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

Wheelabrator Technologies

WIN Waste Innovations — Performance for the Planet

Date 3/15/22

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
3/15/2022	0	60	9.9		192		17		42		60		5				14		309		164.3	
3/15/2022	1	60	10.0		193		20		40		51		4				14		310		164.4	
3/15/2022	2	60	10.0		196		21		46		54		4				16		309		166.7	
3/15/2022	3	60	9.9		197		20		46		57		4		4		13		306	308	167.0	165.6
3/15/2022	4	60	9.8		197		19		49		62		4				13		305		167.8	
3/15/2022	5	60	9.8		197		22		63		65		5				13		304		168.2	
3/15/2022	6	60	9.9		195		21		56		63		5				13		304		165.7	
3/15/2022	7	60	10.1		194		18		39		55		4		4		13	14	304	304	164.8	166.6
3/15/2022	8	60	10.4		191		22		68		68		6				13		304		165.7	
3/15/2022	9	60	10.0		164		5		22		79		6				13		304		169.8	
3/15/2022	10	60	10.5		171		22		46		53		7				13		304		164.8	
3/15/2022	11	60	10.6		191		69		48		0		5		6		13		304	304	167.7	167.0
3/15/2022	12	60	10.4		188		42		37		0		5				14		304		163.2	
3/15/2022	13	60	10.2		195		22		54		59		4				13		305		166.3	
3/15/2022	14	60	10.2		186		16		33		53		6				14		304		162.5	
3/15/2022	15	60	10.0		191		21		64		68		5		5		13	13	304	304	165.8	164.4
3/15/2022	16	60	10.0		191		19		47		59		6				14		305		164.7	
3/15/2022	17	60	10.1		182		16		36		55		5				15		304		162.4	
3/15/2022	18	60	10.3		170		21		35		40		5				13		304		163.0	
3/15/2022	19	60	10.2		184		23		41		45		5		5		13		305	304	164.5	163.6
3/15/2022	20	60	10.1		184		23		36		37		5				15		304		165.3	
3/15/2022	21	60	10.2		186		20		32		38		5				15		304		165.9	
3/15/2022	22	60	10.0		186		21		35		39		5				14		305		165.3	
3/15/2022	23	60	10.1		179		15		38		60		5		5		13	14	304	304	163.4	165.0

Average:	**187**		**53**		see above		see above		see above	
Geometric Mean Average:		**20**								
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 3/15/22

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
3/15/2022	0	0	20.5	IF	0	IF	10	IF	0	IBF	0	IBF	0	IF			0		76		0.0	
3/15/2022	1	0	20.5	IF	0	IF	9	IF	0	IBF	0	IBF	0	IF			0		74		0.0	
3/15/2022	2	0	20.5	IF	0	IF	9	IF	0	IBF	0	IBF	0	IF			0		73		0.0	
3/15/2022	3	5	19.7	ICF	2	ICF	96	ICF	0	IBF	0	IBCF	6	ICF	1	ICF	0		71	73	0.0	0.0
3/15/2022	4	12	16.9	IBCF	59	IBCF	61	IBCF	0	IBF	0	IBCF	496	IBCF			0		71		0.0	
3/15/2022	5	0	20.5	IF	1	IF	9	IF	137	IBCF	94	IBCF	0	IF			0		70		0.0	
3/15/2022	6	0	20.5	IF	1	IF	8	IF	0	IBF	0	IBF	0	IF			0		70		0.0	
3/15/2022	7	0	20.5	IF	2	IF	8	IF	0	IBF	0	IBF	0	IF	124	IBCF	0	0	70	70	0.0	0.0
3/15/2022	8	0	20.5	IF	2	IF	7	IF	0	IBF	0	IBF	0	IF			0		69		0.0	
3/15/2022	9	0	20.5	IF	2	IF	8	IF	0	IBF	0	IBF	0	IF			0		69		0.0	
3/15/2022	10	0	20.5	IF	2	IF	7	IF	0	IBF	0	IBF	0	IF			0		69		0.0	
3/15/2022	11	0	20.5	IF	2	IF	7	IF	0	IBF	0	IBF	0	IF	0	IF	0		69	69	0.0	0.0
3/15/2022	12	0	20.5	IF	2	IF	7	IF	0	IBF	0	IBF	0	IF			0		73		0.0	
3/15/2022	13	0	20.5	IF	1	IF	6	IF	0	IBF	0	IBF	0	IF			0		72		0.0	
3/15/2022	14	0	20.5	IF	1	IF	6	IF	0	IBF	0	IBF	0	IF			0		68		0.0	
3/15/2022	15	0	20.5	IF	1	IF	6	IF	0	IBF	0	IBF	0	IF	0	IF	0	0	69	71	0.0	0.0
3/15/2022	16	0	20.5	IF	1	IF	6	IF	0	IBF	0	IBF	0	IF			0		68		0.0	
3/15/2022	17	0	20.5	IF	1	IF	6	IF	0	IBF	0	IBF	0	IF			0		63		0.0	
3/15/2022	18	0	20.5	IF	1	IF	6	IF	0	IBF	0	IBF	0	IF			0		61		0.0	
3/15/2022	19	0	20.6	IF	0	IF	6	IF	0	IBF	0	IBF	0	IF	0	IF	0		59	63	0.0	0.0
3/15/2022	20	0	20.6	IF	0	IF	6	IF	0	IBF	0	IBF	0	IF			0		57		0.0	
3/15/2022	21	0	20.6	IF	0	IF	6	IF	0	IBF	0	IBF	0	IF			0		57		0.0	
3/15/2022	22	0	20.6	IF	0	IF	6	IF	0	IBF	0	IBF	0	IF			0		55		0.0	
3/15/2022	23	0	20.6	IF	0	IF	6	IF	0	IBF	0	IBF	0	IF	0	IF	0	0	55	56	0.0	0.0

Average:	3 IBCF			see above	see above	see above
Geometric Mean Average:		8 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 15-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		2		2	2	2	2	2	2	1	2	1
17	1		1		1	1	1	1	1	1	2	1	1
18	2		2		2	2	2	2	2	1	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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WHEELABRATOR NORTH ANDOVER
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OPACITY REPORT

PERFORMANCE FOR THE PLANET

Date 15-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	2	IF	2	IF	2	IF	2	IF	2	IF	2
13	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2
14	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2
15	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2
16	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2
17	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2
18	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2
19	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2
20	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2
21	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2
22	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2
23	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2

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