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

Wheelabrator Technologies

WIN Waste Innovations — Performance for the Planet

Date 10/16/23

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
10/16/2023	0	60	10.0		143		18		48		63		0				15		309		165.8	
10/16/2023	1	60	10.0		141		20		50		59		0				14		310		167.1	
10/16/2023	2	60	10.0		140		18		47		61		0				12		310		166.0	
10/16/2023	3	60	9.9		140		23		58		61		0		0		15		309	309	166.6	166.4
10/16/2023	4	60	10.2		143		18		37		52		0				13		310		167.0	
10/16/2023	5	60	10.3		143		22		34		36		0				15		309		166.9	
10/16/2023	6	60	10.6		141		18		30		39		0				14		308		166.9	
10/16/2023	7	60	10.4		140		20		29		29		0		0		14	14	310	310	167.8	167.2
10/16/2023	8	60	10.2		143		22		45		50		1				14		310		168.4	
10/16/2023	9	60	10.4		139		14		20		29		0				13		309		167.1	
10/16/2023	10	60	10.1		142		20		30		32		0				14		310		167.4	
10/16/2023	11	60	10.4		139		13		28		52		0		0		15		309	309	166.9	167.4
10/16/2023	12	60	10.2		141		21		32		35		0				15		310		166.2	
10/16/2023	13	60	10.0		141		20		31		35		1				12		309		165.7	
10/16/2023	14	60	10.0		142		15		31		52		1				13		310		164.0	
10/16/2023	15	60	10.2		139		20		33		41		1		1		15	14	309	309	163.8	164.9
10/16/2023	16	60	10.1		143		25		52		53		0				11		310		166.7	
10/16/2023	17	60	10.2		141		22		31		30		0				15		310		166.7	
10/16/2023	18	60	10.1		140		22		33		34		0				14		309		165.3	
10/16/2023	19	60	10.1		141		11		34		68		0		0		15		309	309	164.2	165.7
10/16/2023	20	60	10.2		141		8		42		82		0				15		309		166.9	
10/16/2023	21	60	10.2		142		11		37		70		0				14		309		167.5	
10/16/2023	22	60	10.2		140		8		39		80		0				14		309		166.2	
10/16/2023	23	60	10.3		140		7		48		85		0		0		14	14	309	309	166.4	166.7

Average:	141				55	see above	see above	see above	see above	
Geometric Mean Average:		16								
Limit:	≤ 150 **24-HR Block Avg.**	≤ 29 **24-HR Geometric Mean**	**OR**		≥ 80% **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

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

Wheelabrator TECHNOLOGIES

WIN WASTE INNOVATIONS
PERFORMANCE FOR THE PLANET

Date 10/16/23

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
10/16/2023	0	0	20.5	IF	0	IF	6	IF	8	IBF	21	IBF	0	IF			0		55		0.0	
10/16/2023	1	0	20.5	IF	0	IF	6	IF	12	IBF	49	IBF	0	IF			0		55		0.0	
10/16/2023	2	0	20.5	IF	0	IF	6	IF	37	IBF	83	IBF	0	IF			0		55		0.0	
10/16/2023	3	5	19.7	ICF	0	ICF	67	ICF	0	IBF	0	IBCF	14	ICF	3	ICF	0		55	55	0.0	0.0
10/16/2023	4	12	16.9	IBCF	63	IBCF	57	IBCF	0	IBF	0	IBCF	485	IBCF			0		55		0.0	
10/16/2023	5	0	20.5	IF	0	IF	6	IF	145	IBCF	96	IBCF	0	IF			0		56		0.0	
10/16/2023	6	0	20.5	IF	0	IF	6	IF	0	IBF	0	IBF	0	IF			0		56		0.0	
10/16/2023	7	0	20.5	IF	0	IF	6	IF	0	IBF	0	IBF	0	IF	121	IBCF	0	0	58	56	0.0	0.0
10/16/2023	8	0	20.5	IF	0	IF	6	IF	0	IBF	0	IBF	0	IF			0		57		0.0	
10/16/2023	9	0	20.5	IF	0	IF	6	IF	0	IBF	0	IBF	0	IF			0		58		0.0	
10/16/2023	10	0	20.5	IF	0	IF	6	IF	26	IBF	78	IBF	0	IF			0		58		0.0	
10/16/2023	11	0	20.5	IF	0	IF	6	IF	76	IBF	92	IBF	0	IF	0	IF	0		59	58	0.0	0.0
10/16/2023	12	0	20.5	IF	0	IF	6	IF	294	IBF	98	IBF	0	IF			0		59		0.0	
10/16/2023	13	0	20.5	IF	0	IF	6	IF	378	IBF	99	IBF	0	IF			0		60		0.0	
10/16/2023	14	0	20.5	IF	0	IF	6	IF	808	IBF	99	IBF	0	IF			0		60		0.0	
10/16/2023	15	0	20.5	IF	0	IF	6	IF	1243	IBF	100	IBF	0	IF	0	IF	0	0	60	60	0.0	0.0
10/16/2023	16	0	20.5	IF	0	IF	6	IF	-5731	IBF	0	IBF	0	IF			0		59		0.0	
10/16/2023	17	0	20.5	IF	0	IF	6	IF	-2545	IBF	0	IBF	0	IF			0		58		0.0	
10/16/2023	18	0	20.5	IF	0	IF	6	IF	-1335	IBF	0	IBF	0	IF			0		58		0.0	
10/16/2023	19	0	20.5	IF	0	IF	6	IF	-551	IBF	0	IBF	0	IF	0	IF	0		57	58	0.0	0.0
10/16/2023	20	0	20.5	IF	0	IF	6	IF	-292	IBF	0	IBF	0	IF			0		57		0.0	
10/16/2023	21	0	20.5	IF	0	IF	6	IF	-1820	IBF	0	IBF	0	IF			0		57		0.0	
10/16/2023	22	0	20.5	IF	0	IF	6	IF	-4173	IBF	0	IBF	0	IF			0		56		0.0	
10/16/2023	23	0	20.5	IF	0	IF	6	IF	5527	IBF	100	IBF	0	IF	0	IF	0	0	56	56	0.0	0.0

Average:	3 IBCF		0 IBCF	see above	see above	see above	see above
Geometric Mean Average:		7 IBCF					
Limit:	≤ 150 **24-HR Block Avg.**	≤ 29 **24-HR Geometric Mean**	**OR** ≥ 80% **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
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OPACITY REPORT

Date 16-Oct-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		1		1	1	1	0	0	0	1	0	0
1	0		1		1	1	1	1	1	1	1	1	0
2	1		1		1	1	1	1	1	1	1	1	1
3	1		1		1	1	1	1	1	0	1	1	1
4	1		1		1	1	0	1	1	1	1	1	0
5	1		1		1	1	1	1	1	1	1	1	1
6	3	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		0		1	1	1	1	1	1	1	1	0
12	1		1		1	1	0	1	1	1	1	1	0
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	0	1	0	0	1	1	0
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	0	1	0

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OPACITY REPORT

Date 16-Oct-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	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1
1	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1
2	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1
3	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1
4	1		1		1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1
5	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1
6	2	BCF	23	BCF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	3
7	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1
8	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1
9	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1
10	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1
11	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1
12	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1
13	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1
14	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1
15	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1
16	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1
17	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1
18	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1
19	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1
20	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1
21	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1
22	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1
23	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1

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