB	HEPADP	OpMode
1/20/2020	average	15.3	16.7	33.8	794	899	5.8	37	42	4	32	9.1	9.1	6.5	20.0	28.9	1	Normal(ON)/Shut-down/Off/Start-up
	min	8.0	0.0	-33.0	462	360	3.3	12	17	-4	2	6.7	7.7	4.8	0.0	0.0	0	
	max	20.4	655.6	178.9	1169	1048	6.7	50	53	13	46	11.1	10.8	8.5	46.8	41.5	2	
1/21/2020	average	12.1	4.7	44.3	1020	1015	6.5	31	47	16	35	8.8	8.6	6.9	0.3	37.8	1	Start-up/Normal(ON)
	min	8.2	0.9	-33.0	593	840	5.6	26	26	0	12	7.5	6.8	6.5	0.1	11.5	0	
	max	20.0	596.0	151.5	1215	1049	6.7	35	54	23	41	9.4	9.5	8.0	6.8	41.5	2	
1/22/2020	average	12.2	5.5	50.7	1053	1031	6.6	34	51	17	39	9.0	8.9	6.9	0.1	41.0	2	Normal(ON)
	min	9.0	0.0	6.3	875	1008	6.6	30	50	13	37	8.6	8.5	6.8	0.1	40.7	1	
	max	16.0	691.6	231.4	1170	1104	6.6	38	51	20	43	9.3	9.3	7.1	0.1	41.2	4	
1/23/2020	average	11.8	2.5	57.2	1123	1033	6.6	35	51	16	39	8.8	8.8	6.8	0.1	40.9	2	Normal(ON)
	min	9.5	0.0	24.3	1083	1018	6.6	33	51	12	37	8.3	8.6	6.7	0.1	40.4	1	
	max	16.5	432.2	139.2	1171	1057	6.6	40	51	18	41	9.4	9.1	6.9	0.1	41.2	3	
1/24/2020	average	11.8	2.5	62.9	1134	1037	6.6	37	51	14	40	8.6	8.8	6.7	0.1	41.1	1	Normal(ON)
	min	9.4	0.0	26.9	820	1019	6.6	33	50	10	37	8.1	7.1	6.7	0.1	40.1	1	
	max	16.5	482.6	154.2	1164	1066	6.7	41	53	19	43	9.9	9.0	6.9	0.1	42.2	3	
1/25/2020	average	12.0	3.6	51.0	1128	1028	6.6	36	51	15	40	8.8	8.7	6.7	0.1	42.2	1	Normal(ON)
	min	8.0	0.0	21.5	794	1014	6.5	35	50	13	39	8.2	7.3	6.6	0.1	41.9	1	
	max	15.1	649.6	157.1	1181	1155	6.6	38	52	17	42	10.0	8.9	7.0	0.1	42.4	2	
1/26/2020	average	12.5	4.2	46.3	949	1018	6.6	39	52	13	43	8.9	9.0	6.8	0.1	42.3	2	Normal(ON)
	min	8.4	0.0	20.2	743	987	6.5	35	51	9	41	8.0	7.6	6.7	0.1	41.7	1	
	max	15.1	622.7	197.7	1164	1067	6.6	42	54	18	46	9.5	9.5	7.0	0.1	42.7	2	
1/27/2020	average	11.4	3.8	60.9	1122	1036	6.6	41	51	10	45	8.7	8.8	6.7	0.1	42.1	1	Normal(ON)
	min	9.3	0.0	21.0	966	1019	6.6	38	50	7	42	8.1	8.6	6.6	0.1	41.7	1	
	max	14.1	489.6	155.7	1175	1063	6.6	44	52	14	47	9.6	9.0	6.8	0.1	42.3	2	
1/28/2020	average	19.2	2.5	8.5	526	490	6.6	25	27	2	22	8.0	9.1	7.9	0.1	9.8	0	Shut-down/Off
	min	9.6	0.0	0.0	388	359	6.6	20	18	-4	15	7.6	8.6	6.7	0.1	0.0	0	
	max	20.4	703.9	114.9	1168	1045	6.6	40	52	18	43	9.5	9.5	8.3	0.1	42.0	1	
1/29/2020	average	20.3	0.0	0.0	388	359	6.6	20	18	-2	16	7.6	9.2	8.3	0.1	0.0	0	Off
	min	20.1	0.0	0.0	388	359	6.6	20	18	-2	16	7.6	9.2	8.3	0.1	0.0	0	
	max	20.4	0.0	0.0	388	359	6.6	20	18	-2	16	7.6	9.2	8.3	0.1	0.0	0	
1/30/2020	average	20.2	5.0	-1.7	84	101	6.1	20	18	-2	16	7.6	9.2	8.3	0.1	0.0	0	Off/Start-up
	min	20.0	0.0	-25.3	26	27	6.0	20	18	-2	16	7.6	9.2	8.3	0.1	0.0	0	
	max	20.4	716.1	0.0	388	734	6.6	20	18	-2	16	7.6	9.2	8.3	0.1	0.0	0	
1/31/2020	average	19.1	26.8	-9.4	522	826	5.5	24	21	-3	16	7.7	8.8	8.0	3.4	3.8	0	Start-up
	min	10.3	0.0	-34.1	279	579	3.8	13	12	-14	3	7.4	7.6	7.0	0.1	0.0	0	
	max	20.1	387.2	43.4	621	963	6.6	57	54	6	52	8.0	9.2	8.3	34.0	37.7	0	



178649.8

O₂ < 7.5

O₂ < 7.5

	Start	Stop		Op.	Stack		Actions
Date	Time	Time	Duration	Mode	O ₂ %	Explanation	Taken
1/3/2020	12:46	12:52	0:06	Normal	7.30	O ₂ level dropped after load of waste was charged into the incinerator.	O ₂ level returned to the normal operating range.
1/14/2020	20:35	20:41	0:06	Normal	6.90	O ₂ level dropped after load of waste was charged into the incinerator.	O ₂ level returned to the normal operating range.
1/14/2020	23:39	23:51	0:12	Normal	7.00	O ₂ level dropped after load of waste was charged into the incinerator.	O ₂ level returned to the normal operating range.
1/15/2020	0:02	0:13	0:11	Normal	6.60	O ₂ level dropped after load of waste was charged into the incinerator.	O ₂ level returned to the normal operating range.
1/15/2020	0:27	0:41	0:14	Normal	6.70	O ₂ level dropped after load of waste was charged into the incinerator.	O ₂ level returned to the normal operating range.

Carbon Monoxide > 8ppm 12 hour alarm



Carbon Monoxide > 8ppm 12 hour alarm

	Start	Stop		Op.	Stack CO	Stack CO		Actions
Date	Time	Time	Duration	Mode	@ 11% O2	as mg/m ³	Explanation	Taken
1/10/2020	6:00	18:00	12:00	Normal	9.1	10.5	Waste fed into the incineator caused high CO levels	The operator reduced the feed rate until the CO levels returned to the normal operating range.

Carbon Monoxide > 8ppm 4 hour alarm



Carbon Monoxide > 8ppm 4 hour alarm

	Start	Stop		Op.	Stack CO	Stack CO		Actions
Date	Time	Time	Duration	Mode	@ 11% O ₂	as mg/m ³	Explanation	Taken
1/10/2020	5:00	9:00	4:00	normal	9.2	10.6	Waste fed into the incineator caused high CO levels	The operator reduced the feed rate until the CO levels returned to the normal operating range.
1/10/2020	16:00	20:00	4:00	normal	16.8	19.4	Waste fed into the incineator caused high CO levels	The operator reduced the feed rate until the CO levels returned to the normal operating range.
1/16/2020	16:00	3:00	11:00	normal	8.2	9.5	Waste fed into the incineator caused high CO levels	The operator reduced the feed rate until the CO levels returned to the normal operating range.

Oxides of Nitrogen > 98ppm 24 hr average

	Start	Stop		Op.	Stack NOx	Stack NOx		Actions
Date	Time	Time	Duration	Mode	@ 11% O2	as mg/m ³	Explanation	Taken
1/2/2020	2:00	17:00	15:00	Normal	99	178.2	High NOx levels were caused by a mechanical failure of the urea pump.	Maintenance replaced the pump.

Secondary Chamber Temperature < 1000°C

Date	Start Time	Stop Time	Duration	Op. Mode	Temp. °C	Explanation	Actions Taken
1/2/2020	15:25	0:00	8:35	Normal	959	Low upper chamber temperture caused by the incinerator sitting idle.	No waste was fed during this time.
1/4/2020	4:56	6:04	1:08	Normal	992	Low upper chamber temperture caused by the incinerator sitting idle.	No waste was fed during this time.
1/8/2020	22:00	1:08	3:08	Normal	984	Low upper chamber temperture caused by the incinerator sitting idle.	No waste was fed during this time.
1/10/2020	19:48	7:52	12:04	Normal	958	Low upper chamber temperture caused by the incinerator sitting idle.	No waste was fed during this time.
1/12/2020	18:46	20:30	1:44	Normal	987	Low upper chamber temperture caused by the incinerator sitting idle.	No waste was fed during this time.
1/13/2020	11:40	12:43	1:03	shut-down	991	Low upper chamber temperature caused by the incinerator sitting idle during a controlled shut-down.	No waste was fed during this time.
1/14/2020	20:51	23:30	2:39	Normal	940	Low upper chamber temperture caused by the incinerator sitting idle.	No waste was fed during this time.
1/17/2020	1:15	7:35	6:20	Normal	972	Low upper chamber temperture caused by the incinerator sitting idle.	No waste was fed during this time.
1/18/2020	20:42	8:32	11:50	Normal	967	Low upper chamber temperture caused by the incinerator sitting idle.	No waste was fed during this time.

1/19/2020	16:13	16:59	0:46	Normal	981	Low upper chamber temperture caused by the incinerator sitting idle.	No waste was fed during this time.
1/19/2020	18:27	11:07	16:40	Normal/s hut-down	959	Low upper chamber temperature caused by the incinerator sitting idle during a controlled shut-down.	No waste was fed during this time.
1/21/2020	13:07	14:45	1:38	Normal	987	Low upper chamber temperture caused by the incinerator sitting idle.	No waste was fed during this time.
1/26/2020	16:18	20:05	3:47	Normal	991	Low upper chamber temperture caused by the incinerator sitting idle.	No waste was fed during this time.

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



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

	Start	Stop		Op.	Condenser		Action
Date	Time	Time	Duration	Mode	pH	Explanation	Taken
1/4/2020	0:21	11:03	10:42	Normal	10.6	High pH reading caused by pH probe error.	Maintenace re-calibrated the pH probe.
1/12/2020	12:07	9:13	21:06	Normal	14.3	High pH reading caused by pH probe error.	Maintenace re-calibrated the pH probe.
1/14/2020	20:36	23:12	2:36	Normal	11.3	pH probe error caused too much caustic to be pumped into the system .	Maintenace re-calibrated the pH probe.

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



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

[illegible]



Atomizer Amps < 36

[illegible]

Differential from Demister < 10 C



Differential from Demister < 10°C

	Start	Stop		Op.	Differential Temp		Actions
Date	Time	Time	Duration	Mode	Outlet °C	Explanation	Taken
1/2/2020	10:45	14:32	3:47	Normal	3	Low differential temperature was caused by an improper reheat steam set point.	Maintenance corrected the reheat steam set point.
1/18/2020	21:42	0:00	2:18	Normal	8	low differential temperature cause by plugged heat exchanger and condensor tank nozzels.	Maintenance shut-down the incinerator and cleaned the heatexchanger and condensor tank nozzels on Jan. 20
1/19/2020	0:00	23:59	23:59	Normal	6	low differential temperature cause by plugged heat exchanger and condensor tank nozzels.	Maintenance shut-down the incinerator and cleaned the heatexchanger and condensor tank nozzels on Jan. 20
1/20/2020	0:00	5:45	5:45	Normal	7	low differential temperature cause by plugged heat exchanger and condensor tank nozzels.	Maintenance shut-down the incinerator and cleaned the heatexchanger and condensor tank nozzels on Jan. 20
1/20/2020	8:49	12:13	3:24	Shut-down	6	low differential temperature cause by plugged heat exchanger and condensor tank nozzels.	Maintenance shut-down the incinerator and cleaned the heatexchanger and condensor tank nozzels on Jan. 20

HEPA Filter Bed D.P. > 4" WC

	Start	Stop		Op.		Actions
Date	Time	Time	Duration	Mode	Explanation	Taken
01/08/20	4:53:00	6:47:00	1:54:00	Normal	High Differential Pressure due to the carbon bed plugging up.	Maintenance rinsed the carbon to lower the differential pressure.
01/10/20	18:48:00	25:04:00	6:16:00	Normal	High Differential Pressure due to the carbon bed plugging up.	Maintenance rinsed the carbon to lower the differential pressure.
			0:00:00			
			0:00:00			
			0:00:00			
			0:00:00			



February 2020 Incineration Averages

TheDate		OX6min	COmin	NOXmin	Prime Temp °C	Sec Temp °C	SNCR	Dem Temp °C	Carb Temp °C	Diff Temp °C	ID Fan Temp °C	QuenchPH	CondPH	AtomPH	AtomA	AtomB	HEPADP	OpMode
2/1/2020	Average	13.4	3.2	36.1	891	986	6.5	41	48	8	38	8.1	8.5	7.3	37.8	37.0	0.0	Start-up/Normal(On)
	Min	7.8	0.0	-38.5	553	839	5.4	31	29	-34	8	6.5	7.9	6.6	3.3	3.4	0.0	
	Max	20.0	73.7	115.4	1225	1049	6.6	64	52	21	47	9.3	10.8	7.5	46.1	44.8	0.0	
2/2/2020	Average	12.9	2.6	52.5	912	1020	6.6	42	53	10	47	8.2	8.8	7.6	42.9	43.2	0	Normal(On)
	Min	8.5	0.0	24.2	162	983	6.6	27	49	1	37	7.2	7.2	7.3	41.0	42.2	0	
	Max	15.3	648.0	126.3	1124	1057	6.8	57	59	22	58	9.8	10.1	8.6	44.6	44.2	0	
2/3/2020	Average	12.0	1.3	55.1	1137	1025	6.6	27	49	22	39	8.0	8.9	7.7	41.1	40.4	0	Normal(On)
	Min	7.6	0.0	22.8	191	878	6.6	24	47	20	37	7.6	8.4	7.0	40.0	39.8	0	
	Max	16.8	658.4	192.6	1768	1099	6.6	30	50	23	41	8.2	9.6	8.6	44.5	44.1	0	
2/4/2020	Average	11.8	4.2	74.3	1768	1034	6.6	29	50	21	41	8.2	8.5	6.8	42.0	42.1	0	Normal(On)
	Min	8.9	0.0	27.2	1768	1019	6.6	26	49	19	38	7.7	6.9	6.6	39.6	40.0	0	
	Max	14.5	601.6	156.9	1768	1094	6.6	31	52	25	43	9.6	8.7	7.2	43.8	43.9	0	
2/5/2020	Average	12.2	3.3	67.1	1768	1031	6.6	29	50	21	42	8.4	8.4	6.7	43.5	43.7	0	Normal(On)
	Min	8.6	0.0	30.1	1767	1017	6.6	25	46	17	39	7.8	8.1	6.6	43.2	43.6	0	
	Max	15.8	613.2	200.8	1768	1071	6.6	34	51	23	45	10.1	11.9	7.1	43.7	43.8	0	
2/6/2020	Average	12.3	1.3	82.4	1767	1033	6.6	32	51	18	41	8.5	8.5	6.7	42.0	42.3	0	Normal(On)
	Min	9.2	0.0	33.9	1765	999	6.6	28	50	15	39	8.2	8.2	6.6	41.3	41.6	0	
	Max	15.2	243.4	180.7	1768	1063	6.6	36	51	22	44	8.7	8.7	6.9	43.6	43.9	0	
2/7/2020	Average	11.8	3.3	72.3	1768	1035	6.6	30	50	20	41	8.2	8.4	6.7	41.9	42.1	0	Normal(On)
	Min	10.1	0.0	33.0	1768	1013	6.6	26	49	17	39	6.8	7.0	6.7	41.3	41.6	0	
	Max	13.7	687.1	245.5	1768	1102	6.7	33	51	25	42	8.8	8.6	7.1	42.5	42.9	0	
2/8/2020	Average	12.3	1.5	57.6	1768	1024	6.6	29	50	21	41	8.3	8.4	6.8	42.0	42.8	0	Normal(On)
	Min	8.6	0.0	31.3	1768	1001	6.6	28	50	20	40	7.6	8.2	6.7	41.8	42.4	0	
	Max	16.3	427.5	125.0	1768	1052	6.6	30	50	22	42	8.8	8.6	6.8	42.2	43.3	1	
2/9/2020	Average	12.2	1.4	61.0	1768	1026	6.6	29	50	21	42	8.5	8.5	6.7	42.1	42.6	0	Normal(On)
	Min	8.6	0.0	30.3	1768	1018	6.6	26	49	17	40	8.1	8.1	6.7	41.8	42.3	0	
	Max	15.5	729.2	148.6	1768	1062	6.6	33	51	23	42	9.0	8.7	7.0	43.7	43.0	1	
2/10/2020	Average	11.7	2.7	74.3	1768	1035	6.6	29	50	21	41	8.2	8.5	6.8	42.6	42.9	1	Normal(On)
	Min	8.4	0.0	20.6	1767	962	6.6	26	48	14	37	7.8	8.2	6.5	41.9	42.7	0	
	Max	15.1	477.9	248.9	1768	1166	6.7	36	51	25	45	8.8	9.9	7.2	43.7	43.1	1	
2/11/2020	Average	13.5	9.0	46.9	1570	966	6.2	34	45	10	34	7.6	8.3	7.1	34.7	35.3	0	Normal(On)Shut-down/Off/Start-up/Normal(ON)
	Min	5.6	0.0	-31.9	342	524	4.2	22	21	-47	7	6.8	7.3	6.6	0.1	0.0	0	
	Max	20.4	4191.0	215.3	1768	1064	6.6	70	51	26	43	9.4	9.7	8.2	43.0	42.9	1	
2/12/2020	Average	11.7	4.9	53.6	1768	1032	6.6	29	50	21	40	8.1	8.4	7.0	41.8	42.5	1	Normal(ON)
	Min	8.6	0.5	20.9	1767	1000	6.4	24	48	14	38	6.6	6.9	6.6	40.6	42.1	0	
	Max	14.7	595.1	362.6	1768	1111	6.7	37	53	26	43	9.9	10.0	7.7	44.2	42.9	1	
2/13/2020	Average	11.7	4.1	56.7	1768	1036	6.6	31	50	19	40	8.3	8.4	6.7	41.2	42.5	1	Normal(ON)
	Min	9.9	0.0	23.7	1768	1019	6.5	26	48	12	37	6.8	7.0	6.6	40.9	42.4	0	
	Max	14.7	676.4	235.0	1768	1131	6.6	39	51	23	44	9.0	9.0	7.0	41.5	42.6	1	
2/14/2020	Average	12.3	4.0	68.3	1768	1030	6.6	30	50	20	37	8.2	8.4	6.7	41.0	42.2	1	Normal(ON)/Shut-down
	Min	9.0	0.0	8.0	1768	1019	6.5	26	49	16	34	6.3	7.9	6.5	40.5	42.1	1	
	Max	15.1	218.0	333.2	1768	1066	6.6	35	51	23	40	8.6	12.1	6.9	41.1	42.4	1	
2/15/2020	Average	12.4	1.2	52.5	1767.8	1025.9	6.6	28.0	50.0	22.0	38.9	8.2	8.3	6.7	41.3	42.3	1.0	Shut-down/Start-up
	Min	7.5	0.0	24.4	1767.8	1006.9	6.6	26.2	49.2	19.6	37.2	7.5	8.1	6.6	41.1	42.1	1.0	
	Max	15.0	698.6	257.3	1767.8	1128.6	6.6	30.9	50.5	23.1	40.5	8.7	8.5	6.9	41.4	42.4	1.0	
2/16/2020	Average	12.6	3.2	63.0	1768	1024	6.6	28	50	22	40	8.3	8.5	6.8	41.3	42.2	1	Start-up/Normal(ON)
	Min	8.9	0.0	33.7	1768	1002	6.6	26	49	21	39	7.9	8.2	6.7	40.8	42.0	1	
	Max	15.3	693.7	253.4	1768	1062	6.6	29	51	24	41	9.2	9.6	6.9	41.6	42.4	1	
2/17/2020	Average	12.1	3.7	71.3	1294	1019	6.6	30	49	20	40	8.1	8.5	6.8	41.3	41.8	1	Normal(On)/Shut-down/Normal(ON)
	Min	7.0	0.0	27.7	696	912	6.6	21	46	11	37	7.2	7.4	7.0	41.0	41.5	0	
	Max	16.3	667.4	178.2	1768	1065	6.7	40	51	25	46	9.6	9.1	7.1	41.9	42.0	2	
2/18/2020	Average	12.6	4.8	82.4	1046	1036	6.6	33	51	18	39	8.4	8.6	6.8	41.3	41.9	1	Normal(On)
	Min	6.1	0.0	33.1	812	1018	6.4	27	49	14	36	6.3	6.9	6.6	40.8	41.7	0	
	Max	14.9	649.8	265.4	1135	1277	6.6	37	51	23	42	8.7	9.0	9.4	41.5	42.2	2	
2/19/2020	Average	12.7	0.3	72.2	981	1025	6.6	32	51	19	38	8.4	8.8	6.7	41.1	41.9	1	Normal(On)
	Min	9.9	0.0	33.2	772	978	6.6	28	50	15	36	7.2	8.5	6.6	40.7	41.6	1	
	Max	15.7	214.0	201.4	1091	1063	6.6	36	51	23	40	9.3	9.1	6.9	41.5	42.1	1	



February 2020 Incineration Averages

TheDate		OX6min	COMin	NOXmin	Prime Temp °C	Sec Temp °C	SNCR	Dem Temp °C	Carb Temp °C	Diff Temp °C	ID Fan Temp °C	QuenchPH	CondPH	AtomPH	AtomA	AtomB	HEPADP	OpMode
2/20/2020	Average	13.0	1.8	101.7	1027	1036	6.6	32	51	18	38	9.3	9.1	6.7	41.0	41.8	1	Normal(On)
	Min	9.1	0.0	-1.2	825	1007	6.6	29	50	15	35	9.1	8.9	6.6	40.8	41.7	1	
	Max	15.5	594.8	251.8	1085	1178	6.6	36	51	21	41	9.6	9.6	6.9	41.1	41.9	2	
2/21/2020	Average	12.3	3.5	46.5	993	1034	6.6	31	50	20	38	9.2	9.2	6.7	41.1	41.9	2	Normal(On)
	Min	9.2	0.0	-1.7	816	1005	6.5	26	49	15	34	8.3	7.9	6.6	40.7	41.7	1	
	Max	14.9	714.3	352.4	1062	1142	6.6	36	51	26	41	9.8	9.8	6.9	41.4	42.1	3	
2/22/2020	Average	12.5	4.8	-0.8	1022	1026	6.6	28	50	22	38	9.2	9.1	6.7	41.3	41.9	2	Normal(On)
	Min	8.9	0.0	-2.0	939	1019	6.6	27	50	20	37	8.9	8.9	6.7	41.2	41.8	2	
	Max	15.8	590.0	0.6	1077	1054	6.6	31	50	23	40	9.6	9.4	6.8	41.4	42.0	3	
2/23/2020	Average	12.0	3.6	-0.8	1045	1034	6.6	31	51	19	37	9.2	9.0	6.7	41.3	41.9	0	Normal(On)
	Min	9.8	0.0	-1.9	983	1003	6.6	29	50	16	34	9.0	8.8	6.6	41.2	41.7	0	
	Max	15.9	513.3	0.5	1081	1077	6.6	35	51	21	39	9.6	9.2	6.9	41.4	42.0	3	
2/24/2020	Average	12.2	6.2	34.2	1006	1034	6.6	31	50	19	38	9.1	8.9	6.7	41.1	41.9	0	Normal(On)
	Min	8.0	0.0	-1.4	920	1006	6.6	27	50	14	35	8.9	8.7	6.6	40.9	41.7	0	
	Max	15.4	660.0	370.3	1067	1089	6.6	37	51	23	42	9.5	9.2	6.8	41.2	42.0	1	
2/25/2020	Average	12.2	4.6	60.5	962	1031	6.6	31	51	19	38	9.0	8.9	6.7	41.1	41.9	1	Normal(On)
	Min	8.5	0.0	0.4	812	980	6.6	27	49	15	36	5.6	7.6	6.6	40.9	41.7	0	
	Max	16.2	654.9	362.6	1050	1069	6.7	36	51	23	41	9.6	9.3	7.0	41.7	42.1	1	
2/26/2020	Average	11.8	3.3	89.9	994.1	1040.1	6.6	32.8	50.6	17.9	38.8	8.9	8.8	6.7	41.1	41.6	1.0	Normal(On)
	Min	10.1	0.0	24.1	947.3	1019.5	6.6	27.6	50.0	12.4	35.9	7.8	8.4	6.6	40.9	41.5	1.0	
	Max	13.3	235.4	240.5	1023.8	1071.2	6.6	38.7	51.2	22.5	42.6	9.5	9.2	6.9	41.2	41.8	1.0	
2/27/2020	Average	11.6	5.7	77.1	1021	1038	6.6	31	51	19	38	8.7	8.8	6.8	41.2	41.9	1	Normal(On)
	Min	9.8	0.1	21.9	924	1019	6.6	28	50	12	35	8.4	8.6	6.7	41.1	41.5	1	
	Max	14.0	652.4	227.8	1080	1109	6.6	39	51	23	43	9.5	9.2	7.0	41.3	42.1	2	
2/28/2020	Average	11.9	5.5	85.3	1028	1037	6.6	31	50	19	38	8.7	8.9	6.7	41.2	41.8	2	Normal(On)
	Min	9.4	0.1	19.4	976	1019	6.6	27	50	16	36	8.4	8.5	6.6	41.1	41.6	1	
	Max	14.3	763.8	244.3	1086	1109	6.6	39	51	23	43	9.5	9.3	7.0	41.4	42.1	3	
2/29/2020	Average	13.1	5.8	45.1	822	1012	6.6	31	50	19	38	8.3	8.8	6.9	41.3	41.8	2	Normal(On)
	Min	7.1	0.1	17.0	579	920	6.6	28	50	17	35	7.4	8.1	6.4	40.9	41.6	0	
	Max	15.8	636.4	208.9	1061	1078	6.6	33	52	22	40	9.2	12.3	7.4	41.9	42.0	4	



February 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 Sum
2/1/2020	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	516.4	396	424.8	418	420.6	2175.8	220942.4
2/2/2020	421.5	483.5	295.5	416.3	0	537	462.8	475	475.6	353.6	73.2	518.8	510.1	500.1	466.3	174.4	494.7	551	287.5	519.4	509.7	553.2	379.1	281.8	9740.1	
2/3/2020	334.8	266.3	0	0	0	0	0	572	304.8	169.8	235.5	427.8	433.5	425.5	461.8	186.8	488.8	525.9	314.8	512.3	534.8	585.7	427.8	0	7208.7	
2/4/2020	430.4	434.8	303.8	449.3	420.3	420.8	295.5	421	425.5	304	422.5	422	421	188	401.5	0	0	0	537.7	484.8	510.3	529.7	355	113	8290.9	
2/5/2020	424.5	396	17.5	0	0	0	370.5	402.4	430	425.8	426.7	421.3	427.5	440	134.5	587.7	469.9	280.3	570.6	439	520.2	520.8	366.7	165	8236.9	
2/6/2020	487.1	465	327	360.5	424.8	447.3	330.5	429	423.5	420.3	420.5	416	424	422	409.5	425.8	430.5	428.8	0	0	548	0	271.8	0	8311.9	
2/7/2020	352.8	427.3	499	308	478.8	441	295.5	304.5	290.3	425	457.4	394.6	428.6	420.5	189	593.2	146.9	95.9	205.9	0	493.7	554.7	332.8	565.3	8700.7	
2/8/2020	422.8	163.1	0	421	540.9	446.7	173	552.6	437.5	463.2	545.3	475.2	550.2	570.4	303.9	422.5	357.5	434.5	12.5	0	383.5	578.5	339.5	418.5	9012.8	
2/9/2020	483	451	440	461.5	449	434.5	223.2	576.2	506.9	443.8	525.1	506.7	563	626.4	410.3	424.5	429.9	396.6	0	424.6	429.3	443	143.9	141	9933.4	
2/10/2020	358	208	220.4	467.2	268	452.3	243.5	365	428.5	425	424.5	422	420.8	426.5	122.5	0	0	546.3	506	539.6	559.5	523.9	351	232	8510.5	
2/11/2020	507	430.5	422.8	469.2	407.5	203.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	459.2	47	2946.7		
2/12/2020	439.9	444	410.2	516	420	373.3	202.5	0	427.8	444	426	426	422.5	435	142.3	0	587.4	625.5	177	598.7	554	563.5	364	55.5	9055.1	
2/13/2020	0	537.5	449	434	421	307	301	433	424	443.1	420.3	425.1	257.8	440.5	67	558	509.7	573.9	538.4	217.5	507.5	592.4	437.7	150.6	9446	
2/14/2020	472	433.5	401	426	507	462.5	346.1	0	422.5	421.6	423.3	428	0	545.7	0	506.3	527.5	638.2	563.1	511.2	549	515.5	434.5	0	9534.5	
2/15/2020	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	
2/16/2020	0	0	446	506.4	442.5	432	249	506.4	635.5	440.5	630	472.3	504.8	572.3	517.7	301.4	649.6	303.9	610.9	554	0	617	0	254.5	9646.7	
2/17/2020	455	446.4	439.3	455.5	0	0	0	0	0	0	425	433.1	430.8	427.8	39	599.8	513	566.3	517.5	511.1	511.1	548.4	459.5	329.7	8108.3	
2/18/2020	0	435.3	436.9	495	427.3	430.8	220	434	171.5	458.1	423.8	436.5	421	442.5	224	372	239	0	0	0	0	0	0	0	6067.7	
2/19/2020	0	0	0	0	152.5	476	247.5	398.8	431.3	34.6	227	422.8	432.5	583	264	556	535.2	329.5	0	105	584.5	468.5	445.5	190.5	6884.7	
2/20/2020	0	432.3	481.5	426.8	427.3	459.5	302.5	433.8	435.1	420.3	204.8	133.8	424.5	397.5	431.8	537	515.3	502.2	607.1	161.9	0	0	0	0	7735	
2/21/2020	0	0	470	430	255.5	429	222.5	400.1	396.4	332.1	420.5	430.3	420.5	392.5	282.5	564.7	582.7	542	0	158.5	54.5	549	506.8	70	7910.1	
2/22/2020	0	421.4	421	0	480	0	0	487.9	281.9	425.1	506.1	156.4	461	239.3	429.9	438.2	419	520	262.4	0	425.2	452.5	443.1	0	7270.4	
2/23/2020	0	519.8	538.3	534.8	0	451.7	376	459.8	486.3	528.5	464	604.8	550.8	592.5	423.5	425.5	423	431.8	0	498.1	426.2	437	126	241.6	9540	
2/24/2020	0	453.3	489.6	422	310	81	0	0	421.5	456.5	431	435	428	433.5	566	304.5	514.4	513.1	513.4	502.1	530	581.5	524.5	0	8910.9	
2/25/2020	0	0	0	64.5	0	0	96	375.2	511.8	426.5	425	0	10	440.8	428.5	286	511.5	512.4	481.6	430.8	610.3	576.5	432.5	0	6619.9	
2/26/2020	0	458	438.3	445.8	421.3	433.3	320	461.8	462.5	469.8	495.8	474.3	468	420.1	228	179.6	525.2	505.6	545.3	538.4	511.6	439	336	0	9577.7	
2/27/2020	0	441	446.3	447.3	443.8	438.8	298.5	422.5	423.9	459	485.8	475.8	514	471	147.5	436.3	495.6	561.9	500.1	0	529.2	556	409.5	146.5	9550.3	
2/28/2020	0	452.8	450.8	453.2	456.3	461.2	351.5	302.8	478.6	477.4	477.4	455.1	480.5	455	137.8	392.5	442.6	588.2	534.4	525.2	516.9	531	238	0	9659.2	
2/29/2020	0	0	0	0	0	0	0	0	328.5	18	0	0	0	0	0	0	0	279.5	0	37	429.5	427.5	425	412.5	2357.5	

O₂ < 7.5

O₂ < 7.5

	Start	Stop		Op.	Stack		Actions
Date	Time	Time	Duration	Mode	O ₂ %	Explanation	Taken
2/18/2020	15:08	15:21	0:13	Normal	7.40	O ₂ level dropped after load of waste was charged into the incinerator.	O ₂ level returned to the normal operating range.

Carbon Monoxide > 8ppm 12 hour alarm



Carbon Monoxide > 8ppm 12 hour alarm

	Start	Stop		Op.	Stack CO	Stack CO		Actions
Date	Time	Time	Duration	Mode	@ 11% O2	as mg/m ³	Explanation	Taken
2/11/2020	22:54	1:00	2:06	Normal	23.4	27.0	Waste fed into the incineator caused high CO levels	The operator reduced the feed rate until the CO levels returned to the normal operating range.

Carbon Monoxide > 8ppm 4 hour alarm



Carbon Monoxide > 8ppm 4 hour alarm

	Start	Stop		Op.	Stack CO	Stack CO		Actions
Date	Time	Time	Duration	Mode	@ 11% O2	as mg/m ³	Explanation	Taken
2/4/2020	16:30	20:30	4:00	normal	10.4	12.0	Waste fed into the incineator caused high CO levels	The operator reduced the feed rate until the CO levels returned to the normal operating range.
2/4/2020	22:00	2:00	4:00	normal	8.1	9.3	Waste fed into the incineator caused high CO levels	The operator reduced the feed rate until the CO levels returned to the normal operating range.
2/12/2020	23:30	3:30	4:00	normal	8.8	10.2	Waste fed into the incineator caused high CO levels	The operator reduced the feed rate until the CO levels returned to the normal operating range.
2/16/2020	16:00	20:00	4:00	normal	11	12.7	Waste fed into the incineator caused high CO levels	The operator reduced the feed rate until the CO levels returned to the normal operating range.
2/17/2020	7:00	11:00	4:00	Shut-down	14.3	16.5	CO spike caused by ash falling over during shut-down	No waste was fed during this period.
2/18/2020	15:30	19:30	4:00	normal	20.6	23.8	CO spike caused by ash falling over during shut-down	No waste was fed during this period.

Secondary Chamber Temperature < 1000°C

	Start Time	Stop Time	Duration	Op. Mode	Temp. °C	Explanation	Actions Taken
Date							
2/2/2020	3:36	4:06	0:30	Normal	990	Low upper chamber temperture caused by the incinerator sitting idle.	No waste was fed during this time.
2/2/2020	5:32	6:06	0:34	Normal	994	Low upper chamber temperture caused by the incinerator sitting idle.	No waste was fed during this time.
2/17/2020	13:35	15:15	1:40	Normal	960	Low upper chamber temperture caused by the incinerator sitting idle.	No waste was fed during this time.
2/19/2020	1:58	4:11	2:13	Normal	988	Low upper chamber temperture caused by the incinerator sitting idle.	No waste was fed during this time.

TheDate		OX6min	COmin	NOXmin	PrimTemp °C	SecTemp °C	SNCR	DemTemp °C	CarbTemp °C	DiffTemp °C	IDFanTemp °C	QuenchPH	CondPH	AtomPH	AtomA	AtomB	HEPADP	OpMode
3/1/2020	Average	11.7	4.4	65.5	1066	1032	6.6	31	51	19	39	8.6	8.1	7.2	41.6	42.1	0	Normal(ON)
	Min	9.4	0.3	23.2	1009	1019	6.6	28	50	16	37	8.0	7.8	6.9	41.2	41.9	0	
	Max	14.3	683.3	181.7	1109	1055	6.6	35	51	22	41	9.0	8.7	7.6	42.0	42.1	1	
3/2/2020	Average	11.8	4.0	80.2	1038	1041	7	34	51	17	40	8.8	8.1	7.2	41.6	42.1	1	Normal(ON)
	Min	9.3	0.0	17.5	984	1019	7	29	50	12	37	8.5	7.6	6.9	41.4	41.9	1	
	Max	14.8	366.7	375.7	1078	1107	7	39	51	22	43	9.3	8.8	7.4	42.0	42.3	1	
3/3/2020	Average	12.3	4.6	52.8	1017	1028	6.6	36	50	15	39	9.1	7.2	7.2	41.4	41.3	1	Normal(ON)/Shut-down/Off/Start-up/Normal(ON)
	Min	8.7	0.0	-6.6	801	728	5.0	31	27	-44	8	8.5	3.8	6.9	0.1	0.0	0	
	Max	20.4	518.8	162.5	1077	1068	6.6	70	51	19	44	9.5	8.6	8.6	42.6	42.2	1	
3/4/2020	Average	12.1	5.1	61.0	1023	1034	6.6	32	50	18	39	8.8	10.7	6.8	42.4	42.0	1	Normal(ON)
	Min	9.0	0.5	19.4	993	1019	6.5	26	49	9	36	6.0	1.3	5.4	42.0	41.8	1	
	Max	14.7	719.4	209.9	1058	1126	6.6	42	51	24	43	9.6	14.8	7.6	42.7	42.3	2	
3/5/2020	Average	12.9	5.2	47.8	936	1023	6.6	30	50	20	37	8.4	11.4	7.0	42.2	41.8	1	Normal(ON)
	Min	9.3	0.1	22.6	777	991	6.6	25	49	17	33	7.4	7.6	6.6	42.1	41.6	0	
	Max	15.7	617.4	187.4	1038	1072	6.6	33	51	23	40	9.0	14.8	8.6	42.4	41.9	2	
3/6/2020	Average	11.9	3.9	62.7	965	1033	6.6	30	50	20	41	8.4	8.3	6.7	42.0	41.5	0	Normal(ON)
	Min	9.8	0.0	21.1	748	939	6.6	28	50	16	39	7.9	7.8	6.6	41.9	41.4	0	
	Max	14.9	400.1	170.4	1068	1125	6.6	34	51	22	43	8.8	8.6	6.9	42.2	41.6	0	
3/7/2020	Average	18.9	1.3	8.0	556	407	4.5	22	25	3	15	9.2	9.7	7.9	10.7	10.5	0	Shut-down/Off
	Min	10.3	0.0	0.0	196	99	3.4	17	14	-4	0	7.2	7.7	6.7	0.0	0.0	0	
	Max	20.4	261.6	149.4	1095	1058	6.6	31	50	23	41	11.0	12.0	8.4	42.1	41.5	0	
3/8/2020	Average	20.3	0.0	0.0	105	65	4.3	8	13	5	17	11.0	9.7	8.3	0.0	0.0	0	Off
	Min	20.1	0.0	0.0	57	44	3.8	6	10	-2	7	10.7	9.5	8.1	0.0	0.0	0	
	Max	20.4	0.0	0.0	196	100	4.8	17	18	10	20	11.0	10.1	8.4	0.1	0.0	0	
3/9/2020	Average	20.3	0.0	0.0	42	38	4.9	13	16	3	18	10.1	9.5	8.6	0.1	0.0	0	Off
	Min	20.1	0.0	0.0	32	34	4.5	6	10	-4	17	9.2	9.0	8.3	0.1	0.0	0	
	Max	20.4	0.0	0.0	57	44	5.8	27	23	7	20	11.1	10.0	9.2	0.1	0.0	0	
3/10/2020	Average	20.2	0.0	0.0	29	31	6.2	25	24	-1	18	10.5	9.2	9.2	0.1	0.0	0	Off
	Min	20.1	0.0	0.0	26	27	5.8	23	21	-4	17	10.3	8.9	9.1	0.1	0.0	0	
	Max	20.4	0.0	0.0	32	35	6.3	27	27	4	20	10.8	9.3	9.2	0.1	0.0	0	
3/11/2020	Average	20.2	0.0	0.0	23	25	6.3	21	24	2	15	10.2	8.6	9.2	0.0	0.0	0	Off
	Min	20.1	0.0	0.0	21	23	6.2	20	21	1	13	10.0	8.3	9.1	0.0	0.0	0	
	Max	20.4	0.0	0.0	26	28	6.4	24	27	4	19	10.3	9.2	9.2	0.1	0.0	0	
3/12/2020	Average	20.2	10.1	-1.1	56	171	6.0	20	22	2	11	9.9	8.8	9.1	0.0	0.0	0	Off/Start-up
	Min	20.0	0.0	-11.0	20	21	6.0	19	16	-2	9	9.8	8.2	9.1	0.0	0.0	0	
	Max	20.4	129.8	4.4	343	827	6.4	24	27	4	19	10.3	12.9	9.2	0.1	0.0	0	
3/13/2020	Average	16.3	13.0	13.0	613	943	6.3	22	28	6	23	9.1	13.0	8.2	17.1	16.4	0	Start-up
	Min	8.9	0.0	-12.1	344	827	6.0	18	13	-6	13	6.3	8.5	6.6	0.1	0.0	0	
	Max	20.0	259.7	106.6	1014	1045	6.7	30	50	23	36	9.9	14.8	9.1	42.8	40.7	0	
3/14/2020	Average	11.6	5.6	56.2	1006	1032	6.6	23	46	23	36	8.4	8.5	7.0	43.0	40.7	0	Start-up/Normal(ON)
	Min	8.2	0.3	19.7	839	1019	6.6	21	44	22	36	8.0	8.1	6.6	41.6	40.2	0	
	Max	14.8	569.8	208.1	1065	1160	6.6	27	49	23	40	8.8	8.9	7.2	43.8	40.9	0	
3/15/2020	Average	12.7	5.2	44.9	906	1027	6.6	25	47	23	39	8.1	8.5	7.0	42.5	40.6	0	Normal(ON)
	Min	8.2	0.1	22.3	800	1013	6.6	23	46	22	38	7.4	8.0	6.7	41.8	40.2	0	
	Max	14.5	680.7	211.0	1055	1162	6.6	26	49	23	40	8.7	8.9	7.2	43.0	40.8	0	
3/16/2020	Average	11.6	4.1	57.8	968	1031	6.6	24	47	23	39	8.2	8.3	6.8	42.0	40.2	0	Normal(ON)
	Min	8.2	0.1	18.9	821	1006	6.6	22	46	21	38	7.8	7.8	6.6	41.7	39.4	0	
	Max	14.9	307.3	203.6	1067	1059	6.6	28	49	23	41	8.6	8.7	7.0	42.4	40.7	0	
3/17/2020	Average	11.9	5.6	53.7	951	1029	6.6	24	47	23	40	8.2	8.2	6.8	42.7	41.5	0	Normal(ON)
	Min	7.0	0.0	19.1	744	974	6.6	22	46	22	38	7.6	7.4	6.7	41.7	39.4	0	
	Max	15.5	640.1	214.1	1066	1106	6.6	27	48	24	42	8.6	8.7	7.0	43.2	42.8	0	
3/18/2020	Average	11.5	4.2	66.4	1064	1033	6.6	25	47	23	39	8.3	7.8	6.8	42.2	42.7	0	Normal(ON)
	Min	9.7	0.0	27.2	1028	1019	6.6	23	46	22	38	8.0	7.2	6.6	41.3	42.5	0	
	Max	13.6	416.9	174.5	1093	1053	6.6	27	49	23	41	8.6	8.4	7.0	43.6	43.0	0	
3/19/2020	Average	11.5	3.9	55.7	1065	1031	6.6	25	47	22	39	8.3	7.0	6.8	41.8	42.6	0	Normal(ON)
	Min	9.0	0.0	21.9	1038	1019	6.6	23	46	20	37	8.0	2.8	6.2	41.4	42.3	0	
	Max	14.6	377.7	252.9	1107	1103	6.6	29	49	23	41	8.7	8.5	7.1	42.3	42.8	0	
3/20/2020	Average	12.2	3.4	51.9	978	996	6.5	28	48	20	39	8.0	6.4	6.8	39.3	39.8	0	Normal(ON)/Shut-down/Off/Start-up/Normal(ON)
	Min	7.4	0.0	-19.8	662	542	5.5	23	46	-2	31	6.8	0.9	6.5	16.1	16.0	0	
	Max	20.4	434.9	187.3	1107	1164	6.6	48	50	23	43	8.7	13.3	7.5	42.9	43.1	0	
3/21/2020	Average	12.5	4.9	51.8	987	1016	6.6	28	49	21	41	8.1	8.3	6.8	42.0	42.1	0	Normal(ON)
	Min	7.7	0.0	18.9	704	865	6.6	26	49	18	39	7.5	7.7	6.6	41.6	41.8	0	
	Max	16.7	514.9	139.7	1099	1059	6.6	32	50	23	43	8.6	8.9	7.1	42.6	42.5	0	



March 2020 Incineration Averages

TheDate		OX6min	COmin	NOXmin	PrimTemp °C	SecTemp °C	SNCR	DemTemp °C	CarbTemp °C	DiffTemp °C	IDFanTemp °C	QuenchPH	CondPH	AtomPH	AtomA	AtomB	HEPADP	OpMode
3/22/2020	Average	11.7	2.8	60.1	984	1033	6.6	28	49	21	41	8.2	8.2	7.0	42.5	41.6	0	Normal(ON)
	Min	8.0	0.0	22.4	736	1020	6.5	26	49	19	39	7.5	7.7	6.7	40.6	41.3	0	
	Max	14.4	56.1	185.7	1034	1059	6.6	31	50	23	43	8.6	8.7	7.2	43.8	41.9	0	
3/23/2020	Average	11.2	3.1	67.1	1022	1037	6.6	29	49	20	41	8.1	8.2	6.9	41.4	42.2	0	Normal(ON)
	Min	9.4	0.0	21.5	839	1019	6.6	26	42	15	38	7.5	7.5	6.7	40.5	41.5	0	
	Max	13.5	223.1	246.7	1088	1068	6.6	36	51	23	46	8.5	8.6	7.1	43.1	42.7	0	
3/24/2020	Average	11.7	2.7	73.5	1046	1039	6.6	31	50	19	43	8.2	8.0	6.9	42.3	42.5	0	Normal(ON)
	Min	10.0	0.0	23.1	1007	1020	6.6	27	49	14	40	7.7	7.4	6.7	41.5	42.3	0	
	Max	13.4	33.7	185.6	1075	1066	6.6	37	51	23	44	8.7	8.4	7.1	42.9	42.8	0	
3/25/2020	Average	11.3	3.4	68.3	1022	1038	6.6	31	50	20	42	8.3	8.1	6.9	42.9	42.7	0	Normal(ON)
	Min	9.4	0.0	23.0	994	1019	6.6	26	50	15	41	7.9	7.5	6.7	42.4	42.4	0	
	Max	13.0	610.1	224.7	1040	1109	6.6	36	51	23	44	8.7	8.5	7.1	43.3	42.8	0	
3/26/2020	Average	11.2	4.6	48.7	1014	1032	6.6	30	50	21	42	7.9	8.2	7.0	43.2	42.7	0	Normal(ON)
	Min	7.8	0.0	14.4	879	975	6.6	26	49	15	41	7.4	7.6	6.7	42.5	42.3	0	
	Max	15.7	625.1	186.5	1081	1081	6.6	36	51	23	44	8.4	9.5	7.4	44.6	43.1	0	
3/27/2020	Average	11.3	4.7	62.9	990	1041	6.6	31.2	51	19	43	8.1	8.3	6.8	42.5	42.3	0	Normal(ON)
	Min	9.8	0.0	13.5	952	1019	6.5	27.7	50	14	41	7.9	7.7	6.6	40.1	42.0	0	
	Max	12.7	722.8	190.9	1025	1109	6.6	36.7	51	22	45	8.3	8.8	7.1	44.5	42.9	0	
3/28/2020	Average	11.2	4.9	56.6	1013	1037	6.6	31.2	51	19	43	7.9	8.7	7.1	42.4	42.9	0	Normal(ON)/Shut-down/Normal(ON)
	Min	8.8	0.0	14.6	976	1019	6.5	26.0	49	14	41	7.7	8.0	6.7	40.6	42.6	0	
	Max	13.3	494.4	202.3	1062	1112	6.6	36.6	51	23	44	8.2	9.7	7.7	44.7	43.1	0	
3/30/2020	Average	10.7	4.3	66.3	952	1037	6.6	30	50	20	42	8.2	8.1	6.8	42.5	42.7	0	Normal(ON)
	Min	8.2	0.0	13.1	847	1019	6.6	26	50	16	40	7.3	6.2	6.6	42.3	42.6	0	
	Max	12.4	481.6	230.1	1029	1068	6.6	35	51	24	44	10.9	9.1	7.1	43.0	43.0	0	
3/31/2020	Average	11.1	2.8	67.2	973	1039	6.6	32	51	19	43	8.4	8.3	6.8	42.4	42.8	0	Normal(ON)
	Min	9.4	0.0	16.6	926	1019	6.6	27	50	14	41	7.5	7.2	6.7	42.2	42.6	0	
	Max	13.6	115.8	342.6	1018	1084	6.6	37	51	23	45	11.3	9.0	7.0	43.1	43.1	0	



March 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	Montly Sum
3/1/2020	0	430.2	449	440.5	458.5	427.5	292.5	496.8	564.2	554.3	566.3	547.4	531.3	502	318.8	508.2	537.8	244.5	385.5	431	242.5	471.5	0	144	9544.3	199182.9
3/2/2020	0	443.5	463.5	462.4	430.4	437	374.5	307.6	428.3	581.5	421	433.3	423.3	436.1	139	302.1	196.2	0	518.3	505.3	524	519.9	372.1	242	8961.3	
3/3/2020	105.5	456	450.6	449.5	448	444	262.5	359.3	206.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	137	3318.5	
3/4/2020	517.5	507.4	503.5	502.8	505.3	503	354.5	223.8	421.9	413	478	420	447.8	473.9	325.8	375	280.8	608.2	555	507.8	538.3	500.6	0	0	9963.9	
3/5/2020	313.7	0	0	0	0	0	53.5	133	0	0	493.5	481.8	483.8	498.5	201.5	323.2	581.5	512.9	524.4	515.7	526	554.4	527.7	517.7	7242.8	
3/6/2020	0	0	0	502.4	515.8	531.1	278	439	473.5	479.1	485.9	484.6	479.8	442.8	209.8	0	333.6	372.7	269.5	419	427	426	152.4	435.2	8157.2	
3/7/2020	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	
3/8/2020	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	
3/9/2020	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	
3/10/2020	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	
3/11/2020	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	
3/12/2020	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	
3/13/2020	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	604.3	571.9	457.8	515.2	2149.2	
3/14/2020	0	0	0	0	524.2	634	88	572	231.4	521.3	514.3	603	239.8	565.5	577.2	524	503	598.5	506.2	244.5	623.7	565.6	556.5	328.2	9520.9	
3/15/2020	549.4	544.7	542	537.7	538.3	590	519.5	534.3	514.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	222.4	5092.8	
3/16/2020	0	507	511.5	517.6	514.2	508.2	316	60.5	149.5	108.5	179	43.5	208	116.5	0	509.4	561.3	522.8	501.8	545.3	506	556	464	0	7906.6	
3/17/2020	0	507.9	0	180	66.5	0	0	0	0	0	433	0	257.5	234.5	0	0	522.2	546	582.8	556.7	607	600.3	462.4	185.5	5742.3	
3/18/2020	0	74.5	502.5	516	513	510	517	670	206.5	417.6	342.6	247	239	316.6	31.7	612.8	534.3	503.8	582.9	574.2	544.3	556.3	430.4	86.4	9529.4	
3/19/2020	0	317.8	520.1	506.3	504.8	509.3	407.4	35	0	167.5	192	67.5	326.5	166.5	82.5	542.9	277	573	511	543.3	510.8	567.9	562.4	165.5	8057	
3/20/2020	0	559.4	509.4	441.3	504.2	306.9	268.5	0	0	0	0	0	0	0	0	257.7	500.8	500.5	301.5	514.3	625.6	590.9	526.3	421	6828.3	
3/21/2020	0	515.5	495.9	0	511	507.7	0	586.1	579.3	514.8	179.4	0	0	519.3	511.5	548	546.3	435	0	0	0	0	0	0	6449.8	
3/22/2020	0	538	520.3	516.8	518.5	514.5	387	548.5	537.8	514.3	509.8	513.3	536.9	0	535.6	535.6	544.6	558.5	438	0	0	0	0	305.9	9073.9	
3/23/2020	0	453.5	590.7	535.5	508.5	508.5	318	351.4	0	116	670	0	9	101	126.5	533	564.8	462.1	457.8	538.2	507.9	529.2	593.5	36.5	8511.6	
3/24/2020	0	529	505.5	506.5	461.4	475.3	322.3	261.5	315	131.3	194.5	109.4	311.9	282.2	227.4	589	502	608.3	535.8	512.4	521.6	618.7	476.2	306	9303.2	
3/25/2020	0	507	340.1	630.5	504.5	526	408.3	628.3	531.8	282.6	332.2	354.5	408.5	382.5	67	641.8	368.6	509.1	521.1	540.3	518.6	521.9	0	0	9525.2	
3/26/2020	0	336	62.5	501	508	563.5	643	438.4	535.9	17	127	41	0	14	0	0	531.2	519.1	515.1	542.1	552.6	527.4	426.9	60.5	7462.2	
3/27/2020	0	503.5	511	510.4	500.7	518.5	508	250.5	546.8	107.5	211	0	202	197	112	549.4	523.6	559.4	518.6	559.5	552.8	529.5	469.2	544.7	9485.6	
3/28/2020	406	513.5	526.4	524.1	506	517	0	0	0	634	522.3	539.9	548	557.8	520.3	515.3	558.8	555.3	468	0	0	0	611.5	0	9024.2	
3/29/2020	0	516.8	510.8	541.2	0	521.6	447.5	563	609.8	558.6	526.1	508.6	560	507	540.5	525.3	571.5	543.5	300.8	0	0	0	0	301.5	9154.1	
3/30/2020	0	512.9	552.8	502.5	500.1	430	341	667.5	416	214.5	420.5	138	525.5	571	280	584.7	529.9	571.6	534.3	432.1	0	436.9	333.5	0	9495.3	
3/31/2020	0	557.2	542.4	335	304	647.8	602.3	236.5	178.5	396.7	306.5	285.5	341	317.2	235.6	634	522	502.8	523.3	509.3	565.6	520.1	446	174	9683.3	

Carbon Monoxide > 8ppm 12 hour alarm



Carbon Monoxide > 8ppm 12 hour alarm

	Start	Stop		Op.	Stack CO	Stack CO		Actions
Date	Time	Time	Duration	Mode	@ 11% O2	as mg/m ³	Explanation	Taken
3/15/2020	8:00	13:00	5:00	Normal	8.2	9.5	Waste fed into the incineator caused high CO levels	The operator reduced the feed rate until the CO levels returned to the normal operating range.

Carbon Monoxide > 8ppm 4 hour alarm



Carbon Monoxide > 8ppm 4 hour alarm

	Start	Stop		Op.	Stack CO	Stack CO		Actions
Date	Time	Time	Duration	Mode	@ 11% O ₂	as mg/m ³	Explanation	Taken
3/1/2020	7:00	11:00	4:00	normal	10.4	12.0	Waste fed into the incineator caused high CO levels	The operator reduced the feed rate until the CO levels returned to the normal operating range.
3/4/2020	19:00	23:00	4:00	normal	13.7	15.8	Waste fed into the incineator caused high CO levels	The operator reduced the feed rate until the CO levels returned to the normal operating range.
3/5/2020	14:00	23:00	9:00	normal	8.7	10.0	Waste fed into the incineator caused high CO levels	The operator reduced the feed rate until the CO levels returned to the normal operating range.
3/7/2020	3:44	4:25	0:41	Shut-down	14.6	16.8	CO spike caused by ash falling over during shut-down	No waste was fed during this period.
3/14/2020	7:00	11:00	4:00	normal	10.2	11.8	Waste fed into the incineator caused high CO levels	The operator reduced the feed rate until the CO levels returned to the normal operating range.
3/14/2020	13:00	17:00	4:00	normal	8.9	10.3	Waste fed into the incineator caused high CO levels	The operator reduced the feed rate until the CO levels returned to the normal operating range.
3/15/2020	7:00	11:00	4:00	normal	15.8	18.2	Waste fed into the incineator caused high CO levels	The operator reduced the feed rate until the CO levels returned to the normal operating range.
3/17/2020	2:00	6:00	4:00	normal	9	10.4	Waste fed into the incineator caused high CO levels	The operator reduced the feed rate until the CO levels returned to the normal operating range.

Carbon Monoxide > 8ppm 4 hour alarm

3/17/2020	16:00	20:00	4:00	normal	10.2	11.8	Waste fed into the incineator caused high CO levels	The operator reduced the feed rate until the CO levels returned to the normal operating range.
3/20/2020	4:00	11:00	7:00	normal	9	10.4	Waste fed into the incineator caused high CO levels	The operator reduced the feed rate until the CO levels returned to the normal operating range.
3/21/2020	6:00	14:00	8:00	normal	8.2	9.5	Waste fed into the incineator caused high CO levels	The operator reduced the feed rate until the CO levels returned to the normal operating range.
3/25/2020	21:00	6:00	9:00	normal	8.1	9.3	Waste fed into the incineator caused high CO levels	The operator reduced the feed rate until the CO levels returned to the normal operating range.
3/26/2020	21:00	5:00	8:00	normal	8.5	9.8	Waste fed into the incineator caused high CO levels	The operator reduced the feed rate until the CO levels returned to the normal operating range.
3/28/2020	9:00	17:00	8:00	normal	8.1	9.3	Waste fed into the incineator caused high CO levels	The operator reduced the feed rate until the CO levels returned to the normal operating range.

Secondary Chamber Temperature < 1000°C

	Start Time	Stop Time	Duration	Op. Mode	Temp. °C	Explanation	Actions Taken
Date							
3/6/2020	0:23	0:53	0:30	Normal	999	Low upper chamber temperture caused by the incinerator sitting idle.	No waste was fed during this time.
3/21/2020	19:46	22:12	2:26	Normal	924	Low upper chamber temperture caused by the incinerator sitting idle.	No waste was fed during this time.

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



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

	Start	Stop		Op.	Quench		Action
Date	Time	Time	Duration	Mode	pH	Explanation	Taken
3/31/2020	1:48	4:48	3:00	Normal	10.7	pH feed system error cause too much caustic to be pumped into the quench tank.	Maintenance corrected the caustic feed.

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



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

	Start	Stop		Op.	Condenser		Action
Date	Time	Time	Duration	Mode	pH	Explanation	Taken
3/3/2020	23:22	0:00	0:38	Normal	12.1	High pH reading caused by pH probe error.	Maintenace re-calibrated the pH probe.
3/4/2020	0:00	23:59	23:59	Normal	14.8	High pH reading caused by pH probe error.	Maintenace re-calibrated the pH probe.
3/5/2020	0:00	9:35	9:35	Normal	14.7	High pH reading caused by pH probe error.	Maintenace re-calibrated the pH probe.

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



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

[illegible]