



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



Date 3/23/23

Wheel Plant Wheelabrator North Andover
Unit 1 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
3/23/2023	0	0	20.9	IF	29	IF	8	IF	-988	IBF	0	IBF	0	IF		0		67		0.0		
3/23/2023	1	0	20.9	IF	29	IF	8	IF	-1034	IBF	0	IBF	0	IF		1		67		0.0		
3/23/2023	2	0	20.9	IF	28	IF	8	IF	-948	IBF	0	IBF	0	IF		0		67		0.0		
3/23/2023	3	5	20.1	ICF	26	ICF	7	ICF	-877	IBF	0	IBCF	2	ICF	1	ICF	0	67	67	0.0	0.0	
3/23/2023	4	12	17.4	IBCF	146	IBCF	62	IBCF	-646	IBF	0	IBCF	550	IBCF		0		65		0.0		
3/23/2023	5	0	20.9	IF	25	IF	7	IF	202	IBCF	96	IBCF	0	IF		0		56		0.0		
3/23/2023	6	0	20.9	IF	24	IF	7	IF	-447	IBF	0	IBF	0	IF		0		57		0.0		
3/23/2023	7	0	20.9	IF	25	IF	7	IF	-518	IBF	0	IBF	0	IF	138	IBCF	0	0	59	59	0.0	0.0
3/23/2023	8	0	20.9	IF	26	IF	7	IF	-547	IBF	0	IBF	0	IF		0		59		0.0		
3/23/2023	9	0	20.9	IF	27	IF	7	IF	-559	IBF	0	IBF	0	IF		0		61		0.0		
3/23/2023	10	0	20.9	IF	29	IF	7	IF	-560	IBF	0	IBF	0	IF		2		62		0.0		
3/23/2023	11	0	20.9	IF	30	IF	7	IF	-519	IBF	0	IBF	0	IF	0	IF	1	63	61	0.0	0.0	
3/23/2023	12	0	20.9	IF	27	IF	7	IF	-557	IBF	0	IBF	0	IF		1		64		0.0		
3/23/2023	13	0	20.9	IF	27	IF	7	IF	-600	IBF	0	IBF	0	IF		1		65		0.0		
3/23/2023	14	0	20.9	IF	27	IF	7	IF	-635	IBF	0	IBF	0	IF		1		66		0.0		
3/23/2023	15	0	20.9	IF	29	IF	7	IF	-683	IBF	0	IBF	0	IF	0	IF	1	66	65	0.0	0.0	
3/23/2023	16	0	20.9	IF	30	IF	7	IF	-658	IBF	0	IBF	0	IF		1		66		0.0		
3/23/2023	17	0	20.9	IF	31	IF	7	IF	-649	IBF	0	IBF	0	IF		1		66		0.0		
3/23/2023	18	0	20.9	IF	31	IF	7	IF	-663	IBF	0	IBF	0	IF		1		66		0.0		
3/23/2023	19	0	20.9	IF	32	IF	7	IF	-662	IBF	0	IBF	0	IF	0	IF	1	65	66	0.0	0.0	
3/23/2023	20	0	20.9	IF	33	IF	7	IF	-656	IBF	0	IBF	0	IF		1		65		0.0		
3/23/2023	21	0	20.9	IF	33	IF	7	IF	-658	IBF	0	IBF	0	IF		2		65		0.0		
3/23/2023	22	0	20.9	IF	33	IF	7	IF	-634	IBF	0	IBF	0	IF		1		65		0.0		
3/23/2023	23	0	20.9	IF	31	IF	7	IF	-599	IBF	0	IBF	0	IF	0	IF	1	63	64	0.0	0.0	

Average:
Geometric Mean Average:

Limit:

34	IBCF
8	IBCF
≤ 205	≤ 29
24-HR Block Avg.	24-HR Geometric Mean

OR

0	IBCF
≥ 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
- * - Shutdown



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



Date 3/23/23

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.
3/23/2023	0	60	11.8		197		44		53		17		5			14		310		165.4	
3/23/2023	1	60	11.8		197		32		25		0		5			14		310		166.6	
3/23/2023	2	60	11.8		199		24		24		3		5			14		312		166.0	
3/23/2023	3	60	11.9		197		10		16		38		3	5		13		313	311	165.2	165.8
3/23/2023	4	60	11.7		195		16		19		13		3			14		310		167.0	
3/23/2023	5	60	11.7		196		39		53		27		4			14		310		166.5	
3/23/2023	6	60	11.8		194		13		7		0		3			14		310		165.6	
3/23/2023	7	60	11.6		199		14		8		0		3	3		14	14	310	310	166.3	166.3
3/23/2023	8	60	11.6		197		24		17		0		4			13		310		166.9	
3/23/2023	9	60	11.7		194		24		17		0		3			13		310		167.0	
3/23/2023	10	60	11.3		200		10		3		0		3			14		310		165.8	
3/23/2023	11	60	11.3		196		5		0		0		2	3		13		310	310	166.6	166.6
3/23/2023	12	60	11.2		199		13		7		0		1			13		310		167.3	
3/23/2023	13	60	11.4		197		16		8		0		2			13		310		166.0	
3/23/2023	14	60	11.6		197		17		9		0		2			11		310		167.8	
3/23/2023	15	60	11.2		198		10		0		0		2	2		11	13	310	310	166.4	166.9
3/23/2023	16	60	11.2		199		11		1		0		3			12		310		165.3	
3/23/2023	17	60	11.2		196		9		2		0		2			13		310		166.8	
3/23/2023	18	60	11.1		197		8		2		0		3			12		310		166.6	
3/23/2023	19	60	11.2		198		9		3		0		2	2		12		310	310	166.9	166.4
3/23/2023	20	60	11.3		199		12		10		0		2			13		310		167.1	
3/23/2023	21	60	11.2		196		5		1		0		3			12		310		166.3	
3/23/2023	22	60	11.3		198		7		6		0		2			12		310		165.8	
3/23/2023	23	60	11.5		196		17		17		1		2	2		13	12	310	310	167.2	166.6

Average:
Geometric Mean Average:

Limit:

197	14
≤ 205 24-HR Block Avg.	≤ 29 24-HR Geometric Mean

OR

0
≥ 75% Removal Efficiency

see above
≤ 69 4-HR Block Average ppmc

see above
≥ 12 8-HR. Block Average lb/hr

see above
≤ 345 °F 4-HR Block Average

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
- * - Shutdown



WHEELABRATOR NORTH ANDOVER A WIN-WASTE INNOVATIONS COMPANY OPACITY REPORT



Date 23-Mar-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	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	ICF	23	ICF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	4
7	1	IF	1	IF	1	IF	1	IF	1	IF	2	IF	1	IF	1	IF	1	IF	2	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	2	IF	3	IF	2	IF	1	IF	2	IF	2
10	1	IF	3	IF	2	IF	1	IF	1	IF	1	IF	3	IF	2	IF	1	IF	1	IF	2
11	2	IF	4	IF	4	IF	2	IF	3	IF	3	IF	2	IF	2	IF	2	IF	3	IF	3
12	2	IF	3	IF	2	IF	1	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2	IF	2
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	2	IF	1	IF	1
15	1	IF	2	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

Status Flags

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



WHEELABRATOR NORTH ANDOVER A WIN-WASTE INNOVATIONS COMPANY OPACITY REPORT



Date 23-Mar-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	2	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1
2	1	1	2	1	1	1	1	1	2	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	IBC	5	IBC	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	2	1	1	1	2	1
17	1	1	1	1	1	1	1	1	1	1	1
18	1	1	1	1	1	1	1	2	2	1	1
19	2	2	1	2	1	2	2	1	2	2	2
20	2	2	2	2	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 C - Calibration F - Offline T - Out of Control ^ - Startup
 B - Bad M - Maintenance P - Purge E - Excluded * - Shutdown