



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



Date 7/29/22

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
7/29/2022	0	0	20.5	IBF	60	IBF	3	IBF	225	IBF	99	IBF	161	IBF			0		283		7.3	
7/29/2022	1	0	18.8	IF	914	IF	125	IF	76	IBF	0	IBF	3426	IF			0		311		1.8	
7/29/2022	2	0	19.0	IF	981	IF	159	IF	117	IBF	0	IBF	3717	IF			0		307		0.0	
7/29/2022	3	5	18.6	ICF	753	ICF	106	ICF	141	IBF	25	IBCF	2555	ICF	2465	IBCF	0		247	287	0.0	2.3
7/29/2022	4	12	16.3	IBCF	350	IBCF	80	IBCF	172	IBF	53	IBCF	1432	IBCF			0		250		0.0	
7/29/2022	5	0	19.7	IF	1305	IF	185	IF	176	IBCF	0	IBCF	4892	IF			0		227		15.5	
7/29/2022	6	0	19.9	IF	1515	IF	141	IF	181	IBF	22	IBF	5020	IF			0		246		14.2	
7/29/2022	7	0	20.1	IF	107	IF	10	IF	238	IBF	96	IBF	305	IF	2912	IBCF	0	0	260	246	11.5	10.3
7/29/2022	8	10	16.2	IF	362	IF	17	IF	32	IBF	47	IBF	182	IF			0		221		8.2	
7/29/2022	9	60	15.4		308		13		25		48		12				13		231		17.5	
7/29/2022	10	60	12.6		210		7		18		59		1				13		257		36.1	
7/29/2022	11	60	9.9		153		7		60		89		87	33		13		291	260	77.1	43.5	
7/29/2022	12	60	8.3		103		24		107		78		65				14		300		124.8	
7/29/2022	13	60	9.1		106		54		135		60		677				13		287		137.9	
7/29/2022	14	60	9.8		136		71		79		9		39				13		321		142.5	
7/29/2022	15	60	10.4		144		6		69		92		39	205		13	13	311	305	138.3	135.9	
7/29/2022	16	60	10.3		191		19		52		64		8				13		311		162.3	
7/29/2022	17	60	10.3		181		42		54		22		8				13		310		157.2	
7/29/2022	18	60	10.4		186		45		63		29		7				13		309		161.3	
7/29/2022	19	60	10.3		185		15		55		72		7	7		13		309	310	156.5	159.3	
7/29/2022	20	60	10.0		192		28		74		62		5				13		310		162.3	
7/29/2022	21	60	9.8		190		24		77		69		5				13		309		167.0	
7/29/2022	22	60	9.8		181		18		71		75		4				13		310		166.3	
7/29/2022	23	60	9.9		183		20		62		67		5	5		13	13	309	309	163.0	164.6	

Average: Geometric Mean Average:	177	20	<b>OR</b>	66	see above	see above	see above	see above
Limit:	≤ 205 24-HR Block Avg.	≤ 29 24-HR Geometric Mean		≥ 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



Date 7/29/22

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
7/29/2022	0	60	21.1	IB	0	IB	0	IB	140		100	IB	0	IB		14		309		163.6		
7/29/2022	1	36	20.3	IBF	14	IBF	4	IBF	66		93	IBF	242	IBF		14		308		161.3		
7/29/2022	2	0	19.1	IF	309	IF	95	IF	58	IBF	0	IBF	4796	IF		0		281		0.0		
7/29/2022	3	5	18.3	ICF	220	ICF	53	ICF	51	IBF	0	IBCF	2609	ICF	1912	IBCF	0	265	309	0.0	162.4	
7/29/2022	4	12	15.8	IBCF	143	IBCF	50	IBCF	52	IBF	3	IBCF	1169	IBCF		0		265		0.0		
7/29/2022	5	0	18.7	IF	318	IF	77	IF	47	IBCF	0	IBCF	2221	IF		0		274		0.0		
7/29/2022	6	0	18.6	IF	317	IF	73	IF	37	IBF	0	IBF	2406	IF		0		286		0.0		
7/29/2022	7	0	18.7	IF	331	IF	73	IF	37	IBF	0	IBF	2168	IF	1991	IBCF	0	14	294	280	0.0	0.0
7/29/2022	8	3	17.9	IF	351	IF	64	IF	29	IBF	0	IBF	1847	IF		0		299		0.0		
7/29/2022	9	0	19.1	IF	405	IF	113	IF	46	IBMF	0	IBMF	3355	IF		0		299		1.0		
7/29/2022	10	0	19.3	IF	398	IF	119	IF	100	IBMF	0	IBMF	4121	IF		0		247		0.1		
7/29/2022	11	0	20.0	IF	538	IF	113	IF	157	IBF	28	IBF	5133	IF	3614	IF	0	212	264	0.0	0.3	
7/29/2022	12	0	20.0	IF	35	IF	7	IF	193	IBF	96	IBF	302	IF		0		202		0.0		
7/29/2022	13	0	20.0	IF	525	IF	133	IF	198	IBF	33	IBF	4645	IF		0		210		0.0		
7/29/2022	14	0	20.5	IF	20	IF	4	IF	438	IBF	99	IBF	183	IF		0		206		0.0		
7/29/2022	15	0	20.8	IF	14	IF	2	IF	-218	IBF	0	IBF	48	IF	1295	IF	0	0	201	205	0.0	0.0
7/29/2022	16	0	20.8	IF	11	IF	3	IF	-115	IBF	0	IBF	10	IF		0		202		0.0		
7/29/2022	17	0	20.8	IF	9	IF	3	IF	-82	IBF	0	IBF	3	IF		0		183		0.0		
7/29/2022	18	0	20.8	IF	9	IF	3	IF	-71	IBF	0	IBF	1	IF		0		167		0.0		
7/29/2022	19	0	20.8	IF	10	IF	3	IF	-63	IBF	0	IBF	0	IF	3	IF	0	158	178	0.0	0.0	
7/29/2022	20	0	20.8	IF	11	IF	2	IF	-57	IBF	0	IBF	0	IF		0		153		0.0		
7/29/2022	21	0	20.9	IF	11	IF	2	IF	-56	IBF	0	IBF	0	IF		0		147		0.0		
7/29/2022	22	0	20.8	IF	12	IF	2	IF	-52	IBF	0	IBF	0	IF		0		141		0.0		
7/29/2022	23	0	20.9	IF	11	IF	2	IF	-45	IBF	0	IBF	0	IF	0	IF	0	0	133	144	0.0	0.0

Average:  
Geometric Mean Average:

Limit:

168 IBCF	12 IBCF	0 IBCMF
≤ 205 24-HR Block Avg.	≤ 29 24-HR Geometric Mean	≥ 75% Removal Efficiency

OR

see above
≤ 69 ppmc 4-HR Block Average

see above	see above	see above
≥ 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 29-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	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	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		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

**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 29-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		1		1		1		1		1		1		1		1		1		1	1
1	1		1		1		1	I	1		1		1	IF	1	IF	1	IF	1	IF	1	1
2	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	1
3	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	1
4	1		1		1	IF	1	IF	0	IF	0	IF	0	IF	0	IF	0	IF	0	IF	0	0
5	0	IF	0	IF	1	IF	0	IF	0	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	0
6	2	BCF	23	BCF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	3
7	0	IF	0	IF	0	IF	0	IF	0	IF	1	IF	0	IF	0	IF	0	IF	1	IF	1	0
8	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	1
9	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	1
10	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	1
11	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	1
12	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	1
13	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	1
14	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	1
15	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	1
16	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	1
17	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	1
18	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	1
19	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	1
20	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	1
21	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	1
22	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	1
23	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	IF	1	1

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 B - Bad                            M - Maintenance                      P - Purge                      E - Excluded                      \* - Shutdown