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

Wheelabrator Technologies

WIN Waste Innovations — Performance for the Planet

Date 3/16/22

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
3/16/2022	0	60	10.2		179		22		47		52		5				14		304		165.1	
3/16/2022	1	60	10.3		194		25		61		60		5				13		305		165.5	
3/16/2022	2	60	10.2		190		22		53		59		5				14		304		165.3	
3/16/2022	3	60	10.1		187		23		47		52		4		5		15		304	304	165.6	165.4
3/16/2022	4	60	10.4		181		22		43		50		3				13		304		165.5	
3/16/2022	5	60	10.3		172		13		41		67		3				13		304		164.6	
3/16/2022	6	60	9.9		180		18		42		58		4				13		305		167.5	
3/16/2022	7	60	10.0		182		14		43		67		3		3		14	14	305	304	165.4	165.7
3/16/2022	8	60	10.2		178		18		67		74		4				14		304		165.7	
3/16/2022	9	60	10.1		176		21		78		73		4				14		304		166.4	
3/16/2022	10	60	10.3		192		24		78		70		3				13		305		167.0	
3/16/2022	11	60	10.2		184		20		77		74		3		4		15		304	304	165.6	166.2
3/16/2022	12	60	10.2		181		21		58		64		3				15		304		168.7	
3/16/2022	13	60	10.4		188		19		62		69		2				13		305		166.7	
3/16/2022	14	60	10.3		181		21		63		68		4				14		304		165.8	
3/16/2022	15	60	10.3		189		21		58		63		3		3		12	14	305	304	165.7	166.7
3/16/2022	16	60	10.0		182		18		46		61		5				15		305		164.6	
3/16/2022	17	60	9.8		178		14		52		73		4				14		304		167.8	
3/16/2022	18	60	10.0		172		16		52		69		4				14		304		168.9	
3/16/2022	19	60	10.0		186		19		52		63		4		4		14		305	304	165.6	166.7
3/16/2022	20	60	10.1		189		16		59		73		4				14		304		165.3	
3/16/2022	21	60	10.1		182		19		56		66		5				14		304		164.7	
3/16/2022	22	60	10.0		182		22		62		65		4				14		305		164.9	
3/16/2022	23	60	10.0		179		18		60		70		4		4		15	14	304	304	165.2	165.0

Average:	**183**			see above	see above	see above	see above	see above
Geometric Mean Average:		**19**						
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

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COMPLIANCE SUMMARY REPORT

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WIN Waste Innovations — Performance for the Planet

Date 3/16/22

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
3/16/2022	0	0	20.6	IF	0	IF	6	IF	0	IBF	0	IBF	0	IF			0		55		0.0	
3/16/2022	1	0	20.6	IF	0	IF	6	IF	0	IBF	0	IBF	0	IF			0		54		0.0	
3/16/2022	2	0	20.6	IF	0	IF	6	IF	0	IBF	0	IBF	0	IF			0		52		0.0	
3/16/2022	3	5	19.8	ICF	3	ICF	65	ICF	0	IBF	0	IBCF	11	ICF	3	ICF	0		50	53	0.0	0.0
3/16/2022	4	12	17.0	IBCF	58	IBCF	53	IBCF	0	IBF	0	IBCF	513	IBCF			0		50		0.0	
3/16/2022	5	0	20.6	IF	0	IF	6	IF	141	IBCF	96	IBCF	0	IF			0		49		0.0	
3/16/2022	6	0	20.6	IF	0	IF	6	IF	0	IBF	0	IBF	0	IF			0		48		0.0	
3/16/2022	7	0	20.6	IF	0	IF	6	IF	0	IBMF	0	IBMF	0	IF	128	IBCF	0	0	49	49	0.0	0.0
3/16/2022	8	0	20.6	IF	0	IF	6	IF	0	IBF	0	IBF	0	IF			0		50		0.0	
3/16/2022	9	0	20.6	IF	0	IF	6	IF	0	IBF	0	IBF	0	IF			0		50		0.0	
3/16/2022	10	0	20.6	IF	0	IF	6	IF	0	IBF	0	IBF	0	IF			0		51		0.0	
3/16/2022	11	0	20.6	IF	0	IF	6	IF	0	IBF	0	IBF	0	IF	0	IF	0		53	51	0.0	0.0
3/16/2022	12	0	20.6	IF	0	IF	6	IF	0	IBF	0	IBF	0	IF			0		55		0.0	
3/16/2022	13	0	20.6	IF	0	IF	6	IF	0	IBF	0	IBF	0	IF			0		58		0.0	
3/16/2022	14	0	20.6	IF	0	IF	6	IF	0	IBF	0	IBF	0	IF			0		60		0.0	
3/16/2022	15	0	20.6	IF	0	IF	6	IF	0	IBF	0	IBF	0	IF	0	IF	0	0	62	59	0.0	0.0
3/16/2022	16	40	17.4		98		16		0		0		22				0		83		0.1	
3/16/2022	17	60	17.3		153		1		0		0		11				10		102		0.4	
3/16/2022	18	60	17.2		158		0		0		0		4				14		108		9.5	
3/16/2022	19	60	15.5		121		3		0		0		2		10		14		129	105	28.3	9.6
3/16/2022	20	60	13.5		103		3		0		0		0				13		166		46.0	
3/16/2022	21	60	14.1		109		4		0		0		1				15		194		48.3	
3/16/2022	22	60	16.2		150		12		0		0		6				15		240		51.7	
3/16/2022	23	60	16.4		168		20		0		0		8		4		15	12	245	211	56.4	50.6
Average:					132										see above				see above	see above	see above	
Geometric Mean Average:							2				0											
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

PERFORMANCE FOR THE PLANET

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

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OPACITY REPORT

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

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