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

Wheelabrator Technologies

WIN Waste Innovations — Performance for the Planet

Date 7/30/22

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
7/30/2022	0	60	9.9		170		8		43		80		5				13		310		163.5	
7/30/2022	1	60	10.0		178		15		54		72		5				13		309		166.4	
7/30/2022	2	60	10.0		167		13		52		75		6				13		309		164.4	
7/30/2022	3	60	9.8		172		13		64		79		5		5		13		309	309	166.7	165.2
7/30/2022	4	60	9.7		181		14		68		79		5				13		310		167.7	
7/30/2022	5	60	9.9		183		1		43		97		4				13		296		165.9	
7/30/2022	6	60	10.1		183		9		48		81		3				13		300		167.0	
7/30/2022	7	60	9.9		192		19		49		62		4		4		13	13	318	306	165.4	166.5
7/30/2022	8	60	9.8		193		21		63		67		4				13		319		166.2	
7/30/2022	9	60	9.9		187		48		183		74		5				13		317		167.5	
7/30/2022	10	60	10.0		188		44		174		75		5				13		313		168.6	
7/30/2022	11	60	10.2		186		33		145		77		4		4		13		311	315	166.9	167.3
7/30/2022	12	60	10.0		183		48		226		79		4				13		309		168.3	
7/30/2022	13	60	10.0		180		28		147		81		3				13		310		167.4	
7/30/2022	14	60	10.0		177		20		118		83		3				13		309		166.5	
7/30/2022	15	60	9.8		178		25		130		81		4		3		13	13	309	309	168.0	167.6
7/30/2022	16	60	9.9		185		26		129		80		22				13		309		167.2	
7/30/2022	17	60	9.8		184		21		102		80		3				13		309		168.7	
7/30/2022	18	60	9.8		178		13		86		85		3				13		310		167.3	
7/30/2022	19	60	9.8		181		13		87		86		3		7		13		310	309	168.9	168.0
7/30/2022	20	60	9.9		183		13		71		82		2				13		309		166.9	
7/30/2022	21	60	9.9		170		12		67		83		3				13		309		164.0	
7/30/2022	22	60	9.8		176		9		60		86		3				13		310		166.2	
7/30/2022	23	60	9.7		171		10		59		83		3		3		17	14	309	309	168.3	166.4
Average:					**180**																	
Geometric Mean Average:							**16**				**81**											
Limit:					**≤ 205** **24-HR Block Avg.**		**≤ 29** **24-HR Geometric Mean**		**OR**		**≥ 75%** **Removal Efficiency**				see above **≤ 69** **4-HR Block Average**	**ppmc**	see above **≥ 12** **8-HR. Block Average**	**lb/hr**	see above **≤ 345** **4-HR Block Average**	**°F**	see above **≤ 173** **4-HR Block Average**	**klb/hr**

Status Flags

I - Invalid
B - Bad
C - Calibration
M - Maintenance
F - Offline
P - Purge
T - Out of Control
E - Excluded
^ - Startup
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Date 7/30/22

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
7/30/2022	0	0	20.9	IF	11	IF	2	IF	-44	IBF	0	IBF	0	IF			0		128		0.0	
7/30/2022	1	0	20.9	IF	10	IF	2	IF	-41	IBF	0	IBF	0	IF			0		123		0.0	
7/30/2022	2	0	20.9	IF	9	IF	3	IF	-38	IBF	0	IBF	0	IF			0		119		0.0	
7/30/2022	3	5	20.1	ICF	8	ICF	3	ICF	-36	IBF	0	IBCF	1	ICF	0	ICF	0		113	121	0.0	0.0
7/30/2022	4	12	17.3	IBCF	92	IBCF	55	IBCF	-35	IBF	0	IBCF	544	IBCF			0		112		0.0	
7/30/2022	5	0	20.9	IF	8	IF	4	IF	-54	IBCF	0	IBCF	0	IF			0		108		0.0	
7/30/2022	6	0	20.9	IF	8	IF	4	IF	-35	IBF	0	IBF	0	IF			0		106		0.0	
7/30/2022	7	0	20.9	IF	8	IF	4	IF	-31	IBF	0	IBF	0	IF	136	IBCF	0	0	104	108	0.0	0.0
7/30/2022	8	0	20.9	IF	8	IF	4	IF	-29	IBF	0	IBF	0	IF			0		102		0.0	
7/30/2022	9	0	20.9	IF	7	IF	4	IF	-29	IBF	0	IBF	0	IF			0		101		0.0	
7/30/2022	10	0	20.9	IF	7	IF	4	IF	-26	IBF	0	IBF	0	IF			0		100		0.0	
7/30/2022	11	0	20.9	IF	7	IF	4	IF	-25	IBF	0	IBF	0	IF	0	IF	0		99	101	0.0	0.0
7/30/2022	12	0	20.9	IF	7	IF	4	IF	-24	IBF	0	IBF	0	IF			0		99		0.0	
7/30/2022	13	0	20.9	IF	7	IF	4	IF	-23	IBF	0	IBF	0	IF			0		98		0.0	
7/30/2022	14	0	20.9	IF	7	IF	4	IF	-21	IBF	0	IBF	0	IF			0		97		0.0	
7/30/2022	15	0	20.9	IF	7	IF	4	IF	-21	IBF	0	IBF	0	IF	0	IF	0	0	97	98	0.3	0.1
7/30/2022	16	0	20.9	IF	7	IF	4	IF	-20	IBF	0	IBF	0	IF			0		97		0.3	
7/30/2022	17	0	20.9	IF	7	IF	4	IF	-20	IBF	0	IBF	0	IF			0		97		0.3	
7/30/2022	18	0	20.9	IF	8	IF	4	IF	-19	IBF	0	IBF	0	IF			0		99		0.3	
7/30/2022	19	0	20.9	IF	8	IF	4	IF	-16	IBF	0	IBF	0	IF	0	IF	0		102	99	0.3	0.3
7/30/2022	20	0	20.9	IF	8	IF	4	IF	-17	IBF	0	IBF	0	IF			0		99		0.3	
7/30/2022	21	0	20.9	IF	9	IF	4	IF	-15	IBF	0	IBF	0	IF			0		101		0.2	
7/30/2022	22	0	20.9	IF	9	IF	4	IF	-16	IBF	0	IBF	0	IF			0		109		0.0	
7/30/2022	23	0	20.9	IF	8	IF	4	IF	-15	IBF	0	IBF	0	IF	0	IF	0	0	103	103	0.0	0.1

Average:	12 IBCF			see above	see above	see above
Geometric Mean Average:		4 IBCF	0 IBCF			
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 30-Jul-2022

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	2	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	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

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OPACITY REPORT

Date 30-Jul-2022

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	1	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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