WHEELABRATOR NORTH ANDOVER
A WIN-WASTE INNOVATIONS COMPANY
COMPLIANCE SUMMARY REPORT

Wheelabrator Technologies

WIN Waste Innovations — Performance for the Planet

Date 3/5/20

Wheel: **Plant** Wheelabrator North Andover
Unit 1 **Unit** **Unit 1**
Outlet **Source** Outlet

Date	Hour	On-Line Minutes	O2		NOx		SO2						CO				Carbon Feed		FF Temp (deg F)		Steam KLbs/Hr	
			Out Vol % Dry	Status	Outlet ppm 7%O2	Status	Outlet ppm 7%O2	Status	Inlet ppm 7%O2	Status	Removal	Status	Outlet ppm 7%O2	Status	4 Hr Block	Status	Lbs/Hr Avg.	8 Hr Block	1 Hr Avg.	4 Hr Block	1 Hr Avg.	4 Hr Block
3/5/2020	0	60	12.2		146		19		75		74		12				14		309		165.4	
3/5/2020	1	60	12.1		145		17		59		71		12				14		309		164.7	
3/5/2020	2	60	12.0		146		16		49		67		11				14		309		164.9	
3/5/2020	3	60	12.1		144		17		56		70		14		12		14		309	309	165.0	165.0
3/5/2020	4	60	12.2		146		18		63		71		13				14		309		163.9	
3/5/2020	5	60	12.1		146		19		66		72		12				14		309		165.0	
3/5/2020	6	60	12.1		148		11		45		75		11				14		309		164.0	
3/5/2020	7	60	12.1		143		13		54		76		14		12		14	14	309	309	163.9	164.2
3/5/2020	8	60	12.2		145		21		71		70		12				14		309		165.5	
3/5/2020	9	60	12.3		143		22		72		69		23				14		309		165.6	
3/5/2020	10	60	12.1		144		19		81		76		17				14		310		162.6	
3/5/2020	11	60	12.0		145		24		90		73		10		16		13		309	309	164.9	164.7
3/5/2020	12	60	11.8		147		27		122		78		12				14		309		167.3	
3/5/2020	13	60	11.9		144		17		66		75		9				13		309		164.9	
3/5/2020	14	60	11.8		147		10		40		76		11				13		309		164.4	
3/5/2020	15	60	11.8		148		23		92		76		12		11		13	14	309	309	163.5	165.0
3/5/2020	16	60	11.7		143		22		84		74		9				13		309		164.8	
3/5/2020	17	60	11.8		148		21		85		75		9				13		309		164.0	
3/5/2020	18	60	11.7		145		22		82		73		9				13		309		166.0	
3/5/2020	19	60	11.5		149		22		82		73		8		9		13		309	309	168.0	165.7
3/5/2020	20	60	11.7		157		21		81		74		10				13		309		165.6	
3/5/2020	21	60	11.8		143		14		48		70		9				13		309		164.3	
3/5/2020	22	60	11.9		145		20		62		68		10				13		309		164.0	
3/5/2020	23	60	11.7		147		22		70		69		10		10		13	13	309	309	166.0	165.0

Average:	146					see above	see above	see above	see above	see above
Geometric Mean Average:		19		73						
Limit:	≤ 205 **24-HR Block Avg.**	≤ 29 **24-HR Geometric Mean**	**OR**	≥ 75% **Removal Efficiency**		≤ 69 **4-HR Block Average** ppmc	≤ 12 **8-HR. Block Average** lb/hr	≤ 345 °F **4-HR Block Average**	≤ 173 klb/hr **4-HR Block Average**	

Status Flags

I - Invalid
B - Bad
C - Calibration
M - Maintenance
F - Offline
P - Purge
T - Out of Control
E - Excluded
^ - Startup
* - Shutdown

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Date 3/5/20

Wheel: **Plant** Wheelabrator North Andover
Unit 2 **Unit** **Unit 1**
Outlet **Source** Outlet

Date	Hour	On-Line Minutes	O2		NOx		SO2						CO				Carbon Feed		FF Temp (deg F)		Steam KLbs/Hr	
			Out Vol % Dry	Status	Outlet ppm 7%O2	Status	Outlet ppm 7%O2	Status	Inlet ppm 7%O2	Status	Removal	Status	Outlet ppm 7%O2	Status	4 Hr Block	Status	Lbs/Hr Avg.	8 Hr Block	1 Hr Avg.	4 Hr Block	1 Hr Avg.	4 Hr Block
3/5/2020	0	60	11.3		144		10		30		69		3				14		310		165.9	
3/5/2020	1	60	11.0		145		5		21		78		2				14		310		166.3	
3/5/2020	2	60	11.0		145		7		24		69		3				14		310		165.2	
3/5/2020	3	60	10.9		145		2		17		86		2		3		14		310	310	166.0	165.8
3/5/2020	4	60	10.9		143		7		20		65		2				14		310		165.7	
3/5/2020	5	60	10.8		145		6		21		73		2				14		310		165.8	
3/5/2020	6	60	10.9		144		5		19		72		1				14		310		165.1	
3/5/2020	7	60	10.9		145		5		16		70		1		2		15	14	310	310	165.8	165.6
3/5/2020	8	60	11.0		144		9		29		70		2				15		310		166.0	
3/5/2020	9	60	11.3		144		20		42		52		8				14		309		165.8	
3/5/2020	10	60	10.6		144		35		55		36		2				14		310		163.4	
3/5/2020	11	60	9.9		146		13		37		66		2		3		14		310	310	166.1	165.3
3/5/2020	12	60	10.2		143		6		27		79		0				14		310		165.4	
3/5/2020	13	60	10.3		144		2		14		87		2				14		310		165.3	
3/5/2020	14	60	9.9		144		1		10		92		1				14		310		166.3	
3/5/2020	15	60	10.0		146		2		18		91		1		1		14	14	310	310	165.7	165.7
3/5/2020	16	60	10.1		148		1		12		88		1				14		310		165.2	
3/5/2020	17	60	10.1		141		2		16		86		1				14		310		165.8	
3/5/2020	18	60	10.2		148		5		20		75		1				14		310		166.3	
3/5/2020	19	60	10.1		141		2		9		82		0		1		14		310	310	165.0	165.6
3/5/2020	20	60	10.2		145		3		19		83		0				14		310		165.6	
3/5/2020	21	60	10.0		144		3		19		84		1				14		310		165.0	
3/5/2020	22	60	10.5		143		3		17		83		1				14		310		164.8	
3/5/2020	23	60	10.3		147		12		49		76		2		1		14	14	310	310	166.3	165.4

Average:	145					see above	see above	see above	see above	see above
Geometric Mean Average:		5		78						
Limit:	≤ 205 24-HR Block Avg.	≤ 29 24-HR Geometric Mean	**OR**	≥ 75% Removal Efficiency		≤ 69 ppmc 4-HR Block Average	≤ 12 lb/hr 8-HR. Block Average	≤ 345 °F 4-HR Block Average	≤ 173 klb/hr 4-HR Block Average	

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WHEELABRATOR NORTH ANDOVER
A WIN-WASTE INNOVATIONS COMPANY
OPACITY REPORT

Date 05-Mar-2020

Plant Wheelabrator North Andover
Unit **Unit 1**
Source Outlet

Opacity is a measure of how much soot or smoke may be contained in stack emissions. The more smoke that is contained in the emissions the higher the level of opacity. Continuous opacity monitors located after all of the air pollution control equipment measure the opacity of the emissions from each boiler. Typically the human eye can not detect or see smoke that is less than 5% opacity. You won't see smoke from a modern trash-to-energy plant although in colder weather you will see water vapor condensation, similar to seeing your breath on a cold day. This is not considered opacity. We have a permit limit established by the Massachusetts Department of Environmental Protection of 10% opacity averaged every six (6) minutes.

Limit 10 %

Time (hr)	1-6 min	7-12 min	13-18 min	19-24 min	25-30 min	31-36 min	37-42 min	43-48 min	49-54 min	55-60 min	Average
0	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1	1	1	1	1
6	1 IC	5 IC	1	1	1	1	1	1	1	1	1
7	1	1	1	1	1	1	1	1	1	1	1
8	1	1	1	1	1	1	1	1	1	1	1
9	1	1	1	1	1	1	1	1	1	1	1
10	1	1	1	1	1	1	1	1	1	1	1
11	1	1	1	1	1	1	1	1	1	1	1
12	1	1	1	1	1	1	1	1	1 IM	1 IM	1
13	33 IM	1 IM	1 IM	22 IM	0 IM	14 IM	14 IM	14 IM	14 IM	14 IM	12
14	18 IM	13 IM	13 IM	14 IM	14 IM	0 IM	1 IM	1 IM	1	0	8
15	1	1	1	1	1	1	1	1	1	1	1
16	1	1	1	1	1	1	1	1	1	1	1
17	1	1	1	1	1	1	1	1	1	1	1
18	1	1	1	1	1	1	1	1	1	1	1
19	1	1	1	1	1	1	1	1	1	1	1
20	1	1	1	1	1	1	1	1	1	1	1
21	1	1	1	1	1	1	1	1	1	1	1
22	1	1	1	1	1	1	1	1	1	1	1
23	1	1	1	1	1	1	1	1	1	1	1

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WHEELABRATOR NORTH ANDOVER
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OPACITY REPORT

Date 05-Mar-2020

Plant Wheelabrator North Andover
Unit **Unit 2**
Source Outlet

Opacity is a measure of how much soot or smoke may be contained in stack emissions. The more smoke that is contained in the emissions the higher the level of opacity. Continuous opacity monitors located after all of the air pollution control equipment measure the opacity of the emissions from each boiler. Typically the human eye can not detect or see smoke that is less than 5% opacity. You won't see smoke from a modern trash-to-energy plant although in colder weather you will see water vapor condensation, similar to seeing your breath on a cold day. This is not considered opacity. We have a permit limit established by the Massachusetts Department of Environmental Protection of 10% opacity averaged every six (6) minutes.

Limit 10 %

Time (hr)	1-6 min		7-12 min		13-18 min	19-24 min	25-30 min	31-36 min	37-42 min	43-48 min	49-54 min	55-60 min	Average
0	0		0		0	0	0	0	0	0	0	0	0
1	0		0		0	0	0	0	0	0	0	0	0
2	0		0		0	0	0	0	0	0	0	0	0
3	0		0		0	0	0	0	0	0	0	0	0
4	0		0		0	0	0	0	0	0	0	0	0
5	0		0		0	0	0	0	0	0	0	0	0
6	1	IC	4	IC	0	0	0	0	0	0	0	0	1
7	0		0		0	0	0	0	0	0	0	0	0
8	0		0		0	0	0	0	0	0	0	0	0
9	0		0		0	0	0	0	0	0	0	0	0
10	0		0		0	0	0	0	0	0	0	0	0
11	0		0		0	0	0	0	0	0	0	0	0
12	0		0		0	0	0	0	0	0	0	0	0
13	0		0		0	0	0	0	0	0	0	0	0
14	0		0		0	0	0	0	0	0	0	0	0
15	0		0		0	0	0	0	0	0	0	0	0
16	0		0		0	0	0	0	0	0	0	0	0
17	0		0		0	0	0	0	0	0	0	0	0
18	0		0		0	0	0	0	0	0	0	0	0
19	0		0		0	0	0	0	0	0	0	0	0
20	0		0		0	0	0	0	0	0	0	0	0
21	0		0		0	0	0	0	0	0	0	0	0
22	0		0		0	0	0	0	0	0	0	0	0
23	0		0		0	0	0	0	0	0	0	0	0

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