

IGA/Finance Joint Meeting

June 26

7:30pm

Harvey Hearing Room & Zoom

**Present:** Councilors Belcher (HB), Swope (SS), Aiello (JA), DaRos (JD)

**Absent:** Councilor ~~Minutes~~ **Minutes** are followed by supplementary information provided

**Members of the Public:** none **by the MWRA**

7:33pm – Call to Order by HB

Motion by SS to approve two prior sets of meeting minutes (04APR24 & 09JUN24)

- 2<sup>nd</sup> by JA
- Unanimously Approved

• **MWRA Discussion**

*\*Please see included document that contains a list of questions that these minutes refer to\**

- List of questions developed by JA, sent to MWRA by SS
- JA: Does MWRA have air quality monitoring in Winthrop?
- HB: Not sure, but airport proximity may impact results of any monitoring; can use existing research on impact of treatment plants on air quality paired with vehicle statistics and known air quality impacts
- SS: What type of entity is MWRA?
  - o JA: An authority established by legislature; consists of various appointees; operates independent of the state; should be self-sustaining; subject to rules/regs of emissions, environmental considerations, etc.
- JA: We should connect with Wig Zamore from MCAC – very up to date on data regarding particulate matter, etc.
- SS: MWRA reported only 2 odor complaints in 2023
- QUESTION: Can we get breakdown of car vs. truck traffic to Deer Island? Amount of wear and tear/pollutants is different for each
  - o JA: Need to look at emissions data for employee car trips on an average week; asked MWRA about their capital plan to see if there are major projects planned that would increase traffic
- SS: What is there is a fire on one of the delivery trucks? Can we require additional insurance to cover potential damage?

- HB: That is a main concern of my constituents – we likely can't require additional insurance, but we should know what the financial management approach would be based on the MWRA's contracts with the trucking companies
- JA: As part of their risk management mitigation, we could ask for a significant amount towards Winthrop Fire Department – funds towards the fire house or a truck
- SA: What should Winthrop's main negotiation strategy be? What is our biggest need?
  - JA: water mains and sewer pipes under our roadways should be of interest to MWRA, as climate change continues to compromise our roadways and the pipes below them, access to Deer Island may become compromised
  - JA: DPW Director Calla should be contacted about urgent needs
- JD: Constituents have mentioned delivery trucks that are NOT being escorted by WPD per agreement
- HB: Response from MWRA mentions that payment for dog officer is "paid outside of the MOU" – we need a full list of any payments or services MWRA provides Winthrop that are not included in the MOU – anything outside of the MOU is at risk of being taken away
- SS: Are water rates the same for all MWRA Communities?
  - JA: Yes
- JA: Need to look at stream of payments year by year – determine what payments would be in 2024 when adjusted for inflation
  - HB: Will do data analysis
- JA: Need to discuss with Paul Flanagan, our representative on the MWRA Board; State delegation will be important in securing fair mitigation agreement
- JA: Need to propose that the Council fill our vacant MWRA CAC seat ASAP
- JD: Mitigation needs to have heavy focus on climate/resiliency

**Actions Items:**

- SS to contact Director Calla
- JD to discuss capital plan & being an Environmental Justice community with Manager Marino
- HB/JA: to meet with WPD Chief and WFD Chief
- JA: Invite Paul Flanagan to upcoming meeting
- SS: Send follow up questions to MWRA
- HB: do inflation analysis
- JA: Reach out to Wig Zamore

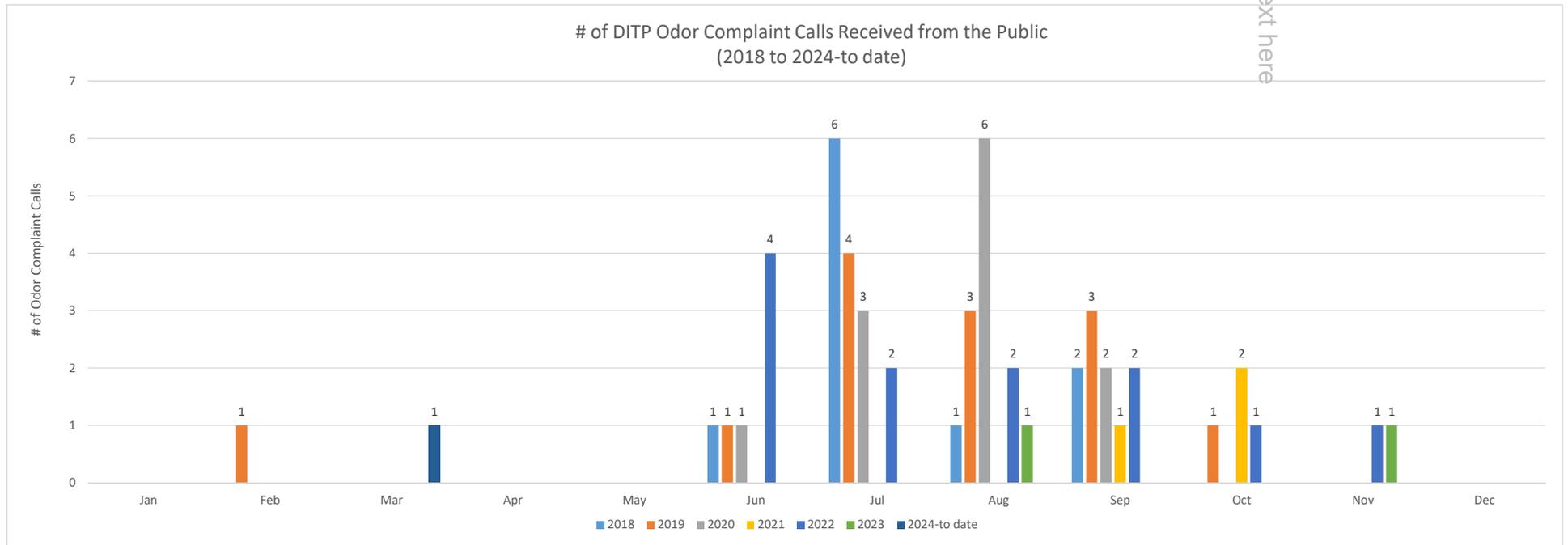
**Next Meeting:** Friday, July 12<sup>th</sup> at Noon

Meeting adjourned at 8:59pm

**Minutes are followed by supplementary information  
provided by the MWRA.**

Month	Summary of DITP Odor Complaints Calls from the Public (2018 to 2024-to date)						
	Number of Odor Complaint Calls						
	2018	2019	2020	2021	2022	2023	2024-to date
Jan	0	0	0	0	0	0	0
Feb	0	1	0	0	0	0	0
Mar	0	0	0	0	0	0	1
Apr	0	0	0	0	0	0	0
May	0	0	0	0	0	0	
Jun	1	1	1	0	4	0	
Jul	6	4	3	0	2	0	
Aug	1	3	6	0	2	1	
Sep	2	3	2	1	2	0	
Oct	0	1	0	2	1	0	
Nov	0	0	0	0	1	1	
Dec	0	0	0	0	0	0	
<b>Total #Calls</b>	<b>10</b>	<b>13</b>	<b>12</b>	<b>3</b>	<b>12</b>	<b>2</b>	<b>1</b>

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**MWRA Deer Island Power Plant Monthly Report**  
**CTG 1 and CTG 2**

**From: 01-Dec-19**  
**To: 31-Dec-19**

DAY	Daily Hours	Daily Fuel gal	365-DAY ROLLING TOTAL (Both Units Combined)						
			EMISSIONS, TONS						
			Hours	Fuel gal	NOx	PM	VOC	CO	SO2
1-Dec-19	0.00	0	690.1	742,121	6.190	1.102	0.065	1.148	0.054
2-Dec-19	0.00	0	690.1	742,121	6.190	1.102	0.065	1.148	0.054
3-Dec-19	0.00	0	690.1	742,121	6.190	1.102	0.065	1.148	0.054
4-Dec-19	2.10	2,299	692.2	744,420	6.209	1.106	0.065	1.152	0.054
5-Dec-19	0.00	0	692.2	744,420	6.209	1.106	0.065	1.152	0.054
6-Dec-19	0.00	0	692.2	744,420	6.209	1.106	0.065	1.152	0.054
7-Dec-19	0.00	0	692.2	744,420	6.209	1.106	0.065	1.152	0.054
8-Dec-19	0.00	0	692.2	744,420	6.209	1.106	0.065	1.152	0.054
9-Dec-19	0.00	0	692.2	744,420	6.209	1.106	0.065	1.152	0.054
10-Dec-19	0.00	0	692.2	744,420	6.209	1.106	0.065	1.152	0.054
11-Dec-19	0.00	0	692.2	744,420	6.209	1.106	0.065	1.152	0.054
12-Dec-19	0.00	0	692.2	744,420	6.209	1.106	0.065	1.152	0.054
13-Dec-19	0.48	526	692.6	744,946	6.214	1.106	0.065	1.153	0.054
14-Dec-19	0.00	0	692.6	744,946	6.214	1.106	0.065	1.153	0.054
15-Dec-19	0.00	0	692.6	744,946	6.214	1.106	0.065	1.153	0.054
16-Dec-19	0.00	0	692.6	744,946	6.214	1.106	0.065	1.153	0.054
17-Dec-19	0.00	0	690.7	742,626	6.194	1.103	0.065	1.149	0.054
18-Dec-19	0.00	0	690.7	742,626	6.194	1.103	0.065	1.149	0.054
19-Dec-19	0.00	0	690.7	742,626	6.194	1.103	0.065	1.149	0.054
20-Dec-19	0.00	0	690.7	742,626	6.194	1.103	0.065	1.149	0.054
21-Dec-19	0.00	0	690.7	742,626	6.194	1.103	0.065	1.149	0.054
22-Dec-19	0.00	0	690.7	742,626	6.194	1.103	0.065	1.149	0.054
23-Dec-19	0.00	0	690.7	742,626	6.194	1.103	0.065	1.149	0.054
24-Dec-19	0.00	0	690.7	742,626	6.194	1.103	0.065	1.149	0.054
25-Dec-19	0.00	0	690.7	742,626	6.194	1.103	0.065	1.149	0.054
26-Dec-19	0.00	0	690.7	742,626	6.194	1.103	0.065	1.149	0.054
27-Dec-19	0.00	0	690.7	742,626	6.194	1.103	0.065	1.149	0.054
28-Dec-19	0.00	0	690.7	742,626	6.194	1.103	0.065	1.149	0.054
29-Dec-19	0.00	0	690.7	742,626	6.194	1.103	0.065	1.149	0.054
30-Dec-19	0.00	0	690.7	742,626	6.194	1.103	0.065	1.149	0.054
31-Dec-19	0.00	0	690.7	742,626	6.194	1.103	0.065	1.149	0.054
<b>Permit Limits - 12 month rolling average</b>			<b>3,881,000</b>	<b>61.4</b>	<b>10.3</b>	<b>2.0</b>	<b>17.0</b>	<b>13.8</b>	

**Massachusetts Water Resources Authority  
Deer Island Power Plant Monthly Report**

**CP-301 GAS FLARES**

**Dec-19**

DAY	GAS FLARE Minutes are followed by the MWRA kscf	365 DAY TOTAL kscf	Rolling 365 Day information provided				
			NOx tpy	PM tpy	VOC tpy	CO tpy	SO2 tpy
30-Nov-19	0.0	49,614	0.87	0.12	0.04	0.34	1.94
1-Dec-19	0.0	49,614	0.87	0.12	0.04	0.34	1.94
2-Dec-19	0.0	49,614	0.87	0.12	0.04	0.34	1.94
3-Dec-19	0.0	49,614	0.87	0.12	0.04	0.34	1.94
4-Dec-19	0.0	49,614	0.87	0.12	0.04	0.34	1.94
5-Dec-19	0.0	49,614	0.87	0.12	0.04	0.34	1.94
6-Dec-19	0.0	49,614	0.87	0.12	0.04	0.34	1.94
7-Dec-19	0.0	49,614	0.87	0.12	0.04	0.34	1.94
8-Dec-19	0.0	49,614	0.87	0.12	0.04	0.34	1.94
9-Dec-19	0.0	49,614	0.87	0.12	0.04	0.34	1.94
10-Dec-19	0.0	49,614	0.87	0.12	0.04	0.34	1.94
11-Dec-19	0.0	49,614	0.87	0.12	0.04	0.34	1.94
12-Dec-19	0.0	49,614	0.87	0.12	0.04	0.34	1.94
13-Dec-19	0.0	49,614	0.87	0.12	0.04	0.34	1.94
14-Dec-19	3.4	49,617	0.87	0.12	0.04	0.34	1.94
15-Dec-19	222.3	49,840	0.88	0.12	0.04	0.35	1.95
16-Dec-19	0.0	49,676	0.87	0.12	0.04	0.35	1.94
17-Dec-19	0.0	49,533	0.87	0.12	0.04	0.34	1.93
18-Dec-19	0.0	49,533	0.87	0.12	0.04	0.34	1.93
19-Dec-19	0.0	49,533	0.87	0.12	0.04	0.34	1.93
20-Dec-19	0.0	49,533	0.87	0.12	0.04	0.34	1.93
21-Dec-19	0.0	49,533	0.87	0.12	0.04	0.34	1.93
22-Dec-19	0.0	49,533	0.87	0.12	0.04	0.34	1.93
23-Dec-19	0.0	49,533	0.87	0.12	0.04	0.34	1.93
24-Dec-19	0.0	49,533	0.87	0.12	0.04	0.34	1.93
25-Dec-19	0.0	49,533	0.87	0.12	0.04	0.34	1.93
26-Dec-19	0.0	49,533	0.87	0.12	0.04	0.34	1.93
27-Dec-19	0.0	49,533	0.87	0.12	0.04	0.34	1.93
28-Dec-19	0.0	49,533	0.87	0.12	0.04	0.34	1.93
29-Dec-19	0.0	49,533	0.87	0.12	0.04	0.34	1.93
30-Dec-19	0.0	49,533	0.87	0.12	0.04	0.34	1.93
31-Dec-19	0.0	49,533	0.87	0.12	0.04	0.34	1.93

# MWRA Deer Island Power Plant Monthly Report

Dec-19

## ZURNS Boilers, Units 101 & 201

Day	No. 2 Oil kgal	D. G. kscf	365-Rolling Total		
			Hours Operating	PM tpy	VOC tpy
30-Nov-19	0.357	4727	8,820.8	2.769	1.605
01-Dec-19	3.205	4020	8,820.8	2.769	1.605
02-Dec-19	2.129	4223	8,820.8	2.768	1.604
03-Dec-19	0.000	4943	8,820.8	2.767	1.603
04-Dec-19	0.000	4752	8,820.8	2.766	1.603
05-Dec-19	0.000	4842	8,820.8	2.767	1.603
06-Dec-19	0.000	5134	8,820.8	2.767	1.604
07-Dec-19	0.000	5247	8,820.8	2.767	1.604
08-Dec-19	0.000	5589	8,820.8	2.767	1.604
09-Dec-19	0.000	4798	8,820.8	2.766	1.603
10-Dec-19	0.000	5204	8,820.8	2.766	1.603
11-Dec-19	0.000	5524	8,820.8	2.768	1.605
12-Dec-19	0.000	4824	8,820.8	2.770	1.607
13-Dec-19	0.000	4949	8,820.3	2.770	1.607
14-Dec-19	0.000	5097	8,812.0	2.769	1.607
15-Dec-19	0.000	5899	8,812.0	2.770	1.607
16-Dec-19	0.000	5041	8,812.0	2.769	1.607
17-Dec-19	0.000	4376	8,812.0	2.767	1.605
18-Dec-19	2.940	4108	8,812.8	2.766	1.604
19-Dec-19	0.115	5218	8,813.5	2.767	1.605
20-Dec-19	0.786	4889	8,813.5	2.767	1.605
21-Dec-19	0.000	5492	8,804.0	2.767	1.605
22-Dec-19	0.000	5376	8,804.0	2.766	1.605
23-Dec-19	0.000	4516	8,804.0	2.764	1.604
24-Dec-19	0.000	4324	8,804.3	2.763	1.604
25-Dec-19	0.000	4447	8,804.3	2.762	1.603
26-Dec-19	0.000	4713	8,804.3	2.762	1.604
27-Dec-19	0.000	4152	8,804.3	2.761	1.604
28-Dec-19	0.000	4131	8,804.3	2.759	1.604
29-Dec-19	0.000	4624	8,804.3	2.758	1.603
30-Dec-19	0.000	4464	8,804.3	2.757	1.603
31-Dec-19	0.000	5842	8,804.3	2.758	1.604

Date: Jan 08 2020  
Time: 09:20



Begin: Dec 01, 2019 00:00  
End: Dec 31, 2019 23:59

MWRA  
Deer Island, MA

\*\*\*\* MULTI-PARAMETER SUMMARY REPORT \*\*\*\*

365 Day Emissions - Combined Boilers

Start	365 Day Total SO <sub>2</sub> tons	365 Day Total NOX tons	365 Day Total CO tons	365 Day Total HI mmBtu
12/01/19	4.10125	13.54825	1.13898	1081473.750
12/02/19	4.09466	13.54774	1.14006	1081176.750
12/03/19	4.09048	13.53874	1.14040	1080861.000
12/04/19	4.08539	13.52706	1.14916	1080623.125
12/05/19	4.08481	13.50429	1.15214	1080642.750
12/06/19	4.08177	13.49302	1.15624	1080833.500
12/07/19	4.07510	13.48781	1.15755	1080777.250
12/08/19	4.06936	13.48095	1.15815	1080761.125
12/09/19	4.05753	13.46517	1.15970	1080327.250
12/10/19	4.05044	13.45436	1.15997	1080356.500
12/11/19	4.05028	13.44083	1.16142	1080926.625
12/12/19	4.05289	13.43057	1.13761	1081391.750
12/13/19	4.04463	13.42294	1.13562	1081415.000
12/14/19	4.04024	13.40732	1.11082	1081160.875
12/15/19	4.03677	13.41401	1.10972	1081299.375
12/16/19	4.02984	13.41795	1.10870	1081053.375
12/17/19	4.02045	13.41176	1.10871	1080186.250
12/18/19	4.01442	13.42714	1.11007	1079997.250
12/19/19	4.00740	13.43148	1.11466	1080204.500
12/20/19	4.00403	13.42051	1.11555	1080080.625
12/21/19	3.99060	13.43065	1.07293	1080007.500
12/22/19	3.98373	13.43241	1.07191	1079856.500
12/23/19	3.97749	13.42159	1.07117	1079133.000
12/24/19	3.97316	13.42708	1.07064	1078427.750
12/25/19	3.96698	13.41075	1.06256	1077921.625
12/26/19	3.96328	13.39043	1.05959	1077694.250
12/27/19	3.96095	13.36373	1.05976	1077158.000
12/28/19	3.95840	13.34181	1.05702	1076515.875
12/29/19	3.95127	13.32764	1.06158	1076049.875
12/30/19	3.94371	13.32248	1.06351	1075469.625
12/31/19	3.94625	13.31150	1.05756	1075759.500

**Massachusetts Water Resources Authority  
Deer Island Treatment Plant  
Pumping Odor Control (CP102) - Stack # 1  
DEP Conditional Permit No: MBR-91-IND-007A**

Month-Year	Total Reduced Sulfur (TRS)		Total Non-Methane Hydrocarbons (TNMHC)		# Exceedances (>1.0 ppmv TRS)	Notes
	12-Month Rolling		12-Month Rolling			
	Tons	Total	Tons	Total		
Jan-19	0.000	0.005	0.015	0.145	0	
Feb-19	0.000	0.005	0.009	0.142	0	
Mar-19	0.000	0.005	0.015	0.147	0	
Apr-19	0.000	0.005	0.014	0.152	0	
May-19	0.000	0.005	0.024	0.163	0	
Jun-19	0.000	0.005	0.013	0.166	0	
Jul-19	0.000	0.005	0.009	0.166	0	
Aug-19	0.000	0.004	0.009	0.159	0	
Sep-19	0.000	0.004	0.009	0.158	0	
Oct-19	0.000	0.004	0.009	0.155	0	
Nov-19	0.000	0.004	0.010	0.155	0	
Dec-19	0.000	0.004	0.009	0.145	0	
<b>Emissions Limitations:</b>	0.040	0.230	0.800	5.400	1.0 ppmv TRS	
<b>Current Detection Limits, ppm v:</b>	0.01		0.20			

**Massachusetts Water Resources Authority**  
**Deer Island Treatment Plant**  
 Primary A-D, East/West Grit Odor Control (CP103) - Stack # 2 & 3  
 DEP Conditional Permit No: MBR-91-IND-007B

Month-Year	Total Reduced Sulfur (TRS)		Total Non-Methane Hydrocarbons (TNMHC)		# Exceedances (>1.0 ppmv TRS)	Notes
	12-Month Rolling		12-Month Rolling			
	Tons	Total	Tons	Total		
Jan-19	0.003	0.048	0.074	1.300	0	
Feb-19	0.003	0.047	0.068	1.301	0	
Mar-19	0.003	0.047	0.092	1.295	0	
Apr-19	0.003	0.047	0.079	1.301	0	
May-19	0.003	0.043	0.094	1.271	0	
Jun-19	0.003	0.043	0.105	1.251	0	
Jul-19	0.003	0.040	0.095	1.208	0	
Aug-19	0.003	0.039	0.122	1.210	0	
Sep-19	0.007	0.040	0.091	1.128	0	
Oct-19	0.004	0.041	0.090	1.092	0	
Nov-19	0.004	0.042	0.090	1.085	0	
Dec-19	0.003	0.042	0.150	1.150	0	
<b>Emissions Limitations:</b>	0.500	4.000	5.600	34.000	1.0 ppmv TRS	
<b>Current Detection Limits, ppm v:</b>	0.01		0.20			

**Massachusetts Water Resources Authority**  
**Deer Island Treatment Plant**  
 Secondary Odor Control (CP202) - Stack # 5  
 DEP Conditional Permit No: MBR-92-IND-056

Month-Year	Total Reduced Sulfur (TRS)		Total Non-Methane Hydrocarbons (TNMHC)		# Exceedances (>1.0 ppmv TRS)	Notes
	12-Month Rolling		12-Month Rolling			
	Tons	Total	Tons	Total		
Jan-19	0.000	0.005	0.012	0.209	0	
Feb-19	0.000	0.005	0.010	0.208	0	
Mar-19	0.000	0.005	0.012	0.205	0	
Apr-19	0.000	0.005	0.015	0.202	0	
May-19	0.000	0.005	0.012	0.185	0	
Jun-19	0.000	0.005	0.021	0.187	0	
Jul-19	0.000	0.005	0.012	0.166	0	
Aug-19	0.000	0.005	0.017	0.159	0	
Sep-19	0.000	0.005	0.011	0.155	0	
Oct-19	0.000	0.005	0.014	0.158	0	
Nov-19	0.000	0.005	0.012	0.159	0	
Dec-19	0.000	0.005	0.035	0.183	0	
<b>Emissions Limitations:</b>	0.1250	1.0000	0.3600	2.2000	1.0 ppmv TRS	
<b>Current Detection Limits, ppm v:</b>	0.01		0.20			

**Massachusetts Water Resources Authority  
Deer Island Treatment Plant**

Primary Residuals Odor Control (CP301) - Stack # 4 and Secondary Residuals Odor Control (CP303) - Stack # 4  
DEP Conditional Permit No: MBR-91-IND-007C and MBR-91-IND-007D

Month-Year	Total Reduced Sulfur (TRS)		Total Non-Methane Hydrocarbons (TNMHC)		Ammonia (NH3)		# Exceedances (>1.0 ppmv TRS)	Notes
	Tons	12-Month Rolling Total	Tons	12-Month Rolling Total	Tons	12-Month Rolling Total		
	Jan-19	0.002	0.039	0.047	0.759	0.022	0.276	0
Feb-19	0.002	0.033	0.042	0.755	0.021	0.276	0	
Mar-19	0.002	0.033	0.046	0.755	0.023	0.276	0	
Apr-19	0.002	0.032	0.045	0.753	0.022	0.275	0	
May-19	0.002	0.029	0.047	0.725	0.024	0.276	0	
Jun-19	0.002	0.028	0.052	0.692	0.023	0.276	0	
Jul-19	0.002	0.027	0.053	0.676	0.024	0.276	0	
Aug-19	0.002	0.026	0.051	0.652	0.024	0.276	0	
Sep-19	0.004	0.025	0.046	0.604	0.023	0.276	0	
Oct-19	0.004	0.027	0.071	0.598	0.024	0.276	0	
Nov-19	0.003	0.028	0.046	0.595	0.023	0.276	0	
Dec-19	0.002	0.028	0.047	0.594	0.023	0.275	0	
<b>Emissions Limitations:</b>	0.250	2.000	3.800	23.300		verify <1 tpy	1.0 ppmv TRS	
<b>Current Detection Limits, ppm v:</b>	0.01		0.20		0.25			

**MWRA Deer Island Power Plant Monthly Report**  
**CTG 1 and CTG 2**

**From: 01-Dec-20**  
**To: 31-Dec-20**

DAY	Daily Hours	Daily Fuel gal	365-DAY ROLLING TOTAL (Both Units Combined)						
			EMISSIONS, TONS						
			Hours	Fuel gal	NOx	PM	VOC	CO	SO2
1-Dec-20	0.00	0	191.1	184,700	1.523	0.283	0.011	0.287	0.012
2-Dec-20	0.00	0	191.1	184,700	1.523	0.283	0.011	0.287	0.012
3-Dec-20	0.00	0	189.0	182,401	1.505	0.279	0.011	0.283	0.012
4-Dec-20	0.77	833	189.8	183,234	1.512	0.281	0.011	0.285	0.012
5-Dec-20	0.00	0	189.8	183,234	1.512	0.281	0.011	0.285	0.012
6-Dec-20	0.00	0	189.8	183,234	1.512	0.281	0.011	0.285	0.012
7-Dec-20	0.00	0	189.8	183,234	1.512	0.281	0.011	0.285	0.012
8-Dec-20	0.00	0	189.8	183,234	1.512	0.281	0.011	0.285	0.012
9-Dec-20	0.00	0	189.8	183,234	1.512	0.281	0.011	0.285	0.012
10-Dec-20	0.23	67	190.0	183,301	1.512	0.281	0.011	0.285	0.012
11-Dec-20	0.94	1,081	191.0	184,382	1.521	0.282	0.011	0.287	0.012
12-Dec-20	0.00	0	190.5	183,856	1.517	0.282	0.011	0.286	0.012
13-Dec-20	0.00	0	190.5	183,856	1.517	0.282	0.011	0.286	0.012
14-Dec-20	0.00	0	190.5	183,856	1.517	0.282	0.011	0.286	0.012
15-Dec-20	0.00	0	190.5	183,856	1.517	0.282	0.011	0.286	0.012
16-Dec-20	0.00	0	190.5	183,856	1.517	0.282	0.011	0.286	0.012
17-Dec-20	0.00	0	190.5	183,856	1.517	0.282	0.011	0.286	0.012
18-Dec-20	2.39	2,580	192.9	186,436	1.538	0.286	0.011	0.290	0.012
19-Dec-20	0.00	0	192.9	186,436	1.538	0.286	0.011	0.290	0.012
20-Dec-20	0.00	0	192.9	186,436	1.538	0.286	0.011	0.290	0.012
21-Dec-20	0.00	0	192.9	186,436	1.538	0.286	0.011	0.290	0.012
22-Dec-20	0.00	0	192.9	186,436	1.538	0.286	0.011	0.290	0.012
23-Dec-20	0.00	0	192.9	186,436	1.538	0.286	0.011	0.290	0.012
24-Dec-20	0.00	0	192.9	186,436	1.538	0.286	0.011	0.290	0.012
25-Dec-20	10.27	12,380	203.2	198,816	1.643	0.302	0.013	0.308	0.013
26-Dec-20	24.00	24,909	227.2	223,725	1.855	0.335	0.018	0.346	0.014
27-Dec-20	5.38	5,356	232.5	229,081	1.900	0.342	0.019	0.354	0.015
28-Dec-20	0.00	0	232.5	229,081	1.900	0.342	0.019	0.354	0.015
29-Dec-20	0.00	0	232.5	229,081	1.900	0.342	0.019	0.354	0.015
30-Dec-20	0.00	0	232.5	229,081	1.900	0.342	0.019	0.354	0.015
31-Dec-20	0.00	0	232.5	229,081	1.900	0.342	0.019	0.354	0.015
<b>Permit Limits - 12 month rolling average</b>			<b>3,881,000</b>	<b>61.4</b>	<b>10.3</b>	<b>2.0</b>	<b>17.0</b>	<b>13.8</b>	

**Massachusetts Water Resources Authority  
Deer Island Power Plant Monthly Report**

**CP-301 GAS FLARES**

**Dec-20**

DAY	GAS FLARE kscf	365 DAY TOTAL kscf	<u>Rolling 365 Day</u>				
			NOx tpy	PM tpy	VOC tpy	CO tpy	SO2 tpy
30-Nov-20	0.0	23,281	0.41	0.06	0.02	0.16	0.91
1-Dec-20	0.0	23,281	0.41	0.06	0.02	0.16	0.91
2-Dec-20	0.0	23,281	0.41	0.06	0.02	0.16	0.91
3-Dec-20	0.0	23,281	0.41	0.06	0.02	0.16	0.91
4-Dec-20	0.0	23,281	0.41	0.06	0.02	0.16	0.91
5-Dec-20	0.0	23,281	0.41	0.06	0.02	0.16	0.91
6-Dec-20	0.0	23,281	0.41	0.06	0.02	0.16	0.91
7-Dec-20	0.0	23,281	0.41	0.06	0.02	0.16	0.91
8-Dec-20	0.0	23,281	0.41	0.06	0.02	0.16	0.91
9-Dec-20	0.0	23,281	0.41	0.06	0.02	0.16	0.91
10-Dec-20	0.0	23,281	0.41	0.06	0.02	0.16	0.91
11-Dec-20	0.0	23,281	0.41	0.06	0.02	0.16	0.91
12-Dec-20	0.0	23,281	0.41	0.06	0.02	0.16	0.91
13-Dec-20	0.0	23,278	0.41	0.06	0.02	0.16	0.91
14-Dec-20	0.0	23,056	0.41	0.06	0.02	0.16	0.90
15-Dec-20	0.0	23,056	0.41	0.06	0.02	0.16	0.90
16-Dec-20	0.0	23,056	0.41	0.06	0.02	0.16	0.90
17-Dec-20	0.0	23,056	0.41	0.06	0.02	0.16	0.90
18-Dec-20	0.0	23,056	0.41	0.06	0.02	0.16	0.90
19-Dec-20	0.0	23,056	0.41	0.06	0.02	0.16	0.90
20-Dec-20	0.0	23,056	0.41	0.06	0.02	0.16	0.90
21-Dec-20	0.0	23,056	0.41	0.06	0.02	0.16	0.90
22-Dec-20	0.0	23,056	0.41	0.06	0.02	0.16	0.90
23-Dec-20	0.0	23,056	0.41	0.06	0.02	0.16	0.90
24-Dec-20	0.0	23,056	0.41	0.06	0.02	0.16	0.90
25-Dec-20	178.0	23,234	0.41	0.06	0.02	0.16	0.91
26-Dec-20	260.9	23,495	0.41	0.06	0.02	0.16	0.92
27-Dec-20	0.0	23,495	0.41	0.06	0.02	0.16	0.92
28-Dec-20	0.0	23,495	0.41	0.06	0.02	0.16	0.92
29-Dec-20	0.0	23,495	0.41	0.06	0.02	0.16	0.92
30-Dec-20	0.0	23,495	0.41	0.06	0.02	0.16	0.92
31-Dec-20	0.0	23,495	0.41	0.06	0.02	0.16	0.92

# MWRA Deer Island Power Plant Monthly Report

Dec-20

## ZURNS Boilers, Units 101 & 201

Day	No. 2 Oil kgal	D. G. kscf	365-Rolling Total		
			Hours Operating	PM tpy	VOC tpy
30-Nov-20	0.326	4156	8,765.8	2.511	1.456
01-Dec-20	0.000	4700	8,765.5	2.511	1.457
02-Dec-20	0.000	5161	8,765.5	2.511	1.457
03-Dec-20	0.000	4722	8,765.5	2.511	1.457
04-Dec-20	0.000	4077	8,765.5	2.510	1.456
05-Dec-20	0.000	4305	8,765.5	2.509	1.455
06-Dec-20	0.000	4779	8,765.5	2.508	1.455
07-Dec-20	0.000	5321	8,765.5	2.507	1.455
08-Dec-20	0.147	4491	8,765.5	2.507	1.454
09-Dec-20	3.236	3782	8,765.5	2.506	1.453
10-Dec-20	0.773	4109	8,765.8	2.504	1.452
11-Dec-20	0.000	5028	8,765.8	2.504	1.452
12-Dec-20	0.000	4640	8,765.8	2.503	1.451
13-Dec-20	0.000	5661	8,765.8	2.504	1.452
14-Dec-20	0.186	4694	8,765.8	2.502	1.451
15-Dec-20	3.163	3698	8,765.8	2.501	1.450
16-Dec-20	3.200	3541	8,765.8	2.500	1.449
17-Dec-20	3.263	3923	8,765.0	2.500	1.449
18-Dec-20	0.855	4274	8,764.3	2.499	1.448
19-Dec-20	0.000	4446	8,764.3	2.498	1.447
20-Dec-20	0.000	4633	8,764.3	2.497	1.447
21-Dec-20	0.000	4265	8,764.3	2.495	1.445
22-Dec-20	2.947	3440	8,764.3	2.494	1.444
23-Dec-20	1.073	3882	8,764.3	2.493	1.444
24-Dec-20	0.000	4525	8,764.3	2.493	1.444
25-Dec-20	0.000	5438	8,764.3	2.495	1.445
26-Dec-20	0.000	5624	8,764.3	2.497	1.446
27-Dec-20	2.284	3834	8,764.3	2.497	1.446
28-Dec-20	3.057	3858	8,764.3	2.496	1.445
29-Dec-20	3.076	3525	8,764.3	2.496	1.444
30-Dec-20	1.755	3898	8,764.3	2.493	1.442
31-Dec-20	2.817	3956	8,764.3	2.491	1.441

Date: Jan 12 2021  
Time: 07:54



Begin: Dec 01, 2020 00:00  
End: Dec 31, 2020 23:59

MWRA  
Deer Island, MA

\*\*\*\* MULTI-PARAMETER SUMMARY REPORT \*\*\*\*

365 Day Emissions - Combined Boilers

Start	365 Day Total SO2 tons	365 Day Total NOX tons	365 Day Total CO tons	365 Day Total HI mmBtu
12/01/20	2.12677	12.68443	0.95300	985343.750
12/02/20	2.12301	12.69954	0.95340	985476.688
12/03/20	2.11758	12.70971	0.94464	985458.313
12/04/20	2.10593	12.70811	0.94165	984993.250
12/05/20	2.10320	12.70788	0.93754	984489.000
12/06/20	2.09911	12.71078	0.93623	984204.375
12/07/20	2.08967	12.71583	0.93571	984042.000
12/08/20	2.07853	12.72373	0.93523	983875.750
12/09/20	2.06228	12.74571	0.93514	983451.250
12/10/20	2.04449	12.74563	0.93536	982696.250
12/11/20	2.03341	12.75566	0.93518	982820.250
12/12/20	2.01907	12.76083	0.93486	982632.625
12/13/20	2.01958	12.78016	0.93458	982975.500
12/14/20	2.01069	12.78149	0.93415	982268.313
12/15/20	1.99809	12.80023	0.93323	981881.563
12/16/20	2.00762	12.82212	0.93314	981809.375
12/17/20	2.00611	12.83201	0.93501	981740.813
12/18/20	2.00023	12.83549	0.92816	981268.000
12/19/20	2.01090	12.83478	0.92568	980891.375
12/20/20	2.00996	12.83172	0.92567	980369.000
12/21/20	1.99594	12.82809	0.93061	979693.438
12/22/20	1.98592	12.84659	0.93163	979440.438
12/23/20	1.97680	12.85732	0.93190	979400.000
12/24/20	1.96792	12.86078	0.93294	979447.438
12/25/20	1.95754	12.87056	0.93263	979888.563
12/26/20	1.94760	12.89916	0.93457	980784.063
12/27/20	1.93987	12.92369	0.93661	980914.250
12/28/20	1.95175	12.94565	0.93057	980864.188
12/29/20	1.95891	12.96874	0.92900	980711.688
12/30/20	1.94416	12.97815	0.93323	979768.063
12/31/20	1.93155	12.99386	0.93337	979259.500

**Massachusetts Water Resources Authority**  
**Deer Island Treatment Plant**  
Pumping Odor Control (CP102) - Stack # 1  
DEP Conditional Permit No: MBR-91-IND-007A

Month-Year	Total Reduced Sulfur (TRS)		Total Non-Methane Hydrocarbons (TNMHC)		# Exceedances (>1.0 ppmv TRS)	Notes
	12-Month Rolling		12-Month Rolling			
	Tons	Total	Tons	Total		
Jan-20	0.000	0.004	0.026	0.157	0	
Feb-20	0.000	0.004	0.009	0.158	0	
Mar-20	0.000	0.004	0.009	0.152	0	
Apr-20	0.000	0.004	0.009	0.148	0	
May-20	0.000	0.004	0.009	0.133	0	
Jun-20	0.000	0.004	0.012	0.132	0	
Jul-20	0.000	0.004	0.011	0.134	0	
Aug-20	0.000	0.004	0.010	0.135	0	
Sep-20	0.000	0.004	0.010	0.136	0	
Oct-20	0.000	0.004	0.009	0.136	0	
Nov-20	0.000	0.004	0.009	0.135	0	
Dec-20	0.000	0.004	0.009	0.135	0	
<b>Emissions Limitations:</b>	0.040	0.230	0.800	5.400	1.0 ppmv TRS	
<b>Current Detection Limits, ppm v:</b>	0.01		0.20			

**Massachusetts Water Resources Authority**  
**Deer Island Treatment Plant**  
 Primary A-D, East/West Grit Odor Control (CP103) - Stack # 2 &  
 3 DEP Conditional Permit No: MBR-91-IND-007B

Month-Year	Total Reduced Sulfur (TRS)		Total Non-Methane Hydrocarbons (TNMHC)		# Exceedances (>1.0 ppmv TRS)	Notes
	12-Month Rolling		12-Month Rolling			
	Tons	Total	Tons	Total		
Jan-20	0.004	0.043	0.073	1.148	0	
Feb-20	0.003	0.043	0.068	1.148	0	
Mar-20	0.004	0.044	0.085	1.141	0	
Apr-20	0.003	0.044	0.070	1.133	0	
May-20	0.003	0.044	0.075	1.114	0	
Jun-20	0.003	0.045	0.124	1.132	0	
Jul-20	0.006	0.048	0.134	1.171	0	
Aug-20	0.004	0.048	0.173	1.223	0	
Sep-20	0.003	0.044	0.124	1.256	0	
Oct-20	0.005	0.046	0.140	1.306	0	
Nov-20	0.003	0.044	0.098	1.314	0	
Dec-20	0.003	0.044	0.079	1.243	0	
<b>Emissions Limitations:</b>	0.500	4.000	5.600	34.000	1.0 ppmv TRS	
<b>Current Detection Limits, ppm v:</b>	0.01		0.20			

**Massachusetts Water Resources Authority  
Deer Island Treatment Plant**

Primary Residuals Odor Control (CP301) - Stack # 4 and Secondary Residuals Odor Control (CP303) - Stack #  
4 DEP Conditional Permit No: MBR-91-IND-007C and MBR-91-IND-007D

Month-Year	Total Reduced Sulfur (TRS)		Total Non-Methane Hydrocarbons (TNMHC)		Ammonia (NH3)		# Exceedances (>1.0 ppmv TRS)	Notes
	12-Month Rolling		12-Month Rolling		12-Month Rolling			
	Tons	Total	Tons	Total	Tons	Total		
Jan-20	0.002	0.028	0.047	0.594	0.024	0.277	0	
Feb-20	0.002	0.029	0.044	0.596	0.022	0.277	0	
Mar-20	0.002	0.029	0.047	0.596	0.023	0.278	0	
Apr-20	0.002	0.029	0.046	0.597	0.023	0.278	0	
May-20	0.002	0.029	0.047	0.598	0.024	0.278	0	
Jun-20	0.002	0.030	0.055	0.601	0.023	0.278	0	
Jul-20	0.005	0.033	0.060	0.608	0.024	0.278	0	
Aug-20	0.006	0.037	0.075	0.631	0.023	0.278	0	
Sep-20	0.004	0.037	0.046	0.631	0.023	0.278	0	
Oct-20	0.004	0.037	0.101	0.662	0.025	0.279	0	
Nov-20	0.002	0.036	0.046	0.662	0.023	0.279	0	
Dec-20	0.002	0.036	0.047	0.662	0.024	0.279	0	
<b>Emissions Limitations:</b>	0.250	2.000	3.800	23.300	verify <1 tpy		1.0 ppmv TRS	
<b>Current Detection Limits, ppm v:</b>	0.01		0.20		0.25			

**Massachusetts Water Resources Authority  
Deer Island Treatment Plant**

Secondary Odor Control (CP202) - Stack # 5  
DEP Conditional Permit No: MBR-92-IND-056

Month-Year	Total Reduced Sulfur (TRS)		Total Non-Methane Hydrocarbons (TNMHC)		# Exceedances (>1.0 ppmv TRS)	Notes
	12-Month Rolling		12-Month Rolling			
	Tons	Total	Tons	Total		
Jan-20	0.000	0.005	0.017	0.188	0	
Feb-20	0.000	0.005	0.011	0.189	0	
Mar-20	0.000	0.005	0.012	0.189	0	
Apr-20	0.000	0.005	0.011	0.185	0	
May-20	0.000	0.005	0.012	0.185	0	
Jun-20	0.000	0.005	0.015	0.179	0	
Jul-20	0.001	0.005	0.017	0.185	0	
Aug-20	0.000	0.005	0.023	0.190	0	
Sep-20	0.000	0.005	0.011	0.190	0	
Oct-20	0.000	0.005	0.021	0.196	0	
Nov-20	0.000	0.005	0.011	0.195	0	
Dec-20	0.000	0.005	0.012	0.172	0	
<b>Emissions Limitations:</b>	0.1250	1.0000	0.3600	2.2000	1.0 ppmv TRS	
<b>Current Detection Limits, ppm v:</b>	0.01		0.20			

**MWRA Deer Island Power Plant Monthly Report**  
**CTG 1 and CTG 2**

**From: 01-Dec-21**  
**To: 31-Dec-21**

DAY	Daily Hours	Daily Fuel gal	365-DAY ROLLING TOTAL (Both Units Combined)						
			EMISSIONS, TONS						
			Hours	Fuel gal	NOx	PM	VOC	CO	SO2
1-Dec-21	0.00	0	196.9	217,936	1.797	0.314	0.021	0.331	0.012
2-Dec-21	0.00	0	196.9	217,936	1.797	0.314	0.021	0.331	0.012
3-Dec-21	0.00	0	196.9	217,936	1.797	0.314	0.021	0.331	0.012
4-Dec-21	0.00	0	196.1	217,103	1.790	0.313	0.021	0.330	0.012
5-Dec-21	0.00	0	196.1	217,103	1.790	0.313	0.021	0.330	0.012
6-Dec-21	0.00	0	196.1	217,103	1.790	0.313	0.021	0.330	0.012
7-Dec-21	0.00	0	196.1	217,103	1.790	0.313	0.021	0.330	0.012
8-Dec-21	1.83	2,015	198.0	219,118	1.806	0.315	0.022	0.333	0.012
9-Dec-21	0.00	0	198.0	219,118	1.806	0.315	0.022	0.333	0.012
10-Dec-21	0.00	0	197.7	219,051	1.806	0.315	0.022	0.333	0.012
11-Dec-21	0.00	0	196.8	217,970	1.797	0.314	0.021	0.331	0.012
12-Dec-21	0.00	0	196.8	217,970	1.797	0.314	0.021	0.331	0.012
13-Dec-21	0.00	0	196.8	217,970	1.797	0.314	0.021	0.331	0.012
14-Dec-21	0.00	0	196.8	217,970	1.797	0.314	0.021	0.331	0.012
15-Dec-21	0.00	0	196.8	217,970	1.797	0.314	0.021	0.331	0.012
16-Dec-21	0.00	0	196.8	217,970	1.797	0.314	0.021	0.331	0.012
17-Dec-21	0.99	1,135	197.8	219,105	1.806	0.316	0.021	0.333	0.012
18-Dec-21	0.00	0	195.4	216,525	1.785	0.311	0.021	0.329	0.012
19-Dec-21	0.00	0	195.4	216,525	1.785	0.311	0.021	0.329	0.012
20-Dec-21	0.00	0	195.4	216,525	1.785	0.311	0.021	0.329	0.012
21-Dec-21	0.00	0	195.4	216,525	1.785	0.311	0.021	0.329	0.012
22-Dec-21	0.00	0	195.4	216,525	1.785	0.311	0.021	0.329	0.012
23-Dec-21	0.00	0	195.4	216,525	1.785	0.311	0.021	0.329	0.012
24-Dec-21	0.00	0	195.4	216,525	1.785	0.311	0.021	0.329	0.012
25-Dec-21	0.00	0	185.1	204,145	1.679	0.295	0.019	0.310	0.011
26-Dec-21	0.00	0	161.1	179,236	1.468	0.263	0.015	0.273	0.010
27-Dec-21	0.00	0	155.8	173,880	1.423	0.256	0.014	0.265	0.010
28-Dec-21	0.00	0	155.8	173,880	1.423	0.256	0.014	0.265	0.010
29-Dec-21	0.00	0	155.8	173,880	1.423	0.256	0.014	0.265	0.010
30-Dec-21	0.00	0	155.8	173,880	1.423	0.256	0.014	0.265	0.010
31-Dec-21	0.00	0	155.8	173,880	1.423	0.256	0.014	0.265	0.010
<b>Permit Limits - 12 month rolling average</b>			<b>3,881,000</b>	<b>61.4</b>	<b>10.3</b>	<b>2.0</b>	<b>17.0</b>	<b>13.8</b>	

**Massachusetts Water Resources Authority  
Deer Island Power Plant Monthly Report**

**CP-301 GAS FLARES**

**Dec-21**

DAY	GAS FLARE kscf	365 DAY TOTAL kscf	<u>Rolling 365 Day</u>				
			NOx tpy	PM tpy	VOC tpy	CO tpy	SO2 tpy
30-Nov-21	0.0	32,210	0.57	0.08	0.02	0.22	1.26
1-Dec-21	0.0	32,210	0.57	0.08	0.02	0.22	1.26
2-Dec-21	0.0	32,210	0.57	0.08	0.02	0.22	1.26
3-Dec-21	0.0	32,210	0.57	0.08	0.02	0.22	1.26
4-Dec-21	0.0	32,210	0.57	0.08	0.02	0.22	1.26
5-Dec-21	0.0	32,210	0.57	0.08	0.02	0.22	1.26
6-Dec-21	0.0	32,210	0.57	0.08	0.02	0.22	1.26
7-Dec-21	0.0	32,210	0.57	0.08	0.02	0.22	1.26
8-Dec-21	0.0	32,210	0.57	0.08	0.02	0.22	1.26
9-Dec-21	0.0	32,210	0.57	0.08	0.02	0.22	1.26
10-Dec-21	0.0	32,210	0.57	0.08	0.02	0.22	1.26
11-Dec-21	0.0	32,210	0.57	0.08	0.02	0.22	1.26
12-Dec-21	0.0	32,210	0.57	0.08	0.02	0.22	1.26
13-Dec-21	0.0	32,210	0.57	0.08	0.02	0.22	1.26
14-Dec-21	0.0	32,210	0.57	0.08	0.02	0.22	1.26
15-Dec-21	0.0	32,210	0.57	0.08	0.02	0.22	1.26
16-Dec-21	0.0	32,210	0.57	0.08	0.02	0.22	1.26
17-Dec-21	0.0	32,210	0.57	0.08	0.02	0.22	1.26
18-Dec-21	0.0	32,210	0.57	0.08	0.02	0.22	1.26
19-Dec-21	258.3	32,468	0.57	0.08	0.02	0.23	1.27
20-Dec-21	20.4	32,489	0.57	0.08	0.02	0.23	1.27
21-Dec-21	0.0	32,489	0.57	0.08	0.02	0.23	1.27
22-Dec-21	0.0	32,489	0.57	0.08	0.02	0.23	1.27
23-Dec-21	392.0	32,881	0.58	0.08	0.02	0.23	1.28
24-Dec-21	0.0	32,881	0.58	0.08	0.02	0.23	1.28
25-Dec-21	42.5	32,745	0.58	0.08	0.02	0.23	1.28
26-Dec-21	0.0	32,484	0.57	0.08	0.02	0.23	1.27
27-Dec-21	0.0	32,484	0.57	0.08	0.02	0.23	1.27
28-Dec-21	0.0	32,484	0.57	0.08	0.02	0.23	1.27
29-Dec-21	0.0	32,484	0.57	0.08	0.02	0.23	1.27
30-Dec-21	0.0	32,484	0.57	0.08	0.02	0.23	1.27
31-Dec-21	0.0	32,484	0.57	0.08	0.02	0.23	1.27

# MWRA Deer Island Power Plant Monthly Report

Dec-21

## ZURNS Boilers, Units 101 & 201

Day	No. 2 Oil kgal	D. G. kscf	365-Rolling Total		
			Hours Operating	PM tpy	VOC tpy
30-Nov-21	3.208	3235	8,733.5	2.539	1.453
01-Dec-21	1.704	3443	8,733.8	2.538	1.452
02-Dec-21	0.000	3927	8,733.8	2.536	1.451
03-Dec-21	0.000	4936	8,733.8	2.536	1.451
04-Dec-21	0.000	4942	8,733.8	2.537	1.452
05-Dec-21	0.000	4648	8,733.8	2.538	1.452
06-Dec-21	0.000	4149	8,733.8	2.537	1.452
07-Dec-21	0.000	4012	8,733.8	2.535	1.450
08-Dec-21	0.000	4937	8,733.8	2.535	1.451
09-Dec-21	0.000	4033	8,733.8	2.535	1.451
10-Dec-21	0.000	4045	8,733.5	2.535	1.451
11-Dec-21	0.000	4650	8,733.5	2.534	1.451
12-Dec-21	0.000	4628	8,733.5	2.534	1.451
13-Dec-21	0.000	4988	8,733.5	2.533	1.450
14-Dec-21	0.000	4302	8,733.5	2.533	1.450
15-Dec-21	2.423	3693	8,733.5	2.532	1.450
16-Dec-21	0.755	3784	8,733.5	2.532	1.450
17-Dec-21	0.751	4401	8,733.5	2.532	1.450
18-Dec-21	0.668	4467	8,733.5	2.533	1.450
19-Dec-21	0.000	5268	8,733.5	2.534	1.451
20-Dec-21	0.000	5346	8,733.5	2.535	1.452
21-Dec-21	2.639	3938	8,733.5	2.535	1.452
22-Dec-21	0.725	4350	8,733.5	2.536	1.452
23-Dec-21	1.972	4184	8,733.5	2.537	1.453
24-Dec-21	0.000	4898	8,733.5	2.538	1.453
25-Dec-21	1.010	4478	8,733.5	2.536	1.452
26-Dec-21	0.333	4556	8,733.5	2.535	1.451
27-Dec-21	0.789	4456	8,733.5	2.535	1.452
28-Dec-21	2.875	3757	8,733.5	2.535	1.452
29-Dec-21	1.817	3810	8,733.5	2.536	1.452
30-Dec-21	2.320	3732	8,733.5	2.536	1.452
31-Dec-21	0.000	4517	8,733.5	2.536	1.452

Date: Jan 05 2022  
Time: 11:15



Begin: Dec 01, 2021 00:00  
End: Dec 31, 2021 23:59

MWRA  
Deer Island, MA

\*\*\*\* MULTI-PARAMETER SUMMARY REPORT \*\*\*\*

365 Day Emissions - Combined Boilers

Start	365 Day Total SO2 tons	365 Day Total NOX tons	365 Day Total CO tons	365 Day Total HI mmBtu
12/01/21	2.04255	13.08965	0.82574	998939.750
12/02/21	2.02939	13.06383	0.82498	998189.125
12/03/21	2.02159	13.04996	0.82496	998319.250
12/04/21	2.01949	13.04798	0.82549	998845.625
12/05/21	2.00776	13.04026	0.82559	999054.250
12/06/21	1.99682	13.01999	0.82814	998671.250
12/07/21	1.98849	12.99646	0.82806	997875.063
12/08/21	1.98579	12.98813	0.82698	998126.250
12/09/21	1.98560	12.95640	0.82681	997838.813
12/10/21	1.98539	12.94043	0.82524	997694.625
12/11/21	1.98350	12.91931	0.83108	997464.938
12/12/21	1.98328	12.90738	0.83198	997457.563
12/13/21	1.96563	12.88788	0.83170	997048.188
12/14/21	1.95786	12.87212	0.83117	996784.688
12/15/21	1.95751	12.85418	0.83118	996681.625
12/16/21	1.93711	12.82613	0.83319	996496.500
12/17/21	1.92801	12.80107	0.82966	996445.438
12/18/21	1.92517	12.78864	0.82965	996536.813
12/19/21	1.90392	12.78574	0.82974	997036.813
12/20/21	1.88933	12.78490	0.82987	997470.625
12/21/21	1.88797	12.79582	0.82499	997630.875
12/22/21	1.88404	12.78146	0.82431	997881.938
12/23/21	1.88284	12.78571	0.82975	998187.688
12/24/21	1.88224	12.78448	0.82849	998414.563
12/25/21	1.88210	12.77978	0.82963	997968.375
12/26/21	1.88204	12.76104	0.82730	997364.125
12/27/21	1.87822	12.74825	0.82505	997538.813
12/28/21	1.85619	12.73972	0.82438	997453.188
12/29/21	1.83791	12.72299	0.82409	997454.938
12/30/21	1.83407	12.71407	0.82008	997431.188
12/31/21	1.83341	12.68976	0.81799	997388.813

**Massachusetts Water Resources Authority**  
**Deer Island Treatment Plant**  
Pumping Odor Control (CP102) - Stack # 1  
DEP Conditional Permit No: MBR-91-IND-007A

Month-Year	Total Reduced Sulfur (TRS)		Total Non-Methane Hydrocarbons (TNMHC)		# Exceedances (>1.0 ppmv TRS)	Notes
	12-Month Rolling		12-Month Rolling			
	Tons	Total	Tons	Total		
Jan-21	0.000	0.004	0.009	0.118	0	
Feb-21	0.000	0.004	0.008	0.118	0	
Mar-21	0.000	0.004	0.020	0.129	0	
Apr-21	0.000	0.004	0.009	0.129	0	
May-21	0.000	0.004	0.009	0.129	0	
Jun-21	0.000	0.004	0.009	0.125	0	
Jul-21	0.000	0.004	0.013	0.127	0	
Aug-21	0.000	0.004	0.009	0.126	0	
Sep-21	0.000	0.004	0.009	0.125	0	
Oct-21	0.002	0.006	0.020	0.136	0	
Nov-21	0.000	0.006	0.009	0.136	0	
Dec-21	0.000	0.006	0.009	0.136	0	
<b>Emissions Limitations:</b>	0.040	0.230	0.800	5.400	1.0 ppmv TRS	
<b>Current Detection Limits, ppm v:</b>	0.01		0.20			

**Massachusetts Water Resources Authority  
Deer Island Treatment Plant**

Primary A-D, East/West Grit Odor Control (CP103) - Stack # 2 &  
3 DEP Conditional Permit No: MBR-91-IND-007B

Month-Year	Total Reduced Sulfur (TRS)		Total Non-Methane Hydrocarbons (TNMHC)		# Exceedances (>1.0 ppmv TRS)	Notes
	12-Month Rolling		12-Month Rolling			
	Tons	Total	Tons	Total		
Jan-21	0.003	0.043	0.076	1.246	0	
Feb-21	0.003	0.043	0.068	1.246	0	
Mar-21	0.003	0.042	0.089	1.250	0	
Apr-21	0.003	0.042	0.076	1.256	0	
May-21	0.003	0.042	0.090	1.271	0	
Jun-21	0.003	0.041	0.093	1.240	0	
Jul-21	0.003	0.038	0.107	1.213	0	
Aug-21	0.003	0.037	0.112	1.153	0	
Sep-21	0.003	0.037	0.094	1.122	0	
Oct-21	0.003	0.034	0.100	1.083	0	
Nov-21	0.003	0.034	0.081	1.065	0	
Dec-21	0.003	0.035	0.083	1.069	0	
<b>Emissions Limitations:</b>	0.500	4.000	5.600	34.000	1.0 ppmv TRS	
<b>Current Detection Limits, ppm v:</b>	0.01		0.20			

**Massachusetts Water Resources Authority  
Deer Island Treatment Plant**

Primary Residuals Odor Control (CP301) - Stack # 4 and Secondary Residuals Odor Control (CP303) - Stack #  
4 DEP Conditional Permit No: MBR-91-IND-007C and MBR-91-IND-007D

Month-Year	Total Reduced Sulfur (TRS)		Total Non-Methane Hydrocarbons (TNMHC)		Ammonia (NH3)		# Exceedances (>1.0 ppmv TRS)	Notes
	12-Month Rolling		12-Month Rolling		12-Month Rolling			
	Tons	Total	Tons	Total	Tons	Total		
Jan-21	0.002	0.036	0.047	0.662	0.024	0.279	0	
Feb-21	0.002	0.036	0.043	0.661	0.021	0.278	0	
Mar-21	0.002	0.036	0.047	0.662	0.024	0.279	0	
Apr-21	0.002	0.036	0.046	0.662	0.023	0.279	0	
May-21	0.002	0.036	0.058	0.672	0.024	0.279	0	
Jun-21	0.002	0.035	0.051	0.668	0.023	0.279	0	
Jul-21	0.002	0.032	0.085	0.693	0.024	0.279	0	
Aug-21	0.002	0.028	0.069	0.687	0.024	0.279	0	
Sep-21	0.002	0.026	0.075	0.716	0.023	0.279	0	
Oct-21	0.002	0.023	0.051	0.666	0.024	0.278	0	
Nov-21	0.002	0.023	0.046	0.666	0.023	0.278	0	
Dec-21	0.002	0.023	0.047	0.666	0.024	0.278	0	
<b>Emissions Limitations:</b>	0.250	2.000	3.800	23.300	verify <1 tpy		1.0 ppmv TRS	
<b>Current Detection Limits, ppm v:</b>	0.01		0.20		0.25			

**Massachusetts Water Resources Authority  
Deer Island Treatment Plant**

Secondary Odor Control (CP202) - Stack # 5  
DEP Conditional Permit No: MBR-92-IND-056

Month-Year	Total Reduced Sulfur (TRS)		Total Non-Methane Hydrocarbons (TNMHC)		# Exceedances (>1.0 ppmv TRS)	Notes
	12-Month Rolling		12-Month Rolling			
	Tons	Total	Tons	Total		
Jan-21	0.000	0.005	0.012	0.166	0	
Feb-21	0.000	0.005	0.010	0.166	0	
Mar-21	0.000	0.005	0.012	0.166	0	
Apr-21	0.000	0.005	0.011	0.166	0	
May-21	0.000	0.005	0.012	0.166	0	
Jun-21	0.000	0.005	0.014	0.166	0	
Jul-21	0.000	0.005	0.014	0.163	0	
Aug-21	0.000	0.005	0.017	0.157	0	
Sep-21	0.000	0.005	0.011	0.157	0	
Oct-21	0.000	0.005	0.012	0.148	0	
Nov-21	0.000	0.005	0.011	0.148	0	
Dec-21	0.000	0.005	0.012	0.148	0	
<b>Emissions Limitations:</b>	0.1250	1.0000	0.3600	2.2000	1.0 ppmv TRS	
<b>Current Detection Limits, ppm v:</b>	0.01		0.20			

**MWRA Deer Island Power Plant Monthly Report**  
**CTG 1 and CTG 2**

**From: 01-Dec-22**  
**To: 31-Dec-22**

DAY	Daily Hours	Daily Fuel gal	365-DAY ROLLING TOTAL (Both Units Combined)						
			EMISSIONS, TONS						
			Hours	Fuel gal	NOx	PM	VOC	CO	SO2
1-Dec-22	0.00	0	53.9	56,439	0.453	0.081	0.005	0.084	0.003
2-Dec-22	0.00	0	53.9	56,439	0.453	0.081	0.005	0.084	0.003
3-Dec-22	0.00	0	53.9	56,439	0.453	0.081	0.005	0.084	0.003
4-Dec-22	0.00	0	53.9	56,439	0.453	0.081	0.005	0.084	0.003
5-Dec-22	0.00	0	53.9	56,439	0.453	0.081	0.005	0.084	0.003
6-Dec-22	0.00	0	53.9	56,439	0.453	0.081	0.005	0.084	0.003
7-Dec-22	1.81	2,162	55.7	58,601	0.471	0.084	0.005	0.087	0.003
8-Dec-22	0.00	0	53.9	56,586	0.454	0.081	0.005	0.084	0.003
9-Dec-22	0.00	0	53.9	56,586	0.454	0.081	0.005	0.084	0.003
10-Dec-22	0.00	0	53.9	56,586	0.454	0.081	0.005	0.084	0.003
11-Dec-22	0.00	0	53.9	56,586	0.454	0.081	0.005	0.084	0.003
12-Dec-22	0.00	0	53.9	56,586	0.454	0.081	0.005	0.084	0.003
13-Dec-22	0.00	0	53.9	56,586	0.454	0.081	0.005	0.084	0.003
14-Dec-22	0.00	0	53.9	56,586	0.454	0.081	0.005	0.084	0.003
15-Dec-22	0.00	0	53.9	56,586	0.454	0.081	0.005	0.084	0.003
16-Dec-22	0.81	903	54.7	57,489	0.461	0.082	0.005	0.086	0.003
17-Dec-22	0.00	0	53.7	56,354	0.452	0.081	0.005	0.084	0.003
18-Dec-22	0.00	0	53.7	56,354	0.452	0.081	0.005	0.084	0.003
19-Dec-22	0.00	0	53.7	56,354	0.452	0.081	0.005	0.084	0.003
20-Dec-22	0.00	0	53.7	56,354	0.452	0.081	0.005	0.084	0.003
21-Dec-22	0.00	0	53.7	56,354	0.452	0.081	0.005	0.084	0.003
22-Dec-22	0.00	0	53.7	56,354	0.452	0.081	0.005	0.084	0.003
23-Dec-22	0.00	0	53.7	56,354	0.452	0.081	0.005	0.084	0.003
24-Dec-22	3.19	3,776	56.9	60,130	0.483	0.085	0.005	0.089	0.003
25-Dec-22	0.00	0	56.9	60,130	0.483	0.085	0.005	0.089	0.003
26-Dec-22	0.00	0	56.9	60,130	0.483	0.085	0.005	0.089	0.003
27-Dec-22	0.00	0	56.9	60,130	0.483	0.085	0.005	0.089	0.003
28-Dec-22	0.00	0	56.9	60,130	0.483	0.085	0.005	0.089	0.003
29-Dec-22	0.00	0	56.9	60,130	0.483	0.085	0.005	0.089	0.003
30-Dec-22	0.00	0	56.9	60,130	0.483	0.085	0.005	0.089	0.003
31-Dec-22	0.00	0	56.9	60,130	0.483	0.085	0.005	0.089	0.003
<b>Permit Limits - 12 month rolling average</b>			<b>3,881,000</b>	<b>61.4</b>	<b>10.3</b>	<b>2.0</b>	<b>17.0</b>	<b>13.8</b>	

**Massachusetts Water Resources Authority  
Deer Island Power Plant Monthly Report**

CP-301 GAS FLARES

Dec-22

DAY	GAS FLARE kscf	365 DAY TOTAL kscf	Rolling 365 Day				
			NOx tpy	PM tpy	VOC tpy	CO tpy	SO2 tpy
30-Nov-22	0.0	26,490	0.47	0.07	0.02	0.18	1.03
1-Dec-22	0.0	26,490	0.47	0.07	0.02	0.18	1.03
2-Dec-22	0.0	26,490	0.47	0.07	0.02	0.18	1.03
3-Dec-22	0.0	26,490	0.47	0.07	0.02	0.18	1.03
4-Dec-22	0.0	26,490	0.47	0.07	0.02	0.18	1.03
5-Dec-22	0.0	26,490	0.47	0.07	0.02	0.18	1.03
6-Dec-22	0.0	26,490	0.47	0.07	0.02	0.18	1.03
7-Dec-22	0.0	26,490	0.47	0.07	0.02	0.18	1.03
8-Dec-22	0.0	26,490	0.47	0.07	0.02	0.18	1.03
9-Dec-22	0.0	26,490	0.47	0.07	0.02	0.18	1.03
10-Dec-22	0.0	26,490	0.47	0.07	0.02	0.18	1.03
11-Dec-22	0.0	26,490	0.47	0.07	0.02	0.18	1.03
12-Dec-22	0.0	26,490	0.47	0.07	0.02	0.18	1.03
13-Dec-22	0.0	26,490	0.47	0.07	0.02	0.18	1.03
14-Dec-22	0.0	26,490	0.47	0.07	0.02	0.18	1.03
15-Dec-22	0.0	26,490	0.47	0.07	0.02	0.18	1.03
16-Dec-22	0.0	26,490	0.47	0.07	0.02	0.18	1.03
17-Dec-22	0.0	26,490	0.47	0.07	0.02	0.18	1.03
18-Dec-22	0.0	26,490	0.47	0.07	0.02	0.18	1.03
19-Dec-22	0.0	26,232	0.46	0.07	0.02	0.18	1.02
20-Dec-22	0.0	26,212	0.46	0.07	0.02	0.18	1.02
21-Dec-22	0.0	26,212	0.46	0.07	0.02	0.18	1.02
22-Dec-22	0.0	26,212	0.46	0.07	0.02	0.18	1.02
23-Dec-22	0.0	25,820	0.45	0.06	0.02	0.18	1.01
24-Dec-22	0.0	25,820	0.45	0.06	0.02	0.18	1.01
25-Dec-22	0.0	25,777	0.45	0.06	0.02	0.18	1.01
26-Dec-22	0.0	25,777	0.45	0.06	0.02	0.18	1.01
27-Dec-22	0.0	25,777	0.45	0.06	0.02	0.18	1.01
28-Dec-22	0.0	25,777	0.45	0.06	0.02	0.18	1.01
29-Dec-22	0.0	25,777	0.45	0.06	0.02	0.18	1.01
30-Dec-22	0.0	25,777	0.45	0.06	0.02	0.18	1.01
31-Dec-22	0.0	25,777	0.45	0.06	0.02	0.18	1.01

# MWRA Deer Island Power Plant Monthly Report

Dec-22

## ZURNS Boilers, Units 101 & 201

Day	No. 2 Oil kgal	D. G. kscf	365-Rolling Total		
			Hours Operating	PM tpy	VOC tpy
30-Nov-22	0.000	4153	8,784.8	2.505	1.420
01-Dec-22	1.726	4257	8,784.8	2.506	1.420
02-Dec-22	1.551	4696	8,786.0	2.508	1.421
03-Dec-22	0.000	4478	8,786.0	2.507	1.421
04-Dec-22	0.000	4609	8,786.0	2.507	1.420
05-Dec-22	0.132	4510	8,786.8	2.507	1.420
06-Dec-22	1.834	3899	8,789.8	2.507	1.420
07-Dec-22	0.470	4090	8,792.5	2.507	1.420
08-Dec-22	0.000	4728	8,792.5	2.507	1.420
09-Dec-22	1.589	4431	8,796.3	2.508	1.420
10-Dec-22	3.095	3897	8,796.3	2.508	1.420
11-Dec-22	1.201	4293	8,796.3	2.508	1.420
12-Dec-22	0.000	4427	8,795.5	2.508	1.420
13-Dec-22	1.940	3970	8,795.5	2.507	1.419
14-Dec-22	3.460	3310	8,795.5	2.506	1.418
15-Dec-22	3.689	2747	8,795.5	2.505	1.417
16-Dec-22	1.733	3321	8,798.5	2.504	1.416
17-Dec-22	0.000	4498	8,798.5	2.504	1.416
18-Dec-22	0.000	4796	8,798.5	2.505	1.417
19-Dec-22	0.368	4631	8,802.3	2.504	1.416
20-Dec-22	0.396	4187	8,802.3	2.502	1.415
21-Dec-22	0.000	4629	8,802.3	2.502	1.416
22-Dec-22	0.753	4129	8,802.3	2.502	1.416
23-Dec-22	2.281	3883	8,802.3	2.502	1.415
24-Dec-22	1.612	4425	8,802.3	2.501	1.415
25-Dec-22	2.873	3623	8,802.3	2.501	1.414
26-Dec-22	1.582	4295	8,802.3	2.500	1.414
27-Dec-22	0.041	5165	8,802.3	2.501	1.414
28-Dec-22	2.135	4003	8,802.3	2.502	1.415
29-Dec-22	3.182	3449	8,802.3	2.501	1.414
30-Dec-22	3.158	3074	8,802.3	2.501	1.414
31-Dec-22	3.145	3336	8,802.3	2.500	1.413

Date: Jan 06 2023  
Time: 08:55



Begin: Dec 01, 2022 00:00  
End: Dec 31, 2022 23:59

MWRA  
Deer Island, MA

\*\*\*\*\* MULTI-PARAMETER SUMMARY REPORT \*\*\*\*\*

365 Day Emissions - Boiler 201

Start	365 Day Total SO2 tons	365 Day Total NOX tons	365 Day Total CO tons	365 Day Total HI mmBtu
12/01/22	1.36771	6.43559	0.29314	450159.375
12/02/22	1.36785	6.43691	0.29797	450187.844
12/03/22	1.36785	6.43691	0.29797	450187.844
12/04/22	1.36785	6.43691	0.29797	450187.844
12/05/22	1.36788	6.43742	0.29984	450205.781
12/06/22	1.36894	6.44005	0.31263	450276.750
12/07/22	1.36979	6.44283	0.32505	450340.656
12/08/22	1.36979	6.44283	0.32505	450340.656
12/09/22	1.37052	6.44730	0.34122	450431.406
12/10/22	1.37052	6.44730	0.34122	450431.406
12/11/22	1.37052	6.44730	0.34122	450431.406
12/12/22	1.37052	6.44730	0.34122	450431.406
12/13/22	1.37052	6.44730	0.34122	450431.406
12/14/22	1.37052	6.44730	0.34122	450431.406
12/15/22	1.37052	6.44730	0.34122	450431.406
12/16/22	1.37062	6.44840	0.34563	450453.844
12/17/22	1.37062	6.44840	0.34563	450453.844
12/18/22	1.37062	6.44840	0.34563	450453.844
12/19/22	1.37142	6.45100	0.35740	450504.031
12/20/22	1.37142	6.45100	0.35740	450504.031
12/21/22	1.37142	6.45100	0.35740	450504.031
12/22/22	1.37142	6.45100	0.35740	450504.031
12/23/22	1.37142	6.45100	0.35740	450504.031
12/24/22	1.37142	6.45100	0.35740	450504.031
12/25/22	1.37142	6.45100	0.35740	450504.031
12/26/22	1.37142	6.45100	0.35740	450504.031
12/27/22	1.37142	6.45100	0.35740	450504.031
12/28/22	1.37142	6.45100	0.35740	450504.031
12/29/22	1.37142	6.45100	0.35740	450504.031
12/30/22	1.37142	6.45100	0.35740	450504.031
12/31/22	1.37142	6.45100	0.35740	450504.031

Report produced by Cirrus

DAS S/N (00000001)

1/6/2023

**Massachusetts Water Resources Authority**  
**Deer Island Treatment Plant**  
 Pumping Odor Control (CP102) - Stack # 1  
 DEP Conditional Permit No: MBR-91-IND-007A

Month-Year	Total Reduced Sulfur (TRS)		Total Non-Methane Hydrocarbons (TNMHC)		# Exceedances (>1.0 ppmv TRS)	Notes
	Tons	12-Month Rolling Total	Tons	12-Month Rolling Total		
Jan-22	0.000	0.006	0.009	0.136	0	
Feb-22	0.000	0.006	0.009	0.136	0	
Mar-22	0.000	0.006	0.009	0.125	0	
Apr-22	0.000	0.006	0.011	0.126	0	
May-22	0.000	0.006	0.009	0.126	0	
Jun-22	0.000	0.006	0.017	0.135	0	
Jul-22	0.000	0.006	0.012	0.134	0	
Aug-22	0.000	0.006	0.010	0.134	0	
Sep-22	0.000	0.006	0.009	0.134	0	
Oct-22	0.000	0.004	0.009	0.124	0	
Nov-22	0.000	0.005	0.009	0.124	0	
Dec-22	0.000	0.005	0.009	0.124	0	
<b>Emissions Limitations:</b>	0.040	0.230	0.800	5.400	1.0 ppmv TRS	
<b>Current Detection Limits, ppm v:</b>	0.01		0.20			

**Massachusetts Water Resources Authority**  
**Deer Island Treatment Plant**  
 Primary A-D, East/West Grit Odor Control (CP103) - Stack # 2 & 3  
 DEP Conditional Permit No: MBR-91-IND-007B

Month-Year	Total Reduced Sulfur (TRS)		Total Non-Methane Hydrocarbons (TNMHC)		# Exceedances (>1.0 ppmv TRS)	Notes
	12-Month Rolling		12-Month Rolling			
	Tons	Total	Tons	Total		
Jan-22	0.003	0.035	0.073	1.066	0	
Feb-22	0.003	0.035	0.066	1.064	0	
Mar-22	0.003	0.034	0.078	1.052	0	
Apr-22	0.003	0.034	0.072	1.048	0	
May-22	0.003	0.034	0.094	1.053	0	
Jun-22	0.004	0.036	0.118	1.077	0	
Jul-22	0.004	0.037	0.073	1.043	0	
Aug-22	0.013	0.048	0.121	1.052	0	
Sep-22	0.007	0.051	0.106	1.063	0	
Oct-22	0.004	0.052	0.097	1.060	0	
Nov-22	0.004	0.053	0.108	1.088	0	
Dec-22	0.003	0.053	0.078	1.082	0	
<b>Emissions Limitations:</b>	0.500	4.000	5.600	34.000	1.0 ppmv TRS	
<b>Current Detection Limits, ppm v:</b>	0.01		0.20			

**Massachusetts Water Resources Authority  
Deer Island Treatment Plant**

Primary Residuals Odor Control (CP301) - Stack # 4 and Secondary Residuals Odor Control (CP303) - Stack # 4  
DEP Conditional Permit No: MBR-91-IND-007C and MBR-91-IND-007D

Month-Year	Total Reduced Sulfur (TRS)		Total Non-Methane Hydrocarbons (TNMHC)		Ammonia (NH3)		# Exceedances (>1.0 ppmv TRS)	Notes
	12-Month Rolling		12-Month Rolling		12-Month Rolling			
	Tons	Total	Tons	Total	Tons	Total		
Jan-22	0.002	0.023	0.047	0.666	0.024	0.278	0	
Feb-22	0.002	0.023	0.044	0.667	0.021	0.278	0	
Mar-22	0.002	0.023	0.047	0.667	0.024	0.278	0	
Apr-22	0.002	0.023	0.048	0.670	0.023	0.278	0	
May-22	0.002	0.023	0.047	0.660	0.024	0.278	0	
Jun-22	0.002	0.023	0.056	0.664	0.023	0.278	0	
Jul-22	0.002	0.023	0.082	0.661	0.024	0.278	0	
Aug-22	0.005	0.026	0.114	0.706	0.024	0.278	0	
Sep-22	0.002	0.026	0.075	0.706	0.023	0.278	0	
Oct-22	0.002	0.027	0.059	0.713	0.024	0.278	0	
Nov-22	0.002	0.027	0.051	0.718	0.023	0.278	0	
Dec-22	0.002	0.027	0.047	0.718	0.023	0.278	0	
<b>Emissions Limitations:</b>	0.250	2.000	3.800	23.300		verify <1 tpy	1.0 ppmv TRS	
<b>Current Detection Limits, ppm v:</b>	0.01		0.20		0.25			

**Massachusetts Water Resources Authority**  
**Deer Island Treatment Plant**  
 Secondary Odor Control (CP202) - Stack # 5  
 DEP Conditional Permit No: MBR-92-IND-056

Month-Year	Total Reduced Sulfur (TRS)		Total Non-Methane Hydrocarbons (TNMHC)		# Exceedances (>1.0 ppmv TRS)	Notes
	12-Month Rolling		12-Month Rolling			
	Tons	Total	Tons	Total		
Jan-22	0.000	0.005	0.012	0.148	0	
Feb-22	0.000	0.005	0.010	0.148	0	
Mar-22	0.000	0.005	0.012	0.148	0	
Apr-22	0.000	0.005	0.011	0.148	0	
May-22	0.000	0.005	0.012	0.148	0	
Jun-22	0.000	0.005	0.011	0.145	0	
Jul-22	0.000	0.005	0.012	0.142	0	
Aug-22	0.000	0.005	0.012	0.136	0	
Sep-22	0.000	0.005	0.013	0.139	0	
Oct-22	0.000	0.005	0.013	0.140	0	
Nov-22	0.000	0.005	0.011	0.140	0	
Dec-22	0.000	0.005	0.012	0.140	0	
<b>Emissions Limitations:</b>	0.1250	1.0000	0.3600	2.2000	1.0 ppmv TRS	
<b>Current Detection Limits, ppm v:</b>	0.01		0.20			

**MWRA Deer Island Power Plant Monthly Report**  
**CTG 1 and CTG 2**

**From: 01-Dec-23**  
**To: 31-Dec-23**

DAY	Daily Hours	Daily Fuel gal	365-DAY ROLLING TOTAL (Both Units Combined)						
			EMISSIONS, TONS						
			Hours	Fuel gal	NOx	PM	VOC	CO	SO2
1-Dec-23	0.00	0	128.3	148,520	1.219	0.204	0.018	0.221	0.010
2-Dec-23	0.00	0	128.3	148,520	1.219	0.204	0.018	0.221	0.010
3-Dec-23	0.00	0	128.3	148,520	1.219	0.204	0.018	0.221	0.010
4-Dec-23	0.00	0	128.3	148,520	1.219	0.204	0.018	0.221	0.010
5-Dec-23	0.00	0	128.3	148,520	1.219	0.204	0.018	0.221	0.010
6-Dec-23	0.00	0	128.3	148,520	1.219	0.204	0.018	0.221	0.010
7-Dec-23	0.00	0	126.5	146,358	1.202	0.201	0.018	0.218	0.009
8-Dec-23	0.00	0	126.5	146,358	1.202	0.201	0.018	0.218	0.009
9-Dec-23	0.00	0	126.5	146,358	1.202	0.201	0.018	0.218	0.009
10-Dec-23	0.00	0	126.5	146,358	1.202	0.201	0.018	0.218	0.009
11-Dec-23	4.07	4,396	130.6	150,754	1.238	0.207	0.018	0.225	0.010
12-Dec-23	0.00	0	130.6	150,754	1.238	0.207	0.018	0.225	0.010
13-Dec-23	0.00	0	130.6	150,754	1.238	0.207	0.018	0.225	0.010
14-Dec-23	0.00	0	130.6	150,754	1.238	0.207	0.018	0.225	0.010
15-Dec-23	0.00	0	130.6	150,754	1.238	0.207	0.018	0.225	0.010
16-Dec-23	0.00	0	129.8	149,851	1.230	0.206	0.018	0.223	0.010
17-Dec-23	0.00	0	129.8	149,851	1.230	0.206	0.018	0.223	0.010
18-Dec-23	5.71	7,636	135.5	157,487	1.294	0.216	0.020	0.235	0.010
19-Dec-23	22.26	25,146	157.7	182,633	1.503	0.248	0.024	0.271	0.012
20-Dec-23	0.00	0	157.7	182,633	1.503	0.248	0.024	0.271	0.012
21-Dec-23	0.00	0	157.7	182,633	1.503	0.248	0.024	0.271	0.012
22-Dec-23	0.00	0	157.7	182,633	1.503	0.248	0.024	0.271	0.012
23-Dec-23	0.00	0	157.7	182,633	1.503	0.248	0.024	0.271	0.012
24-Dec-23	0.00	0	154.5	178,857	1.472	0.243	0.023	0.266	0.011
25-Dec-23	0.00	0	154.5	178,857	1.472	0.243	0.023	0.266	0.011
26-Dec-23	0.00	0	154.5	178,857	1.472	0.243	0.023	0.266	0.011
27-Dec-23	0.00	0	154.5	178,857	1.472	0.243	0.023	0.266	0.011
28-Dec-23	0.00	0	154.5	178,857	1.472	0.243	0.023	0.266	0.011
29-Dec-23	0.00	0	154.5	178,857	1.472	0.243	0.023	0.266	0.011
30-Dec-23	0.00	0	154.5	178,857	1.472	0.243	0.023	0.266	0.011
31-Dec-23	0.00	0	154.5	178,857	1.472	0.243	0.023	0.266	0.011
<b>Permit Limits - 12 month rolling average</b>			<b>3,881,000</b>	<b>61.4</b>	<b>10.3</b>	<b>2.0</b>	<b>17.0</b>	<b>13.8</b>	

**Massachusetts Water Resources Authority  
Deer Island Power Plant Monthly Report  
CP-301 GAS FLARES**

**Dec-23**

DAY	GAS FLARE kscf	365 DAY TOTAL kscf	Rolling 365 Day				
			NOx tpy	PM tpy	VOC tpy	CO tpy	SO2 tpy
30-Nov-23	0.0	22,205	0.39	0.06	0.02	0.15	0.87
1-Dec-23	0.0	22,205	0.39	0.06	0.02	0.15	0.87
2-Dec-23	0.0	22,205	0.39	0.06	0.02	0.15	0.87
3-Dec-23	0.0	22,205	0.39	0.06	0.02	0.15	0.87
4-Dec-23	0.0	22,205	0.39	0.06	0.02	0.15	0.87
5-Dec-23	0.0	22,205	0.39	0.06	0.02	0.15	0.87
6-Dec-23	0.0	22,205	0.39	0.06	0.02	0.15	0.87
7-Dec-23	0.0	22,205	0.39	0.06	0.02	0.15	0.87
8-Dec-23	0.0	22,205	0.39	0.06	0.02	0.15	0.87
9-Dec-23	0.0	22,205	0.39	0.06	0.02	0.15	0.87
10-Dec-23	0.0	22,205	0.39	0.06	0.02	0.15	0.87
11-Dec-23	0.0	22,205	0.39	0.06	0.02	0.15	0.87
12-Dec-23	0.0	22,205	0.39	0.06	0.02	0.15	0.87
13-Dec-23	0.0	22,205	0.39	0.06	0.02	0.15	0.87
14-Dec-23	0.0	22,205	0.39	0.06	0.02	0.15	0.87
15-Dec-23	0.0	22,205	0.39	0.06	0.02	0.15	0.87
16-Dec-23	0.0	22,205	0.39	0.06	0.02	0.15	0.87
17-Dec-23	0.0	22,205	0.39	0.06	0.02	0.15	0.87
18-Dec-23	0.0	22,205	0.39	0.06	0.02	0.15	0.87
19-Dec-23	0.0	22,205	0.39	0.06	0.02	0.15	0.87
20-Dec-23	0.0	22,205	0.39	0.06	0.02	0.15	0.87
21-Dec-23	0.0	22,205	0.39	0.06	0.02	0.15	0.87
22-Dec-23	0.0	22,205	0.39	0.06	0.02	0.15	0.87
23-Dec-23	0.0	22,205	0.39	0.06	0.02	0.15	0.87
24-Dec-23	0.0	22,205	0.39	0.06	0.02	0.15	0.87
25-Dec-23	0.0	22,205	0.39	0.06	0.02	0.15	0.87
26-Dec-23	0.0	22,205	0.39	0.06	0.02	0.15	0.87
27-Dec-23	0.0	22,205	0.39	0.06	0.02	0.15	0.87
28-Dec-23	0.0	22,205	0.39	0.06	0.02	0.15	0.87
29-Dec-23	0.0	22,205	0.39	0.06	0.02	0.15	0.87
30-Dec-23	0.0	22,205	0.39	0.06	0.02	0.15	0.87
31-Dec-23	0.0	22,205	0.39	0.06	0.02	0.15	0.87

# MWRA Deer Island Power Plant Monthly Report

Dec-23

## ZURNS Boilers, Units 101 & 201

Day	No. 2 Oil kgal	D. G. kscf	365-Rolling Total		
			Hours Operating	PM tpy	VOC tpy
30-Nov-23	7.692	3876	8,800.3	2.531	1.470
01-Dec-23	2.334	3682	8,800.3	2.530	1.469
02-Dec-23	3.276	3685	8,799.0	2.529	1.468
03-Dec-23	2.825	4149	8,799.0	2.530	1.468
04-Dec-23	0.000	5207	8,799.0	2.530	1.468
05-Dec-23	0.000	5519	8,798.3	2.532	1.469
06-Dec-23	0.000	4977	8,795.3	2.533	1.470
07-Dec-23	0.000	4655	8,792.5	2.534	1.471
08-Dec-23	0.000	4364	8,792.5	2.533	1.471
09-Dec-23	0.000	4324	8,788.8	2.533	1.471
10-Dec-23	0.000	4696	8,788.8	2.533	1.471
11-Dec-23	0.000	4805	8,788.8	2.534	1.472
12-Dec-23	0.000	4693	8,789.5	2.534	1.472
13-Dec-23	0.000	5015	8,789.5	2.535	1.473
14-Dec-23	1.428	4130	8,789.5	2.536	1.474
15-Dec-23	0.184	4848	8,789.5	2.538	1.476
16-Dec-23	0.000	5124	8,786.5	2.541	1.477
17-Dec-23	0.000	4689	8,786.5	2.541	1.478
18-Dec-23	0.000	4480	8,786.5	2.541	1.477
19-Dec-23	0.000	4020	8,782.8	2.540	1.477
20-Dec-23	0.078	4505	8,782.8	2.540	1.477
21-Dec-23	2.679	4176	8,782.8	2.540	1.477
22-Dec-23	0.000	5400	8,782.8	2.542	1.478
23-Dec-23	0.000	4848	8,782.8	2.543	1.479
24-Dec-23	0.000	5139	8,782.8	2.543	1.479
25-Dec-23	1.421	4043	8,782.8	2.544	1.480
26-Dec-23	3.281	3525	8,782.8	2.543	1.479
27-Dec-23	1.244	3795	8,782.8	2.541	1.478
28-Dec-23	0.000	4284	8,782.8	2.541	1.478
29-Dec-23	0.000	4661	8,782.8	2.542	1.479
30-Dec-23	0.000	4808	8,782.8	2.544	1.481
31-Dec-23	0.000	4434	8,782.8	2.545	1.482

Date: Jan 10 2024  
Time: 13:34



Begin: Dec 01, 2023 00:00  
End: Dec 31, 2023 23:59

MWRA  
Deer Island, MA  
\*\*\*\*\* MULTI-PARAMETER SUMMARY REPORT \*\*\*\*\*

365 Day Emissions - Combined Boilers

Start	365 Day Total SO2 tons	365 Day Total NOX tons	365 Day Total CO tons	365 Day Total HI mmBtu
12/01/23	2.50912	12.66471	0.71942	991068.375
12/02/23	2.50229	12.65706	0.71703	990688.375
12/03/23	2.49913	12.66363	0.71848	990872.438
12/04/23	2.49740	12.66329	0.72252	991235.875
12/05/23	2.49409	12.66551	0.72218	991831.750
12/06/23	2.49481	12.66250	0.70934	992237.875
12/07/23	2.48884	12.66338	0.69685	992517.375
12/08/23	2.48566	12.65681	0.69804	992296.188
12/09/23	2.48082	12.64044	0.68359	992015.250
12/10/23	2.47723	12.62215	0.68518	992079.750
12/11/23	2.47166	12.60808	0.68604	992227.563
12/12/23	2.46418	12.60425	0.68595	992389.250
12/13/23	2.45758	12.59672	0.68679	992760.250
12/14/23	2.45904	12.59152	0.68714	992981.625
12/15/23	2.46541	12.58509	0.68717	993781.563
12/16/23	2.46721	12.58369	0.68287	994641.625
12/17/23	2.46719	12.59850	0.68310	994757.750
12/18/23	2.46658	12.59551	0.68418	994565.375
12/19/23	2.46697	12.57768	0.67281	994144.188
12/20/23	2.46640	12.56014	0.67536	994294.063
12/21/23	2.46544	12.54970	0.67718	994383.250
12/22/23	2.46403	12.53600	0.68059	995053.750
12/23/23	2.46442	12.51545	0.67880	995330.000
12/24/23	2.46634	12.49076	0.67864	995545.313
12/25/23	2.46464	12.46790	0.67807	995603.250
12/26/23	2.45788	12.44769	0.67785	995366.125
12/27/23	2.45183	12.42606	0.67779	994696.625
12/28/23	2.45391	12.39197	0.67776	994576.875
12/29/23	2.45815	12.36670	0.67528	994881.125
12/30/23	2.46316	12.35314	0.67181	995505.625
12/31/23	2.46393	12.33643	0.67168	995745.438

**Massachusetts Water Resources Authority**  
**Deer Island Treatment Plant**  
 Pumping Odor Control (CP102) - Stack # 1  
 DEP Conditional Permit No: MBR-91-IND-007A

Month-Year	Total Reduced Sulfur (TRS)		Total Non-Methane Hydrocarbons (TNMHC)	# Exceedances (>1.0 ppmv TRS)	Notes
	Tons	12-Month Rolling Total	Tons	12-Month Rolling Total	
Jan-23	0.000	0.005	0.009	0.124	0
Feb-23	0.000	0.005	0.018	0.133	0
Mar-23	0.000	0.005	0.009	0.133	0
Apr-23	0.000	0.005	0.027	0.150	0
May-23	0.000	0.005	0.027	0.167	0
Jun-23	0.000	0.005	0.023	0.173	0
Jul-23	0.000	0.005	0.057	0.218	0
Aug-23	0.000	0.005	0.014	0.222	0
Sep-23	0.000	0.005	0.034	0.247	0
Oct-23	0.000	0.005	0.033	0.270	0
Nov-23	0.001	0.005	0.012	0.274	0
Dec-23	0.000	0.005	0.009	0.274	0
<b>Emissions Limitations:</b>	0.040	0.230	0.800	5.400	1.0 ppmv TRS
<b>Detection Limits, ppm v:</b>	0.01		0.20		

**Massachusetts Water Resources Authority**  
**Deer Island Treatment Plant**  
 Primary A-D, East/West Grit Odor Control (CP103) - Stack # 2 & 3  
 DEP Conditional Permit No: MBR-91-IND-007B

Month-Year	Total Reduced Sulfur (TRS)		Total Non-Methane Hydrocarbons (TNMHC)		# Exceedances (>1.0 ppmv TRS)	Notes
	Tons	12-Month Rolling Total	Tons	12-Month Rolling Total		
Jan-23	0.003	0.053	0.076	1.085	0	
Feb-23	0.003	0.053	0.067	1.087	0	
Mar-23	0.003	0.053	0.076	1.085	0	
Apr-23	0.003	0.053	0.208	1.220	0	
May-23	0.003	0.053	0.192	1.318	0	
Jun-23	0.003	0.051	0.245	1.445	0	
Jul-23	0.003	0.050	0.437	1.809	0	
Aug-23	0.003	0.040	0.138	1.826	0	
Sep-23	0.003	0.036	0.278	1.999	0	
Oct-23	0.003	0.036	0.253	2.154	0	
Nov-23	0.003	0.035	0.114	2.160	0	
Dec-23	0.003	0.035	0.089	2.171	0	
<b>Emissions Limitations:</b>	0.500	4.000	5.600	34.000	1.0 ppmv TRS	
<b>Detection Limits, ppm v:</b>	0.01		0.20			

**Massachusetts Water Resources Authority  
Deer Island Treatment Plant**

Primary Residuals Odor Control (CP301) - Stack # 4 and Secondary Residuals Odor Control (CP303) - Stack # 4  
DEP Conditional Permit No: MBR-91-IND-007C and MBR-91-IND-007D

Month-Year	Total Reduced Sulfur (TRS)		Total Non-Methane Hydrocarbons (TNMHC)		Ammonia (NH3)		# Exceedances (>1.0 ppmv TRS)	Notes
	12-Month Rolling		12-Month		12-Month Rolling			
	Tons	Total	Tons	Rolling Total	Tons	Total		
Jan-23	0.002	0.027	0.047	0.718	0.024	0.278	0	
Feb-23	0.002	0.027	0.043	0.717	0.021	0.278	0	
Mar-23	0.002	0.027	0.047	0.717	0.024	0.278	0	
Apr-23	0.002	0.028	0.132	0.800	0.023	0.278	0	
May-23	0.002	0.028	0.163	0.916	0.024	0.278	0	
Jun-23	0.002	0.028	0.170	1.030	0.023	0.278	0	
Jul-23	0.002	0.028	0.298	1.246	0.024	0.278	0	
Aug-23	0.002	0.025	0.075	1.207	0.024	0.278	0	
Sep-23	0.002	0.024	0.181	1.313	0.023	0.278	0	
Oct-23	0.003	0.025	0.187	1.441	0.024	0.278	0	
Nov-23	0.003	0.025	0.046	1.436	0.023	0.278	0	
Dec-23	0.002	0.025	0.047	1.437	0.024	0.278	0	
<b>Emissions Limitations:</b>	0.250	2.000	3.800	23.300		verify <1 tpy	1.0 ppmv TRS	
<b>Detection Limits, ppm v:</b>	0.01		0.20		0.25			

**Massachusetts Water Resources Authority**  
**Deer Island Treatment Plant**  
 Secondary Odor Control (CP202) - Stack # 5  
 DEP Conditional Permit No: MBR-92-IND-056

Month-Year	Total Reduced Sulfur (TRS)		Total Non-Methane Hydrocarbons (TNMHC)		# Exceedances (>1.0 ppmv TRS)	Notes
	12-Month Rolling		12-Month Rolling			
	Tons	Total	Tons	Total		
Jan-23	0.000	0.005	0.012	0.140	0	
Feb-23	0.000	0.005	0.010	0.140	0	
Mar-23	0.000	0.005	0.012	0.140	0	
Apr-23	0.000	0.005	0.028	0.157	0	
May-23	0.000	0.005	0.032	0.177	0	
Jun-23	0.000	0.005	0.037	0.203	0	
Jul-23	0.000	0.005	0.071	0.262	0	
Aug-23	0.000	0.005	0.032	0.282	0	
Sep-23	0.000	0.005	0.050	0.319	0	
Oct-23	0.000	0.005	0.039	0.344	0	
Nov-23	0.000	0.005	0.011	0.344	0	
Dec-23	0.000	0.005	0.012	0.344	0	
<b>Emissions Limitations:</b>	0.1250	1.0000	0.3600	2.2000	1.0 ppmv TRS	
<b>Detection Limits, ppm v:</b>	0.01		0.20			

**Boston/Winthrop Fire Truck Responses**

<b>Date:</b>	<b>City/Town:</b>	<b>Reason for Responses:</b>	<b>Area:</b>
1/1/2023	Boston/Winthrop	Fire in Dumpster	Winthrop Terminal
1/5/2023	Winthrop	Alarm in North Main	North Main
2/26/2023	Winthrop	Alarm	Maint Bldg
3/24/2023	Boston/Winthrop	Alarm	Gravity Thickener
4/4/2023	Winthrop	Alarm Active/Smoke Detector	Primary OPS
5/5/2023	Boston/Winthrop/EMS	Winthrop Turbine Incident	Parking Lot 3
6/23/2023	Winthrop/Ambulance	Ill Employee	2nd FI Maintenance
7/17/2023	Boston/Winthrop	Alarm	Thermal
7/21/2023	Winthrop	Alarm	Primary Cross Gallery
12/15/2023	Boston/Winthrop	Alarm	Gravity Thickener
12/25/2023	Winthrop	Alarm	Gravity Thickener
2/26/2024	Boston/Winthrop	Alarm	Maintenance Bldg
3/14/2024	Winthrop/EMS	Ill Employee	Maintnenance Bldg
3/24/2024	Boston/Winthrop	Alarm	Gravity Thickener
5/5/2024	Winthrop	Alarm	South Pump Facility
5/7/2024	Boston/Winthrop/EMS	Fire Notification	Cryo Facility

<b>Other:</b>
fire suppression released
smoke in Maint Office Area
Faulty Flow Switch
Microwave casued smoke alarm
Flow Switch
Hot water steam set off beam detector
Flow Switch
Flow Switch
Faulty Flow Switch
Flow Switch
Unknown
Smoldering Insulation on cold box

Gate Logs

Date	Chemical	Fuel Oil	Warehouse	Equipment (Const E	Trash (Grit+Dumpster)
5/20/2022		2		4	2
5/23/2022		2		2	
12/6/2022		3		1	1
12/7/2022		2		2	
12/8/2022		3		5	2
12/9/2022		2		6	2
3/20/2023		3		3	
3/27/2023		1		4	
3/28/2023		4		2	2
3/30/2023		2		5	1
3/31/2023		3		3	1
8/7/2023		4		6	
8/15/2023		4			
8/17/2023		4			
3/20/2024		2		3	1

Total

8

6

5

4

11

10



7

8

8

9

7

11

4

4



7

MWRA / Deer Island Treatment Plant

Contract 6723 – Seawall Preliminary Design Report (PDR) Summary

**Main PDR**

Recommendation Table Summary

Highlighted text shows priority repairs within next 3 years.

Component	Repair Option	Cost	Reference
Seawall Repair	6 – remove 5" concrete in damaged areas, patch, protective coating & cathodic protection	\$21 M	2.3.5
Pedestrian Railing Replacement	2 – 42" aluminum railing	\$1.1 M	2.3.14
Behind Wall Drainage System	N/A – new 9" w x 5' d channel w/grating behind seawall	\$2 M (presented) \$3.5M (shown in Cost estimate)	Figure 2.3.6, Appendix F 7.2
Revetment	None made, but North revetment should be 8 & 9.5 ton stone; is currently 4 & 8 - ton stone respectively. Could be "Considered in the future"	None listed	Appendix C 4.1.3
Stone Toe Protection Apron (STPA)	3 – reuse 2.5 ton armor stone & re-lay at 10H:1V slope w/new bedding at seawalls	\$16.2 M	2.4.1 and Appendix C 4.1.1
Granite Blocks	Appendix C: 5.2.1 Option 1 – Mechanically fasten w/steel dowel	None listed	2.4.3 and Appendix C 5.2.1 Option 1
Outfalls	None recommended	None listed	2.5.2 and Appendix A
Beach Fill	Enhance beaches fronting seawalls as a "maintenance item". Not a formal recommendation in this PDR.	None listed	2.6.10 and Appendix E
Dredging	Limits of dredging would be for slope modifications to Stone Toe Protection Apron	Not expressly mentioned if included in STPA cost estimate	2.7 and Appendix F

Concrete Testing shows high chloride content to the lower half of the seawalls which is the cause for much of the spalling and delamination.

The recommended seawall repair option includes removing areas with high chloride content to a depth of 5-inches and patching with a low slump high density concrete and adding a protective coating to the entire exposed face. They also recommend a cathodic protection system to protect the steel – which is

not described within. Option 5 includes a similar approach but without the cathodic protection system at a cost of \$16.5 M, roughly \$4.5 M less. They do not address repairing the already corroded rebar.

The inspections indicated that much of the expansion joint material on the sidewalk and seawalls is loose, separated, missing or damaged. Coupled with rain and wave overtopping, the water is penetrating through the joints at the top of the wall and causing “V” shape spalls. They recommend removing the loose material and replacing all expansion joint materials. A cost for this was not provided.

The inspection report also identified many cracks throughout the upper portion of the seawall. In these areas, Green recommends chipping the areas to sound concrete and pressure injecting epoxy material. The cost for the crack repair is included in certain seawall repair options.

Surface runoff/flooding: Inspections determined that the drainage system was likely not designed to handle surface runoff, as the top 3 feet of soils were low permeability soils (compacted glacial till). It is because of that that after rain events the seawall sees high overland flow and flooding problems. The recommendation is to create a separate drainage system to handle surface water consisting of a 9-inch wide, 5-foot deep channel with grating behind the seawall and 6” PVC drain pipes spaced every 12-feet.

Railings: Rail post holes are not grouted flush allowing sea water to sit at the base, which is causing the posts to rust. The inspections also note a failed coating system and rail deterioration. The recommendation is to install new 42-inch tall aluminum picket fence.

The remainder of the PDR is summarized in the corresponding reports. It wasn’t summarized well in the main PDR document and some alternatives are missing recommendations and cost estimates.

## **Appendix A – Seawall and Stormwater Drainage Outfall Report**

This report documents seawall and drainage inspection procedures including access, and visual and delamination (sounding) testing and includes photographs of specific areas of concern and detailed sketches outlining locations and quantities of delamination, exposed and debonded reinforcing, spalling etc. along each seawall and sidewalk. Generally:

The CP-204 and CP-301 seawalls show delamination, spalls and debonded reinforcing from the top of the footing up to about 8-ft. Many footing locations are either covered by the mudline or exhibit scaling and abrasion. The expansion joint filler is missing at several locations; weep holes for drainage are often blocked; top of wall locations at construction joints exhibit severe spalling and delamination which is causing chunks of concrete to fall into the sea and tripping hazards on the walkway.

Many of the drainage outfalls are missing the rubber “duckbill” valves that were installed to prevent tidal influence in the stormwater system. Additionally, many of the outfalls are mostly buried by sand deposits, holding the duckbill valves closed and severely limiting the functionality of the stormwater outfall.

## **Appendix B – Seawall Testing Reports**

The testing reports include the results of the chemical and physical testing of the concrete cores taken from the seawalls where chloride content, compressive strength, aggregate size, grading, depth of carbonation, water-to-cement ratio, and air content were analyzed. This was mainly to provide the “as built” condition of the concrete as well as how deep the seawater influence has penetrated.

Generally, the compressive strength of the concrete exceeded what was specified with the exception of two of the twelve locations. The coarse aggregate size was consistently  $\frac{3}{4}$ ” (min 0.5”, max 1”) and was determined to be generally well graded. The depth of carbonation ranged from 0 to 1/4”. Water to cement ratio ranged from 0.40 to 0.48 with approximately 8-11% unhydrated cement particles. Lastly, half of the samples’ air void systems were not consistent with the current American Concrete Institute (ACI) recommendations for freeze-thaw resistance. No trend between CP 204 or 301 seawall or location of sample (top/middle/bottom of wall) was identified in this analysis.

## **Appendix C – Seawall and Shoreline Assessment**

CP-043 Northeast Revetment: Generally looked good with minor toe stone displacement. Armor stone appeared stable. While there is a noticeable transition between the granite blocks (square cut vs rough cut) at station 22+20, there was no distinguishable difference or transition between the 4-ton and 8-ton revetments shown on the Record Drawings. There was minimal deterioration between 2021 inspections and those performed in 2005.

CP-204 Seawall: Showed no signs of settlement, undermining, wall rotation, or movement at expansion joints. The top of footing was consistently exposed and the wall stem was generally in poor condition below El. 118 and fair condition above. Conditions have deteriorated significantly since 2005 inspections. Stone toe protection apron (STPA) in front of the wall had no discernable structure and although didn’t appear to have changed significantly since the 2005 inspections and were noted to be in poor condition.

CP-301 Seawall: Showed no signs of settlement, undermining, wall rotation, or movement at expansion joints. The top of footing was consistently exposed and the wall stem as generally in poor condition below El. 118 and fair condition above. Conditions have deteriorated significantly since 2005 inspections. Stone toe protection apron (STPA) in front of the wall showed considerable movement worsened significantly since the 2005 inspections and were noted to be in poor condition. Lastly, at the CP-204/301 transition, there is an area where the footing is undermined and the cut-off wall below the footing is visible.

CP-204 South Revetment: Generally in good condition with similar conditions as 2005 inspections.

CP-048 Southwest Revetment: Generally in good condition with similar conditions as 2005 inspections.

CP-048 West Revetment: Generally in good condition with moderate toe stone movement in a roughly 100-ft destabilized area. Generally similar conditions as 2005 inspections.

A revetment analysis was performed to determine the weight of the armor stone required to properly protect the shoreline. The results that the CP-043 Northern Revetment and the CP-304 Seawall’s armor stones are significantly undersized for the current 100-year storm, with the CP-301 Seawall’s armor stone being undersized for the future 2050, 100-year storm in addition to the other two systems.

The Northern portion of the CP-043 revetment should be overlaid with 8-ton stone while the southern section of the CP-043 northern revetment should be overlaid with 10-ton stone to provide adequate protection for future conditions. Although the report and the calculations repeatedly state this revetment is undersized, no formal recommendation to upgrade this area was made, saying only it “should be considered in the future”.

For the seawall scour protection, both CP-301 and CP-204 seawalls can either be upgraded to 8-ton armor stone at the current 1V:2H slope or 2.5 ton stone at 1V:6H slope or shallower to remain stable in the 2050 100-year storm. The recommendation is to re-use the existing 2.5 ton armor stone and lay it at a 1V:10H slope and underlay it with a 500-lb underlayer and 25-lb bedding layer. Keeping the scour protection to the originally designed 23-feet out from the wall stem would classify this improvement as scour protection apron maintenance and ease permitting.

A global stability analysis was performed for both CP-301 and 204 seawalls. The results conclude that the walls were adequately sized to prevent an overturning or bearing capacity failure for all cases analyzed. For portions supported on piles, the pile loads are within the installed capacities.

Granite Block Crest Lining: two options were presented to help reduce blocks’ movement during storms: 1) Mechanically fastening them with steel dowels and grout to the armor stone; and 2) Increasing the grade behind the stone. No recommendation or price were provided, but it is assumed Option 1 would be the accepted approach.

#### **Appendix D – Technical Memo on Wave Overtopping and Forcing**

This memo details how the Massachusetts Coast Flood Risk Model (MC-FRM) which was developed by Woods Hole Group for the MassDOT and supplemented with DITP ground, LiDAR and bathymetric survey was used to generate wave height, wave force, and water levels for current and future conditions which were used in the evaluations presented above. The results indicate the current 100-year storm water level to be 115.5-ft (MWRA datum) and future, 2050 100-year water level to raise to 118.1-ft. the wave heights vary between the east (7-9.5-ft with a frequency of ~10.5 sec) and west side (3-4-ft with a frequency of ~4 sec) in the current conditions. Those numbers increase to 8-11-ft (east) and 4.5-5.5-ft (west) in the 2050 conditions. Frequency only increased slightly between current and future conditions.

Modeling results confirmed the calculations in Appendix C indicating that the northeast revetment was susceptible to damage with an overtopping rate of 0.54 cfs/lf and the CP-204 seawall was susceptible to damage at an overtopping rate of 0.02 cfs/lf during future 2050 conditions. Note the scale for damage to seawalls is different than that of revetments.

Wave forces on the seawall were also calculated. These values are 35 and 55 kpis/foot in the current day and future 2050 100-year storms, respectively.

#### **Appendix E – Technical Memo: Beach Study and Coastal Inspections**

This memo details the condition of the shoreline and how it has been affected since the construction of the shoreline protection system at DITP.

Based on available data, the shoreline was compared from years 1847-1978 and years 2001-2019 to represent pre- and post- construction conditions. In the pre-construction conditions, the shoreline remained relatively stable minus the northeast corner and a portion of the western side of the island

which were affected by the New England Hurricane of 1938. Post-construction, the shoreline has shown to be stable, as expected given the shoreline protection deployed. Figure 3 contrasts shoreline movement between these two periods. Yirrell Beach was noted to be showing an increased rate of accretion, at 3.2 feet/year which can be attributed to active beach management activities.

The study further investigated change in nearshore morphology (where sand is being deposited/eroded in front of existing shoreline protection structures) between 2010 and 2021 using the topography and bathymetry collected as part of this contract. This evaluation shows erosion of the northernmost end of the northern revetment. On the seawalls, erosion is shown at the location of the tow stones with deposition of the nearshore beaches. The southern revetment shows variability especially where the shore-perpendicular structures exist, and the western revetment generally shows deposition which is likely due to the curvature of the shoreline.

Lastly, the memorandum modeled sediment transport in front of the seawalls during a 100-year storm and whether beach nourishment (sand placement) would be beneficial. The beaches that front the seawalls exhibit erosion during storms as evident by the exposed stone toe protection apron. The model concludes that beach fill will provide a considerable reduction of exposure to the toe protection, making it more resilient and reduces wave impacts on the seawall. Erosion during a 100-year storm would reduce from 6-ft in front of the CP-204 seawall to 3.5-ft, and from 10-ft to 2-ft in front of the CP-301 seawall. Beach nourishment could then routinely be added as a maintenance item for seawall protection.

No formal recommendations, quantities/size of sand, or cost estimate was provided in this memorandum.

## **Appendix F – Geotechnical and Hazardous Materials Report**

This memorandum outlines the procedures for conducting borings, groundwater and sediment sampling and testing and provides background information on the environmental status of DITP. They noted that a Class A-3 Response Action Outcome (RAO) was filed for the site in 2001 which included a Method 3 Risk Assessment was concluded with a condition of No Significant Risk with the implementation of an Activity Use Limitation (AUL) on the 9 lots that comprise DITP (this project spans Lots 3, 4, and 6). The AUL restricts future residential use and imposes soil management requirements during construction and excavation activities.

Soil Chemical Testing Results: TPH, EPH and metal were detected in the soil at limits above laboratory reporting limits, however no contaminants were detected above the MCP RCS-1.

Groundwater Chemical Testing Results: VOCs, SVOCs, metals and ammonia as Nitrogen were detected at limits above laboratory reporting limits, however no contaminants were detected above the MCP RCGW-2.

Sediment Sampling Testing Results: EPH, SVOC's and metals were detected above laboratory reporting limits, however MCP RCS-1 standards only apply to soil and there are no reportable concentrations.

All samples are consistent with concentrations previously identified and are not reportable under the MCP.

Boring results indicated a thin layer of topsoil, followed by fill soils that were clayey sand with gravel and sandy lean clay with gravel and appeared to be re-worked glacial till. It was a medium-dense to very dense soil with low permeability and poor compaction properties.

Groundwater levels did not appear to be tidally influenced, but did appear to be influenced by rain events. Additional explorations (geoprobings) were since performed to better understand the groundwater behind the seawall and will be included in the updated report.

The recommendations are for a rip-rap layer similar to what was installed in the northernmost 600-ft be installed on the vegetated slope portion of the seawall adjacent to the disinfection tanks. The rip rap layer should be installed a sufficient distance beyond the impact of breaking waves splashing over the seawall, and a drainage system be installed on the backside of the wall (mentioned previously). This drainage system would be independent of the groundwater/tides and be for storm related run-off only.

No significant reportable contamination was identified that would impact the proposed construction. It is likely that most excess soil would be acceptable at a less than RCS-1 fill site. RAM Plan and SMP are requirements of the AUL.

Given the low permeability of the soils, recharge of construction dewatering is not likely an option. On-site treatment consisting of a fractionalization tank settling and removal of fine particles through a bag filter system prior to discharge to the stormwater system is the most likely requirement.

Sediment management in locations where dredging is proposed (slope for Stone Toe Protection) could be reused as daily cover at a Massachusetts lined or unlined landfill. Areas with high conductivity (due to high clay content) may require disposal at an out of state landfill for non-hazardous waste.

### **Appendix G – Permit Evaluation Technical Memorandum**

This memorandum summarizes all regulatory reviews, permits, approvals, notifications and licenses, together called “permits” that could potentially be applicable on this project based on the proposed scope of work and describes why they are or are not relevant. It outlines permits by federal, state and local agencies and documents a schedule for submittal date in both design and construction to keep the project on track. The memorandum outlines six federal permits, ten state permits and one local permit that may be required.

### **Appendix H - Plans**

The Drawings are rough plans highlighting the areas for seawall repair, STPA repair and Granite block anchoring. Very conceptual, even for a “30% submittal”.

### **Appendix I – Cost Estimate**

The cost estimate contains worksheets for all options of the following recommendations:

- Railing replacement
- Seawall Repair
- Behind wall drainage system.

It does not include:

- Any new revetment (unclear if this is recommended)
- STPA repair
- Granite Blocks
- Outfall rehab/replacement (unclear if this is recommended)
- Beach fill (unclear if this is recommended)

## **Appendix J – Flood Evaluation Study Memorandum**

This memorandum discusses the approach for developing the overtopping model for the DITP. Woods Hole Group used the design water levels and wave conditions developed under other sections of the PDR to supplement the MC-FRM (also discussed under other sections of the PDR, and developed for the Mass DOT and supplemented by LiDAR and bathymetry obtained under this project) to model wave overtopping and inundation. The results of the model indicated that while a majority of DITP is of high elevation and protected by shore protection structures, the following areas would be impacted under current conditions, during a 100-year storm:

- Northeast Revetment (CP-043) and CP-204 seawall would experience flooding along the crest of the walkway with no upland effects;
- CP-301 Seawall would experience similar flooding along the walkway with additional flooding along the southern portion inside the fence line – in proximity to the southernmost Digester Module (Module 2).
- Landward flooding to the western and southern revetment (CP-204 and CP-208) which would affect the pier facility, westernmost portion of Parking Lot 3 inside the DITP fence line and southernmost pedestrian walkways;
- Flooding at the Tafts Ave entry to DITP, in the public parking area.

Flooding in the above areas is limited to 1-ft or less. During the future 2050, 100-yr storm, impacted areas are similar, with the following additions:

- Tafts Ave is showing 3-4 feet of flooding at the entry way to DITP;
- Pier facility is showing roughly 2-ft of flooding and flooding further into Parking Lot 3 inside the DITP fence line
- Flooding at R/T Building and around guard shack;
- 1-2 feet of flooding along Deer Island Road around SSPS, and Road D between SSPS and the Gravity Thickeners, and Road 9 in front of the Residuals OC Facility
- 1-2 feet of flooding in the area of Digester Module 2 inside the DITP fence line.

One thing to note is that Woods Hole Group used true 100-year storm elevations, as modeled by their software. Our design criteria (and the storm surge map we developed internally) use historical 100-yr storm +2.5-ft.