

Impacts Analysis



Marathon Oil EF, LLC
Scully
Non-Rule Standard Permit Application
06/2025
Eagle Ford, Lavaca County, Texas
NRSP Compliance

Air Quality Standard Permit for Oil and Gas Handling and Production Facilities: (H) Emission Limitations. Total maximum estimated registered or certified emissions shall meet the most stringent of the following. All emissions estimates must be based on representative worst-case operations and planned MSS activities.

Air Contaminant	Steady-state lb/hr or <30 psig perodic			≥ 30 psig periodic lb/hr up to 600 hr/yr			Total tpy		
	Emission Limit lb/hr	Steady State Facility Emissions lb/hr ^a	Exceed?	Emission Limit lb/hr	Facility Emissions lb/hr	Exceed?	Emission Limit tpy	Facility Emissions tpy	Exceed?
Total VOC							250	63.02	No
Total crude oil or condensate VOC	145	77.70	No	318	145.05	No			
Total natural gas VOC	750	3.03	No	1635	84.45	No			
Benzene	7	0.25	No	15.4	0.45	No	10.2	0.14	No
Hydrogen Sulfide	10.8	0.08	No	9.8	0.19	No	47	0.04	No
Sulfur Dioxide	93.2	0.88	No				250	2.07	No
Nitrogen Oxides	121	11.92	No				250	31.58	No
Carbon Monoxide	104	23.80	No				250	63.10	No
PM10 and PM2.5	28	0.12	No				15	0.52	No

a- Worst case steady state + low pressure periodic emissions assume that VRT vapors to the flare cannot occur simultaneously with VRT down time flashing at the tanks.
b- Worst case steady state + low pressure periodic + high pressure periodic emissions assume that VRT vapors to the flare cannot occur simultaneously with VRT down time flashing at the tanks.

(k)(3) Emission Limits Based on Impact Evaluation:

What is the distance to the closest receptor in feet?
297 Further ESL review is required
What is the distance to the closest property line in feet?
50 Further ambient air quality review is required

Air Contaminant	De Minimis Emission Limits	Project Total Emission Rates	Project ER Less than Limit?
	lb/hr	lb/hr	
Benzene	0.039	0.45	No
Hydrogen Sulfide	0.025	0.19	No
Sulfur Dioxide	2	7.31	No
Nitrogen Oxides	4	51.71	No

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Non-Rule Standard Permit Application
06/2025
Eagle Ford, Lavaca County, Texas
H₂S Compliance Demonstration

Source	EPN	Pollutant	Emission Source Parameters			Demonstration of Compliance with State Property Line Standard			
			Stack Height	Distance to Property Line	Generic Modeling Value ^{a,c}	H ₂ S Emission Rate	Weighted Ratio of Emissions	Ambient Standard ^b	Maximum Allowable Emission Rate
			(feet)	(feet)	(µg/m ³)/(lb/hr)	(lb/hr)	(µg/m ³)	(µg/m ³)	(lb/hr)
Equipment Fugitives	FUG	H ₂ S	3	50	2625	5.18E-04	0.27%	108	1.10E-04
Low Pressure Flare	FL-LP	H ₂ S	40	50	26	0.02	11.44%	108	0.48
High Pressure Flare	FL-HP	H ₂ S	40	50	23	0.07	35.33%	108	1.66
Oil/Condensate Loading	CTL	H ₂ S	10	50	739.2	1.12E-04	0.06%	108	8.47E-05
Hot Oil Loading	HOT	H ₂ S	10	50	739.2	2.02E-03	1.05%	108	1.53E-03
Produced Water Loading	WTL	H ₂ S	10	50	739.2	1.90E-03	0.98%	108	1.44E-03
Gas Compression Engine	ENG-01	H ₂ S	25.8	50	8.57	1.96E-03	1.01%	108	0.13
Gas Cooler Engine	ENG-02	H ₂ S	8	50	85.00	8.97E-05	0.05%	108	5.89E-04
Compressor Rod Packing	COMPRODPAK	H ₂ S	3	50	2625	3.88E-05	0.02%	108	8.25E-06
Pipeline Pigging	MSS-PIG	H ₂ S	6	50	51	0.02	8.51%	108	0.18
Vessel Blowdown	VSSL-BD	H ₂ S	3	50	4304	0.04	22.15%	108	0.01
Oil/Condensate Tank Degassing	MSS-OTK	H ₂ S	30	50	244	0.03	14.22%	108	0.06
Produced Water Tank Degassing	MSS-WTK	H ₂ S	30	50	244	0.01	4.20%	108	0.02
Production Vessel Degassing	MSS-VSSL-DG	H ₂ S	10	50	4304	1.38E-03	0.71%	108	1.79E-04
Totals						0.19	100.00%	108	2.53
						Emissions Less than Maximum Acceptable Emissions?:			Yes

^a Generic modeling value from 30 TAC §106.352(m) Table 2 for fugitive sources, loading, tanks , and process vents; Table 3 for flares; Table 4 for blowdowns, purging, and pigging; Table 5C for engines 500 < hp ≤ 1,000 hp; Table 5D for engines 1,000 < hp ≤ 1,500 orTable 5F for engine >2,000 hp Distances and release heights were not interpolated, the next lowest height and lesser distances was used for determination of maximum acceptable emissions.

^b Most stringent state property line standard from 30 TAC 112.

Marathon Oil EF, LLC
Scully
Non-Rule Standard Permit Application
06/2025
Eagle Ford, Lavaca County, Texas
Benzene Compliance Demonstration

Source	EPN	Pollutant	Emission Source Parameters				Demonstration of Compliance with 1-hour ESL				Demonstration of Compliance with Annual ESL			
			Stack Height	Distance to Receptor	Engine Rating	Generic Modeling Value ^{a,c}	Benzene Emission Rate	Weighted Ratio of Emissions	Effects Screening Level ^b	Maximum Allowable Emission Rate	Benzene Emission Rate	Weighted Ratio of Emissions	Effects Screening Level ^b	Maximum Allowable Emission Rate
			(feet)	(feet)	(HP)	(µg/m ³)/(lb/hr)	(lb/hr)	(µg/m ³)	(µg/m ³)	(lb/hr)	(tpy)	(µg/m ³)	(µg/m ³)	(tpy)
Equipment Fugitives	FUG	Benzene	3	200	NA	1853	1.28E-03	0.29%	170	2.63E-04	4.72E-03	3.47%	4.5	4.61E-03
Low Pressure Flare	FL-LP	Benzene	40	200	NA	26	0.15	34.67%	170	2.27	0.10	71.65%	4.5	6.79
High Pressure Flare	FL-HP	Benzene	40	200	NA	23	0.12	26.48%	170	1.96	0.01	4.33%	4.5	0.46
Oil/Condensate Loading	CTL	Benzene	10	200	NA	739	7.41E-04	0.17%	170	3.83E-04	3.76E-04	0.28%	4.5	9.21E-04
Hot Oil Loading	HOT	Benzene	10	200	NA	739	0.01	3.00%	170	0.01	1.17E-03	0.86%	4.5	2.87E-03
Produced Water Loading	WTL	Benzene	10	200	NA	739	2.72E-03	0.61%	170	1.41E-03	1.93E-03	1.42%	4.5	4.73E-03
Gas Compression Engine	ENG-01	Benzene	25.8	200	NA	9	4.38E-03	0.98%	170	0.20	0.02	14.11%	4.5	4.06
Gas Cooler Engine	ENG-02	Benzene	8	200	NA	85	7.86E-04	0.18%	170	3.53E-03	3.44E-03	2.53%	4.5	0.07
Compressor Rod Packing	COMPROPAK	Benzene	3	200	NA	1853	6.70E-05	0.02%	170	1.38E-05	2.93E-04	0.22%	4.5	2.87E-04
Pipeline Pigging	MSS-PIG	Benzene	6	200	NA	51	0.03	6.38%	170	0.21	5.11E-04	0.38%	4.5	0.02
Vessel Blowdown	VSSL-BD	Benzene	3	200	NA	3621	0.07	16.26%	170	0.01	3.62E-04	0.27%	4.5	1.81E-04
Oil/Condensate Tank Degassing	MSS-OTK	Benzene	30	200	NA	244	0.05	10.44%	170	0.07	6.58E-04	0.48%	4.5	4.89E-03
Produced Water Tank Degassing	MSS-WTK	Benzene	30	200	NA	244	3.80E-06	0.0009%	170	5.94E-06	1.79E-08	0.0000%	4.5	1.33E-07
Production Vessel Degassing	MSS-VSSL-DG	Benzene	10	200	NA	3621	2.33E-03	0.52%	170	2.46E-04	5.71E-06	0.0042%	4.5	2.86E-06
Totals							0.45	100.00%	170	4.73	0.14	100.00%	4.5	11.42
							Emissions Less than Maximum Acceptable Emissions?:		Yes		Emissions Less than Maximum Acceptable Emissions?:		Yes	

^a Generic modeling value from 30 TAC §106.352(m)Table 2 for fugitive sources, loading, tanks , and process vents; Table 3 for flares; Table 4 for blowdowns, purging, and pigging; Table 5C for engines 500 < hp ≤ 1,000 hp ; Table 5D for engines 1,000 < hp ≤ 1,500 orTable 5F for engine >2,000 hp. Distances and release heights were not interpolated, the next lowest height and lesser distances was used for determination of maximum acceptable emissions. In accordance with modeling guidance, the G factor (generic modeling result) for fugitives, loading and tank hatch is multiplied by 0.6.

^b Effects Screening Level (ESL) from TCEQ Current ESL List

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06/2025
Eagle Ford, Lavaca County, Texas
NO₂ Compliance Demonstration

Source	EPN	Pollutant	Emission Source Parameters						NO ₂ Emission Rate	Demonstration of Compliance with NAAQS		
			1-hr NO ₂ :NO _x Ratio ^a	Annual NO ₂ :NO _x Ratio ^a	Distance to Property Line ^b	Stack Height ^b	Generic Modeling Value ^c	NO _x Emission Rate ^c		Weighted Ratio of Emissions	Ambient Standard	Modeled Annual NO ₂ Concentration ^h
					(ft)	(ft)	(µg/m3)/(lb/hr)	(lb/hr)				
Low Pressure Flare	FL-LP	NO _x	0.8	0.75	50	40	26	8.51	6.80	16.45%	188	43.95
High Pressure Flare	FL-HP	NO _x	0.8	0.75	50	40	23	39.80	31.84	76.97%	188	10.62
Gas Compression Engine	ENG-01	NO _x	0.2	0.75	50	26	8.57	3.04	0.61	5.88%	188	372.80
Gas Cooler Engine	ENG-02	NO _x	0.2	0.75	50	8	85	0.36	0.07	0.70%	188	317.85
Totals								51.71	39.32	100%		745
Emissions Less than Maximum Acceptable Emissions?:											Yes	

a NO₂:NO_x ratio of 0.20 for 4 stroke rich and lean burn engines and 0.50 for 2-stroke engines from Air Quality Standard Permit for Oil and Gas Handling Production Facilites, (k)(4)(A). NO₂:NO_x ratio for all other sources from

b Distances and release heights were not interpolated, the next lowest height and lesser distances was used for determination of maximum acceptable emissions.

c Generic modeling value from 30 TAC §106.352(m)Table 2 for fugitive sources, loading, tanks , and process vents; Table 3 for flares; Table 4 for blowdowns, purging, and pigging; Table 5C for engines 500 < hp ≤ 1,000 hp; Table 5D for engines 1,000 < hp ≤ 1,500 orTable 5F for engine >2,000 hp

d Most stringent state property line standard from 30 TAC 112.

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06/2025
Eagle Ford, Lavaca County, Texas
SO₂ Compliance Demonstration

Source	EPN	Pollutant	Emission Source Parameters														Demonstration of Compliance with NAAQS			
			Distance to Property Line ^a		Stack Height ^a		Stack Diameter ^a		Stack Gas Exit Velocity ^a		Stack Gas Exit Temperature ^b		Flare Heat Release ^c		SO ₂ Emission Rate Increase ^d		Dist. to Max. Concentration ^e	1-hr SO ₂ Concentration ^e	1-hr SO ₂ Concentration ^e	3-hr SO ₂ Concentration ^f
			(ft)	(m)	(ft)	(m)	(ft)	(m)	(ft/s)	(m/s)	(F)	(K)	(MMBtu/hr)	(cal/s)	(lb/hr)	(g/s)	(m)	(µg/m ³)/1 lb/hr	(µg/m ³)	(µg/m ³)
Low Pressure Flare	FL-LP	SO ₂	50	15.24	40	12.19	0.75	0.23	--	--	--	--	61.64	4,317,364.00	0.69	0.69	786	0.49	0.34	0.30
High Pressure Flare	FL-HP	SO ₂	50	15.24	40	12.19	0.75	0.23	--	--	--	--	288.39	20,200,152.91	6.42	6.42	1,072	0.13	0.82	0.74
Gas Compression Engine	ENG-01	SO ₂	50	15.24	26	7.86	1.30	0.40	116.80	35.60	1,023.00	823.71	3.00	210,137.00	0.18	0.18	184	4.95	0.91	0.82
Gas Cooler Engine	ENG-02	SO ₂	50	15.24	8	2.44	1.30	0.40	5.10	1.55	1,029.00	827.04	4.00	280,182.67	0.01	0.01	20	307.70	2.59	2.33
															7.31	7.31		--	4.66	4.20
														Background Concentration ^g (µg/m ³):		50		50		
														Total Ambient Concentration ^h (µg/m ³):		54.66		54.20		
														SO ₂ NAAQS ⁱ (µg/m ³):		196		1,300		
														Less Than NAAQS?:		Yes		Yes		

^a Converted from feet: Length (m) = Length (ft) * 0.3048 m/ft

^b Temperature (K) = [Temperature (F) + 459.67] * 5/9

^c Heat Release (cal/s) = Heat Release (MMBtu/hr) * 252.164401 cal/Btu / 3600 s/hr * 10^6 Btu/MMBtu. For flares with AOS flaring, the operating scenario that resulted in the worst case maximum ambient concentration was used.

^d Emission Rate (g/s) = Emission Rate (lb/hr) * 453.592 g/lb / 3,600 s/hr

^e Modeled in SCREEN3.

^f 3-hr Concentration = 1-hr Concentration * 0.9 (3-hr Averaging Factor)

^g Background concentration for Lavaca County from the TCEQ Interim 1-Hour SO2 Screening Background Concentrations in micrograms per cubic meter (December 2010).

^h Total Ambient Concentration = Concentration from Project Sources + Background Concentration

ⁱ The 1,021 µg/m³ state property line standard from 30 TAC 112.3(a) exceeds the NAAQS, therefore, by complying with the 1-hr NAAQS the site demonstrates compliance with the state property line standard.

05/20/25

14:35:23

*** SCREEN3 MODEL RUN ***

*** VERSION DATED 13043 ***

ENG-01

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT
EMISSION RATE (G/S) = 0.126000
STACK HEIGHT (M) = 7.8600
STK INSIDE DIAM (M) = 0.4000
STK EXIT VELOCITY (M/S) = 35.6000
STK GAS EXIT TEMP (K) = 823.7100
AMBIENT AIR TEMP (K) = 293.0000
RECEPTOR HEIGHT (M) = 0.0000
URBAN/RURAL OPTION = RURAL
BUILDING HEIGHT (M) = 0.0000
MIN HORIZ BLDG DIM (M) = 0.0000
MAX HORIZ BLDG DIM (M) = 0.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.

THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BOUY. FLUX = 8.997 M**4/S**3; MOM. FLUX = 18.032 M**4/S**2.

*** FULL METEOROLOGY ***

*** SCREEN AUTOMATED DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	0.000	1	1.0	1.0	320.0	119.16	2.17	2.14	NO
100.	1.995	3	10.0	10.0	3200.0	18.99	12.63	7.72	NO
200.	4.894	3	10.0	10.0	3200.0	18.99	23.83	14.38	NO
300.	4.434	4	10.0	10.0	3200.0	18.99	22.83	12.50	NO
400.	4.136	4	10.0	10.0	3200.0	18.99	29.63	15.60	NO
500.	3.745	4	8.0	8.0	2560.0	21.77	36.36	18.72	NO
600.	3.326	4	5.0	5.0	1600.0	30.12	43.19	22.14	NO
700.	3.123	4	5.0	5.0	1600.0	30.12	49.60	24.86	NO
800.	2.874	4	4.5	4.5	1440.0	32.59	56.02	27.70	NO
900.	2.658	4	4.0	4.0	1280.0	35.68	62.39	30.52	NO
1000.	2.470	4	4.0	4.0	1280.0	35.68	68.59	33.06	NO
1100.	2.307	4	3.5	3.5	1120.0	39.66	74.86	35.31	NO

1200.	2.156	4	3.5	3.5	1120.0	39.66	80.95	37.22	NO
1300.	2.031	4	3.0	3.0	960.0	44.96	87.17	39.45	NO
1400.	1.921	4	3.0	3.0	960.0	44.96	93.16	41.24	NO
1500.	1.816	4	3.0	3.0	960.0	44.96	99.11	43.00	NO
1600.	1.809	5	1.0	1.0	10000.0	69.68	80.12	34.03	NO
1700.	1.872	5	1.0	1.0	10000.0	69.68	84.44	35.01	NO
1800.	1.924	5	1.0	1.0	10000.0	69.68	88.75	35.97	NO
1900.	1.967	5	1.0	1.0	10000.0	69.68	93.04	36.92	NO
2000.	2.002	5	1.0	1.0	10000.0	69.68	97.32	37.86	NO
2100.	2.017	5	1.0	1.0	10000.0	69.68	101.57	38.70	NO
2200.	2.028	5	1.0	1.0	10000.0	69.68	105.82	39.53	NO
2300.	2.033	5	1.0	1.0	10000.0	69.68	110.05	40.34	NO
2400.	2.034	5	1.0	1.0	10000.0	69.68	114.26	41.15	NO
2500.	2.054	6	1.0	1.0	10000.0	59.16	79.31	28.48	NO
2600.	2.089	6	1.0	1.0	10000.0	59.16	82.08	28.94	NO
2700.	2.120	6	1.0	1.0	10000.0	59.16	84.85	29.39	NO
2800.	2.148	6	1.0	1.0	10000.0	59.16	87.60	29.83	NO
2900.	2.172	6	1.0	1.0	10000.0	59.16	90.35	30.27	NO
3000.	2.192	6	1.0	1.0	10000.0	59.16	93.08	30.70	NO
3500.	2.203	6	1.0	1.0	10000.0	59.16	106.66	32.48	NO
4000.	2.181	6	1.0	1.0	10000.0	59.16	120.07	34.14	NO
4500.	2.137	6	1.0	1.0	10000.0	59.16	133.31	35.72	NO
5000.	2.081	6	1.0	1.0	10000.0	59.16	146.41	37.21	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:

184.	4.948	3	10.0	10.0	3200.0	18.99	22.20	13.42	NO
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DWASH= MEANS NO CALC MADE (CONC = 0.0)

DWASH=NO MEANS NO BUILDING DOWNWASH USED

DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED

DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED

DWASH=NA MEANS DOWNWASH NOT APPLICABLE, $X < 3 \cdot LB$

*** SUMMARY OF SCREEN MODEL RESULTS ***

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	4.948	184.	0.

** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **

05/20/25

14:37:52

*** SCREEN3 MODEL RUN ***

*** VERSION DATED 13043 ***

EnG-02

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT
EMISSION RATE (G/S) = 0.126000
STACK HEIGHT (M) = 2.4400
STK INSIDE DIAM (M) = 0.4000
STK EXIT VELOCITY (M/S)= 1.5500
STK GAS EXIT TEMP (K) = 827.0400
AMBIENT AIR TEMP (K) = 293.0000
RECEPTOR HEIGHT (M) = 0.0000
URBAN/RURAL OPTION = RURAL
BUILDING HEIGHT (M) = 0.0000
MIN HORIZ BLDG DIM (M) = 0.0000
MAX HORIZ BLDG DIM (M) = 0.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.

THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BOUY. FLUX = 0.393 M**4/S**3; MOM. FLUX = 0.034 M**4/S**2.

*** FULL METEOROLOGY ***

*** SCREEN AUTOMATED DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	0.000	1	1.0	1.0	320.0	13.07	0.53	0.38	NO
100.	187.4	4	3.0	3.0	960.0	5.20	8.26	4.76	NO
200.	112.7	4	1.5	1.5	480.0	9.15	15.69	8.74	NO
300.	81.42	4	1.0	1.0	320.0	13.07	22.81	12.47	NO
400.	61.18	4	1.0	1.0	320.0	13.07	29.61	15.57	NO
500.	46.51	4	1.0	1.0	320.0	13.07	36.27	18.55	NO
600.	36.29	4	1.0	1.0	320.0	13.07	42.83	21.43	NO
700.	31.51	6	1.0	1.0	10000.0	20.50	24.99	12.09	NO
800.	31.80	6	1.0	1.0	10000.0	20.50	28.11	13.04	NO
900.	31.35	6	1.0	1.0	10000.0	20.50	31.21	13.97	NO
1000.	30.44	6	1.0	1.0	10000.0	20.50	34.27	14.88	NO
1100.	29.17	6	1.0	1.0	10000.0	20.50	37.32	15.69	NO

1200.	27.83	6	1.0	1.0	10000.0	20.50	40.35	16.49	NO
1300.	26.48	6	1.0	1.0	10000.0	20.50	43.35	17.26	NO
1400.	25.15	6	1.0	1.0	10000.0	20.50	46.34	18.02	NO
1500.	23.87	6	1.0	1.0	10000.0	20.50	49.30	18.75	NO
1600.	22.65	6	1.0	1.0	10000.0	20.50	52.25	19.48	NO
1700.	21.50	6	1.0	1.0	10000.0	20.50	55.18	20.19	NO
1800.	20.42	6	1.0	1.0	10000.0	20.50	58.10	20.88	NO
1900.	19.41	6	1.0	1.0	10000.0	20.50	61.00	21.56	NO
2000.	18.46	6	1.0	1.0	10000.0	20.50	63.88	22.23	NO
2100.	17.59	6	1.0	1.0	10000.0	20.50	66.76	22.80	NO
2200.	16.78	6	1.0	1.0	10000.0	20.50	69.62	23.36	NO
2300.	16.03	6	1.0	1.0	10000.0	20.50	72.46	23.90	NO
2400.	15.33	6	1.0	1.0	10000.0	20.50	75.30	24.44	NO
2500.	14.68	6	1.0	1.0	10000.0	20.50	78.12	24.96	NO
2600.	14.07	6	1.0	1.0	10000.0	20.50	80.93	25.48	NO
2700.	13.50	6	1.0	1.0	10000.0	20.50	83.73	25.99	NO
2800.	12.97	6	1.0	1.0	10000.0	20.50	86.52	26.49	NO
2900.	12.47	6	1.0	1.0	10000.0	20.50	89.30	26.98	NO
3000.	12.00	6	1.0	1.0	10000.0	20.50	92.07	27.47	NO
3500.	10.11	6	1.0	1.0	10000.0	20.50	105.78	29.44	NO
4000.	8.674	6	1.0	1.0	10000.0	20.50	119.28	31.27	NO
4500.	7.560	6	1.0	1.0	10000.0	20.50	132.60	32.98	NO
5000.	6.673	6	1.0	1.0	10000.0	20.50	145.76	34.59	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:
 20. 307.7 4 10.0 10.0 3200.0 2.43 2.94 1.80 NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, $X < 3 \cdot LB$

 *** SUMMARY OF SCREEN MODEL RESULTS ***

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
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SIMPLE TERRAIN	307.7	20.	0.

 ** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **

05/20/25

14:34:03

*** SCREEN3 MODEL RUN ***

*** VERSION DATED 13043 ***

FLHP

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = FLARE
EMISSION RATE (G/S) = 0.126000
FLARE STACK HEIGHT (M) = 12.1900
TOT HEAT RLS (CAL/S) = 0.202002E+08
RECEPTOR HEIGHT (M) = 0.0000
URBAN/RURAL OPTION = RURAL
EFF RELEASE HEIGHT (M) = 26.3455
BUILDING HEIGHT (M) = 0.0000
MIN HORIZ BLDG DIM (M) = 0.0000
MAX HORIZ BLDG DIM (M) = 0.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.

THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BOUY. FLUX = 334.925 M**4/S**3; MOM. FLUX = 204.230 M**4/S**2.

*** FULL METEOROLOGY ***

*** SCREEN AUTOMATED DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	0.000	1	1.0	1.1	1211.3	1210.32	4.39	4.37	NO
100.	0.1958E-02	6	1.0	1.7	10000.0	169.76	40.35	40.21	NO
200.	0.3740E-02	5	1.0	1.4	10000.0	210.70	53.94	53.04	NO
300.	0.4011E-02	5	1.0	1.4	10000.0	210.70	55.32	53.39	NO
400.	0.4313E-02	5	1.0	1.4	10000.0	210.70	57.09	53.77	NO
500.	0.4664E-02	5	1.0	1.4	10000.0	210.70	59.20	54.21	NO
600.	0.2225E-01	1	3.0	3.2	960.0	421.00	150.35	169.25	NO
700.	0.5768E-01	1	3.0	3.2	960.0	421.00	171.10	227.13	NO
800.	0.8007E-01	1	3.0	3.2	960.0	421.00	191.41	295.56	NO
900.	0.1059	1	2.0	2.1	640.0	618.33	235.13	388.56	NO
1000.	0.1250	1	2.0	2.1	640.0	618.33	256.05	477.47	NO
1100.	0.1279	1	2.0	2.1	640.0	618.33	276.60	577.35	NO
1200.	0.1228	1	2.0	2.1	640.0	618.33	296.83	688.28	NO
1300.	0.1173	1	2.0	2.1	640.0	618.33	312.64	808.72	NO

1400.	0.1120	1	2.0	2.1	640.0	618.33	327.66	940.47	NO
1500.	0.1071	1	2.0	2.1	640.0	618.33	342.79	1083.88	NO
1600.	0.1025	1	2.0	2.1	640.0	618.33	358.00	1238.91	NO
1700.	0.9831E-01	1	2.0	2.1	640.0	618.33	373.26	1405.56	NO
1800.	0.9444E-01	1	2.0	2.1	640.0	618.33	388.57	1583.85	NO
1900.	0.9085E-01	1	2.0	2.1	640.0	618.33	403.90	1773.80	NO
2000.	0.8753E-01	1	2.0	2.1	640.0	618.33	419.25	1975.47	NO
2100.	0.8562E-01	4	20.0	23.1	6400.0	77.35	134.64	54.07	NO
2200.	0.8441E-01	4	20.0	23.1	6400.0	77.35	140.36	55.58	NO
2300.	0.8304E-01	4	20.0	23.1	6400.0	77.35	146.05	57.06	NO
2400.	0.8156E-01	4	20.0	23.1	6400.0	77.35	151.72	58.53	NO
2500.	0.8000E-01	4	20.0	23.1	6400.0	77.35	157.37	59.98	NO
2600.	0.7838E-01	4	20.0	23.1	6400.0	77.35	163.00	61.41	NO
2700.	0.7673E-01	4	20.0	23.1	6400.0	77.35	168.60	62.83	NO
2800.	0.7506E-01	4	20.0	23.1	6400.0	77.35	174.19	64.22	NO
2900.	0.7339E-01	4	20.0	23.1	6400.0	77.35	179.75	65.60	NO
3000.	0.7173E-01	4	20.0	23.1	6400.0	77.35	185.30	66.97	NO
3500.	0.6371E-01	4	20.0	23.1	6400.0	77.35	212.76	73.17	NO
4000.	0.6168E-01	2	2.0	2.1	640.0	618.33	553.78	528.02	NO
4500.	0.5856E-01	2	2.0	2.1	640.0	618.33	608.79	593.79	NO
5000.	0.5475E-01	2	2.0	2.1	640.0	618.33	663.39	660.95	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:

1072.	0.1283	1	2.0	2.1	640.0	618.33	270.67	547.25	NO
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DWASH= MEANS NO CALC MADE (CONC = 0.0)

DWASH=NO MEANS NO BUILDING DOWNWASH USED

DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED

DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED

DWASH=NA MEANS DOWNWASH NOT APPLICABLE, $X < 3 \cdot LB$

*** SUMMARY OF SCREEN MODEL RESULTS ***

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	0.1283	1072.	0.

** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **

06/27/25
13:51:18

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 13043 ***

FL-LP

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = FLARE
EMISSION RATE (G/S) = 0.126000
FLARE STACK HEIGHT (M) = 12.1900
TOT HEAT RLS (CAL/S) = 0.431736E+07
RECEPTOR HEIGHT (M) = 0.0000
URBAN/RURAL OPTION = RURAL
EFF RELEASE HEIGHT (M) = 18.9602
BUILDING HEIGHT (M) = 0.0000
MIN HORIZ BLDG DIM (M) = 0.0000
MAX HORIZ BLDG DIM (M) = 0.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BOUY. FLUX = 71.583 M**4/S**3; MOM. FLUX = 43.650 M**4/S**2.

*** FULL METEOROLOGY ***

*** SCREEN AUTOMATED DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
15.	0.000	1	1.0	1.0	500.0	498.98	12.19	11.40	NO
100.	0.7720E-02	5	1.0	1.3	10000.0	133.50	33.26	32.88	NO
200.	0.9031E-02	5	1.0	1.3	10000.0	133.50	34.73	33.31	NO
300.	0.5047E-01	3	10.0	10.7	3200.0	66.05	35.21	21.84	NO
400.	0.1867	3	10.0	10.7	3200.0	66.05	45.68	28.16	NO
500.	0.3077	3	10.0	10.7	3200.0	66.05	55.91	34.32	NO
600.	0.3705	3	10.0	10.7	3200.0	66.05	65.94	40.36	NO
700.	0.4023	4	20.0	22.0	6400.0	40.13	49.62	24.90	NO
800.	0.4092	4	20.0	22.0	6400.0	40.13	55.95	27.56	NO
900.	0.4007	4	20.0	22.0	6400.0	40.13	62.23	30.18	NO
1000.	0.3836	4	20.0	22.0	6400.0	40.13	68.44	32.75	NO
1100.	0.3613	1	1.0	1.0	500.0	498.98	265.21	571.98	NO
1200.	0.3436	4	15.0	16.5	4800.0	48.57	80.91	37.12	NO
1300.	0.3298	4	15.0	16.5	4800.0	48.57	86.95	38.98	NO

1400.	0.3153	4	15.0	16.5	4800.0	48.57	92.96	40.79	NO
1500.	0.3009	4	15.0	16.5	4800.0	48.57	98.92	42.57	NO
1600.	0.2867	4	15.0	16.5	4800.0	48.57	104.85	44.30	NO
1700.	0.2731	4	15.0	16.5	4800.0	48.57	110.75	46.00	NO
1800.	0.2653	4	10.0	11.0	3200.0	64.57	117.01	48.64	NO
1900.	0.2586	4	10.0	11.0	3200.0	64.57	122.82	50.24	NO
2000.	0.2516	4	10.0	11.0	3200.0	64.57	128.61	51.82	NO
2100.	0.2444	4	10.0	11.0	3200.0	64.57	134.36	53.37	NO
2200.	0.2372	4	10.0	11.0	3200.0	64.57	140.09	54.90	NO
2300.	0.2301	4	10.0	11.0	3200.0	64.57	145.79	56.40	NO
2400.	0.2231	4	10.0	11.0	3200.0	64.57	151.47	57.89	NO
2500.	0.2166	4	8.0	8.8	2560.0	75.97	157.44	60.15	NO
2600.	0.2119	4	8.0	8.8	2560.0	75.97	163.06	61.58	NO
2700.	0.2072	4	8.0	8.8	2560.0	75.97	168.66	62.99	NO
2800.	0.2024	4	8.0	8.8	2560.0	75.97	174.25	64.38	NO
2900.	0.2013	2	1.0	1.0	500.0	498.98	420.16	377.30	NO
3000.	0.2005	2	1.0	1.0	500.0	498.98	431.59	389.74	NO
3500.	0.2202	5	1.5	1.9	10000.0	119.02	161.31	54.25	NO
4000.	0.2399	5	1.0	1.3	10000.0	133.50	182.02	59.56	NO
4500.	0.2544	5	1.0	1.3	10000.0	133.50	201.75	62.14	NO
5000.	0.2653	5	1.0	1.3	10000.0	133.50	221.29	64.61	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:									
786.	0.4094	4	20.0	22.0	6400.0	40.13	55.13	27.22	NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

 *** SUMMARY OF SCREEN MODEL RESULTS ***

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	0.4094	786.	0.

 ** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
