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

Wheelabrator Technologies

WIN Waste Innovations — Performance for the Planet

Date 5/17/23

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
5/17/2023	0	60	9.9		138		13		64		80		4				15		309		164.8	
5/17/2023	1	60	9.8		139		15		68		77		3				15		310		165.1	
5/17/2023	2	60	9.8		142		19		62		70		3				14		309		166.3	
5/17/2023	3	60	9.8		137		14		54		75		3		3		14		310	309	165.4	165.4
5/17/2023	4	60	9.8		141		17		69		76		3				12		310		166.7	
5/17/2023	5	60	10.0		137		14		51		73		2				11		309		168.6	
5/17/2023	6	60	9.9		139		14		62		77		4				13		309		164.1	
5/17/2023	7	60	10.2		141		33		121		72		3		3		12	13	309	309	166.7	166.5
5/17/2023	8	60	10.0		137		18		86		79		4				12		309		165.9	
5/17/2023	9	60	10.1		136		24		109		78		4				12		309		166.5	
5/17/2023	10	60	10.0		140		22		99		77		3				13		310		167.8	
5/17/2023	11	60	10.1		142		29		106		73		4		4		13		309	309	164.9	166.3
5/17/2023	12	60	10.1		140		30		130		77		4				13		309		166.9	
5/17/2023	13	60	9.6		138		8		61		87		5				14		310		166.7	
5/17/2023	14	60	9.9		137		17		72		77		4				14		309		164.0	
5/17/2023	15	60	9.8		134		12		63		81		5		4		14	13	309	309	166.0	165.9
5/17/2023	16	60	10.0		138		39		164		76		4				14		310		166.3	
5/17/2023	17	60	10.1		141		121		361		66		5				14		309		166.0	
5/17/2023	18	60	10.1		141		82		341		76		4				14		309		166.2	
5/17/2023	19	60	10.2		140		28		152		82		3		4		14		309	309	166.2	166.2
5/17/2023	20	60	10.2		140		39		201		81		4				12		309		163.6	
5/17/2023	21	60	10.1		139		26		145		82		4				7		309		164.9	
5/17/2023	22	60	10.0		141		25		131		81		3				12		309		166.2	
5/17/2023	23	60	10.0		137		17		97		82		4		4		15	13	309	309	166.7	165.4
Average:					**139**																	
Geometric Mean Average:							**23**				**78**				see above				see above	see above	see above	
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	

Status Flags

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

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

Wheelabrator Technologies

WIN Waste Innovations — Performance for the Planet

Date 5/17/23

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
5/17/2023	0	60	10.8		139		6		26		79		1				14		310		166.4	
5/17/2023	1	60	10.9		139		6		28		79		0				14		310		166.8	
5/17/2023	2	60	10.9		143		14		37		61		0				14		310		166.8	
5/17/2023	3	60	11.1		139		11		28		60		1		1		14		310	310	166.8	166.7
5/17/2023	4	60	10.9		143		17		35		52		2				13		310		166.7	
5/17/2023	5	60	11.0		134		8		26		68		0				13		309		168.1	
5/17/2023	6	60	10.7		145		15		33		55		1				13		311		166.1	
5/17/2023	7	60	10.9		138		22		52		57		1		1		12	13	310	310	167.8	167.2
5/17/2023	8	60	11.0		139		19		42		56		2				13		309		165.3	
5/17/2023	9	60	10.9		142		21		44		52		2				13		310		166.3	
5/17/2023	10	60	11.1		135		28		44		36		2				13		310		169.1	
5/17/2023	11	60	10.9		141		25		64		61		3		2		13		310	310	165.8	166.6
5/17/2023	12	60	11.2		140		90		90		0		3				13		310		167.6	
5/17/2023	13	60	10.7		141		17		28		39		2				13		310		166.8	
5/17/2023	14	60	10.9		140		19		38		48		1				13		310		165.2	
5/17/2023	15	60	10.9		139		17		30		43		1		2		13	13	310	310	166.7	166.5
5/17/2023	16	60	10.9		142		26		89		71		2				13		310		167.3	
5/17/2023	17	60	11.0		139		29		95		69		1				12		310		166.4	
5/17/2023	18	60	11.0		139		27		92		71		1				13		310		166.9	
5/17/2023	19	60	11.1		140		11		37		70		1		1		13		310	310	166.2	166.7
5/17/2023	20	60	11.2		139		15		38		60		1				13		310		167.2	
5/17/2023	21	60	11.1		140		14		37		63		1				14		310		166.5	
5/17/2023	22	60	11.1		140		13		43		70		2				13		310		166.5	
5/17/2023	23	60	11.1		140		20		52		61		1		1		11	13	310	310	166.3	166.6
Average:					**140**										see above		see above	see above	see above	see above	see above	
Geometric Mean Average:							**17**				**60**											
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	

Status Flags

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

WHEELABRATOR NORTH ANDOVER
A WIN-WASTE INNOVATIONS COMPANY
OPACITY REPORT

Date 17-May-2023

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		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	0	IC	0	IC	0	0	0	0	0	0	0	0	0
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

Status Flags

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

WHEELABRATOR NORTH ANDOVER
A WIN-WASTE INNOVATIONS COMPANY
OPACITY REPORT

PERFORMANCE FOR THE PLANET

Date 17-May-2023

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	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	3	IBC	5	IBC	1	1	1	1	1	1	1	1	2
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	1	1
13	1		1		1	1	1	1	1	1	1	1	1
14	1		1		1	1	1	1	1	1	1	1	1
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

Status Flags

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