DRAFT ENGINEERING EVALUATION
Plant 24726 (Site A0011): Martinez Refining Company LLC
3485 Pacheco Boulevard, Martinez, CA 94553
Application 31608: Dissolved Nitrogen Flotation (DNF) Units

BACKGROUND

Martinez Refining Company LLC (MRC) has requested an Authority to Construct (AC) for the following *new* equipment:

S-3001 Dissolved Nitrogen Flotation Unit (West)
SUEZ Poseidon PPM 2,100 GPM
Maximum operating rate: 3,000 BBL/hour of wastewater
Abated by Cabot Norit Activated Carbon Canisters (A-3002) consisting of two canisters set up in series

S-3003 Dissolved Nitrogen Flotation Unit (East)
SUEZ Poseidon PPM 2,100 GPM
Maximum operating rate: 3,000 BBL/hour of wastewater
Abated by Cabot Norit Activated Carbon Canisters (A-3002) consisting of two canisters set up in series

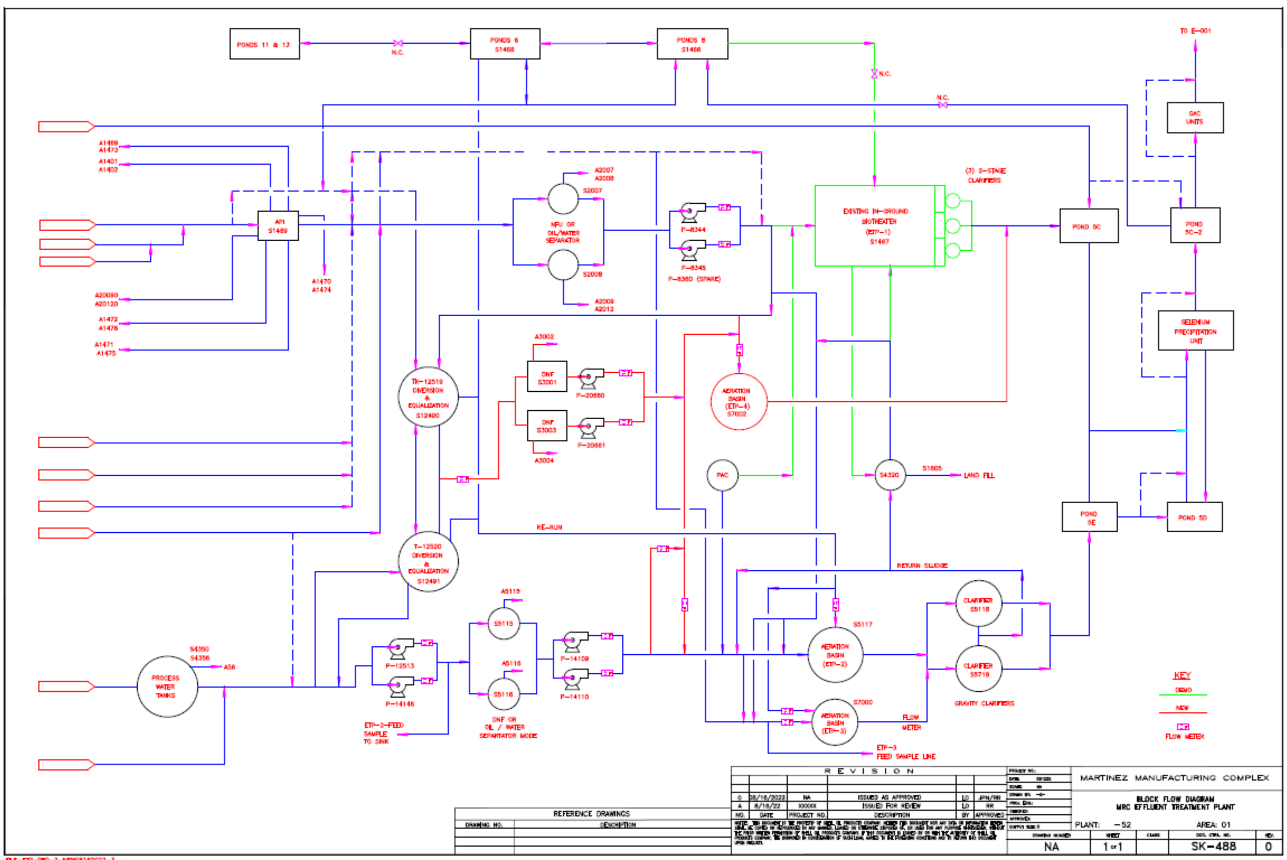
S-3001 and 3003 are shown as “S-NEW1” and “S-NEW2” in Figure 1.

Figure 1:

[redacted]

MRC submitted Applications 31223 (for S-7002 ETP-4) and 31608 (for S-3001 and 3003 DNFs) in June 2021 and February 2022, respectively. As shown in the block flow diagram (BFD) in Figure 2 and as proposed, S-3001 and S-3003 will be upstream of S-7002. Emissions of organic compounds as defined in 1-233 and 8-8-201 and toxic air contaminant (TAC) emissions as defined in 2-5-222 from S-3001 and S-3003 will be abated by carbon abatement system A-3002 which will consist of two carbon cannisters arranged in series. Emissions from DNFs (S-3001 and S-3003) will be routed to a single stack connected to carbon adsorption vessel (A-3002) and the abated emissions will exit out of P-3001.

Figure 2:



ETP Biotreater 4 (S-7002 in the BFD) is located downstream of S-3001 and S-3003 and its emissions (as proposed) will not be abated. MRC has proposed to repurpose an existing 83,000-barrel external floating roof tank (S-1067) to serve as ETP-4. As proposed, ETP-4 will replace ETP-1 (S-1467 in the BFD).

Since the issuance of an AC for the DNFs is not contingent upon whether ETP-4 can be permitted i.e., they can operate independent of ETP-4, the scope of this report will only evaluate the DNFs and ETP-4 will be evaluated separately under A# 31223.

EMISSION CALCULATIONS

Per information submitted by MRC that was reviewed and approved by the Air District, contained in Attachment 1 of this report, the unabated daily POC emissions from each DNF estimated by the TOXCHEM model is 9.020 #/day. Assuming a POC abatement efficiency of ≥95% by wt. for A-3002, the combined abated POC emissions from both DNFs are 0.902 #/day (9.020 x 0.05 x 2). The total POC emissions from the DNFs and their fugitive components discussed later in this report are 8.982 #/day (0.902 + 8.08 from Table 3.d.).

The abated hourly and annual TAC emissions for DNFs summarized in Table 1 were determined from the TOXCHEM model and assumed a flow rate of 2,100 GPM to estimate hourly and annual emissions in concert with maximum historical concentrations (to determine maximum hourly emissions) and average historical concentrations (to determine annual emissions) summarized in Table 2. Attachment 1 of this evaluation report contains TOXCHEM model results MRC provided to the Air District on August 10th, 2023.

For example, hourly and annual benzene emissions estimated by the TOXCHEM model assumed a concentration in the wastewater of 4 ppmw and 0.92 ppmw, respectively and estimated the combined abated benzene hourly and annual emissions to be equal to 2.68E-03 #/hour (1.34E-03/DNF from Attachment 1 x 2 DNFs) and 5.38 #/year (2.69/DNF from Attachment 1 x 2 DNFs), respectively.

Table 1:
TAC Emissions determined by the TOXCHEM model

TAC	DNFs (Abated emissions from S-3001 and S-3003 exiting out of P-3001)		Acute TTL lb/hr	Equals/ Exceeds Exceeds Acute Yes/No	Chronic TTL lb/yr	Equals/ Exceeds Exceeds Chronic Yes/No
	Hourly (lb/hr)	Annual (lb/yr)				
1,3-Butadiene	1.65E-05	0.14	2.90E-01	N	4.80E-01	N
Benzene	2.68E-03	5.38	1.20E-02	N	2.9	Y
Bromomethane	2.62E-04	0.14	1.7	N	1.90E+02	N
Carbon Disulfide	7.16E-06	0.06	2.7	N	3.10E+04	N
Chloroform	1.32E-05	0.09	6	N	-	-
Cumene (Isopropylbenzene)	0	0	6.60E-02	N	1.50E+01	N
Cresols	8.62E-06	0.05	-	-	2.30E+04	N
Cresol(-O)	0	0	-	-	2.30E+04	N
Cresol(-P)	0	0	-	-	2.30E+04	N
Ethylbenzene	1.11E-03	2.28	-	-	3.30E+01	N
Methyl Ethyl Ketone (2-Butanone)	2.90E-07	0	5.8	N	-	-

Table 1: TAC Emissions determined by the TOXCHEM model						
TAC	DNFs (Abated emissions from S-3001 and S-3003 exiting out of P-3001)		Acute TTL lb/hr	Equals/ Exceeds Exceeds Acute Yes/No	Chronic TTL lb/yr	Equals/ Exceeds Exceeds Chronic Yes/No
	Hourly (lb/hr)	Annual (lb/yr)				
N-Hexane	1.48E-05	0.07	-	-	2.70E+05	N
Naphthalene	3.28E-05	0.07	-	-	2.4	N
Phenol	1.08E-05	0.04	2.6	N	7.70E+03	N
Tetrachloroethene (PERC)	1.52E-04	1.33	8.80E+00	N	1.40E+01	N
Toluene	9.66E-03	36.8	2.2	N	1.60E+04	N
Xylenes (mixed)	6.68E-03	12.82	9.7	N	2.70E+04	N

Table 2: Maximum historical and average TAC concentrations in wastewater used by the TOXCHEM model to determine TAC emissions		
TAC	Max Historical Concentration (ppmw)	Average Historical Concentration (ppmw)
Toluene	18.00	7.84
Benzene (1)	4.00	0.92
Carbon Disulfide	0.01	0.01
Methyl Ethyl Ketone (2-Butanone)	0.05	0.05
Naphthalene	0.62	0.16
Cumene (Isopropylbenzene)	0.27	0.04
Ethylbenzene	2.60	0.61
Butadiene-(1,3) (1)	0.002	0.002
Phenol	26.00	10.48
Hexane,n-	0.10	0.06
Xylene	18.00	3.94
Trimethylpentane,2,2,4-	0.09	0.09
Phenanthrene	0.80	0.26
Cresol(-O)	11.00	6.44

Table 2: Maximum historical and average TAC concentrations in wastewater used by the TOXCHEM model to determine TAC emissions		
TAC	**Max Historical Concentration (ppmw)**	**Average Historical Concentration (ppmw)**
Cresol(-P)	16.00	10.92
Chloroform (Trichloromethane)	0.02	0.01
Trimethylbenzene,1,3,5-	2.20	0.20
Dimethylphenol,2,4-	4.20	2.81
Trimethylbenzene,1,2,4-	6.60	0.60
Bromomethane	0.26	0.02
Tetrachloroethene (1)	0.001	0.001
Cyclohexane	0.21	0.08
Toluene (2)	70.00	30.00

(1) Reduced concentrations of 1,3-butadiene (to 0.002 ppmw from 0.01 ppmw used in 1st HRA) and PERC (to 0.001 ppmw from 0.18 ppmw used in 1st HRA) in the incoming wastewater.

(2) Toluene is a modified form of Toluene used to represent TPHg/ POC. This is based on the approach used in BAAQMD's Further Study Measure 9: Refinery Wastewater Treatment Systems, in which TPHg concentrations in refinery wastewater were used to represent POC concentrations, and were modeled as Toluene with an adjusted biodegradation rate constant of 0.01 L/(mg-hr)

Fugitives:

738 fugitive components (259 valves, 467 connectors, 7 pumps, and 5 PRDs) will be installed as part of the proposed project. Fugitive POC emissions were estimated using the correlation equations provided in Table IV-3a of the CAPCOA document titled "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities" dated February 1999 as discussed below.

Table 3.a.:			
Component Type	**Correlation Equation (kg/hr/component)**	**8-18 Screening Value (ppm)[1]**	**Maximum Leak Rate for Delay of Repair (lb/day)[2]**
Valves	2.27 x 10-6 (SV)0.747	100	5
Connectors	1.53 x 10-6 (SV)0.736	100	5
Pumps	5.07 x 10-5 (SV)0.622	500	5
PRDs	8.69 x 10-6 (SV)0.642	500	5

Notes:
1. Screening Value is based on the BAAQMD Reg 8-18 leak standards.
2. Per Reg 8-18-311

Table 3.b.:					
Component Type	Proposed Counts	Not on repair list	not on repair list e/r (#/hr/comp)	On repair list	repair list e/r (#/hr/comp)
Valves	259	259	1.56E-04	0	2.08E-01
Connectors	467	467	1.00E-04	0	2.08E-01
Pumps	7	6	5.33E-03	1	2.08E-01
PRDs	5	5	1.04E-03	0	2.08E-01
Total	**738**	**737**		**1**	

Notes:
1. Per Reg 8-18-306.2 round to the next whole number

Table 3.c.:				
Emissions	Not on repair list (365-days)	On repair list (90-days)	Taken off repair list (275-days)	Total
Valves	3.54E+02	0.00E+00	0.00E+00	3.54E+02
Connectors	4.09E+02	0.00E+00	0.00E+00	4.09E+02
Pumps	2.80E+02	4.50E+02	3.52E+01	7.66E+02
PRDs	4.53E+01	0.00E+00	0.00E+00	4.53E+01
Total				**1,574.19**

#/yr

Table 3.d.:				
Emissions	Not on repair list (365-days)	On repair list (90-days)	Taken off repair list (275-days)	Total
Valves	0.97	0.00	0.00E+00	0.97
Connectors	1.12	0.00	0.00E+00	1.12
Pumps	0.77	5.00	9.65E-02	5.86
PRDs	0.12	0.00	0.00E+00	0.12
Total				**8.08**

#/day

Emissions summarized in Tabe 3.c. were estimated as follows:

1. Fugitive components summarized in Table 3.b. were categorized into those not awaiting repair/replacement and those awaiting repair/replacement estimated per 8-18-306.2.

2. Emissions for fugitive components not awaiting repair/replacement were estimated using correlation equations summarized in Table 3.a.

Screening values (SV) in the above table were taken from Regulation 8-18-300 and were substituted into the correlation equations to calculate the emission rate for each fugitive component type.

Emissions for each type of fugitive component was calculated as the product of the emission rate estimated via the correlation equation times the number of components and assuming the component would leak at the same rate for an entire year.

3. Emissions for fugitive components awaiting repair were estimated per 8-18-311 assuming they would emit 5 pounds/day for no more than 90-days i.e., they would either be repaired/replaced within 90-days.

Emissions for each type of fugitive component taken off the repair list was calculated as the product of the emission rate estimated via the correlation equation times the number of components taken off the repair list and assuming the component would leak at the same rate for the remainder of the year i.e., 275 days = 365 – 90.

For example and as proposed, MRC will be installing 7 pumps of which 1 pump will be assumed to be on the repair list in order to provide margin of compliance with the emissions limit. 6 pumps not awaiting repair will emit 5.33E-03 pounds of POC per hour for 365-days; 1 pump awaiting repair will emit 2.08E-01 pounds of POC per hour for 90-days; and the 1 pump when taken off the repair list will emit 5.33E-03 pounds per hour for 275-days. Per Table 3.c. all pumps combined will emit 766 pounds of POC per year as shown below:

= (6 x 5.33E-03 x 365 x 24) + (1 x 2.08E-01 x 90 x 24) + (1 x 5.33E-03 x 275 x 24)
= 280.39 + 450 + 35.21
= 765.60 pounds/year

Employing the above methodology for the other fugitive component types, the valves, connectors, and PRDs will emit 354.13 pounds/year, 409.12 pounds/year, and 45.35 pounds/year, respectively. Therefore, the combined fugitive POC emissions from all 738 fugitive components is 1,574.20 pounds/year.

Table 4 summarizes the TAC emissions from the fugitive components.

Table 4:		
TAC	**DNFs - fugitives**	
	259 valves + 467 connectors + 7 pumps + 5 PRDs	
	Hourly (lb/hr)	**Annual (lb/yr)**
1,3-Butadiene	3.59E-10	3.15E-06
Benzene	5.39E-07	1.45E-03
Bromomethane	4.67E-08	3.15E-05
Carbon Disulfide	1.80E-09	1.57E-05
Chloroform	3.59E-09	1.57E-05
Cumene (Isopropyl benzene)	4.85E-08	6.30E-05

Table 4:		
TAC	DNFs - fugitives 259 valves + 467 connectors + 7 pumps + 5 PRDs	
	Hourly (lb/hr)	Annual (lb/yr)
Cresols	4.85E-06	2.73E-02
Cresol(-O)	1.98E-06	1.01E-02
Cresol(-P)	2.88E-06	1.72E-02
Ethylbenzene	4.67E-07	9.60E-04
Methyl Ethyl Ketone (2-Butanone)	8.99E-09	7.87E-05
N-Hexane	1.80E-08	9.45E-05
Naphthalene	1.11E-07	2.52E-04
Phenol	4.67E-06	1.65E-02
Tetrachloroethene (PERC)	1.80E-10	1.57E-06
Toluene	3.23E-06	1.23E-02
Xylenes (mixed)	3.23E-06	6.20E-03

Table 5 summarizes the TAC emissions from the DNFs (Table 1) and fugitive components associated with the DNFs (Table 4).

Table 5:										
TAC	DNFs - non-fugitives (Abated emissions from S-3001 and S-3003 exiting out of P-3001)		DNFs - fugitives 259 valves + 467 connectors + 7 pumps + 5 PRDs		Total		Acute TTL lb/hr	Equals/ Exceeds Exceeds Acute Yes/No	Chronic TTL lb/yr	Equals/ Exceeds Exceeds Chronic Yes/No
	Hourly (lb/hr)	Annual (lb/yr)	Hourly (lb/hr)	Annual (lb/yr)	Hourly (lb/hr)	Annual (lb/yr)				
1,3-Butadiene	1.65E-05	1.40E-01	3.59E-10	3.15E-06	1.65E-05	1.40E-01	0.29	N	0.48	N
Benzene	2.68E-03	5.38E+00	5.39E-07	1.45E-03	2.68E-03	5.38E+00	0.012	N	2.9	Y
Bromomethane	2.62E-04	1.40E-01	4.67E-08	3.15E-05	2.62E-04	1.40E-01	1.7	N	190	N
Carbon Disulfide	7.16E-06	6.00E-02	1.80E-09	1.57E-05	7.16E-06	6.00E-02	2.7	N	31000	N
Chloroform	1.32E-05	9.00E-02	3.59E-09	1.57E-05	1.32E-05	9.00E-02	0.066	N	15	N
Cumene (Isopropyl benzene)	0.00E+00	0.00E+00	4.85E-08	6.30E-05	4.85E-08	6.30E-05	-	N	-	N
Cresols	8.62E-06	5.00E-02	4.85E-06	2.73E-02	1.35E-05	7.73E-02	-	N	23000	N
Cresol(-O)	0.00E+00	0.00E+00	1.98E-06	1.01E-02	1.98E-06	1.01E-02	-	N	23000	N
Cresol(-P)	0.00E+00	0.00E+00	2.88E-06	1.72E-02	2.88E-06	1.72E-02	-	N	23000	N
Ethylbenzene	1.11E-03	2.28E+00	4.67E-07	9.60E-04	1.11E-03	2.28E+00	-	N	33	N
Methyl Ethyl Ketone (2-Butanone)	2.90E-07	0.00E+00	8.99E-09	7.87E-05	2.99E-07	7.87E-05	5.8	N	-	N
N-Hexane	1.48E-05	7.00E-02	1.80E-08	9.45E-05	1.48E-05	7.01E-02	-	N	270000	N
Naphthalene	3.28E-05	7.00E-02	1.11E-07	2.52E-04	3.29E-05	7.03E-02	-	N	2.4	N
Phenol	1.08E-05	4.00E-02	4.67E-06	1.65E-02	1.55E-05	5.65E-02	2.6	N	7700	N
Tetrachloroethene (PERC)	1.52E-04	1.33E+00	1.80E-10	1.57E-06	1.52E-04	1.33E+00	8.8	N	14	N
Toluene	9.66E-03	3.68E+01	3.23E-06	1.23E-02	9.66E-03	3.68E+01	2.2	N	16000	N
Xylenes (mixed)	6.68E-03	1.28E+01	3.23E-06	6.20E-03	6.68E-03	1.28E+01	9.7	N	27000	N

HEALTH RISK ASSESSMENT (HRA)

MRC submitted A# 31223 for ETP-4 and A# 31608 for DNFs less than a year apart from each other (A# 31223 → June 29th, 2021 and A# 31608 → February 1st, 2022). Therefore, all TAC emissions associated with the above applications were considered to be part of the same project. In addition to the above and per 2-5-216, diesel exhaust particulate matter (DEPM) emissions from S-4200 and S-4203 – two prime engines was also included in the HRA.

The HRA results memo dated April 29, 2024, was based on emissions summarized in Table 6 of this report and concluded the following:

Results from this HRA indicate that the project cancer risk is estimated at **1.7 in a million**, the project chronic hazard index is estimated at **0.0036**, and the project acute hazard index is estimated at **0.52**. In accordance with the District's Regulation 2-5-301, these new sources do not require TBACT because the cancer risk and chronic HI contributions from each of the new sources is below the TBACT trigger levels of 1.0 in a million cancer risk and 0.20 chronic HI. Since the estimated project cancer risk does not exceed 6.0 in a million and hazard indices do not exceed 1.0, this project complies with the District's Regulation 2-5-302 project risk requirements, for projects located in an Overburdened Community, as defined in Regulation 2-1-243.

The cancer risk contribution from each of the project sources evaluated in the HRA are summarized in the table below.

Source Risk (resident receptor):

Source	Cancer Risk (in a million)
S-7002	0.78
S-4203	0.64
S-4200	0.30
S-3001 and S-3003 (including fugitive emissions)	0.019

Table 6: TAC emissions evaluated in HRA[1]												
TAC	ETP-4		DNFs - non-fugitives		DNFs - fugitives		Total		Acute TTL lb/hr	Equals/ Exceeds Acute Yes/No	Chronic TTL lb/yr	Equals/ Exceeds Chronic Yes/No
	(S-7002)		(Abated emissions from S-3001 and S-3003 exiting out of P-3001)		259 valves + 467 connectors + 7 pumps + 5 PRDs							
	Hourly (lb/hr)	Annual (lb/yr)	Hourly (lb/hr)	Annual (lb/yr)	Hourly (lb/hr)	Annual (lb/yr)	Hourly (lb/hr)	Annual (lb/yr)				
1,3-Butadiene	1.38E-03	12.1	1.65E-05	1.40E-01	6.67E-08	5.84E-04	1.40E-03	1.22E+01	2.90E-01	N	4.80E-01	Y
Benzene	6.18E-02	165	2.68E-03	5.38E+00	1.00E-04	2.69E-01	6.46E-02	1.71E+02	1.20E-02	Y	2.9	Y
Bromomethane	9.20E-02	49.6	2.62E-04	1.40E-01	8.67E-06	5.84E-03	9.23E-02	4.97E+01	1.7	N	1.90E+02	N
Carbon Disulfide	2.10E-03	18.4	7.16E-06	6.00E-02	3.33E-07	2.92E-03	2.11E-03	1.85E+01	2.7	N	3.10E+04	N
Chloroform	6.51E-03	43.5	1.32E-05	9.00E-02	6.67E-07	2.92E-03	6.52E-03	4.36E+01	6.60E-02	N	1.50E+01	Y
Cumene (Isopropylbenzene)	9.26E-03	12.9	0	0.00E+00	9.00E-06	1.17E-02	9.27E-03	1.29E+01	-	N	-	N
Cresols	7.62E-05	0.416	8.62E-06	5.00E-02	9.00E-04	5.07E+00	9.85E-04	5.54E+00	-	N	2.30E+04	N
Cresol(-O)	4.62E-05	0.237	0	0.00E+00	3.67E-04	1.88E+00	4.13E-04	2.12E+00	-	N	2.30E+04	N
Cresol(-P)	3.00E-05	0.179	0	0.00E+00	5.34E-04	3.19E+00	5.64E-04	3.37E+00	-	N	2.30E+04	N
Ethylbenzene	8.97E-02	184	1.11E-03	2.28E+00	8.67E-05	1.78E-01	9.09E-02	1.86E+02	-	N	3.30E+01	Y
Methyl Ethyl Ketone (2-Butanone)	2.38E-04	2.09	2.90E-07	0.00E+00	1.67E-06	1.46E-02	2.40E-04	2.10E+00	5.8	N	-	N
N-Hexane	6.05E-02	305	1.48E-05	7.00E-02	3.33E-06	1.75E-02	6.05E-02	3.05E+02	-	N	2.70E+05	N
Naphthalene	2.10E-03	4.74	3.28E-05	7.00E-02	2.07E-05	4.67E-02	2.15E-03	4.86E+00	-	N	2.4	Y

[1] Fugitive emissions summarized in Table 6 are conservative (~higher) in comparison to emissions summarized in Table 5. Therefore, if the HRA was rerun using fugitive emissions summarized in Table 5 the cancer risk associated with fugitive components would be lower than 0.019 in a million.

Table 6: TAC emissions evaluated in HRA[1]													
TAC	ETP-4		DNFs - non-fugitives		DNFs - fugitives		Total		Acute TTL lb/hr	Equals/ Exceeds Acute Yes/No	Chronic TTL lb/yr	Equals/ Exceeds Chronic Yes/No
	(S-7002)		(Abated emissions from S-3001 and S-3003 exiting out of P-3001)		259 valves + 467 connectors + 7 pumps + 5 PRDs							
	Hourly (lb/hr)	Annual (lb/yr)	Hourly (lb/hr)	Annual (lb/yr)	Hourly (lb/hr)	Annual (lb/yr)	Hourly (lb/hr)	Annual (lb/yr)				
Phenol	1.19E-04	0.42	1.08E-05	4.00E-02	8.67E-04	3.06E+00	9.97E-04	3.52E+00	2.6	N	7.70E+03	N
Tetrachloroethene (PERC)	4.19E-04	3.67	1.52E-04	1.33E+00	3.33E-08	2.92E-04	5.71E-04	5.00E+00	8.80E+00	N	1.40E+01	N
Toluene	8.21E-01	3,130.00	9.66E-03	3.68E+01	6.00E-04	2.29E+00	8.31E-01	3.17E+03	2.2	N	1.60E+04	N
Xylenes (mixed)	1.39E+00	2,670.00	6.68E-03	1.28E+01	6.00E-04	1.15E+00	1.40E+00	2.68E+03	9.7	N	2.70E+04	N

40 CFR 52.21 – Prevention of Significant Deterioration of Air Quality

MRC is a major source under the federal Prevention of Significant Deterioration (PSD) permitting program. When conducting the PSD analysis, the Air District reviewed RTP Environmental Associates, Inc. (RTP) analysis of the activities related to actions planned at MRC's wastewater treatment plant (WWTP) to determine the following:

1. Need to be permitted under the New Source Review, Nonattainment (NNSR) and Prevention of Significant Deterioration (PSD) programs; or
2. Require reporting and recordkeeping in accordance with 40 CFR § 52.21(r)(6).

In a January 3, 2021 memo to MRC titled "NSR Applicability Analysis for Upcoming Wastewater Treatment Plant Actions: Construction of Dissolved Nitrogen Floatation (DNF) Unit and Replacement of ETP-1 Pond 7 with ETP-4 (BIOX)", RTP's analysis summarized in Table 7 determined that the DNF Unit construction and ETP-1 Pond 7 replacement with ETP-4 (BIOX) Projects ("Project") are **not** subject to the pre-project recordkeeping or post-project monitoring requirement. The Air District concurs with this analysis.

Table 7: Summary of PSD/NNSR Analysis Results	
Project Emissions Change for Regulated NSR Pollutants	
Actual -to- Projected Actual Components	**VOC (tpy)**
New Emissions Units (PTE)	
DNF (S-New 1)	0.11
DNF (S-New 2)	0.11
Baseline Actual Emissions (BAE)	(a)
DNF (S-New 1)	0
DNF (S-New 2)	0
ETP-1 Pond 7	0.47
Projected Actual Emissions (PAE) w/ Project	(b)
ETP-1 Pond 7	0
ETP-4	2.49
Projected Actual Emissions (PAE) w/o Project	(c)
ETP-1 Pond 7	0
ETP-4	0
Excludable Emissions	(d = c-a)
ETP-1 Pond 7	0
ETP-4	0
Adjusted PAE (APAE)	(e = b-d)

Table 7: Summary of PSD/NNSR Analysis Results	
Project Emissions Change for Regulated NSR Pollutants	
Actual -to- Projected Actual Components	**VOC (tpy)**
ETP-1 Pond 7	0
ETP-4	2.49
APAE-BAE	(f = e-a)
ETP-1 Pond 7	-0.47
ETP-4	2.49
Projected Related Emissions Increase	
New Emissions Units	0.22
Replacement Unit Project	2.02
Subtotal	2.24
Significance Threshold	40
NNSR Applicable	No
PAE-BAE	2.02
Pre-Project Recordkeeping	**No**
Post-Project Monitoring	**No**

PSD Review:
Under the federal PSD rules, a project for an existing major source is a major modification (and therefore requires PSD review) if it results in both of the following:

- A significant emissions increase; and
- A significant net emissions increase.

For a project that only involves existing emission units, a significant increase occurs if the projected actual emissions exceed the baseline actual emissions by an amount equal to or greater than the significance threshold, on a pollutant specific basis.

- Baseline Actual Emission (BAE) is the annual average emission rate (tons per year) that was actually emitted during a consecutive 24-month period during the last 10 years. Different 24-month periods can be used for different pollutants.

- Projected Actual Emission (PAE) is the maximum annual emissions rate (tons per year) at which the unit is expected to operate during the five years after the emission unit resumes normal operation. PAE excludes any emissions increase that an existing emission unit could have accommodated during the 24-month period selected for the baseline. This exclusion includes an emission increase associated with an increase in product demand. In lieu of projected actual, the owner operator may elect to use potential to emit.

The BAE for ETP-1 Pond 7 (S-2007) was based on 2017-2018 and was determined for each of the years using EPA's Refinery Wastewater Emissions Tool (RWET) spreadsheet.

For existing emissions units, whose emissions could be affected by a project, per the definition of projected actual emissions, may be determined as follows:

(d) In lieu of using the method set out in paragraphs (a)(41)(ii)(a) through (c) of this section, may elect to use the emissions unit's potential to emit, in tons per year, as defined under paragraph (b)(4) of this section.

For purposes of this applicability evaluation, this alternate approach was used to determine the projected actual emissions from ETP-4. Because the projected actual emissions are based on the replacement unit's (ETP-4) potential to emit (PTE), per 40 CFR 52.21(b(41)(ii)(d), there is no need to quantify the excludable emissions. The proposed project will result in the construction of a replacement unit, ETP-4. Per 40 CFR 52.21(b)(7)(ii), this replacement unit is treated as an existing emissions unit. Per the regulation, because ETP-4 has no historical emissions its BAE is zero and its PAE is determined per the definition at 40 CFR 52.21(b)(41)(ii). As noted above in accordance with 40 CFR 52.21(b)(41)(ii)(d) in lieu of determining the projected actual emissions in accordance with paragraphs (b)(41)(ii)(a) through (c), for purposes of this analysis, the PAE has been determined in accordance with the definition of PTE at 40 CFR 52.21(b)(4).

As noted in Table 7, the project related emissions increase of VOC is less that the significant threshold of 40 tons per year, so the project is not subject to nonattainment new source review. In addition, per 40 CFR 52.21(6), because the emissions increase calculation is not based on the definition of projected actual emissions at 40 CFR 52.21(b)(41)(ii)(a) through (c), the project is not subject to the pre-project recordkeeping requirement.

Pre-Project and Post-Project Record Keeping:
Pre-project record keeping and post- project record keeping and reporting are required if there is a *reasonable possibility* that a significant emission increase will occur. Reasonable possibility is determined as follows:

- If unadjusted PAE (PAE without excluding emission increases that could have been accommodated during the baseline period) exceeds the BAE by at least 50% of a significance level, then pre-project record keeping is required.

- If adjusted PAE (after adjusting for excluded emissions that could have been accommodated during the baseline period) exceeds the BAE by at least 50% of a significance level, then pre-project record keeping and post-project record keeping and reporting are required.

Conclusion:
As shown in Table 7, a PSD review is not triggered, because the emission increases are not significant. Therefore, neither pre-project record keeping and/or post-project monitoring is required.

BEST AVAILABLE CONTROL TECHNOLOGY (BACT)

Per Regulation 2-2-301, an Authority to Construct and/or Permit to Operate for a new source or modified source shall require BACT to control emissions of a District BACT pollutant as defined in Regulation 2-2-210 if the source will have the potential to emit that pollutant in an amount of 10.0 or more pounds on any day, as defined in Regulation 2-2-301.1 and 2-2-301.2.

Per information submitted by MRC that is provided in Attachment 1 of this report, the unabated daily POC emissions from each DNF estimated by the TOXCHEM model is 9.020 #/day. Assuming a POC abatement efficiency of ≥95% by wt. for A-3002, the combined abated POC emissions from both DNFs are 0.902 #/day (9.020 x 0.05 x 2). The total POC emissions from the DNFs and their fugitive components are 8.982 #/day (0.902 + 8.08 from Table 3.d.).

Emissions from the DNFs (S-3001 and S-3003) will be routed to a single stack connected to carbon adsorption vessel (A-3002) and the abated emissions will exit out of P-3001. Parts 6 through 9 of the proposed permit conditions will require MRC to monitor A-3002 once per shift for hydrocarbon breakthrough by using a flame ionization detector (FID), or other method approved in writing by the Air Pollution Control Officer (APCO). Part 15 of the proposed permit conditions will require MRC to conduct Air District approved source tests to verify the overall POC abatement efficiency of A-3002 once a year, and also determine the abated POC/TAC emissions exiting P-3001 in order to demonstrate compliance with Parts 3 and 5 of this permit condition respectively.

Sections 2-2-304 through 306 are not applicable since this isn't a PSD project.

CUMULATIVE INCREASE

Table 8 summarizes the cumulative emissions increase of criteria pollutants due to this application.

Table 8: Cumulative Increase

Pollutant	Post 4/5/91 Permitted Emissions (TPY)	Un-offset emissions (TPY)	A# 31608 Emissions Increase (TPY)	Post-A# 31608 Cumulative Emissions Increase (TPY)
PM_{10}	76.812	0.242	0.000	76.812
POC	378.542	0.003	0.952 (0.165 + 0.787)	379.494
NO_x	212.228	0.001	0.000	212.228
SO_2	218.080	0.080	0.000	218.0800
CO	335.358	335.358	0.000	335.3580
$PM_{2.5}$	0.001	0.001	0.000	0.0010

OFFSETS

Per 2-2-302.2.2, MRC will have to offset the POC emissions increase from the DNFs and their associated fugitive components of 0.952 TPY and the Pre-A# 31608 un-offset POC cumulative increase of 0.003 TPY shown in Table 8. The POC offsets required (1.098 TPY) will be withdrawn from banking certificate #'s 1789 and 1795 which each contain 2.980 TPY and 0.877 TPY.

STATEMENT OF COMPLIANCE

The owner/operator is expected to comply with all applicable requirements. Key requirements are listed below:

Regulation 1 (General Provisions and Definitions)

Regulation 1-301 “Public Nuisance” prohibits the discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public; or which endangers the comfort, repose, health or safety of any such persons or the public, or which causes, or has a natural tendency to cause, injury or damage to business or property. For purposes of this section, three or more violation notices validly issued in a 30-day period to a facility for public nuisance shall give rise to a rebuttable presumption that the violations resulted from negligent conduct.

Compliance of S-3001 and 3003 (DNFs) with the above provisions is expected and will be confirmed by the Air District’s Compliance & Enforcement staff during their routine inspections after the above sources are installed and begin operating.

Regulation 7 (Odorous Substances)

Regulation 7 places general limitations on odorous substances and specific emission limitations on certain odorous compounds.

This rule only becomes applicable if the Air District receives odor complaints from ten or more complainants within a 90-day period. Because the DNFs have not yet been installed and/or are operating at MRC, the Air District will have to evaluate compliance with the regulation within 90-days of issuing the AC for the DNFs.

Compliance of S-3001 and 3003 (DNFs) with the above provisions is expected and will be confirmed by the Air District’s Compliance & Enforcement staff during their routine inspections after the sources are installed and begin operating.

Regulation 8, Rule 8 (Organic Compounds - Wastewater Collection and Separation Systems)

Regulation 8, Rule 8 limits emissions of total organic compounds from wastewater collection and separation systems that handle liquids containing total organic compounds from industrial processes. DNFs, described in Attachment 2, fall under the definition of wastewater separation system components in 8-8-236 and are subject to the limited exemption in 8-8-119 for Inspection, Maintenance, Repair and Sampling when in use for active inspection, active maintenance, active repair, or active sampling.
The DNFs are subject to any one of the standards in 8-8-315 that requires them to be vapor-tight[2] (8-8-315.1), or to 8-8-315.2 which requires their owner/operator to operate a vapor-tight collection system that is routed to a vapor recovery or abatement system that has a minimum destruction efficiency of 95% by wt. for abating their TOC emissions, as determined per 8-8-506, or which can meet an outlet concentration of 500 ppmv TOC (expressed as methane). The above requirements are memorialized in Parts 2 and 3 of the proposed permit conditions and Part 15 will require MRC to demonstrate initial compliance within 60-days of starting up the DNFs and annually thereafter.

The DNFs are subject to the repair schedule for non-vapor tight leaks in 8-8-405 and the recurrent leak schedule for equipment found leaking more for than three consecutive quarters in 8-8-406. The DNFs are subject to the recordkeeping requirements in 8-8-505, the source test requirements in 8-8-506 (if applicable), the wastewater organic concentration monitoring requirements in 8-8-507, and the wastewater organic concentration recordkeeping requirements in 8-8-508.

Compliance of S-3001 and 3003 (DNFs) with the above provisions is expected and will be confirmed by the Air District's Compliance & Enforcement staff during their routine inspections after the sources are installed and begin operating.

Regulation 8, Rule 18 (Organic Compounds - Equipment Leaks)

Regulation 8, Rule 18 limits emissions of total organic compounds from equipment leaks, including valves, connectors, pumps, compressors, and pressure relief devices. The limits on these fugitive organic compound emissions are specific to each component type as discussed below.

[2] 8-8-231 defines "vapor-tight" to mean a leak of less than 500 ppm by volume total organic compounds (expressed as methane) above background, measured at the interface of the component in accordance with Section 8-8-603.

738 fugitive components (259 valves, 467 connectors, 7 pumps, and 5 PRDs) will be installed as part of the proposed project. Part 18 of the proposed permit conditions requires MRC to integrate all the above fugitive components into the facility's fugitive equipment monitoring and repair program in accordance with Regulation 8, Rule 18 "Organic Compounds – Equipment Leaks" and demonstrate via LDAR monitoring and emission calculations that the combined TOC emissions don't exceed 1,574.20 pounds in any consecutive 12-month period.

The valves, connectors, pumps, and PRDs are subject to the leak standards and the leak discovery/minimization/repair requirements or leak discovery/repair standards in Regulation 8-18-302 (valves), 8-18-303 (pumps), 8-18-304 (connectors), and 8-18-305 (PRDs) respectively. In addition to the above, all fugitive components will be subject to the standards in Regulation 8-18-306 (Non-repairable Equipment), 8-18-307 (Liquid Leak), 8-18-309 (Open-Ended Valve or Line), 8-18-310 (Recurrent Leaks), and 8-18-311 (Mass Emissions); to the administrative standards in 8-18-401 (Inspection), 8-18-402 (Identification), 8-18-403 (Visual Inspection Schedule), 8-18-404 (Alternative Inspection Schedule), and 8-18-407 (Recurrent Leak Schedule); to the monitoring and recordkeeping requirements in 8-18-501 (Portable Hydrocarbon Detector), 8-18-502 (Records), and 8-18-503 (Reports); to the Manual of Procedures requirements in 8-18-601 (Analysis of Samples), 8-18-602 (Inspection Procedure), and 8-18-603 & 604 (Determination of Control Efficiency and Mass Emissions).

For valves, pumps, and connectors that are not on the non-repairable equipment list the standards in 8-18-302 through 304 limit total organic compound (organic compounds + methane) leaks to not exceed 100 ppm (valves and connectors) and 500 ppm (pumps) unless the leak if discovered by the operator is minimized within 24-hours and is repaired within 7-days, or the leak if discovered by the APCO is repaired within 24-hours. For PRDs that are not on the non-repairable equipment list the standards in 8-18-305 limit total organic compound leaks to not exceed 500 ppm unless the leak if discovered by the operator is minimized within 24-hours and is repaired within 15-days, or the leak if discovered by the APCO is minimized within 24-hours and repaired within 7-days.

To ensure compliance with 8-18 as it relates to this application, the inspection requirements in 8-18-401 requires:
1. All fugitive components that have been opened during a turnaround to be inspected for leaks within 90-days after start-up is completed following a turnaround.
2. All accessible valves and PRDs, and pumps to be inspected quarterly.
3. All inaccessible valves and PRDs defined per 8-18-206 to be inspected at least once a year.
4. Any leaking component leaking in excess of its applicable standards in 8-18-300 to be reinspected within 24-hours after any leak repair or minimization.

5. All connectors to be inspected annually.
6. Any PRD equipped with a weephole to be inspected quarterly at the outlet of the weephole if the horn outlet is inaccessible.
7. Any PRD that releases to the atmosphere to be inspected within 5 working days after the release event.
8. Any essential equipment as defined per 8-18-226 placed on the non-repairable list to be inspected at least once per quarter and calculate the essential equipment's mass emission rate at least once per calendar year after notifying the APCO at least 96-hours in advance of making any measurements.

To ensure compliance with the identification requirements in 8-18 as it relates to this application, 8-18-402 requires:
1. All valves, connectors, pumps, and PRDs to be identified with a unique permanent identification code approved by the APCO which shall be used to refer to the valve, connector, pressure relief device, pump or compressor location.
2. All valves, connectors, pumps, and PRDs leaking in excess of its applicable standards in 8-18-300 to be tagged with a brightly colored weatherproof tag indicating the date the leak was detected.

To ensure compliance with the visual inspection requirements in 8-18 as it relates to this application, 8-18-403 requires all pumps to be visually inspected for leaks daily and determine the concentration of the leak within 24-hours of discovery.

For valves, pumps, or PRDs found leaking in more than three consecutive quarters 8-18-407 requires their inspection frequency be changed from quarterly to monthly, and records of each valve, pump, and PRD changed to monthly monitoring shall be submitted to the APCO each quarter pursuant to 8-18-503.1. If the valve, pump, or PRD remains leak free for four consecutive months pursuant to Sections 8-18-302, 303 and 305 the inspection frequency will revert back to quarterly upon request by the operator and after approval by the APCO. Compliance of fugitive components associated with S-3001 and 3003 (DNFs) with the above provisions is expected and will be confirmed by the Air District's Compliance & Enforcement staff during their routine inspections after the sources are installed and begin operating.

Regulation 8, Rule 28 (Organic Compounds - Episodic Releases from Pressure Relief Valves at Petroleum Refineries and Chemical Plants)

Regulation 8, Rule 28 is geared toward preventing episodic emissions of organic compounds from pressure relief devices (PRDs) on equipment handling gaseous organic compounds at petroleum refineries, and to collect information on episodic organic and inorganic compound emissions from PRDs at petroleum refineries and chemical plants.

MRC will be installing 5 new PRDs under A# 31608. The combined daily and annual non-episodic POC emissions from the PRDs is 0.12 pounds per day and 45.3 pounds per year. Refer to Tables 3.c. and 3.d. Regulation 8-28-302 requires a new refinery source or a modified existing refinery source that is equipped with at least one PRD in organic compound service to meet all applicable requirements of Regulation 2, Rule including BACT. Per Table 3.d., the combined non-episodic POC emissions from all 738 fugitive components including the 5 new PRDs is 8.08 pounds per day. Therefore, BACT is not triggered for the non-episodic emissions and 8-28-302 doesn't apply to the 5 new PRDs. Episodic emissions are not evaluated within permit applications.

When the AC for A# 31608 is issued and after all 5 new PRDs are installed, the PRDs will have to meet either one of the requirements in 8-28-303.1 or 303.2 if one or more of the 5 new PRDs has the potential to release greater than 10 pounds of organic or inorganic pollutants (~reportable materials) listed in 8-28-401.5 into the atmosphere, and meet the requirements in 8-28-304 for repeat releases. The potential for a release event shall be determined through the monitoring required per part 19 and Regulation 8-28-503.

If the monitoring per section 503 indicates the potential for a release event, then Sections 303 and 304 will become applicable. MRC could comply with Section 303 by meeting the requirements in either Section 303.1 or 303.2. Section 303.1 requires PRDs be vented to a control device capable of meeting 95% by weight control efficiency, and Section 303.2 requires implementation of the Process Safety Requirements per Section 405.

All PRDs installed as part of AN 31608 that have release events that meet the criteria set forth in 8-28-214 shall comply with Section 304 and the reporting requirements in 8-28-401, the inspection requirements in 8-28-402, and the identification requirements in 8-28-404.

The Process Safety Requirements (PSR) in 8-28-405 applies to PRDs if all of the following are met: the PRD is in organic compound service, the PRD has the potential for a release event determined through the monitoring required per part 19 and Regulation 8-28-503 and is therefore, subject to 8-28-303 and 304.

PRDs subject to PSR must...
Comply with 8-28-405.1; submit and use a Process Hazards Analysis (PHA) per 8-28-405.2 within 90-days of the first release event and implement at least three redundant Prevention Measures (PM) before the second release event and ensure all atmospheric PRDs are equipped with at least three PMs; and comply with the requirements in 8-28-405.3 and 8-28-405.4.

The requirements in 8-28-406 (Monitoring System Demonstration Report), 8-28-407 (Process Unit Identification Report), the recordkeeping requirements in 8-28-502 and the monitoring requirements in 8-28-503 apply to atmospheric PRDs that have the potential for a release event.

Compliance with applicable provisions in 8-28 for the 5 new PRDs and all existing PRDs will be confirmed by the Air District's Compliance & Enforcement staff during their routine inspections after the DNFs are installed and begin operating.

40 CFR 60 - New Source Performance Standards

40 CFR 60 Subpart A - General Provisions

Any source subject to an applicable standard under 40 CFR 60 is also subject to the general provisions of Subpart A. Subpart A contains requirements for notification of construction or modification, monitoring, recordkeeping and reporting, performance testing, and control standards. MRC currently complies with the monitoring, recordkeeping and reporting requirements of Subpart A.

40 CFR 60 Subpart Kb "Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984"

The DNFs will not be used for storage of volatile organic liquids and will instead be used to remove oil and other suspended contaminants from refinery wastewater using dissolved nitrogen gas flotation. Therefore, the DNFs are not subject to NSPS Kb.

40 CFR 60 Subpart QQQ "Standards of Performance for VOC Emissions From Petroleum Refinery Wastewater Systems" apply to affected facilities located in petroleum refineries for which construction, modification, or reconstruction is commenced after May 4, 1987. Under this standard an affected facility includes an individual drain system, an oil-water separator and an aggregate facility. An aggregate facility is defined as the drain system together with downstream sewer lines and oil-water separators, down to and including the secondary oil-water separator. The proposed DNFs are not drain systems or oil-water separators. Because the DNFs will be downstream of the oil-water separator, they are a part of an aggregate facility. Therefore, NSPS QQQ does not apply.

As shown in Figure 2, MRC currently operates 4 DNFs: S-2007 and 2008 associated with ETP-1 and S-5115 and 5116 associated with ETP-2. Consistent with applicable requirements that S-2007, S-2008, S-5115, and S-5116 are subject to in MRC's current MFR permit dated February 11, 2020 and as discussed below, the 4 existing DNFs and the 2 new proposed DNFs (S-3001 and 3003) will be subject to 40 CFR 61 Subpart FF "National Emission Standard for Benzene Waste Operations" and 40 CFR 63 Subpart CC "National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries".

NESHAP FF applies because the DNFs will treat materials that contain benzene, and the units meet the definition of a tank in the rule. Per Table 2, the benzene concentration in the inlet water to the DNFs contains less than 10 ppm of benzene on an annual flow-weighted basis i.e., maximum and average historical concentrations are 4 ppmw and 0.92 ppmw, respectively. Therefore, per 40 CFR 61.342(c)(2), the proposed project is exempt from the tank standards in 40 CFR 61.343.

40 CFR 63 Subpart A - General Provisions

Any source subject to an applicable standard under 40 CFR 63 is also subject to the general provisions of Subpart A. MRC currently complies with the monitoring, recordkeeping and reporting requirements of Subpart A and will continue to do so after the proposed DNFs are installed and begin operating.

40 CFR 63 Subpart CC "National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries" applies to petroleum refining process units and related emissions points that emit or have equipment containing or contacting one or more Hazardous Air Pollutant (HAP) listed in this subpart and are located a petroleum refinery that is a major source of HAP emissions [§63.640(a)]. MACT CC establishes standards for miscellaneous process vents (including maintenance vents and in situ sampling systems), storage vessels, wastewater streams and treatment operations, equipment leaks (including pressure relief devices), delayed coking units, flares, heat exchange systems, gasoline loading racks, and marine vessel loading operations. Consistent with applicable requirements codified in their current MFR permit, the proposed DNFs like their existing counterparts will also be subject to the wastewater provisions in MACT CC.

Per Table 2, the benzene concentration in the inlet water to the DNFs contains less than 10 ppm of benzene on an annual flow-weighted basis i.e., maximum and average historical concentrations are 4 ppmw and 0.92 ppmw, respectively. Therefore, per 40 CFR 63.641, the proposed DNFs are Group 2 wastewater streams because the benzene concentration in the streams treated/processed by them is less than 10 ppmw.

California Environmental Quality Act (*CEQA*)

The Air District has determined the permit action to issue an Authority to Construct and Permit to Operate is categorically exempt from CEQA because the project involves no expansion of use beyond that previously existing at the time of the Air District's CEQA determination. (CEQA Guidelines § 15301).

The Air District's permit action is exempt because it permits a minor alteration of an existing facility (i.e., the installation of two additional dissolved nitrogen floatation (DNF) units at an existing wastewater treatment plant where four such units already exist) and does not authorize any expansion of the existing wastewater treatment plant use. The DNFs will use dissolved flotation technology to treat wastewater processed by MRC's wastewater treatment plant before the treated wastewater is released into the Bay. There will be no increase in the quantity of wastewater processed. The DNFs will also improve the consistency of the performance of the overall wastewater pretreatment system. Because there will be no expansion in use at the wastewater treatment plant, the project is exempt under CEQA Guidelines § 15301.

Further, based on the review of the permit application materials, including Appendix H (environmental information form), the project will not result in any additional or different environmental impacts beyond what is already entailed in the applicant's existing use of the source. In making the determination that this application is categorically exempt: 1) the Air District reviewed the permit application materials which indicate that there is no potential for a significant adverse environmental impact from the project; 2) a formal health risk assessment was approved by the Air District; and 3) the Air District determined that the project will not have a significant effect on the environment due to unusual circumstances, or due to cumulative impacts from successive projects of the same type in the same place.

Because MRC is a high public interest facility, a CEQA Notice of Exemption will be filed with the Contra Costa County Clerk and the State Clearinghouse.

School Notification and Overburdened Community (*Regulation 2-1-412*)

MRC submitted A# 31223 for ETP-4 and A# 31608 for DNFs less than a year apart from each other (A# 31223 → June 29th, 2021 and A# 31608 → February 1st, 2022). Therefore, all TAC emissions associated with the above applications were considered to be part of the same project. Because an HRA was required and MRC is located in an OBC, the proposed project is subject to the public notification requirements of Regulation 2-1-412.

Permit Conditions

1. The owner/operator of Dissolved Nitrogen Flotation (DNF) Unit West (S-3001) and/or DNF East (S-3003) shall vent and abate all emissions from S-3001 and/or S-3003 with the properly installed, maintained, and operated per manufacturer's specifications activated carbon canisters (two canisters set up in series) in A-3002 at all times of operation (basis: Regulation 2-1-320, Regulation 8-8-307)

2. Unless stated otherwise and wherever else referenced in these permit conditions, the concentration of POCs and NPOCs including methane shall be collectively referred to as Total Organic Compounds (TOC) as indicated by a hydrocarbon analyzer as specified by Regulation 8-8-504.

   The owner/operator of S-3001 and/or S-3003 shall ensure the following:
   a. A-3002 is equipped with at least two activated carbon cannisters that are arranged in series (at least 2 activated carbon cannisters in all).

   b. Each activated carbon canister that is part of A-3002 contains at least 680 pounds of activated carbon.

   c. Influent and outlet vapor flow into A-3002 shall not exceed 22 SCFM.

   d. The overall abatement efficiency of A-3002 i.e., product of capture efficiency and destruction efficiency is at least 95% by weight for Precursor Organic Compound (POC), Non-POC (NPOC) excluding methane, and Toxic Air Contaminant (TAC).

e. Operate a vapor-tight collection system that is routed to A-3002 which can meet an outlet TOC concentration of 500 ppmv (expressed as methane).

f. The nitrogen floatation gas flow rate into the DNFs is at least 5 SCFM each (daily average).
(basis: Regulation 2-1-320, Cumulative Increase, Regulation 8-8-229, Regulation 8-8-307, Regulation 8-8-315.2)

3. The owner/operator shall ensure that the abated total POC emissions from each S-3001 and/or S-3003 exiting out of A-3002 via emission point P-3001 does not exceed 0.451 pounds per DNF in any consecutive 24-hour period (0.902 pounds per day from both DNFs combined) and 0.082 tons per DNF in any consecutive 12-month period (0.164 tons per consecutive 12-month period from both DNFs combined).

   In addition to the above, the owner/operator shall also ensure that the TOC concentration exiting out of A-3002 via emission point P-3001 is below 500 ppmv (expressed as methane).
   (basis: Cumulative Increase, Regulation 2-1-320, Offsets, Regulation 8-8-315.2)

4. The owner/operator shall ensure the design capacity of S-3001 and/or S-3003 does not exceed 2,100 gallons per minute per DNF and/or 4,200 gallons per minute (GPM) per combined DNFs.
   (basis: Regulation 2-1-320, Cumulative Increase)

5. With the exception of benzene, the owner/operator shall ensure that the abated TAC emissions from S-3001 and/or S-3003 exiting out of A-3002 via

emission point P-3001 does not equal or exceed the acute and/or chronic TAC trigger levels in Table 2-5-1 of 2-5. (amendments adopted 12/15/2021). For benzene, the owner/operator of S-3001 and/or S-3003 shall ensure that the hourly abated benzene emissions from the DNFs exiting out of A-3002 via emission point P-3001 does not equal or exceed the acute TAC trigger level in Table 2-5-1 of 2-5 and 5.38 pounds in any consecutive 12-month period.
(basis: Regulation 2-1-320, Regulation 2-5)

6. The owner/operator of A-3002 shall monitor with a flame ionization detector (FID), or other method approved in writing by the Air Pollution Control Officer (APCO), at the following locations:

   a. At the inlet to the first carbon vessel in series.
   b. At the inlet to the last carbon vessel in series.
   c. At the outlet of the carbon vessel that is last in series prior to venting to the atmosphere.
   When using an FID to monitor breakthrough, readings may be taken with and without a carbon filter tip fitted on the FID probe. Concentrations measured with the carbon filter tip in place shall be considered methane for the purposes of these permit conditions.
   (basis: Cumulative Increase)

7. The owner/operator of A-3002 shall record these monitor readings in a monitoring log at the time and location they are taken. The monitoring results shall be used to estimate the frequency of carbon change-out necessary to maintain compliance with conditions number 8 and 9 and shall be conducted at least once per shift.
   (basis: Cumulative Increase)

8. The owner/operator of A-3002 shall change out the first carbon vessel with unspent carbon upon breakthrough, defined as the detection at its outlet

that shall not exceed either one of the following:
a. 10 % of the inlet stream concentration to the first carbon vessel, or
b. 10 ppmv or greater (measured as C1) at the outlet of the first carbon vessel. (basis: Cumulative Increase, Regulation 2-1-403)

9. The owner/operator of A-3002 shall change out the last carbon vessel with unspent carbon upon detection at its outlet of 10 ppmv or greater (measured as C1).
(basis: Cumulative Increase)

10. The owner/operator of A-3002 shall maintain the following records for each month of operation of the abatement devices:
a. The hours and times of operation.
b. Each monitor reading or analysis result for the day and time of operation they are taken.
c. The number of carbon beds removed from service.

All measurements, records and data required to be maintained by the owner/operator shall be retained and made available for inspection by the Air District for at least five years following the date the data is recorded.
(basis: Cumulative Increase)

11. The owner/operator of A-3002 shall report any non-compliance with any part(s) of these permit conditions to the Director of the Compliance & Enforcement Division at the time that it is discovered. The submittal shall detail the corrective action taken and shall include the data showing the exceedance as well at the time, location, and date of occurrence.
(basis: Cumulative Increase)

12. Within 14-days of starting up the DNFs and in order to demonstrate compliance with Parts 3 and 5 of this permit condition, the owner/operator of each S-3001 and/or S-3003 shall collect and analyze influent

concentrations of POCs and/or TACs in the wastewater processed at each DNF per the following schedule:

a. At least once every 3rd day for the first 90-days from the initial date of operation.

b. At least once every 7th day for the next 90-days after the first 3-months of operation.

c. At least once every 14th day for the next 90-days after the first 6-months of operation.

d. At least once every month for the next 90-days after the first 9-months of operation.

(basis: Regulation 2-1-223, Regulation 2-1-403)

13. To demonstrate compliance with Part 12 of this permit condition, the owner/operator of each S-3001 and/or S-3003 shall ensure all samples collected are:

a. From a location that is Air District approved and agreed upon as being representative of wastewater processed at each DNF.

b. Are analyzed in a 3rd party Air District approved laboratory not owned/operated by the owner/operator of S-3001 and/or S-3003.

c. Are analyzed for all inputs required for running the TOXCHEM model.

(basis: Regulation 2-1-403, Regulation 2-5)

14. In order to demonstrate compliance with Parts 3, 4, and 5 of this permit condition, the owner/operator of each S-3001 and/or S-3003 shall use the information collected per Parts 12 and 13 of this permit condition as inputs to the TOXCHEM model to estimate TOC, POC and TAC emissions from S-3001 and/or S-3003.

The owner/operator shall ensure that the inputs to the TOXCHEM model are based on actual measurements of TOCs, POCs, and/or TACs in the wastewater processed by the DNFs. The TOXCHEM model shall be run for each sampling required per part 12 and the TOXCHEM modeling results shall be submitted electronically to the Air District's assigned permit engineer in the Engineering Division and the assigned inspector in the Compliance & Enforcement Division for review within 21-calendar days of the sampling date.

For example, for the first 90-days from the initial date of operation of the DNFs, TOC, POC, and TAC emissions shall be determined using the TOXCHEM model at least once every 3rd day (at least 30 modelling runs in the first 90-days), at least once every 3rd day for the next 90-days (at least 12 modelling runs) , and so forth.

The owner/operator shall maintain copies of all TOXCHEM modelling inputs and results on site that are readily accessible and available to Air District staff for review upon request.
(basis: Regulation 2-1-403)

15. Within 60-days of starting up S-3001 and/or S-3003, the owner/operator of A-3002 shall conduct an initial Air District approved source test and at least once in every 12-consecutive months thereafter at A-3002 to demonstrate compliance with the overall abatement efficiency of 95% by weight listed in Part 2.d., the abated daily and annual POC emissions in Part 3, and the abated hourly and annual TAC emissions in Part 5 of this permit condition.

    On the day of the source test, the owner/ operator shall concurrently collect and analyze influent concentrations of POCs and/or TACs in the wastewater processed at each DNF (S-3001 and S-3003) when they are being source tested.

The frequency of source testing required under this permit condition shall be reduced from once in every 12-consecutive months to once in every 36-consectuive months if three consecutive annual source tests successfully meet and/or demonstrate that the overall abatement efficiency of A-3002 is at least 95% by weight, and the abated daily and annual POC emissions are each less than 50 percent of the daily and annual POC emission limits in Part 3 of this permit condition, and the abated hourly and/or annual TAC emissions are each less than 50 percent of the hourly and/or annual TAC emission limits in Part 5 of this permit condition. The frequency of source testing shall revert back to once in every 12-consecutive months, if any source test demonstrates that at least one of the above criteria was not met. The source testing frequency can again be reduced to once every 36-consectuive months if another three consecutive annual source tests successfully meet and/or demonstrate that the overall abatement efficiency of A-3002 is at least 95% by weight, and the abated daily and annual POC emissions are each less than 50 percent of the daily and annual POC emission limits in Part 3 of this permit condition, and the abated hourly and/or annual TAC emissions are each less than 50 percent of the hourly and/or annual TAC emission limits in Part 5 of this permit condition.

To demonstrate compliance with the abated daily POC emission limits contained in part 3 of 0.451 pounds per day per DNF and 0.902 pounds per day from both DNFs combined, the owner/operator shall consult with the Air District Source Test Section Manager/staff to decide whether the averaging period of the source test should be increased in order to get a representative sample, or if the average hourly emission rate gathered from source test method is sufficient to demonstrate compliance with Part 3. The average hourly emissions rate from the approved source test shall be multiplied by 24 hours per day in order to determine the daily emissions.

The owner/operator shall demonstrate compliance with the abated annual POC limit by multiplying the average abated POC hourly rate from the approved source test by 8,760 hours per year, or by multiplying the daily abated POC rate (determined above) by 365-days per year.

For all TACs except benzene, compliance with the chronic TAC limit in Table 2-5-1 of Regulation 2-5 shall be demonstrated by multiplying the average abated TAC hourly rate by 8,760 hours per year. For benzene, the abated TAC hourly emissions rate shall be multiplied by 8,760 hours per year in order to demonstrate compliance with part 5, that the abated annual benzene emissions from the both S-3001 and S-3003 combined does not exceed 5.38 pounds per any consecutive 12-month period.

The owner/operator shall submit the source test results to the Air District’s Source Test Section Manager for review/disposition no later than 60 days after the source test date. The owner/operator shall submit a Source Test Protocol and shall notify the Air District’s Source Test Section, in writing, of the projected source test dates at least 30 days prior to conducting any source tests. The owner/operator shall comply with all applicable testing requirements as specified in Volume IV of the Air District’s Manual of Procedures.
(basis: Regulation 2-1-403)

16. Within 30 days after installing fugitive components that will allow refinery wastewater to be routed for processing at S-3001 and/or S-3003, the owner/operator shall provide the assigned permit engineer in the Air District's Engineering Division and the assigned inspector in the Compliance & Enforcement Division with a final count of fugitive components installed.

    The owner/operator has been permitted under Application 31608 for an increase in the following fugitive components in wastewater service:
    Valves: 259; Flanges and Connectors: 467; Pump seals: 7; PRD: 5; and Catch basin/manhole: 0.

    The owner/operator shall ensure the combined POC emissions from the above fugitive components does not exceed 1,574.20 pounds in any consecutive 12-month period.
    (basis: Cumulative Increase, Offsets, Regulation 2-5)

17. If there is an increase in the total fugitive components installed at S-3001 and/or S-3003, the plant's cumulative emissions for the project shall be adjusted to reflect the difference between emissions based on predicted versus actual component counts and any additional offsets shall be provided by the owner/operator. If the actual component count is less than the predicted, the total will be adjusted accordingly, and all emission offsets applied by the owner/operator in excess of the permitted total fugitive emissions will be credited back to the owner/operator by the Air District. An increase in the permitted emissions may also require an updated HRA.
    (basis: Offsets, Regulation 2-5)

18. The owner/operator shall integrate all new fugitive equipment installed at S-3001 and/or S-3003 under Application 31608 into the facility fugitive equipment monitoring and repair program.

    For all new fugitive equipment installed at S-3001 and/or S-3003 under Application 31608, the owner/operator shall inspect valves on a quarterly basis and flanges/connectors on an annual basis, shall use unique identification numbers for all components, and determine mass emissions from them to demonstrate compliance with applicable requirements in Regulation 8-18 and Part 16 of this permit condition.

    On a quarterly basis, the owner/operator shall determine mass emissions from the new fugitive equipment installed at S-3001 and/or S-3003 under Application 31608

by using the LDAR data in place of the screening value (SV) for non-pegged components in correlation equations provided in Table IV-3a "CAPCOA-Revised 1995 Correlation Equations and Factors for Refineries and Marketing Terminals" in the "California Implementation Guidelines For Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities" dated February 1999; the "default zero factor" from the above table when the SV for LDAR data corrected for background equals 0.0 ppmv; and the 10,000 ppmv "pegged" factor when the SV for LDAR data corrected for background is equal to or greater than 10,000 ppmv from the above table.
(basis: Regulation 2-1-403, Regulation 8-18, Cumulative Increase, Offsets)

19. The owner/operator of S-3001 and/or S-3003 shall comply with the monitoring requirements in Regulation 8-28-503 for all PRDs installed as part of Application 31608. (basis: Regulations 2-1-403, 8-28)

20. The owner/operator of S-3001 and/or S-3003 shall maintain the following information in an Air District approved log and shall be provided to Air District staff for review/inspection upon request:

   a. Influent and outlet vapor flow rate in SCFM into A-3002 measured daily to demonstrate compliance with Part 2.
   b. Nitrogen flow rate in SCFM into S-3001 and/or S-3003 measured daily to demonstrate compliance with Part 2(e).
   c. Influent wastewater flow rate in GPM into S-3001 and/or S-3003 measured every minute to demonstrate compliance with Part 4.
   d. Sample collection logs which include information on the sampling location, date and time samples are collected, shipped, and results received to/from the 3rd party laboratory for analysis to demonstrate compliance with Part 12.
   e. All inputs to the TOXCHEM model which are based on the analysis performed on wastewater samples and results provided by the 3rd party laboratory per Part 13.

f. Copies of all monthly TOXCHEM modelling inputs and results to demonstrate compliance with Parts 3, 4, 5, and 14.
g. Copies of all Air District approved source test results to demonstrate compliance with Part 15, and copies of the corresponding TOXCHEM modeling results determined using wastewater samples collected on the day of the source test and analyzed by the 3rd party laboratory.
h. All calculations and data needed to demonstrate compliance with part 16.
i. All records required per part 19 and Regulation 8-28-502 and 503.

All measurements, records and data required to be maintained by the owner/operator of S-3001 and/or S-3003 shall be retained and made available for inspection by the Air District for at least five years following the date the data is recorded.
(basis: Regulation 2-1-403, Cumulative Increase)

RECOMMENDATION

The Air District has evaluated the permit application for the proposed project and has made a preliminary determination that the project is expected to comply with all applicable District, state, and federal air quality-related regulations, including the health risks resulting from toxic air contaminant emissions. The preliminary recommendation is to issue a permit for this project. After considering all comments received, the Air District will make a final determination.

I recommend that the Air District initiate the public comment period and consider any comments received prior to taking any final action on issuance of an Authority to Construct for the following sources:

S-3001 Dissolved Nitrogen Flotation Unit (West)
SUEZ Poseidon PPM 2,100 GPM
Maximum operating rate: 3,000 BBL/hour of wastewater
Abated by Cabot Norit Activated Carbon Canisters (A-3002) consisting of two canisters set up in series

S-3003 Dissolved Nitrogen Flotation Unit (East)
SUEZ Poseidon PPM 2,100 GPM
Maximum operating rate: 3,000 BBL/hour of wastewater
Abated by Cabot Norit Activated Carbon Canisters (A-3002) consisting of two canisters set up in series

Attachment 1:

DNF Toxchem Modeling Results

	S-3001 and S-3003	
	Annual Avg	Max Daily
Wastewater Flowrate (gpm)	2100	2100
Nitrogen Flowrate (scfm)	11	11
Inlet POC (toulene) ppm	30	70
POC emitted to air (lb/day)	0.193	0.451
POC emitted to air (tpy)	0.0353	0.082
Carbon abatement efficiency	95%	95%

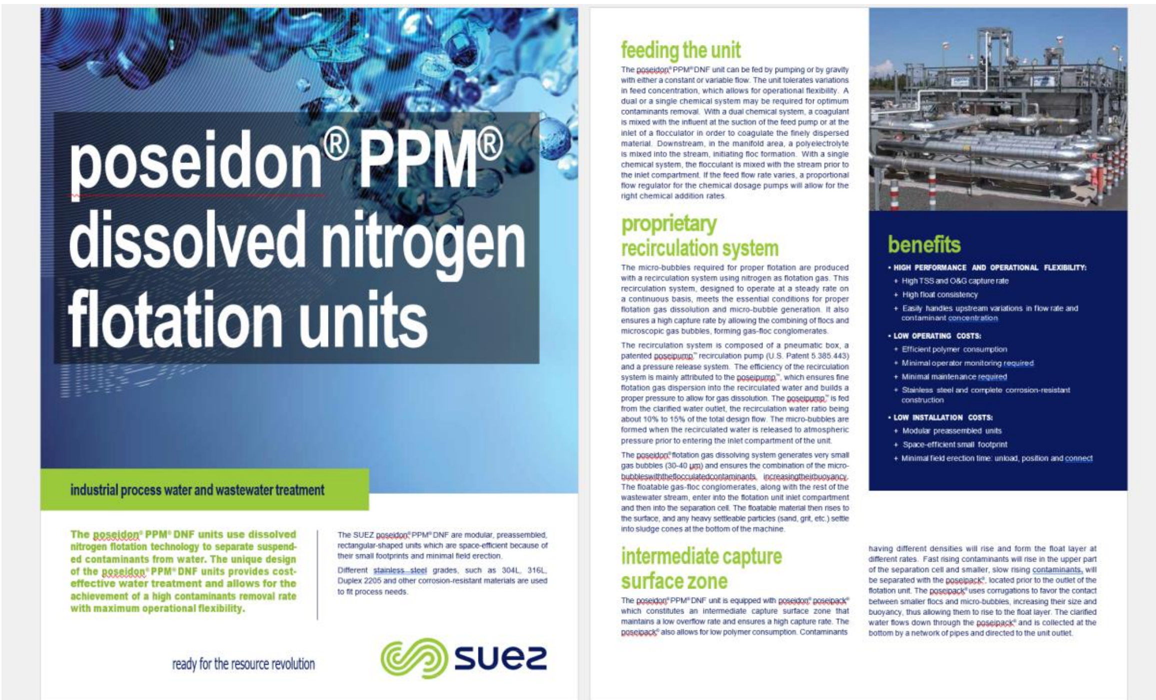
TAC - Max Hourly Emissions (lb/hr)		
Toluene		4.83E-03
Benzene		1.34E-03
Carbon Disulfide		3.58E-06
Methyl Ethyl Ketone (2-Butanone)		1.45E-07
Naphthalene		1.64E-05
Cumene (Isopropylbenzene)		3.07E-05
Ethylbenzene		5.56E-04
Butadiene-(1,3)		8.24E-06
Phenol		5.41E-06
Hexane,n-		7.39E-06
Xylene		3.34E-03
Trimethylpentane,2,2,4-		1.38E-05
Phenanthrene		2.83E-07
Cresol(-O)		2.62E-06
Cresol(-P)		1.68E-06
Cresol (subtotal)		4.31E-06
Chloroform (Trichloromethane)		6.61E-06
Trimethylbenzene,1,3,5-		2.88E-04
Dimethylphenol,2,4-		5.55E-04
Trimethylbenzene,1,2,4-		4.23E-04
Bromomethane		1.31E-04
Tetrachloroethene		7.60E-05
Cyclohexane		1.07E-04

TAC - Annual Emissions (lb/yr)		
Toluene	18.43	
Benzene	2.69	
Carbon Disulfide	0.03	
Methyl Ethyl Ketone (2-Butanone)	0.00	
Naphthalene	0.04	
Cumene (Isopropylbenzene)	0.04	
Ethylbenzene	1.14	
Butadiene-(1,3)	0.07	
Phenol	0.02	
Hexane,n-	0.04	
Xylene	6.41	
Trimethylpentane,2,2,4-	0.12	
Phenanthrene	0.00	
Cresol(-O)	0.01	
Cresol(-P)	0.01	
Cresol (subtotal)	0.02	
Chloroform (Trichloromethane)	0.04	
Trimethylbenzene,1,3,5-	0.23	
Dimethylphenol,2,4-	3.26	
Trimethylbenzene,1,2,4-	0.34	
Bromomethane	0.07	
Tetrachloroethene	0.67	
Cyclohexane	0.38	

Days per year	365
Hours per day	24

lb/day results		
Toluene	1.010	2.319
Benzene	0.148	0.645
Carbon Disulfide	0.002	0.002
Methyl Ethyl Ketone (2-Butanone)	0.000	0.000
Naphthalene	0.002	0.008
Cumene (Isopropylbenzene)	0.002	0.015
Ethylbenzene	0.062	0.267
Butadiene-(1,3)	0.004	0.004
Phenol	0.001	0.003
Hexane,n-	0.002	0.004
Xylene	0.351	1.605
Trimethylpentane,2,2,4-	0.007	0.007
Phenanthrene	0.000	0.000
Cresol(-O)	0.001	0.001
Cresol(-P)	0.001	0.001
Chloroform (Trichloromethane)	0.002	0.003
Trimethylbenzene,1,3,5-	0.013	0.138
Dimethylphenol,2,4-	0.178	0.266
Trimethylbenzene,1,2,4-	0.018	0.203
Bromomethane	0.004	0.063
Tetrachloroethene	0.036	0.036
Cyclohexane	0.021	0.052
Toluene(1) - represents POC	3.866	9.020

Attachment 2:



poseidon® PPM® dissolved nitrogen flotation units

industrial process water and wastewater treatment

The poseidon® PPM® DNF units use dissolved nitrogen flotation technology to separate suspended contaminants from water. The unique design of the poseidon® PPM® DNF units provides cost-effective water treatment and allows for the achievement of a high contaminants removal rate with maximum operational flexibility.

The SUEZ poseidon® PPM® DNF are modular, preassembled, rectangular-shaped units which are space-efficient because of their small footprints and minimal field erection.

Different stainless steel grades, such as 304L, 316L, Duplex 2205 and other corrosion-resistant materials are used to fit process needs.

ready for the resource revolution

SUEZ

feeding the unit

The poseidon® PPM® DNF unit can be fed by pumping or by gravity with either a constant or variable flow. The unit tolerates variations in feed concentration, which allows for operational flexibility. A dual or a single chemical system may be required for optimum contaminants removal. With a dual chemical system, a coagulant is mixed with the influent at the suction of the feed pump or at the inlet of a flocculator in order to coagulate the finely dispersed material. Downstream, in the manifold area, a polyelectrolyte is mixed into the stream, initiating floc formation. With a single chemical system, the flocculant is mixed with the stream prior to the inlet compartment. If the feed flow rate varies, a proportional flow regulator for the chemical dosage pumps will allow for the right chemical addition rates.

proprietary recirculation system

The micro-bubbles required for proper flotation are produced with a recirculation system using nitrogen as flotation gas. This recirculation system, designed to operate at a steady rate on a continuous basis, meets the essential conditions for proper flotation gas dissolution and micro-bubble generation. It also ensures a high capture rate by allowing the combining of flocs and microscopic gas bubbles, forming gas-floc conglomerates.

The recirculation system is composed of a pneumatic box, a patented poseipump™ recirculation pump (U.S. Patent 5.385.443) and a pressure release system. The efficiency of the recirculation system is mainly attributed to the poseipump™, which ensures fine flotation gas dispersion into the recirculated water and builds a proper pressure to allow for gas dissolution. The poseipump™ is fed from the clarified water outlet, the recirculation water ratio being about 10% to 15% of the total design flow. The micro-bubbles are formed when the recirculated water is released to atmospheric pressure prior to entering the inlet compartment of the unit.

The poseidon® flotation gas dissolving system generates very small gas bubbles (30-40 µm) and ensures the combination of the micro-bubbleswiththeflocculatedcontaminants, increasingtheirbuoyancy. The floatable gas-floc conglomerates, along with the rest of the wastewater stream, enter into the flotation unit inlet compartment and then into the separation cell. The floatable material then rises to the surface, and any heavy settleable particles (sand, grit, etc.) settle into sludge cones at the bottom of the machine.

intermediate capture surface zone

The poseidon® PPM® DNF unit is equipped with poseidon® poseipack® which constitutes an intermediate capture surface zone that maintains a low overflow rate and ensures a high capture rate. The poseipack® also allows for low polymer consumption. Contaminants having different densities will rise and form the float layer at different rates. Fast rising contaminants will rise in the upper part of the separation cell and smaller, slow rising contaminants, will be separated with the poseipack®, located prior to the outlet of the flotation unit. The poseipack® uses corrugations to favor the contact between smaller flocs and micro-bubbles, increasing their size and buoyancy, thus allowing them to rise to the float layer. The clarified water flows down through the poseipack® and is collected at the bottom by a network of pipes and directed to the unit outlet.

benefits

- **HIGH PERFORMANCE AND OPERATIONAL FLEXIBILITY:**
  - High TSS and O&G capture rate
  - High float consistency
  - Easily handles upstream variations in flow rate and contaminant concentration
- **LOW OPERATING COSTS:**
  - Efficient polymer consumption
  - Minimal operator monitoring required
  - Minimal maintenance required
  - Stainless steel and complete corrosion-resistant construction
- **LOW INSTALLATION COSTS:**
  - Modular preassembled units
  - Space-efficient small footprint
  - Minimal field erection time: unload, position and connect

float removal system

The poseidon® PPM® DNF unit is equipped with a scraping system which allows for continuous proper removal of the float. This system includes a scraper and one or more rotary thickeners each of which are equipped with a motor-reducer with variable speed adjustment capabilities. This provides for reliability and flexibility of the float consistency and removal.

water level adjustment

The poseidon® PPM® DNF unit is operated with an automatic level control system consisting of a level control valve, level switches and a level transmitter. This type of level adjustment allow for flexibility on the float consistency and removal, in addition to increasing the stability of the treatment by maintaining a constant level in the unit.

sediment removal system

In order to avoid any build-up of heavy solids at the bottom of the unit, sludge cones and automatic drain valves are installed. The sequence of drainage is set relative to the particular application requirements.

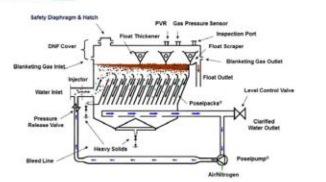
cover and blanketing

The poseidon® PPM® DNF unit is equipped with a sealed cover and allow for blanketing to control odors and hydrocarbon emissions (VOC) while eliminating the risk of fire. The covers are fabricated in stainless steel and flanged to receive all the necessary instrumentation and safety devices for vapor handling.

Preassembled, modular, space-saving design

Small installed footprint saves space and new building cost

poseidon® PPM® DNF Model E unit shown



poseidon® PPM®

dissolved nitrogen flotation units

integrated treatment solutions

As a full treatment line specialist, SUEZ draws upon a broad portfolio of proven technologies to assist industries and municipalities in meeting their water and wastewater treatment challenges. We provide integrated equipment solutions and services for a wide range of applications:

- industrial water and wastewater
- municipal drinking water
- municipal wastewater
- biosolids management

We also offer global expertise in the design, build, operation and maintenance of water treatment plants and systems, all delivered to your specific demands.

piloting

SUEZ in North America offers pilot systems and services for this and many other of our product offerings. Pilot studies are a practical means of optimizing physical-chemical and biological process designs and offer the client several benefits, such as:

- proof of system reliability
- optimal design conditions for the full-scale system
- raw water lab analysis
- regulatory approval

Please contact us if you would like to learn more about pilot studies for this system.

services

Aftermarket

SUEZ in North America provides parts and components for most SUEZ brand equipment as well as parts for demineralizers, thickeners, nozzles, pressure filters, and valves. We offer reliable spare parts at competitive prices. We maintain records of previous installations to quickly identify your requirements. Many items are shipped directly from stock for quick delivery.

Rebuilds, Retrofits and Upgrades

SUEZ in North America offers cost-effective rebuilds and upgrades for SUEZ provided systems, no matter what year they were built. If you are interested in an economical alternative to installing a whole new system, contact us for a proposal.

If interested in this product, check out some of our complementary products:

- poseidon® DAF Saturn
- poseidon® DAF PPM
- poseidon® DNF Saturn
- poseidon® Oil-Water Separators
- Accelator®
- Aquadaf®
- Densadeg®
- Densadeg XRC®
- Superpulsator®
- Ferazur®/Mangazur®
- Greenleaf®
- Smartrack™

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