

From: [Anu Arun](#)
To: [DEQ AQD APU](#)
Subject: Fw: [EXTERNAL] DCP - Slapout FW: Permit No. 2026-0423-O - Need Additional Information | Response
Date: Thursday, July 16, 2026 11:07:08 AM
Attachments: [image001.png](#)
[image002.png](#)
[image003.png](#)
[Slapout Booster Condensate Tanks.pdf](#)
[Slapout Booster Methanol Tanks.xlsx](#)

Hello APU,

Could you please update this in OnBase.

Facility ID	Company	Facility Name	Permit Number
777	DCP OPERATING CO LP	SLAPOUT BOOSTER STATION	2026-0423-O

Thanks,
Anu Arun

From: Teresa Sikorski <teresa.sikorski@roserockenv.com>
Sent: Thursday, July 16, 2026 10:59 AM
To: Anu Arun <Anu.Arun@deq.ok.gov>; Kelsey Lathrop <kelsey.lathrop@roserockenv.com>
Subject: RE: [EXTERNAL] DCP - Slapout FW: Permit No. 2026-0423-O - Need Additional Information | Response

Good morning Anu,

Attached are a PDF copy of the condensate tank report and a read-only Excel file of the methanol tanks report. The methanol tanks report has vertical and horizontal tanks and associated inputs. Please reach out if there are any further questions.

Thank you,

Teresa Sikorski | Environmental Professional
Rose Rock Environmental Services
Mobile: (609) 577-8875

From: Anu Arun <Anu.Arun@deq.ok.gov>
Sent: Thursday, July 16, 2026 10:33 AM
To: Teresa Sikorski <teresa.sikorski@roserockenv.com>; Kelsey Lathrop <kelsey.lathrop@roserockenv.com>
Subject: Re: [EXTERNAL] DCP - Slapout FW: Permit No. 2026-0423-O - Need Additional Information | Response

Good morning Teresa,

Thank you for your clarification.

Please provide the ProMax report output showing the user-entered inputs (the values marked with asterisks) and the stream compositions for all tanks.

Thank you,

Anu Arun

Air Quality Division

405-702-4206

anu.arun@deg.ok.gov



From: Teresa Sikorski <teresa.sikorski@roserockenv.com>

Sent: Thursday, July 16, 2026 10:20 AM

To: Anu Arun <Anu.Arun@deg.ok.gov>; Kelsey Lathrop <kelsey.lathrop@roserockenv.com>

Subject: RE: [EXTERNAL] DCP - Slapout FW: Permit No. 2026-0423-O - Need Additional Information | Response

Good morning Anu,

Regarding the additional items you requested:

- Yes, formaldehyde is included in the manufacturer's VOC emission factor for the engines
- Please clarify what you mean by the ProMax run file. Are you wanting the report output? Also, are you requesting this for all tanks or just the condensate tanks?

Thank you,

Teresa Sikorski | Environmental Professional

Rose Rock Environmental Services

Mobile: (609) 577-8875

From: Anu Arun <Anu.Arun@deg.ok.gov>

Sent: Thursday, July 16, 2026 10:13 AM

To: Kelsey Lathrop <kelsey.lathrop@roserockenv.com>

Cc: Teresa Sikorski <teresa.sikorski@roserockenv.com>

Subject: Re: [EXTERNAL] DCP - Slapout FW: Permit No. 2026-0423-O - Need Additional Information | Response

Good morning,

Thank you for your clarifications and the updated emission calculation sheets.

I need a few additional items:

- Could you please confirm whether formaldehyde is included in the manufacturer's VOC emission factor for the engines.
- Is it possible to get the ProMax run file for the tanks in Excel/Word/PDF format.

Thank you,

Anu Arun

Air Quality Division

405-702-4206

anu.arun@deq.ok.gov



From: Kelsey Lathrop <kelsey.lathrop@roserockenv.com>

Sent: Tuesday, July 14, 2026 2:22 PM

To: Anu Arun <Anu.Arun@deq.ok.gov>

Cc: Laughlin, Jay <jay.laughlin@p66.com>; Teresa Sikorski <teresa.sikorski@roserockenv.com>; Eric Ward <eric.ward@roserockenv.com>

Subject: RE: [EXTERNAL] DCP - Slapout FW: Permit No. 2026-0423-O - Need Additional Information | Response

Good afternoon, Anu,

On behalf of Jay Laughlin (DCP Operating Company), please find the attached and signed documentation providing the direct responses to your specific questions and requested clarifications outlined in your email below.

Per our discussion with DCP, we have made minor revisions to the permit forms and have included updated emissions calculations to reflect these changes.

If you require any further information, please reach out.

Thank you,

Kelsey Lathrop | *Environmental Professional & GIS Specialist*

Rose Rock Environmental Services

Cell: (405) 255-9587

From: Laughlin, Jay <Jay.Laughlin@p66.com>
Sent: Monday, July 6, 2026 10:21 AM
To: Kelsey Lathrop <kelsey.lathrop@roserockenv.com>; Teresa Sikorski <teresa.sikorski@roserockenv.com>
Cc: Eric Ward <eric.ward@roserockenv.com>
Subject: [EXTERNAL] DCP - Slapout FW: Permit No. 2026-0423-O - Need Additional Information

Hi. Can you assist with answering these questions below. Just a quick look, most of this information was already included in the app.

Let me know. Thanks, Jay



Jay Laughlin, P.E.
Environmental

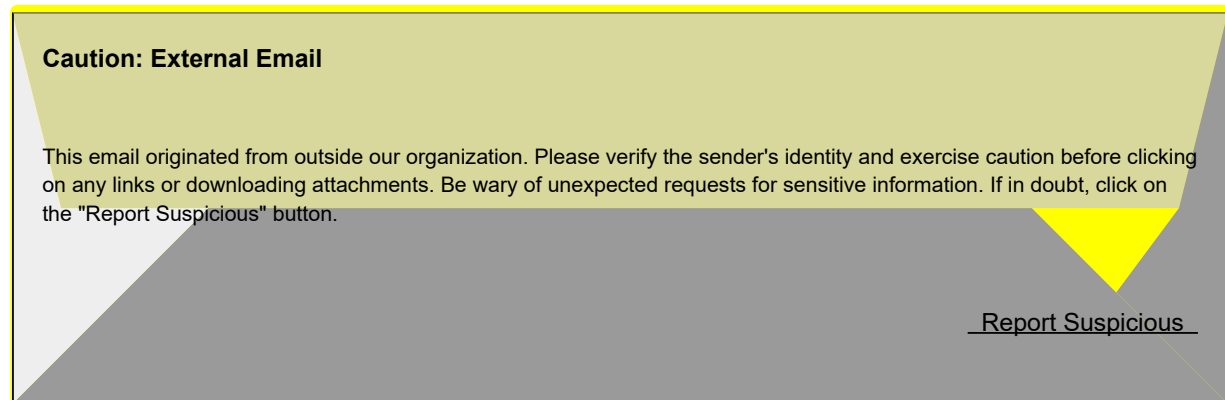
Oklahoma/Kansas/Michigan/Texas Assets

O: 405-605-3835 | M: 405-543-7892 | E: jay.laughlin@p66.com

715 NE 122nd BLD #3, Suite 150 | Oklahoma City, OK 73114-8194
phillips66.com



From: Anu Arun <Anu.Arun@deg.ok.gov>
Sent: Monday, July 6, 2026 9:30 AM
To: Laughlin, Jay <Jay.Laughlin@p66.com>
Subject: [EXTERNAL]Permit No. 2026-0423-O - Need Additional Information



Good morning,

This is regarding the application submitted for the following facility:

Facility ID	Company	Facility Name	Permit Number
777	DCP OPERATING CO LP	SLAPOUT BOOSTER STATION	2026-0423-O

Following a recent internal review, we need a few clarifications with your application:

- Please provide the information on compressors associated with the engines for OOOOb applicability review.
- Please explain the basis for the safety factors applied to each emission source. Several factors vary significantly, including the 750% factor for loading.
- Please confirm which manufacturer provided the formaldehyde emission factor (engine or catalyst) and provide the associated catalyst control efficiency.
- Because formaldehyde is a VOC, please apply the same safety factor to both pollutants or provide justification for using different factors.
- Could you please provide the ProMax input for tanks?
- Please include methanol in your HAP calculations.
- Please confirm the basis for the methanol throughput used in your calculations and provide the ProMax inputs supporting this value.

- Please confirm whether the methanol storage tanks use submerged fill, and if not, provide the fill configuration.

Please provide a response within 10 calendar days. If no response is provided, AQD will issue a formal Notice of Deficiency to suspend the review timeline. If you have any questions, please don't hesitate to reach out to me.

Thank you,

Anu Arun

Air Quality Division

405-702-4206

anu.arun@deq.ok.gov



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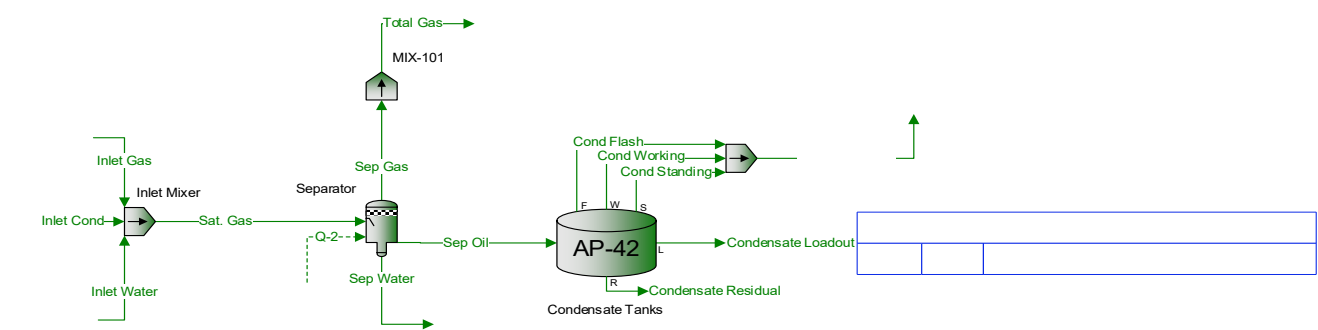
Emission Summary [Total]					
Component Subset	Tank Losses	Flashing Losses	Working Losses	Standing Losses	Loading Losses
	[lb/hr]	[lb/hr]	[lb/hr]	[lb/hr]	[lb/hr]
VOCs	0.771	0.487	0.085	0.199	0.040
HAPs	0.063	0.041	0.007	0.016	0.003
BTEX	0.011	0.007	0.001	0.003	0.001
H2S	0.000	0.000	0.000	0.000	0.000
	[ton/yr]	[ton/yr]	[ton/yr]	[ton/yr]	[ton/yr]
VOCs	3.377	2.132	0.371	0.874	0.177
HAPs	0.276	0.179	0.029	0.068	0.015
BTEX	0.047	0.031	0.005	0.011	0.002
H2S	0.000	0.000	0.000	0.000	0.000

ProMax Version: 6.0.25269.0

Bryan Research & Engineering, LLC

Chemical Engineering Consultants
P.O. Box 4747 Bryan, Texas 77805
Office: (979) 776-5220
FAX: (979) 776-4818
mailto:sales@bre.com
<http://www.bre.com/>

Report Navigator can be activated via the ProMax Navigator Toolbar.



Names	Units	Inlet Gas	Sep Gas	Oil Tank Losses
Temperature	°F	70	48	68.556
Pressure	psig	5	46	-1.3059
Std Vapor Volumetric Flow	MCFD	0.07025	0.0098401	0.35917
Net Ideal Gas Heating Value	Btu/ft^3	1137.3	1027.8	1688.6
VOC	ton/yr		0.0139	3.309
VOC	lb/h		0.003173	0.7555
Benzene	ton/yr	0.00021	1.4e-05	0.0041
Benzene	lb/h	4.7e-05	3.1e-06	0.00094
H2S	ton/yr	3.178e-06	1.546e-08	2.1816e-06
H2S	lb/h	7.26e-07	3.53e-09	4.98e-07
C3(Mass Flow)	ton/yr	0.062442	0.0067146	1.3498
C3(Mass Flow)	lb/h	0.014256	0.001533	0.30817
C3(Mole Fraction)	%	4.1915	3.2178	17.721
VOC	%		5.4828	34.34

Oil Production: 9.8 bbl/d
Oil Production: 150,000 gal/year

VOC (Uncontrolled)
Oil Tank (Total): 3.4 ton/yr
VOC -- Oil Loading Losses: 0.1767 ton/yr

Inlet Stream Summary

Stream Name	Inlet Cond
Stream Flowsheet	Storage Tanks
Temperature °F	70.000
Pressure psig	5.000
Standard Vapor Volumetric Flow MSCFD	8.500
Standard Liquid Volumetric Flow bbl/d	9.965
Vapor Fraction (%)	1.538
Component	[Mol%]
H2S	0.000
N2	0.000
CO2	0.103
C1	1.306
C2	0.896
C3	2.119
iC4	0.721
nC4	2.678
2,2-Dimethylpropane	0.000
Cyclopentane	0.000
iC5	1.850
nC5	3.095
2-Methylpentane	0.000
nC6	7.230
C7	9.050
Methylcyclohexane	1.606
C8	17.566
C9	19.271
C10+	23.122
Cyclohexane	0.000
Benzene	0.139
Toluene	2.234
Ethylbenzene	0.599
m-Xylene	6.415
2,2,4-Trimethylpentane	0.000
Water	0.000

Inlet Stream Summary

Stream Name	Inlet Gas
Stream Flowsheet	Storage Tanks
Temperature °F	70.000
Pressure psig	5.000
Standard Vapor Volumetric Flow MSCFD	0.070
Standard Liquid Volumetric Flow bbl/d	0.032
Vapor Fraction (%)	100.000
Component	[Mol%]
H2S	0.000
N2	0.609
CO2	0.919
C1	82.608
C2	7.017
C3	4.192
iC4	0.606
nC4	1.418
2,2-Dimethylpropane	0.000
Cyclopentane	0.000
iC5	0.392
nC5	0.462
2-Methylpentane	0.333
nC6	0.952
C7	0.272
Methylcyclohexane	0.000
C8	0.136
C9	0.040
C10+	0.004
Cyclohexane	0.000
Benzene	0.008
Toluene	0.017
Ethylbenzene	0.004
m-Xylene	0.009
2,2,4-Trimethylpentane	0.000
Water	0.000

Inlet Stream Summary

Stream Name	Inlet Water
Stream Flowsheet	Storage Tanks
Temperature °F	70.000
Pressure psig	5.000
Standard Vapor Volumetric Flow MSCFD	0.039
Standard Liquid Volumetric Flow bbl/d	0.005
Vapor Fraction (%)	0.000
Component	[Mol%]
H2S	0.000
N2	0.000
CO2	0.000
C1	0.000
C2	0.000
C3	0.000
iC4	0.000
nC4	0.000
2,2-Dimethylpropane	0.000
Cyclopentane	0.000
iC5	0.000
nC5	0.000
2-Methylpentane	0.000
nC6	0.000
C7	0.000
Methylcyclohexane	0.000
C8	0.000
C9	0.000
C10+	0.000
Cyclohexane	0.000
Benzene	0.000
Toluene	0.000
Ethylbenzene	0.000
m-Xylene	0.000
2,2,4-Trimethylpentane	0.000
Water	100.000

Flowsheet Information	
Tank Losses Block Name	Condensate Tanks
Tank Losses Block Inlet Stream	Sep Oil

Tank Characteristics			
Tank Type	Vertical Cylinder		
Time Frame	Year		
Material Category	Light Organics		
Number of Tanks	1		
Shell Height	[ft]	15.000	
Diameter	[ft]	12.000	
Maximum Liquid Height	[%] [ft]	100.000	15.000
Average Liquid Height	[%] [ft]	50.000	7.500
Minimum Liquid Height	[%] [ft]	0.000	0.000
Sum of Increases in Liquid Level	[ft/yr]	195.889	
Tank Volume	[gal] [bbl]	12690.402	302.152
Insulation	Uninsulated		
Bolted or Riveted Construction	False		
Vapor Balanced Tank	False		

Paint Characteristics	
Shell Color	Light Grey
Shell Paint Condition	Average
Roof Color	Light Grey
Roof Paint Condition	Average

Roof Characteristics	
Type	Cone
Diameter	[ft]
Slope	[ft/ft]

Breather Vent Settings	
Breather Vacuum Pressure	[psig]
Breather Vent Pressure	[psig]

Loading Loss Parameters	
Cargo Carrier	Tank Truck or Rail Tank Car
Land Based Mode of Operation	Submerged Loading: Dedicated Normal Service
Marine Based Mode of Operation	-
Control Efficiency	[%]
Truck Annual Leak Test Passed	None
Overall Reduction Efficiency	[%]

Meteorological Data	
Location	Dodge City, KS
Average Atmospheric Pressure	[psia]
Maximum Average Temperature	[°F]
Minimum Average Temperature	[°F]
Solar Insolation	[BTU/ft^2*day]
Average Wind Speed	[mph]

Tank Conditions			
Flashing Temperature	[°F]	68.959	
Maximum Liquid Surface Temperature	[°F]	68.959	
Average Liquid Surface Temperature	[°F]	60.354	
Known Liquid Bulk Temperature?		False	
Bulk Liquid Temperature	[°F]	57.931	
Net Throughput	[bbl/day] [bbl/yr]	9.779	3569.180
Net Throughput Per Tank	[bbl/day] [bbl/yr]	9.779	3569.180
Annual Turnovers Per Tank		13.059	
Residual Liquid	[bbl/day]	9.788	
Residual Liquid Per Tank	[bbl/day]	9.788	
Raoult's Law Used for Vapor Pressure Calc?		False	
Vapor Pressure @ Minimum Liquid Surface Temperature	[psia]	11.601	
Vapor Pressure @ Maximum Liquid Surface Temperature	[psia]	13.390	
Vapor Pressure @ Average Daily Liquid Surface Temperature	[psia]	12.466	

Tank Conditions	
Heated Tank?	-

Emission Summary [Total]					
Component Subset	Tank Losses [ton/yr]	Flashing Losses [ton/yr]	Working Losses [ton/yr]	Standing Losses [ton/yr]	Loading Losses [ton/yr]
VOCs	3.377	2.132	0.371	0.874	0.177
HAPs	0.276	0.179	0.029	0.068	0.015
BTEX	0.047	0.031	0.005	0.011	0.002
H2S	0.000	0.000	0.000	0.000	0.000

Emission Summary [Per Tank]					
Component Subset	Tank Losses [ton/yr]	Flashing Losses [ton/yr]	Working Losses [ton/yr]	Standing Losses [ton/yr]	Loading Losses [ton/yr]
VOCs	3.377	2.132	0.371	0.874	0.177
HAPs	0.276	0.179	0.029	0.068	0.015
BTEX	0.047	0.031	0.005	0.011	0.002
H2S	0.000	0.000	0.000	0.000	0.000

Stream Properties						
	Tank Inlet	Flashing Losses	Working Losses	Standing Losses	Loading Losses	Residual
Molecular Weight	[lb/lbmol]	112.731	30.597	39.800	39.800	51.432
Net Ideal Gas Heating Value	[BTU/scf]	-	1570.932	2020.105	2020.105	2669.206
Standard Vapor Volumetric Flow	[scf/d]	-	270.504	28.629	67.366	7.978
Specific Gravity		0.740	-	-	-	0.733
Reid Vapor Pressure	[psi]	8.151	-	-	-	5.483
API Gravity		61.147	-	-	-	60.336
Standard Liquid Volumetric Flow	[bbl/d]	9.993	-	-	-	9.788

Stream Mass Flow [Total]							
Component	Tank Inlet [ton/yr]	Flashing Losses [ton/yr]	Working Losses [ton/yr]	Standing Losses [ton/yr]	Loading Losses [ton/yr]	Residual [ton/yr]	Total Emissions [ton/yr]
H2S	0.000	0.000	0.000	0.000	0.000	0.000	0.000
N2	0.005	0.005	0.000	0.000	0.000	0.000	0.005
CO2	0.196	0.140	0.017	0.039	0.000	0.000	0.196
C1	1.239	1.089	0.045	0.105	0.000	0.000	1.239
C2	1.165	0.599	0.112	0.264	0.020	0.190	0.975
C3	3.876	0.857	0.155	0.365	0.068	2.499	1.377
C4	1.724	0.171	0.030	0.071	0.015	1.453	0.272
nC4	6.389	0.441	0.077	0.181	0.039	5.690	0.699
2,2-Dimethylpropane	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cyclopentane	0.000	0.000	0.000	0.000	0.000	0.000	0.000
iC5	5.465	0.152	0.026	0.061	0.013	5.226	0.239
nC5	9.137	0.190	0.032	0.075	0.016	8.840	0.297
2-Methylpentane	0.010	0.000	0.000	0.000	0.000	0.010	0.000
nC6	25.497	0.148	0.024	0.057	0.012	25.268	0.229
C7	37.081	0.067	0.011	0.025	0.005	36.979	0.102
Methylcyclohexane	6.445	0.012	0.002	0.004	0.001	6.427	0.018
C8	82.034	0.044	0.007	0.016	0.003	81.968	0.066
C9	101.038	0.016	0.002	0.006	0.001	101.014	0.024
C10+	143.672	0.004	0.001	0.001	0.000	143.666	0.006
Cyclohexane	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Benzene	0.443	0.003	0.000	0.001	0.000	0.439	0.004
Toluene	8.413	0.014	0.002	0.005	0.001	8.391	0.022
Ethylbenzene	2.601	0.001	0.000	0.000	0.000	2.599	0.002
m-Xylene	27.843	0.012	0.002	0.004	0.001	27.824	0.019
2,2,4-Trimethylpentane	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Water	0.030	0.016	0.003	0.007	0.000	0.003	0.027

Capture %
98%
VOC Control %
98%
Propane Control %
99%
VRU Downtime

# of Tanks:	1
98% Capture	
Uncaptured Emissions at Tank	
Tank Losses	
TPV	TPV
VOC	0.0674
HAPs	0.0055
BTEX	0.0009
H2S	0
Methane	0.0248

Emissions after control (98% Destruction)	
Emissions after control at ECD	
Tank Losses	
TPV	TPV
VOC	0.0527
HAPs	0.0054
BTEX	0.0009
H2S	0
Methane	0.0243

Uncaptured Emissions at Tank	
Tank Losses	
TPV	TPV
VOC	0.0675
HAPs	0.0055
BTEX	0.0009
H2S	0
Methane	0.02

Emissions after control at ECD	
Tank Losses	
TPV	TPV
VOC	0.0662
HAPs	0.0054
BTEX	0.0009
H2S	0
Methane	0.02

Uncaptured Emissions at Tank	
Tank Losses	
TPV	TPV
0	0
0.0001	0.0001
0.0039	0.0038
0.0248	0.0243
0.0195	0.0191
0.0275	0.0135
0.0054	0.0053
0.014	0.0137
0	0
0	0
0.0048	0.0047
0.0059	0.0058
0	0
0.0046	0.0045
0.002	0.002
0.0004	0.0004
0.0013	0.0013
0.0005	0.0005
0.0001	0.0001
0	0
0.0001	0.0001
0.0004	0.0004
0	0
0.0004	0.0004
0	0
0.0005	0.0005



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Loading Report			
		Oil	Water
Annual Loading Rate (gal/yr)		149905.550	
Saturation Factor		0.600	
Temperature (F)		57.931	
Temperature (R)		517.601	
Pressure (psia)		3.544	
Molecular Weight (lb/lbmol)		51.432	
VOCs	Loading Loss (lb/hr)	0.040	#REF!
	Loading Loss (tpy)	0.177	#REF!
HAPs	Loading Loss (lb/hr)	0.003	#REF!
	Loading Loss (tpy)	0.015	#REF!

ProMax Version: 6.0.25269.0

Bryan Research & Engineering, LLC

Chemical Engineering Consultants

P.O. Box 4747 Bryan, Texas 77805

Office: (979) 776-5220

FAX: (979) 776-4818

mailto:sales@bre.com

<http://www.bre.com/>

Report Navigator can be activated via the ProMax Navigator Toolbar.

Process Stream Summaries								
		Oil Tanks	Water Tanks	Gun Barrel Losses	Inlet Sep Gas	HT Gas	VRT Gas	Sales Gas
Hourly Flow Rate	scf/hr	14.965						0.410
Net Heating Value	btu/scf	1688.581						1027.764
Propane Weight	%	17.729						3.218
VOC Weight	%	34.340						5.483
H2S	lb/hr	0.000						0.000
VOC	lb/hr	0.756						0.003
Benzene	lb/hr	0.001						0.000
H2S	tpy	0.000						0.000
VOC	tpy	3.309						0.014
Benzene	tpy	0.004						0.000

Projected Emissions					
		Uncontrolled (Total TPY)		Controlled (Total TPY)	
Tank Content	# Tanks	VOC	Methane	VOC	Methane
Oil	#REF!	#REF!	#REF!	#REF!	#REF!
Produced Water	#REF!	#REF!	#REF!	#REF!	#REF!



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Emission Summary [Total]					
Component Subset	Tank Losses	Flashing Losses	Working Losses	Standing Losses	Loading Losses
	[lb/hr]	[lb/hr]	[lb/hr]	[lb/hr]	[lb/hr]
VOCs	0.013	0.000	0.009	0.004	0.013
HAPs	0.013	0.000	0.009	0.004	0.013
BTEX	0.000	0.000	0.000	0.000	0.000
H2S	0.000	0.000	0.000	0.000	0.000
	[ton/yr]	[ton/yr]	[ton/yr]	[ton/yr]	[ton/yr]
VOCs	0.058	0.000	0.039	0.019	0.055
HAPs	0.058	0.000	0.039	0.019	0.055
BTEX	0.000	0.000	0.000	0.000	0.000
H2S	0.000	0.000	0.000	0.000	0.000

ProMax Version: 7.0.26169.0

Bryan Research & Engineering, LLC

Chemical Engineering Consultants

P.O. Box 4747 Bryan, Texas 77805

Office: (979) 776-5220

FAX: (979) 776-4818

mailto:sales@bre.com

<http://www.bre.com/>

Report Navigator can be activated via the ProMax Navigator Toolbar.



Bryan Research & Engineering, LLC

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Emission Summary [Total]					
Component Subset	Tank Losses	Flashing Losses	Working Losses	Standing Losses	Loading Losses
	[lb/hr]	[lb/hr]	[lb/hr]	[lb/hr]	[lb/hr]
VOCs	0.065	0.000	0.039	0.026	0.025
HAPs	0.065	0.000	0.039	0.026	0.025
BTEX	0.000	0.000	0.000	0.000	0.000
H2S	0.000	0.000	0.000	0.000	0.000
	[ton/yr]	[ton/yr]	[ton/yr]	[ton/yr]	[ton/yr]
VOCs	0.285	0.000	0.173	0.112	0.110
HAPs	0.285	0.000	0.173	0.112	0.110
BTEX	0.000	0.000	0.000	0.000	0.000
H2S	0.000	0.000	0.000	0.000	0.000

ProMax Version: 7.0.26169.0

Bryan Research & Engineering, LLC

Chemical Engineering Consultants

P.O. Box 4747 Bryan, Texas 77805

Office: (979) 776-5220

FAX: (979) 776-4818

mailto:sales@bre.com

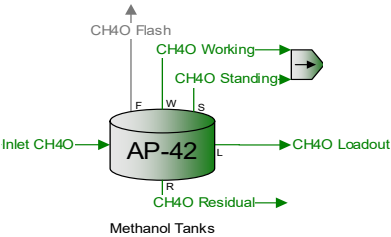
<http://www.bre.com/>

Report Navigator can be activated via the ProMax Navigator Toolbar.

Storage Tanks (Horizontal)



Names	Units	Inlet CH4O
Temperature	°F	68.6
Pressure	psia	1.88
Std Liquid Volumetric Flow	bbbl/day	8.153

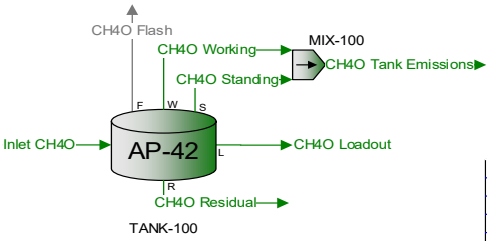


Names	Units	CH4O Working	CH4O Standing	CH4O Tank Emissions
VOC	ton/yr	0.039	0.019	0.058
Methanol	ton/yr	0.039	0.019	0.058
VOC	lb/h	0.0088	0.0044	0.013
Methanol	lb/h	0.0088	0.0044	0.013

Storage Tank (Vertical)



Names	Units	Inlet CH4O
Temperature	°F	68.6
Pressure	psia	1.88
Std Liquid Volumetric Flow	bbl/d	16.307



Names	Units	CH4O Working	CH4O Standing	CH4O Tank Emissions
VOC	ton/yr	0.17	0.11	0.28
Methanol	ton/yr	0.17	0.11	0.28
VOC	lb/h	0.039	0.026	0.065
Methanol	lb/h	0.039	0.026	0.065

Inlet Stream Summary		
Stream Name		Inlet CH4O
Stream Flowsheet		Storage Tanks (Horizontal)
Temperature	°F	68.550
Pressure	psig	-12.818
Standard Vapor Volumetric Flow	MSCFD	26.912
Standard Liquid Volumetric Flow	bbl/d	8.153
Vapor Fraction	(%)	100.000
Component		[Mol%]
H2S		0.000
N2		0.000
CO2		0.000
C1		0.000
C2		0.000
C3		0.000
iC4		0.000
nC4		0.000
2,2-Dimethylpropane		0.000
Cyclopentane		0.000
iC5		0.000
nC5		0.000
2-Methylpentane		0.000
nC6		0.000
C7		0.000
Methylcyclohexane		0.000
C8		0.000
C9		0.000
C10+		0.000
Cyclohexane		0.000
Benzene		0.000
Toluene		0.000
Ethylbenzene		0.000
m-Xylene		0.000
2,2,4-Trimethylpentane		0.000
Water		0.000
Isopropylbenzene		0.000
Naphthalene		0.000
2-Methylphenol		0.000
4-Methylphenol		0.000
Phenol		0.000
Acetone		0.000
2-Butanone		0.000
1,2-Dichloroethane		0.000
Pyridine		0.000
Tridecane		0.000
Nonacosane		0.000
o-Xylene		0.000
p-Xylene		0.000
HCl		0.000
Methanol		100.000
Slapout		0.000

Inlet Stream Summary		
Stream Name		Inlet CH4O
Stream Flowsheet		Storage Tank (Vertical)
Temperature	°F	68.550
Pressure	psig	-12.818
Standard Vapor Volumetric Flow	MSCFD	53.828
Standard Liquid Volumetric Flow	bbl/d	16.307
Vapor Fraction	(%)	100.000
Component		[Mol%]
H2S		0.000
N2		0.000
CO2		0.000
C1		0.000
C2		0.000
C3		0.000
iC4		0.000
nC4		0.000
2,2-Dimethylpropane		0.000
Cyclopentane		0.000
iC5		0.000
nC5		0.000
2-Methylpentane		0.000
nC6		0.000
C7		0.000
Methylcyclohexane		0.000
C8		0.000
C9		0.000
C10+		0.000
Cyclohexane		0.000
Benzene		0.000
Toluene		0.000
Ethylbenzene		0.000
m-Xylene		0.000
2,2,4-Trimethylpentane		0.000
Water		0.000
Isopropylbenzene		0.000
Naphthalene		0.000
2-Methylphenol		0.000
4-Methylphenol		0.000
Phenol		0.000
Acetone		0.000
2-Butanone		0.000
1,2-Dichloroethane		0.000
Pyridine		0.000
Tridecane		0.000
Nonacosane		0.000
o-Xylene		0.000
p-Xylene		0.000
HCl		0.000
Methanol		100.000
Slapout		0.000

Flowsheet Information	
Tank Losses Block Name	Methanol Tanks
Tank Losses Block Inlet Stream	Inlet CH4O

Tank Characteristics	
Tank Type	Horizontal Cylinder
Time Frame	Year
Material Category	Light Organics
Number of Tanks	1
Shell Height [ft]	12.000
Diameter [ft]	4.000
Maximum Liquid Height [%] [ft]	90.000 3.600
Average Liquid Height [%] [ft]	50.000 2.000
Minimum Liquid Height [%] [ft]	10.000 0.400
Sum of Increases in Liquid Level [ft/yr]	341.409
Tank Volume [gal] [bbl]	1128.036 26.858
Insulation	Uninsulated
Bolted or Riveted Construction	False
Vapor Balanced Tank	False

Paint Characteristics	
Shell Color	Brown
Shell Paint Condition	Aged
Roof Color	
Roof Paint Condition	

Roof Characteristics	
Type	
Diameter [ft]	-
Slope [ft/ft]	-

Breather Vent Settings	
Breather Vacuum Pressure [psig]	-0.030
Breather Vent Pressure [psig]	0.030

Loading Loss Parameters	
Cargo Carrier	Tank Truck or Rail Tank Car
Land Based Mode of Operation	Submerged Loading: Dedicated Normal Service
Marine Based Mode of Operation	-
Control Efficiency [%]	0.000
Truck Annual Leak Test Passed	None
Overall Reduction Efficiency [%]	0.000

Meteorological Data	
Location	Dodge City, KS
Average Atmospheric Pressure [psia]	13.390
Maximum Average Temperature [°F]	67.600
Minimum Average Temperature [°F]	43.000
Solar Insolation [BTU/ft^2*day]	1512.000
Average Wind Speed [mph]	13.000

Tank Conditions	
Flashing Temperature [°F]	75.271
Maximum Liquid Surface Temperature [°F]	75.271
Average Liquid Surface Temperature [°F]	66.124
Known Liquid Bulk Temperature?	True
Bulk Liquid Temperature [°F]	68.550
Net Throughput [bbl/day] [bbl/yr]	7.997 2919.062
Net Throughput Per Tank [bbl/day] [bbl/yr]	7.997 2919.062
Annual Turnovers Per Tank	106.690
Residual Liquid [bbl/day]	8.152
Residual Liquid Per Tank [bbl/day]	8.152
Raoult's Law Used for Vapor Pressure Calc?	False
Vapor Pressure @ Minimum Liquid Surface Temperature [psia]	1.395
Vapor Pressure @ Maximum Liquid Surface Temperature [psia]	2.416
Vapor Pressure @ Average Daily Liquid Surface Temperature [psia]	1.846

Tank Conditions	
Heated Tank?	-

Flowsheet Information	
Tank Losses Block Name	TANK-100
Tank Losses Block Inlet Stream	Inlet CH4O

Tank Characteristics	
Tank Type	Vertical Cylinder
Time Frame	Year
Material Category	Light Organics
Number of Tanks	1
Shell Height [ft]	15.000
Diameter [ft]	10.000
Maximum Liquid Height [%] [ft]	90.000 13.500
Average Liquid Height [%] [ft]	50.000 7.500
Minimum Liquid Height [%] [ft]	10.000 1.500
Sum of Increases in Liquid Level [ft/yr]	417.352
Tank Volume [gal] [bbl]	8812.779 209.828
Insulation	Uninsulated
Bolted or Riveted Construction	False
Vapor Balanced Tank	False

Paint Characteristics	
Shell Color	Tan
Shell Paint Condition	Aged
Roof Color	Tan
Roof Paint Condition	Aged

Roof Characteristics	
Type	Dome
Diameter [ft]	10.000
Slope [ft/ft]	-

Breather Vent Settings	
Breather Vacuum Pressure [psig]	-0.030
Breather Vent Pressure [psig]	0.030

Loading Loss Parameters	
Cargo Carrier	Tank Truck or Rail Tank Car
Land Based Mode of Operation	Submerged Loading: Dedicated Normal Service
Marine Based Mode of Operation	-
Control Efficiency [%]	0.000
Truck Annual Leak Test Passed	None
Overall Reduction Efficiency [%]	0.000

Meteorological Data	
Location	Dodge City, KS
Average Atmospheric Pressure [psia]	13.390
Maximum Average Temperature [°F]	67.600
Minimum Average Temperature [°F]	43.000
Solar Insolation [BTU/ft^2*day]	1512.000
Average Wind Speed [mph]	13.000

Tank Conditions	
Flashing Temperature [°F]	74.625
Maximum Liquid Surface Temperature [°F]	74.625
Average Liquid Surface Temperature [°F]	66.183
Known Liquid Bulk Temperature?	True
Bulk Liquid Temperature [°F]	68.550
Net Throughput [bbl/day] [bbl/yr]	15.997 5838.758
Net Throughput Per Tank [bbl/day] [bbl/yr]	15.997 5838.758
Annual Turnovers Per Tank	34.779
Residual Liquid [bbl/day]	16.301
Residual Liquid Per Tank [bbl/day]	16.301
Raoult's Law Used for Vapor Pressure Calc?	False
Vapor Pressure @ Minimum Liquid Surface Temperature [psia]	1.429
Vapor Pressure @ Maximum Liquid Surface Temperature [psia]	2.372
Vapor Pressure @ Average Daily Liquid Surface Temperature [psia]	1.849

Tank Conditions	
Heated Tank?	-

Capture %
98%
VOC Control %
98%
Propane Control %
99%
VRU Downtime

# of Tanks:		1	
98% Capture		Emissions after control (98% Destruction)	
Uncaptured Emissions at Tank		Emissions after control at ECD	
	Tank Losses		Tank Losses
	TPY		TPY
VOC	0.0012		0.0011
HAPs	0.0012		0.0011
BTEX	0		0
H2S	0		0
Methane	0		0

	Uncaptured Emissions at Tank		Emissions after control at ECD	
	Tank Losses		Tank Losses	
	TPY		TPY	
VOC	0.0012	0.0011		
HAPs	0.0012	0.0011		
BTEX	0	0		
H2S	0	0		
Methane	0.00	0.00		

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Capture %	98%
VOC Control %	98%
Propane Control %	99%
VRU Downtime	

	Uncaptured Emissions at Tank		Emissions after control at ECD	
	Tank Losses		Tank Losses	
	TPY		TPY	
VOC	0.0057		0.0056	
HAPs	0.0057		0.0056	
BTEX	0		0	
H2S	0		0	
Methane	0.00		0.00	

Stream Properties							
		Tank Inlet	Flashing Losses	Working Losses	Standing Losses	Loading Losses	Residual
Molecular Weight	[lb/lbmol]	32.042	32.042	32.042	32.042	32.042	32.042
Net Ideal Gas Heating Value	[BTU/scf]	-	766.100	766.100	766.100	766.100	-
Standard Vapor Volumetric Flow	[scf/d]	-	0.000	11.218	7.255	7.162	-
Specific Gravity		1.106	-	-	-	-	0.806
R Reid Vapor Pressure	[psi]	4.921	-	-	-	-	4.921
API Gravity		-	-	-	-	-	42.037
Standard Liquid Volumetric Flow	[bbl/d]	16.307	-	-	-	-	16.301

Stream Mass Flow [Total]							
Component	Tank Inlet	Flashing Losses	Working Losses	Standing Losses	Loading Losses	Residual	Total Emissions
	[ton/yr]	[ton/yr]	[ton/yr]	[ton/yr]	[ton/yr]	[ton/yr]	[ton/yr]
H2S	0.000	0.000	0.000	0.000	0.000	0.000	0.000
N2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
C1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
C2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
C3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
iC4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
nC4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2,2-Dimethylpropane	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cyclopentane	0.000	0.000	0.000	0.000	0.000	0.000	0.000
iC5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
nC5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2-Methylpentane	0.000	0.000	0.000	0.000	0.000	0.000	0.000
nC6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
C7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Methylcyclohexane	0.000	0.000	0.000	0.000	0.000	0.000	0.000
C8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
C9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
C10+	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cyclohexane	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Benzene	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Toluene	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ethylbenzene	0.000	0.000	0.000	0.000	0.000	0.000	0.000
m-Xylene	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2,4-Trimethylpentane	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Water	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Isopropylbenzene	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Naphthalene	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2-Methylphenol	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4-Methylphenol	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Phenol	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Acetone	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2-Butanone	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1,2-Dichloroethane	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pyridine	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Tridecane	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Nonacosane	0.000	0.000	0.000	0.000	0.000	0.000	0.000
o-Xylene	0.000	0.000	0.000	0.000	0.000	0.000	0.000
p-Xylene	0.000	0.000	0.000	0.000	0.000	0.000	0.000
HCl	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Methanol	829.455	0.000	0.173	0.112	0.110	829.170	0.285
Slapout	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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Loading Report			
		Oil	Water
Annual Loading Rate (gal/yr)			
Saturation Factor			
Temperature (F)			
Temperature (R)			
Pressure (psia)			
Molecular Weight (lb/lbmol)			
VOCs	Loading Loss (lb/hr)	0.013	#REF!
	Loading Loss (tpy)	0.055	#REF!
HAPs	Loading Loss (lb/hr)	0.013	#REF!
	Loading Loss (tpy)	0.055	#REF!

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Bryan Research & Engineering, LLC

Chemical Engineering Consultants

P.O. Box 4747 Bryan, Texas 77805

Office: (979) 776-5220

FAX: (979) 776-4818

mailto:sales@bre.com

<http://www.bre.com/>

Report Navigator can be activated via the ProMax Navigator Toolbar.



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ProMax[®] 6.0

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Loading Report			
		Oil	Water
Annual Loading Rate (gal/yr)			
Saturation Factor			
Temperature (F)			
Temperature (R)			
Pressure (psia)			
Molecular Weight (lb/lbmol)			
VOCs	Loading Loss (lb/hr)	0.013	#REF!
	Loading Loss (tpy)	0.055	#REF!
HAPs	Loading Loss (lb/hr)	0.013	#REF!
	Loading Loss (tpy)	0.055	#REF!

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Office: (979) 776-5220

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Process Stream Summary				
		Oil Tanks	Water Tanks	Gun Barrel Losses
Hourly Flow Rate	scf/hr			
Net Heating Value	btu/scf			
Propane Weight	%			
VOC Weight	%			
H2S	lb/hr			
VOC	lb/hr			
Benzene	lb/hr			
H2S	tpy			
VOC	tpy			
Benzene	tpy			

Projected Emissions				
		Uncontrolled (Total TPY)		Control (Total T
Tank Content	# Tanks	VOC	Methane	VOC
Oil	#REF!	#REF!	#REF!	#REF!
Produced Water	#REF!	#REF!	#REF!	#REF!

aries			
Inlet Sep Gas	HT Gas	VRT Gas	Sales Gas

lled PY)
Methane
#REF!
#REF!

Process Stream Summary				
		Oil Tanks	Water Tanks	Gun Barrel Losses
Hourly Flow Rate	scf/hr			
Net Heating Value	btu/scf			
Propane Weight	%			
VOC Weight	%			
H2S	lb/hr			
VOC	lb/hr			
Benzene	lb/hr			
H2S	tpy			
VOC	tpy			
Benzene	tpy			

Projected Emissions				
		Uncontrolled (Total TPY)		Control (Total T
Tank Content	# Tanks	VOC	Methane	VOC
Oil	#REF!	#REF!	#REF!	#REF!
Produced Water	#REF!	#REF!	#REF!	#REF!

aries			
Inlet Sep Gas	HT Gas	VRT Gas	Sales Gas

lled PY)
Methane
#REF!
#REF!