

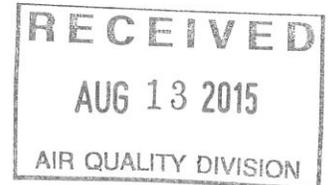


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August 5, 2015

NSR Program Manager / attn: O&G Production Facilities Permit Application  
Department of Environmental Quality  
Air Quality Division  
Herschler Building, 2-E  
122 West 25<sup>th</sup> Street  
Cheyenne, WY 82002



RE: Peak Powder River Resources, LLC  
Air Quality Permit Application #A0001398  
Nine Mile 1-1TH

Dear Program Manager:

Application #A0001398 for the Nine Mile 1-1TH was filed on July 27, 2015 on behalf of our client Peak Powder River Resources, LLC. It has come to my attention that I made a mistake in the process description for this facility. Specifically, I misidentified the purpose and placement of four separation units.

The corrected process description and updated facility diagram are attached to this letter. Please replace pages 1 through 3 of the original application with the three attached pages. This updated information is also on the enclosed CD.

A copy of this letter with the attachments has been forwarded to Heather Bleile at the AQD Casper Division office.

Please contact me if additional information or clarification is needed.

Sincerely,

Cynthia Madison  
Project Engineer

Attachment  
CD

HMB

## Process Description

The Nine Mile 1-1TH is a new horizontal well producing from the Turner Formation. It is located in Campbell County within the area specified as "Statewide" in the Chapter 6, Section 2 Oil and Gas Production Facilities Permitting Guidance (C6 S2 Guidance). It is producing from a field designated as Wildcat by the Wyoming Oil and Gas Conservation Commission

The First Date of Production (FDOP) was June 7, 2015 however; the well was not consistently producing until June 19.

The well is produced with an electric pumping unit. The wellhead product goes into an unheated 3-phase separator. Gas off the separator is sent to a sales line and the oil and water go into a heater treater with a 0.5 million BTU per hour (MMBTU/HR) burner for separation of oil, water and gas. The gas from the treater goes into a sales line. Oil and water are routed to eight 400-barrel (BBL) oil tanks and two 400-BBL water tanks. Flash and S/W/B vapors off the oil tanks are collected and routed to a LEED Fabrication smokeless combustor (see Pages 18-20) for destruction of 98% of the volatile organic compound (VOC) and hazardous air pollutant (HAP) components. Operation of the combustor is continually recorded and monitored using a supervisory control and data acquisition (SCADA) system. By-products of combustion of the tank vapors are carbon monoxide (CO), nitrogen oxides (NO<sub>x</sub>) and water vapor.

During upset conditions, or otherwise, gas from the separator and treater is sent to two single head flares (see Pages 21-23). Two 2-phase separators are set just before the flares to trap any liquids before getting to the flares. Captured liquids are transferred by vac truck to the tanks.

An electric recycle pump is used to recirculate liquids through the separation equipment if further processing is necessary.

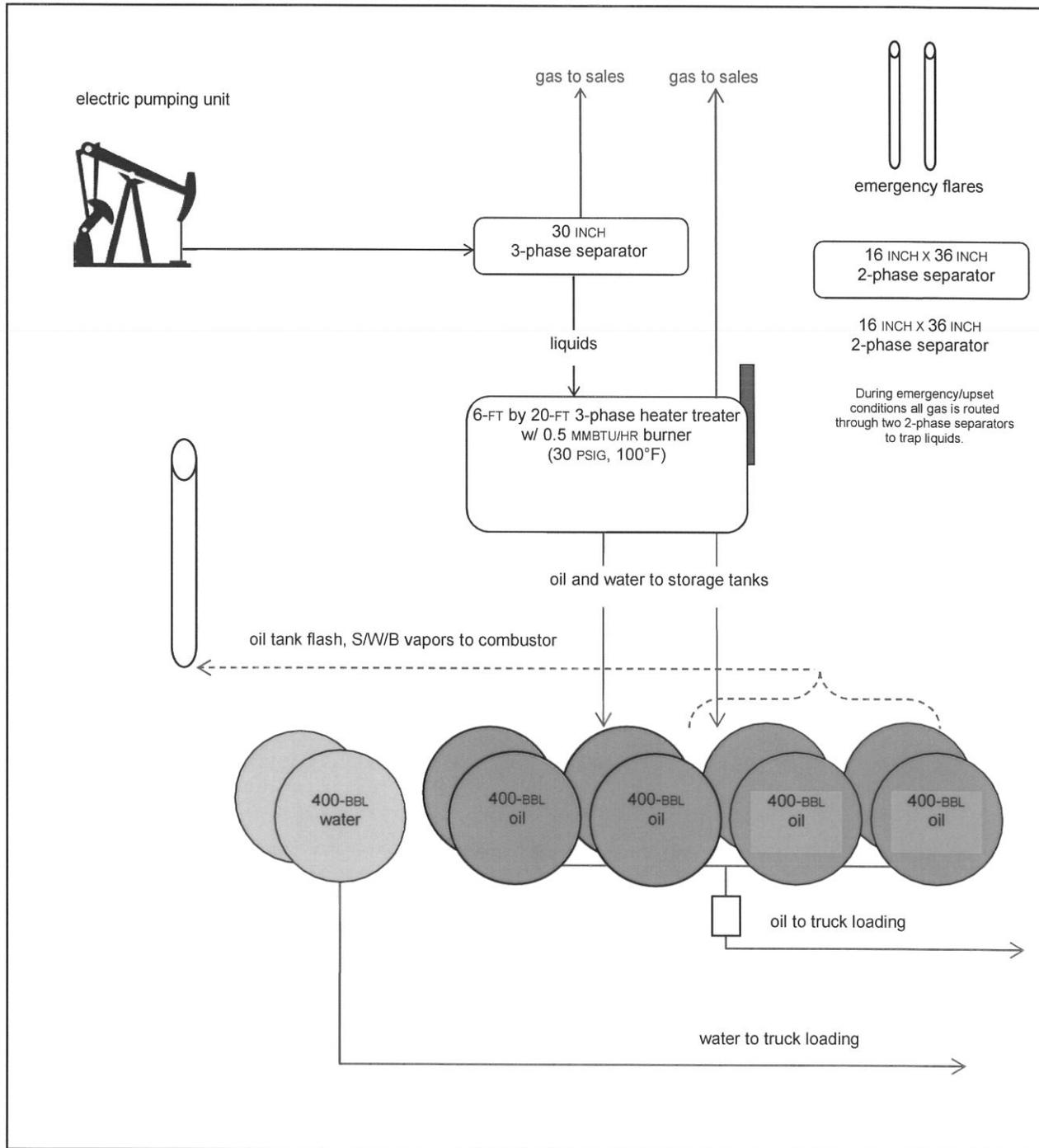
There are no pneumatic pumps or process controllers.

## Presumptive BACT

The sources at this facility affected by the Presumptive BACT requirements in the C6 S2 Guidance are the oil tanks. Vapors from all of the oil tanks have been routed to a smokeless combustor since startup of the well and operation of the combustor is continually recorded and monitored using a SCADA type system, meeting the Presumptive BACT requirements. The combustor is designed to achieve greater than 99% destruction efficiency and is compliant with EPA NSPS 40 CFR Part 60, Subpart OOOO. The flares used to combust all gas produced during emergency or upset conditions are also smokeless and designed to achieve 99% destruction efficiency.

There are no pneumatic controllers or pumps and there are no other sources at this facility emitting  $\geq 8$  tons per year (TPY) of VOCs or  $\geq 5$  TPY of HAPs that would require a BACT analysis to be filed with this application. All Presumptive BACT requirements specified in the C6 S2 Guidance for "Statewide Area" production facilities have been met.

# Nine Mile 1-1TH Process Diagram





# GENE R. GEORGE & ASSOCIATES, INC.

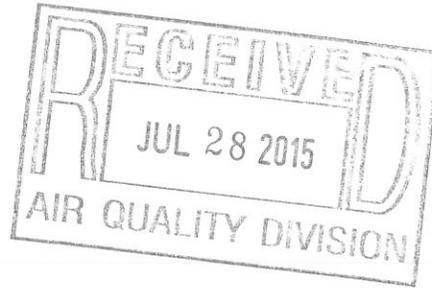
Petroleum Geology • Engineering • Hydrogeology • Regulatory Permitting

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July 27, 2015

NSR Program Manager / attn: O&G Production Facilities Permit Application  
Department of Environmental Quality  
Air Quality Division  
Herschler Building, 2-E  
122 West 25<sup>th</sup> Street  
Cheyenne, WY 82002



RE: Peak Powder River Resources, LLC  
Chapter 6 Section 2 Air Quality Permit Application  
Nine Mile 1-1TH

Dear Program Manager:

Enclosed are one hard copy and one electronic copy of the complete Air Quality Permit Application for the facility named above, prepared on behalf of our client Peak Powder River Resources, LLC. This is a new single-well facility located in Campbell County, within the "Statewide Area" defined in the Chapter 6, Section 2 Oil and Gas Production Facilities Permitting Guidance.

The First Date of Production was June 7, 2015, making this application due by September 7, 2015. The application has been prepared in accordance with the September 2013 O&G Permitting Guidance.

Please contact me if additional information or clarification is needed.

Sincerely,

Cynthia Madison  
Project Engineer

Attachment  
CD

Reviewer HMB  
cc: \_\_\_\_\_  
Modeler \_\_\_\_\_  
D.E. \_\_\_\_\_  
File A0001398  
IMP FID 26974



STATE OF WYOMING  
Department of Environmental Quality/Air Quality Division  
C6 S2 Air Quality Permit Application



## Peak Powder River Resources, LLC

### Nine Mile 1-1TH

Latitude: 43.636174 Longitude: 105.824936  
SW SW Section 1, Township 42N, Range 75W  
Campbell County, WY

API Number 049-005-62501

**ORIGINAL**

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## Process Description

The Nine Mile 1-1TH is a new horizontal well producing from the Turner Formation. It is located in Campbell County within the area specified as "Statewide" in the Chapter 6, Section 2 Oil and Gas Production Facilities Permitting Guidance (C6 S2 Guidance). It is producing from a field designated as Wildcat by the Wyoming Oil and Gas Conservation Commission

The First Date of Production (FDOP) was June 7, 2015 however; the well was not consistently producing until June 19.

The well is produced with an electric pumping unit. Well fluids are directed into two 16-INCH by 36-INCH high pressure two-phase gas separators. Gas off the high pressure separators is routed into a high pressure collection system. Liquids off the high pressure separators are routed into two 30-INCH low pressure three-phase separators. The liquids off the three-phase separators move on to one three-phase heater-treater with a 0.5 million BTU per hour (MMBTU/HR) burner. Gas off the three-phase separators and the treater is routed into a low pressure gas collection system. Oil and water from the heater treater are routed to two 400-barrel (BBL) water tanks and eight 400-BBL oil tanks to await sales via tanker truck. An electric recycle pump is used to recirculate production through the separation equipment if further processing is necessary.

Vapors off the oil tanks are collected and routed to a LEED Fabrication smokeless combustor (see Pages 18-20) for destruction of 98% of the volatile organic compound (VOC) and hazardous air pollutant (HAP) components. Operation of the combustor is continually recorded and monitored using a supervisory control and data acquisition (SCADA) system. By-products of combustion of the tank vapors are carbon monoxide (CO), nitrogen oxides (NO<sub>x</sub>) and water vapor.

There are two single head flares (see Pages 21-23) for burning produced gas in the case of emergency or upset conditions.

There are no pneumatic pumps or process controllers.

## Presumptive BACT

The sources at this facility affected by the Presumptive BACT requirements in the C6 S2 Guidance are the oil tanks. Vapors from all of the oil tanks have been routed to a smokeless combustor since startup of the well and operation of the combustor is continually recorded and monitored using a SCADA type system, meeting the Presumptive BACT requirements. The combustor is designed to achieve greater than 99% destruction efficiency and is compliant with EPA NSPS 40 CFR Part 60, Subpart OOOO. The flares used to combust all gas produced during emergency or upset conditions are also smokeless and designed to achieve 99% destruction efficiency.

There are no pneumatic controllers or pumps and there are no other sources at this facility emitting  $\geq 8$  tons per year (TPY) of VOCs or  $\geq 5$  TPY of HAPs that would require a BACT analysis to be filed with this application. All Presumptive BACT requirements specified in the C6 S2 Guidance for "Statewide Area" production facilities have been met.



## Emission Calculations

### Flash & S/W/B

Uncontrolled VOC emissions from the oil tanks (flash and S/W/B) were estimated using the API E&P TANK V2 model based on the projected oil production rate of 986 BOPD (see Page 11) and an extended hydrocarbon analysis of oil sampled at the outlet of the Nine Mile 1-1TH treater (see Pages 12-14). The model input and output are shown below.

```
*****  
* Project Setup Information *  
*****  
Project File: C:\E&P TANK\PEAK NINE MILE 1-1H.txt  
Flowsheet Selection: Oil Tank with Separator  
Calculation Method: RVP Distillation  
Control Efficiency: 0%  
Known Separator Stream: Low Pressure Oil  
Entering Air Composition: No
```

Well ID: PEAK POWDER RIVER RESOURCES - NINE MILE 1-1TH  
Permit Number: C6S2 Air Quality Permit Application  
Date: 2015.07.21

```
*****  
* Data Input *  
*****  
Separator Pressure: 30.00 [psig]  
Separator Temperature: 100.00 [F]  
Ambient Pressure: 12.00 [psia]  
Ambient Temperature: 50.00 [F]  
C10+ SG: 0.7581  
C10+ MW: 178.614
```

-- Low Pressure Oil -----

No.	Component	mol %
1	H2S	0.0000
2	O2	0.0000
3	CO2	0.1280
4	N2	0.0350
5	C1	0.3250
6	C2	1.1370
7	C3	2.9480
8	i-C4	0.9680
9	n-C4	2.8400
10	i-C5	3.5410
11	n-C5	5.2190
12	C6	3.7740
13	C7	12.6520
14	C8	19.3210
15	C9	10.7540
16	C10+	23.3690
17	Benzene	0.5690
18	Toluene	2.1890
19	E-Benzene	1.0160
20	Xylenes	5.7520
21	n-C6	2.8590
22	224Trimethylp	0.6040

-- Sales Oil -----  
 Production Rate: 986 [bbl/day]  
 Days of Annual Operation: 365 [days/year]  
 API Gravity: 43.3  
 Reid Vapor Pressure: 6.20 [psia]

\*\*\*\*\*  
 \* Calculation Results \*  
 \*\*\*\*\*

-- Emission Summary -----

Item	Uncontrolled [ton/yr]	Uncontrolled [lb/hr]
Total HAPs	10.380	2.370
Total HC	751.198	171.506
VOCs, C2+	728.888	166.413
VOCs, C3+	583.504	133.220

Uncontrolled Recovery Info.

Vapor	38.1100 [MSCFD]
HC Vapor	36.6600 [MSCFD]
GOR	38.65 [SCF/bbl]

-- Emission Composition -----

No	Component	Uncontrolled [ton/yr]	Uncontrolled [lb/hr]
1	H2S	0.000	0.000
2	O2	0.000	0.000
3	CO2	24.097	5.502
4	N2	4.195	0.958
5	C1	22.310	5.094
6	C2	145.384	33.193
7	C3	351.287	80.203
8	i-C4	39.713	9.067
9	n-C4	73.139	16.698
10	i-C5	37.788	8.627
11	n-C5	39.940	9.119
12	C6	10.519	2.402
13	C7	12.690	2.897
14	C8	6.558	1.497
15	C9	1.386	0.316
16	C10+	0.107	0.024
17	Benzene	1.066	0.243
18	Toluene	1.263	0.288
19	E-Benzene	0.210	0.048
20	Xylenes	1.020	0.233
21	n-C6	6.256	1.428
22	2,2,4-Trimethylp	0.562	0.128
	Total	779.490	177.966

-- Stream Data -----

No.	Component	MW	LP Oil mol %	Flash Oil mol %	Sale Oil mol %	Flash Gas mol %	W&S Gas mol %	Total Emissions mol %
1	H2S	34.80	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	O2	32.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	CO2	44.01	0.1280	0.0819	0.0000	5.4367	2.3674	2.9836
4	N2	28.01	0.0350	0.0048	0.0000	3.5162	0.1378	0.8161
5	C1	16.04	0.3250	0.1191	0.0000	24.0327	3.4440	7.5779
6	C2	30.07	1.1370	0.9002	0.0074	28.3966	25.8308	26.3460
7	C3	44.10	2.9480	2.7764	1.1349	22.7040	48.6113	43.4096
8	i-C4	58.12	0.9680	0.9520	0.8445	2.8119	3.9521	3.7231
9	n-C4	58.12	2.8400	2.8155	2.6600	5.6629	7.1569	6.8569
10	i-C5	72.15	3.5410	3.5495	3.5718	2.5668	2.9260	2.8539
11	n-C5	72.15	5.2190	5.2407	5.3177	2.7243	3.0898	3.0165

12 C6	86.16	3.7740	3.8014	3.9125	0.6152	0.6992	0.6824
13 C7	100.20	12.6520	12.7564	13.1870	0.6337	0.7328	0.7129
14 C8	114.23	19.3210	19.4864	20.1723	0.2809	0.3323	0.3219
15 C9	128.28	10.7540	10.8470	11.2331	0.0499	0.0643	0.0614
16 C10+	178.61	23.3690	23.5720	24.4160	0.0026	0.0034	0.0033
17 Benzene	78.11	0.5690	0.5734	0.5912	0.0666	0.0763	0.0744
18 Toluene	92.13	2.1890	2.2074	2.2837	0.0657	0.0770	0.0747
19 E-Benzene	106.17	1.0160	1.0247	1.0610	0.0093	0.0111	0.0108
20 Xylenes	106.17	5.7520	5.8016	6.0074	0.0451	0.0542	0.0524
21 n-C6	86.18	2.8590	2.8807	2.9694	0.3552	0.4057	0.3956
22 2,2,4-Trimethylp	114.24	0.6040	0.6090	0.6299	0.0238	0.0276	0.0268
MW	115.04	115.72	118.29	36.54	43.97	42.48	
Stream Mole Ratio	1.0000	0.9914	0.9571	0.0086	0.0343	0.0429	
Heating Value [BTU/SCF]				1914.16	2445.66	2338.94	
Gas Gravity [Gas/Air]				1.26	1.52	1.47	
Bubble Pt. @ 100F [psia]	31.35	20.22	6.87				
RVP @ 100 [psia]	14.41	12.05	6.15				
Spec. Gravity @ 100F	0.679	0.680	0.682				

The model predicts 36.66 MCFD of tank vapors containing **583.50 TPY VOC** and **10.38 TPY total HAP.**

Controlled tank emissions of **11.67 TPY VOC** and **0.21 TPY HAP** are based on 98% destruction efficiency of the LEED Fabrication combustor.

NO<sub>x</sub> and CO emissions from combustion of the tank vapors are calculated using the flare emission factors listed in the C6 S2 Guidance (0.14 LB NO<sub>x</sub>/MMBTU and 0.035 LB CO/MMBTU) and the flowrate and heat content of the tank vapors from the E&P TANK model.

Waste gas volume: 36.66 MCFD (36,660 SCFD, 25.46 SCFM)  
 Heat content of tank vapors: 2339 BTU/SCF

0.14 LB NO<sub>x</sub>/MMBTU (36,660 SCF/DAY) (2339 BTU/SCF) (MMBTU/10<sup>6</sup> BTU) (365 DAY/YR) (TON/2000 LB)  
 = **2.19 TPY NO<sub>x</sub>**

0.035 LB CO/MMBTU (36,660 SCF/DAY) (2339 BTU/SCF) (MMBTU/10<sup>6</sup> BTU) (365 DAY/YR) (TON/2000 LB)  
 = **0.55 TPY CO**

## Treater Burner

Produced gas is used as fuel for the 0.5 MMBTU/HR heater treater burner. Emissions of NO<sub>x</sub> and CO were calculated using AP-42 emission factors (100 LB NO<sub>x</sub>/MMCF and 84 LB CO/MMCF) and the measured heat content of the gas produced by the well. For the purposes of this application, it is assumed the burner operates 8760 hours annually.

Produced gas heat content: 1383 BTU/SCF

0.5 MMBTU/HR (100 LB NO<sub>x</sub>/MMCF) (1383 BTU/1020 BTU) (1 SCF/1020 BTU) (8760 HR/YR)  
(TON/2000 LB) = **0.29 TPY NO<sub>x</sub>**

0.5 MMBTU/HR (84 LB CO/MMCF) (1383 BTU/1020 BTU) (1 SCF/1020 BTU) (8760 HR/YR)  
(TON/2000 LB) = **0.24 TPY CO**

## Fugitives

Fugitive emissions were estimated using the typical component count for the numbers and types of equipment at this site, the fugitive emission factors provided in the C6 S2 Guidance and the measured weight percentages of VOC and HAP in produced gas (see Pages 15-16).

Emission Factors			
Equipment Type	Gas	Light Oil	Water/Light Oil
	LB THC/DAY/Component	LB THC/DAY/Component	LB THC/DAY/Component
Connector	0.0110	0.0110	0.0058
Flange	0.0210	0.0058	0.0002
Open Line	0.1100	0.0740	0.0130
Other	0.4700	0.4000	0.7400
Pump	0.1300	0.6900	0.0013
Valve	0.2400	0.1300	0.0052

Component Count and Service Type									
	#	LB THC/DAY	TPY	#	LB THC/DAY	TPY	#	LB THC/DAY	TPY
Connector	60	0.66	0.1205	120	1.32	0.2409	60	0.348	0.0635
Flange	20	0.42	0.0767	40	0.232	0.0423	20	0.004	0.0007
Open Line	0	0	0	0	0	0	0	0	0
Other	8	3.76	0.6862	16	6.40	1.168	8	5.92	1.0804
Pump	0	0	0	0	0	0	1	0.0013	0.0002
Valve	40	9.60	1.752	80	10.40	1.898	40	0.208	0.0380
Subtotals			2.64			3.35			1.18

Total THC = **7.17 TPY**

produced gas:	32.75 wt% VOC and 2.57 wt% HAP
fugitive VOC	$7.17 * 32.75/100 = \underline{\underline{2.35 TPY}}$
fugitive HAP	$7.17 * 2.57/100 = \underline{\underline{0.18 TPY}}$

## Truck Loading

Maximum annual truck loading emissions were estimated using the method described in the C6 S2 Guidance based on the projected oil production rate and the VOC/HAP content and molecular weight of tank vapors estimated by the E&P TANK Model (see Page 17).

Projected Production	986 BOPD * 365 = 359,890 BBL/YR
Saturation Factor (Submerged loading, Normal Svc.)	0.6 S
True Vapor Pressure of Oil @ T = 50°F	2.3 P
Molecular Weight of Tank Vapors	42.5330 M
Temperature (°R)	510 T
Tank Vapor VOC/HAP content (WT%)	74.89/1.33
Pounds/1000 gallons loaded:	LL = 12.46 * S * P * M/T

$$12.46 * 0.6 * 2.3 * 42.5330/510 = 1.4 \text{ LB/1000 GAL}$$

$$1.4 \text{ LB/1000 GAL loaded (42 GAL/BBL) (359,890 BBL/YR) (TON/2000 LB) = 10.6 TPY total losses}$$

$$10.6 \text{ TPY (74.89/100) = } \underline{\mathbf{7.94 \text{ TPY VOC}}}$$

$$10.6 \text{ TPY (1.33/100) = } \underline{\mathbf{0.14 \text{ TPY HAP}}}$$

## Emission Summary

### Total Estimated Uncontrolled Emissions (Tons Per Year)

EMISSION SOURCE	VOCs	total HAPs	NO <sub>x</sub>	CO	SO <sub>2</sub>	H <sub>2</sub> S
oil tanks	583.5	10.38				
burner			0.29	0.24		
fugitives	2.35	0.18				
truck loading	7.94	0.14				
TOTAL	593.8	10.7	0.3	0.2		

### Total Estimated Controlled Emissions (Tons Per Year)

EMISSION SOURCE	VOCs	total HAPs	NO <sub>x</sub>	CO	SO <sub>2</sub>	H <sub>2</sub> S
oil tanks	11.67	0.21	2.19	0.55		
burner			0.29	0.24		
fugitives	2.35	0.18				
truck loading	7.94	0.14				
TOTAL	22.0	0.5	2.5	0.8		

### Hazardous Air Pollutants (TPY)

Complete this section for each emissions source if TOTAL HAPs from that source are 9 TPY or greater.					
SOURCE	Benzene	Toluene	Ethyl-Benzene	Xylenes	Other

Date	BOPD	BWPD
7/20/2015	1539	186
7/19/2015	1543	156
7/18/2015	1496	160
7/17/2015	1574	180
7/16/2015	1714	177
7/15/2015	1654	176
7/14/2015	1662	186
7/13/2015	1609	210
7/12/2015	1523	213
7/11/2015	1558	150
7/10/2015	1804	187
7/9/2015	1685	170
7/8/2015	1804	173
7/7/2015	1515	160
7/6/2015	1673	180
7/5/2015	1647	137
7/4/2015	865	123
7/3/2015	928	173
7/2/2015	1824	323
7/1/2015	1708	362
6/30/2015	1369	309
6/29/2015	2357	308
6/28/2015	2035	297
6/27/2015	1927	237
6/26/2015	2098	287
6/25/2015	2067	303
6/24/2015	2371	347
6/23/2015	2116	349
6/22/2015	2046	164
6/21/2015	2093	206
6/20/2015	1949	304
6/19/2015	1562	360
6/18/2015	807	84
6/17/2015	0	0
6/16/2015	0	96
6/15/2015	1816	507
6/14/2015	1776	507
6/13/2015	1797	623
6/12/2015	1721	725
6/11/2015	1629	807
6/10/2015	1571	972
6/9/2015	1821	1648
6/8/2015	2015	3752
6/7/2015	0	7369

Initial 30-day average consistent production = **1644 BOPD**

Projected production  
 $1644 * 0.6 = \mathbf{986 \text{ BOPD}}$

Note: Water/Oil production were not consistent until 6/19.



**AMERICAN MOBILE RESEARCH, INC.**

P.O. BOX 2909  
 CASPER, WYOMING 82602

(307) 235-4590 PHONE  
 (307) 265-4489 FAX

**EXTENDED HYDROCARBON (GLYCALC) LIQUID STUDY  
 CERTIFICATE OF ANALYSIS**

Company ..... **TISDALE CREEK RANCH, INC.**  
 Lab Number ..... CR-15670  
 Date Sampled ..... 6-11-2015

Study Number ..... CR-2  
 Date Tested ..... 6-16-2015

Sample Identification ..... **PEAK ENERGY - NINE MILE NO. 1-1TH PRESSURIZED HEATER TREATER OIL  
 STATION NO. 49-005-62501**

Sample Location ..... GILLETTE, WYOMING.  
 Sample Pressure ..... 30  
 Type Sample ..... SPOT  
 Test Method ..... GPA 2186

Sample Temperature .... 109 F  
 County ..... CAMPBELL  
 Sampling Method ..... GPA-2174

Components	Mole %	Weight %	Liq. Vol. %
Hydrogen Sulfide .....	0.000	0.000	0.000
Oxygen .....	0.000	0.000	0.000
Carbon Dioxide .....	0.128	0.048	0.043
Nitrogen .....	0.035	0.008	0.007
Methane .....	0.325	0.045	0.107
Ethane .....	1.137	0.293	0.592
Propane .....	2.948	1.115	1.580
iso-Butane .....	0.968	0.482	0.616
n-Butane .....	2.840	1.415	1.742
iso-Pentane .....	3.541	2.191	2.520
n-Pentane .....	5.219	3.229	3.681
Hexanes .....	3.774	2.789	3.020
Heptanes .....	12.652	10.870	11.359
Octanes .....	19.321	18.924	19.261
Nonanes .....	10.754	11.826	11.776
Decanes+ .....	23.369	35.790	33.951
Benzene.....	0.569	0.381	0.310
Toluene.....	2.189	1.729	1.426
Ethylbenzene.....	1.016	0.925	0.763
Xylenes.....	5.752	5.236	4.348
n-Hexane .....	2.859	2.113	2.288
2,2,4-Trimethylpentane.	0.604	0.592	0.611
Totals.....	100.000	100.000	100.000

ADDITIONAL BETX DATA

<u>Components</u>	<u>Mole %</u>	<u>Weight %</u>	<u>Liq. Vol. %</u>
2-Methylpentane	2.698	1.994	2.159
3-Methylpentane	1.076	0.795	0.861
n-Hexane	2.859	2.113	2.288
2,2,4-Trimethylpentane	0.604	0.592	0.611
Benzene	0.569	0.381	0.310
Toluene	2.189	1.729	1.426
Ethylbenzene	1.016	0.925	0.763
m-Xylene	0.661	0.602	0.500
p-Xylene	4.113	3.744	3.109
o-Xylene	0.978	0.890	0.739

API GRAVITY AT 60/60 F, calculated .....	65.3
SPECIFIC GRAVITY AT 60/60 F, calculated .....	0.71916
RELATIVE SPECIFIC GRAVITY OF DECANES+ (C10+) FRACTION, calculated .....	0.75811
AVERAGE MOLECULAR WEIGHT .....	116.627
AVERAGE MOLECULAR WEIGHT OF DECANES+ (C10+) FRACTION, calculated .....	178.614
TRUE VAPOR PRESSURE AT 100 F, PSIA, calculated .....	35.356
AVERAGE BOILING POINT, F, calculated .....	254.143
CUBIC FEET OF GAS / GALLON OF LIQUID, as Ideal Gas, calculated .....	20.496
BTU / GALLON OF LIQUID AT 14.73 PSIA, calculated .....	122,193.85
LBS / GALLON OF LIQUID, calculated .....	5.996

NOTATION: ALL CALCULATIONS PERFORMED USING PHYSICAL CONSTANTS FROM GPA 2145-09, THE TABLES OF PHYSICAL CONSTANTS FOR HYDROCARBONS AND OTHER COMPOUNDS OF INTEREST TO THE NATURAL GAS INDUSTRY.

\_\_\_\_\_  
 James A. Kane, President  
 American Mobile Research, Inc.



**AMERICAN MOBILE RESEARCH, INC.**

P.O. BOX 2909  
 CASPER, WYOMING 82602

(307) 235-4590 PHONE  
 (307) 265-4489 FAX

**EXTENDED HYDROCARBON LIQUID STUDIES**

**CERTIFICATE OF ANALYSIS**

Company..... TISDALE CREEK RANCH, INC.

Lab Number..... CR-15670  
 Date Sampled..... 6-11-2015

Study Number..... CR-3  
 Date Tested..... 6-16-2015

Sample Identification..... PEAK ENERGY - NINE MILE NO. 1-1TH FLASHED CRUDE OIL

Sample Location..... GILLETTE, WYOMING.

Sample Pressure..... N/A

Sample Temperature... N/A

Flowrate..... N/A

County..... CAMPBELL

Test Method..... VARIOUS

Sample Container..... 1-QUART BOTTLE

**TEST PERFORMED**

**RESULTS**

API GRAVITY AT 60/60 F (ASTM D-287), observed .....	43.3
SPECIFIC GRAVITY AT 60/60 F (ASTM D-1657), calculated .....	0.8095
REID VAPOR PRESSURE (ASTM D-323), PSIG AT 100 F, observed .....	6.2
TOTAL SULFUR CONTENT (ASTM D-5453), PPMW .....	N/A
TRUE VAPOR PRESSURE (ASTM 2889), PSIA AT 100 F, observed .....	N/A
BASIC SEDIMENT AND WATER CONTENT (BSW), % BY VOLUME .....	N/A
COPPER STRIP CORROSION (ASTM D-130), 1 HOUR AT 100 F, observed ....	N/A
FREE WATER, observed .....	N/A

NOTATION : ALL TESTING PROVIDED ABOVE WAS PERFORMED IN ACCORDANCE TO METHODOLOGY  
 OUTLINED BY THE AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM).

\_\_\_\_\_  
 James A. Kane, President  
 American Mobile Research, Inc.



## AMERICAN MOBILE RESEARCH, INC.

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### EXTENDED HYDROCARBON GAS (GLYCALC) STUDY CERTIFICATE OF ANALYSIS

Company ..... **TISDALE CREEK RANCH, INC.**

Lab Number ..... CR-15670

Date Sampled ..... 6-11-2015

Study Number ..... CR-1

Date Tested ..... 6-16-2015

Sample Identification ..... **PEAK ENERGY - NINE MILE NO. 1-1TH HIGH PRESSURE SALES GAS  
 STATION NO. 49-005-62501**

Sample Location ..... GILLETTE, WYOMING.

Sample Pressure ..... 81 PSIA

Type Sample ..... SPOT

Test Method ..... GPA-2286

Sample Temperature ... 96 F

County ..... CAMPBELL

Cylinder ID ..... AMR 318

Components	Mole %	Weight %	Liq. Vol. %
Carbon Dioxide.....	1.185	2.175	0.995
Hydrogen Sulfide.....	0.000	0.000	0.000
Nitrogen.....	0.604	0.706	0.327
Methane.....	69.029	46.179	57.605
Ethane.....	14.506	18.189	19.096
Propane.....	8.811	16.202	11.949
iso-Butane.....	1.102	2.671	1.775
n-Butane.....	2.473	5.994	3.838
iso-Pentane.....	0.598	1.799	1.077
n-Pentane.....	0.580	1.745	1.035
Cyclopentane.....	0.041	0.120	0.060
n-Hexane.....	0.166	0.597	0.336
Cyclohexane.....	0.076	0.267	0.127
Other Hexanes .....	0.220	0.791	0.445
Heptanes.....	0.368	1.538	0.836
Methylcyclohexane.....	0.082	0.336	0.162
2,2,4-Trimethylpentane..	0.031	0.148	0.079
Benzene.....	0.015	0.049	0.021
Toluene.....	0.032	0.123	0.053
Ethylbenzene.....	0.005	0.022	0.009
Xylenes.....	0.027	0.120	0.051
C8+ Heavies.....	0.049	0.233	0.124
<b>Totals .....</b>	<b>100.000</b>	<b>100.000</b>	<b>100.000</b>

32.7522  
 WT% VOC

**ADDITIONAL BETX DATA**

<u>Components</u>	<u>Mole %</u>	<u>Weight %</u>	<u>Liq. Vol. %</u>
Cyclopentane	0.041	0.120	0.060
Cyclohexane	0.076	0.267	0.127
2-Methylpentane	0.157	0.565	0.318
3-Methylpentane	0.063	0.225	0.127
n-Hexane	0.166	0.597	0.336
Methylcyclohexane	0.082	0.336	0.162
2,2,4-Trimethylpentane	0.031	0.148	0.079
Benzene	0.015	0.049	0.021
Toluene	0.032	0.123	0.053
Ethylbenzene	0.005	0.022	0.009
m-Xylene	0.004	0.018	0.008
p-Xylene	0.016	0.072	0.031
o-Xylene	0.007	0.030	0.013

2.5706 WT%  
HAP

SPECIFIC GRAVITY AT 60/60 F, calculated.....	0.8280
TOTAL GPM ( ETHANE INCLUSIVE ).....	8.322
CALCULATED BTU / REAL CF AT 14.73 PSIA, dry basis.....	1407.422
CALCULATED BTU / REAL CF AT 14.73 PSIA, wet basis.....	1383.189
AVERAGE MOLECULAR WEIGHT.....	23.981
MOLAR MASS RATIO.....	0.8280
RELATIVE DENSITY ( G x Z (Air) / Z ), calculated.....	0.8320
IDEAL GROSS HEATING VALUE, BTU / IDEAL CF AT 14.696 PSIA, calculated.....	1397.399
COMPRESSIBILITY FACTOR ( Z ).....	0.99516
PROPANE GPM.....	2.4212
BUTANE GPM.....	1.1373
GASOLINE GPM ( PENTANE AND HEAVIER ).....	0.8939

NOTATION: ALL CALCULATIONS PERFORMED USING PHYSICAL CONSTANTS FROM GPA 2145-09, THE TABLES OF PHYSICAL CONSTANTS FOR HYDROCARBONS AND OTHER COMPOUNDS OF INTEREST TO THE NATURAL GAS INDUSTRY.

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James A. Kane, President  
 American Mobile Research, Inc.

MOL% to WEIGHT% Conversion

Nine Mile 1-1TH Tank Vapors  
 from E&P TANK output

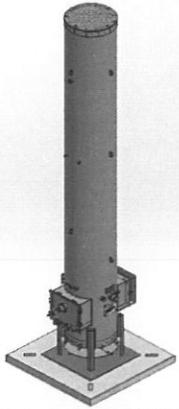
Mol Composition of "Total Emissions" from E&P TANK

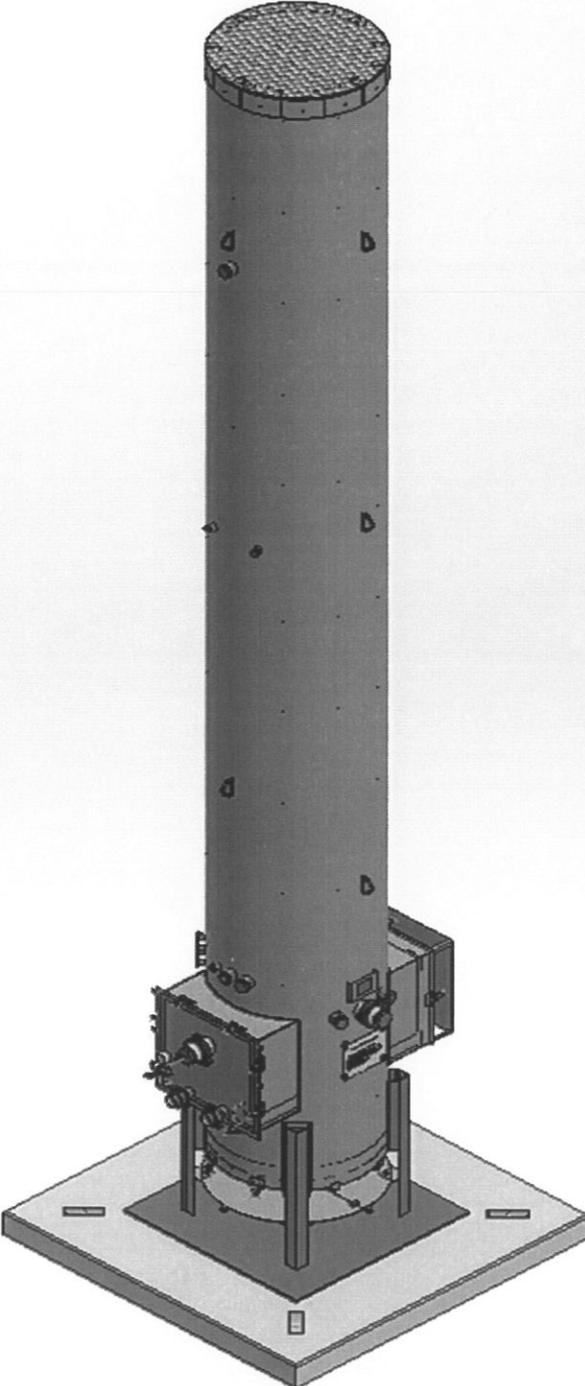
COMPONENT	mol %	M.W.	(mol % X MW)/100	WT% of i
H2S	0	34.08	0	0
O2	0	32.00	0	0.0000
CO2	2.9836	44.01	1.3131	0.0309
N2	0.8161	28.02	0.2287	0.0054
Methane C1	7.5779	16.04	1.2155	0.0286
Ethane C2	26.346	30.07	7.9222	0.1863
Propane C3	43.4096	44.09	19.1393	0.4500
i-Butane i-C4	3.7231	58.12	2.1639	0.0509
n-Butane n-C4	6.8569	58.12	3.9852	0.0937
i-Pentane iC5	2.8539	72.15	2.0591	0.0484
n-Pentane nC5	3.0165	72.15	2.1764	0.0512
n-Hexane n-C6	0.3956	86.17	0.3409	0.0080
Cyclohexane	0	84.16	0.0000	0.0000
other Hexanes	0.6824	85.00	0.5800	0.0136
Heptanes	0.7129	100.20	0.7143	0.0168
Methylcyclohexane	0	98.18	0.0000	0.0000
2,2,4 Trimethylpentane	0.0268	114.22	0.0306	0.0007
Benzene	0.0744	78.11	0.0581	0.0014
Toluene	0.0747	92.14	0.0688	0.0016
Ethylbenzene	0.0108	106.17	0.0115	0.0003
Xylenes	0.0524	106.17	0.0556	0.0013
C8	0.3219	120.00	0.3863	0.0091
C9	0.0614	128.26	0.0788	0.0019
C <sub>10</sub> +	0.0033	142.29	0.0047	0.0001
hydrogen	0	1.01	0.0000	0.0000
Helium	0	4.00	0.0000	0.0000
water	0	18.02	0.0000	0.0000
	100			1.0000

composition of tank vapors from E&P TANK MODEL

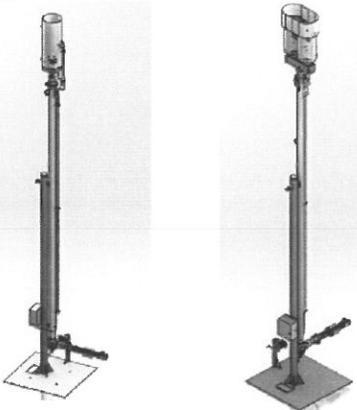
MOLECULAR WEIGHT (lb/lb-mol)= 42.5330  
 TOTAL VOCs WEIGHT PERCENT = 0.7489  
 TOTAL HAPs WEIGHT PERCENT = 0.0133

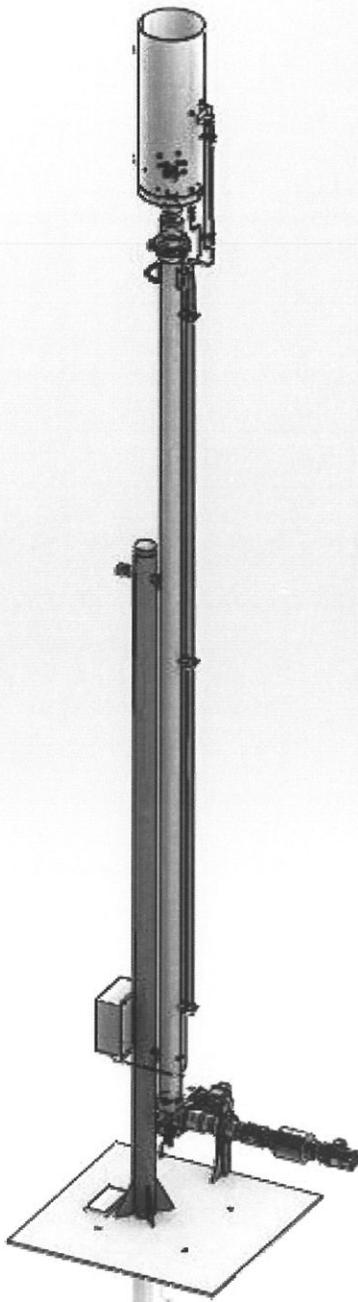
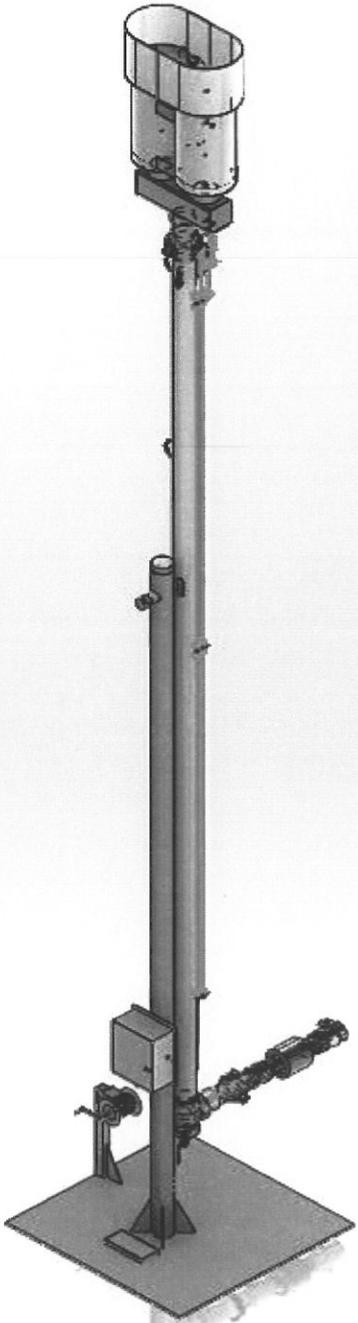
 <p style="text-align: center;"><b>Environmental Control Equipment Data Sheet</b></p>		Item/Tag No.:		Page	1	of	3	
		Project No.:		Revision:				B
		Project:		Date:	27 February 2014			
		P.O. No.:	-	By:	JS			
Client:		Ref. P&ID:	-	Checked:	SG			
Site:		Remarks:	-	Approved:	MS			
Unit/Lease:				Supplier:	LEED FABRICATION			
				Model No.:	L30-0018-00			
<b>GENERAL</b>								
1	Design Code:			NDE:	LEED Fabrication Standards			
2	Service:			Customer Specs:	<input type="checkbox"/> Yes			
3	Description: Standard Single Stage 36 High Efficiency Combustor				<input checked="" type="checkbox"/> No			
<b>PROCESS DATA</b>								
Gas Composition:		mol %	Process Conditions:					
4	Methane		Variable	Value	Units			
5	Ethane		Flow Rate	Up to 99	Mscfd			
6	Propane		Pressure	Up to 12	oz/in2			
7	i-Butane		Temperature		°F			
8	n-Butane		Molecular Weight					
9	i-Pentane		Process/Waste Stream	<input checked="" type="checkbox"/> Gas	<input type="checkbox"/> Liquid			
10	n-Pentane		Detailed Process Description / Process Notes:					
11	n-Hexane		1. Turndown 10:1. Based on an expected normal operating rate indicated above.					
12	CO2		2. DRE: 98 % operating at design conditions					
13	N2		3. Burner Pressure Drop: Min. 0.10 oz/in2					
14	Helium							
15	H2O							
16	C7							
17	C8							
18	C9							
19	C10							
20	C11+							
	TOTAL							
Other Components:		PPMV	Available Utilities:					
22	H2S		Fuel / Pilot Gas	Min. 30psig Natural Gas /Propane 40-50 SCFH				
23	Benzene		Instrument Air	NA				
24	Toluene		Power	120 V / 60 Hz or Solar Power				
25	E-Benzene		Steam	NA				
26	Xylene		Purge Gas					
<b>DESIGN DATA</b>								
27	Ambient Temperatures:		Noise Performance Requirements:		Under 85 dBA			
28	Low, °F	-20	Structural Design Code:					
29	High, °F	120	Wind Design Code:		ASCE			
30	Design Conditions: Pressure/Temperature							
31	Max. Relative Humidity, %	90	Pressure/Speed		100 mph			
32	Elevation (ASL), ft		Category					
33	Area Classification: Class I Div 2		Seismic Design Code:					
34	Electrical Design Code: NEC		Location					
<b>EQUIPMENT SPECIFICATION</b>								
35	Type: <input type="checkbox"/> Elevated <input checked="" type="checkbox"/> Enclosed		Equipment Design:					
36	<input type="checkbox"/> Above Ground		Component		Material / Size / Rating / Other			
37	<input checked="" type="checkbox"/> Stack <input type="checkbox"/> Multiple Stack		Burner					
38	<input type="checkbox"/> Portable / Trailer		Burner Tip / Assist Gas Burner		304 SS			
39			Burner Body		Carbon Steel			
40	Smokeless By: <input type="checkbox"/> Steam <input type="checkbox"/> Assist Air		Pilot					
41	<input type="checkbox"/> Gas Assist <input checked="" type="checkbox"/> Staging		Pilot Tip		304 SS			
42			Pilot Line(s)		Carbon Steel			
43	Stack: <input checked="" type="checkbox"/> Self Supporting		Firebox / Stack					
44	Flare Burner: <input type="checkbox"/> Non-Smokeless <input checked="" type="checkbox"/> Smokeless <input type="checkbox"/> Gas Assist		Shell		Carbon Steel			
45	Pilot: <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Continuous		Piping		Carbon Steel			
46	Pilot Air Inspirator: <input checked="" type="checkbox"/> Local <input type="checkbox"/> Remote		Nozzles		Carbon Steel			
47	Pilot Flame Control: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes (Thermocouple)		Flanges		Carbon Steel			
48			Insulation		Blanket			
49	Pilot Ignition: <input type="checkbox"/> Flamefront Generator <input checked="" type="checkbox"/> Inspiring Ignitor		Insulation Pins		304 SS			
50	<input type="checkbox"/> Electronic <input checked="" type="checkbox"/> Automatic <input type="checkbox"/> Manual		Refractory		NA			
51	<input type="checkbox"/> With Pilot Flame Control		Refractory Anchors		NA			
52	<input type="checkbox"/> With Auto Pilot Re-Ignition		Ladders and Platforms		NA			
53			Stack Sample Connections		Per EPA requirements			
54	Pilot Ignition Backup: <input type="checkbox"/> Manual Specify: i.e Piezo-Electric		Sight Glass		2			
55	<input type="checkbox"/> Battery Pack		Other					

 <p style="text-align: center;"><b>Environmental Control Equipment Data Sheet</b></p>		Item/Tag No.:		Page	2	of	3	
		Project No.:		Revision:	B			
		Project:		Date:	27 February 2014			
		P.O. No.:	-	By:	JS			
		RFQ No.:	-	Checked:	SG			
Client:		Ref. P&ID:	-	Approved:	MS			
Site:				Supplier:	LEED FABRICATION			
Unit/Lease:		Remarks:	-	Model No.:	L30-0018-00			
<b>EQUIPMENT SPECIFICATION</b>								
56	Flame Detection:	<input type="checkbox"/> Thermocouple	<input checked="" type="checkbox"/> Ionization Rod	Auxiliary Equipment				
57		<input type="checkbox"/> UV Scanner		Valves	NA			
58	General Configuration:			Blowers	NA			
59				Dampers	NA			
60				Inlet KO / Liquid Seal	NA			
61				Flame / Detonation Arrestor	Yes			
62				Instrumentation & Controls				
63				Solenoids / Shut-Off Valves	Check with Sales for available config.			
64				Flow Meters	NA			
65				Calorimeter	NA			
66				Pressure Switches/Transmitters	NA			
67				Thermocouples	Check with Sales for available config.			
68		Temperature Switches/Transmitters	NA					
69		BMS	Check with Sales for available config.					
70		CEMS	NA					
71		Other	NA					
72								
73								
74								
75								
<b>FABRICATION AND INSPECTION</b>								
76	Special requirements	<input type="checkbox"/> Skid Mounted	<input checked="" type="checkbox"/> Concrete Pad	Equipment Info				
77		<input type="checkbox"/> Other		Component	Weight / Dimensions			
78				Burner				
79	Inspection	<input checked="" type="checkbox"/> Vendor Standard		Burner Assembly				
80		<input type="checkbox"/> Other. Specify:		Stack				
81	Material Certification	<input checked="" type="checkbox"/> Vendor Standard		Stack Assembly	36" OD x 25' H			
82		<input type="checkbox"/> MTR		Pilot Tip				
83		<input type="checkbox"/> Certificate of Compliance		Pilot Line(s)				
84		<input type="checkbox"/> Other (Specify):		Stack Assembly				
85	NDE	<input checked="" type="checkbox"/> Vendor Standard		Auxiliary Equipment				
86		<input type="checkbox"/> Radiography. Specify:		Blowers				
87		<input type="checkbox"/> Ultrasonic. Specify:		Inlet KO / Liquid Seal				
88		<input type="checkbox"/> Liquid Penetrant.		Flame / Detonation Arrestor				
89		<input type="checkbox"/> Magnetic Particles.		Skid				
90		<input type="checkbox"/> PMI. Specify:		Instrumentation & Controls				
91		<input type="checkbox"/> Other. Specify:		BMS				
92	Surface Preparation	<input checked="" type="checkbox"/> Vendor Standard		Control Panel				
93		<input type="checkbox"/> Other. Specify:						
94	Paint System	<input checked="" type="checkbox"/> Vendor Standard						
95		<input type="checkbox"/> Other. Specify:						
96	Finished Color	<input checked="" type="checkbox"/> Vendor Standard						
97		<input type="checkbox"/> Other. Specify:						
98								
99								
Additional Notes:								

 <p style="text-align: center;"><b>Environmental Control Equipment Data Sheet</b></p>	Item/Tag No.:		Page	3	of	3
	Project No.:		Revision:	B		
	Project:		Date:	27 February 2014		
	P.O. No.:	-	By:	JS		
	RFQ No.:	-	Checked:	SG		
Client:		Ref. P&ID:	Approved:	MS		
Site:			Supplier:	LEED FABRICATION		
Unit/Lease:		Remarks:	Model No.:	L30-0018-00		
<b>GENERAL ARRANGEMENT</b>						
						

 <p style="text-align: center;"><b>Environmental Control Equipment Data Sheet</b></p>		Item/Tag No.:		Page	1	of	3
		Project No.:		Revision:	B		
		Project:		Date:	27 February 2014		
		P.O. No.:	-	By:	JS		
		RFQ No.:	-	Checked:	SG		
		Remarks:	-	Approved:	MS		
Client:		Ref. P&ID:	-	Supplier:	LEED FABRICATION		
Site:				Model No.:	L30-0007/8-00		
Unit/Lease:							
<b>GENERAL</b>							
1	Design Code:		NDE:	LEED Fabrication Standards			
2	Service:		Customer Specs:	<input type="checkbox"/> Yes			
3	Description:	Standard Single/Dual Head Flare		<input checked="" type="checkbox"/> No			
<b>PROCESS DATA</b>							
Gas Composition:		mol %	Process Conditions:				
4	Methane		Variable	Value	Units		
5	Ethane		Flow Rate	Up to 2.75	mmscf		
6	Propane		Pressure		psig		
7	I-Butane		Temperature		°F		
8	n-Butane		Molecular Weight				
9	I-Pentane		Process/Waste Stream	<input checked="" type="checkbox"/> Gas	<input type="checkbox"/> Liquid		
10	n-Pentane		<b>Detailed Process Description / Process Notes:</b>				
11	n-Hexane		1. Turndown 10:1. Based on an expected normal operating rate indicated above				
12	CO2		2. Gas mixture heating value estimated to be 1500 BTU/SCF unless specified by customer				
13	N2		3. Actual gas composition varies by site				
14	Helium		4. EPA NSPS 40 CFR Part 60 compliant				
15	H2O		5. 98% DRE				
16	C7						
17	C8						
18	C9						
19	C10						
20	C11+						
21	TOTAL						
Other Components:		PPMV	Available Utilities:				
22	H2S		Fuel / Pilot Gas	Natural Gas: 50 SCFH / Propane 40 SCFH @ 5-7 psig			
23	Benzene		Instrument Air	NA			
24	Toluene		Power	120 V / 60 Hz or Solar Power			
25	E-Benzene		Steam	NA			
26	Xylene		Purge Gas	NA			
<b>DESIGN DATA</b>							
27	Ambient Temperatures:		Noise Performance Requirements:				
28	Low, °F	-20	Structural Design Code:				
29	High, °F	120	Wind Design Code:		ASCE		
30	Design Conditions: Pressure/Temperature		Pressure/Speed		100 mph		
31	Max. Relative Humidity, %	90	Category				
32	Elevation (ASL), ft		Seismic Design Code:				
33	Area Classification:	Class I Div 2	Location				
34	Electrical Design Code:		NEC				
<b>EQUIPMENT SPECIFICATION</b>							
35	Type:	<input checked="" type="checkbox"/> Elevated <input type="checkbox"/> Enclosed	Equipment Design:				
36		<input type="checkbox"/> Above Ground	Component		Material / Size / Rating / Other		
37		<input checked="" type="checkbox"/> Stack <input type="checkbox"/> Multiple Stack	Burner				
38		<input type="checkbox"/> Portable / Trailer	Burner Tip / Assist Gas Burner		304/316 SS		
39			Burner Body		Carbon Steel		
40	Smokeless By:	<input type="checkbox"/> Steam <input type="checkbox"/> Assist Air	Pilot				
41		<input type="checkbox"/> Gas Assist <input type="checkbox"/> Staging	Pilot Tip		304/316 SS		
42			Pilot Line(s)		Carbon Steel		
43	Stack:	<input checked="" type="checkbox"/> Self Supporting	Firebox / Stack				
44	Flare Burner:	<input type="checkbox"/> Non-Smokeless <input checked="" type="checkbox"/> Smokeless <input type="checkbox"/> Gas Assist	Shell		NA		
45	Pilot:	<input checked="" type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Continuous	Piping		Carbon Steel		
46	Pilot Air Inspirator:	<input checked="" type="checkbox"/> Local <input type="checkbox"/> Remote	Nozzles		Carbon Steel		
47	Pilot Flame Control:	<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes (Thermocouple)	Flanges		Carbon Steel		
48			Insulation		NA		
49	Pilot Ignition:	<input type="checkbox"/> Flamefront Generator <input checked="" type="checkbox"/> Inspiring Ignitor	Insulation Pins		NA		
50		<input checked="" type="checkbox"/> Electronic <input checked="" type="checkbox"/> Automatic <input type="checkbox"/> Manual	Refractory		NA		
51		<input type="checkbox"/> With Pilot Flame Control	Refractory Anchors		NA		
52		<input type="checkbox"/> With Auto Pilot Re-Ignition	Ladders and Platforms		NA		
53			Stack Sample Connections		NA		
54	Pilot Ignition Backup:	<input type="checkbox"/> Manual Specify: <u>I.e Piezo-Electric</u>	Sight Glass		NA		
55		<input type="checkbox"/> Battery Pack	Other				

 <p style="text-align: center;"><b>Environmental Control Equipment Data Sheet</b></p>		Item/Tag No.:		Page	2	of	3	
		Project No.:		Revision:	B			
		Project:		Date:	27 February 2014			
		P.O. No.:	-	By:	JS			
RFQ No.:	-	Checked:	SG					
Client:		Approved:	MS					
Site:		Supplier:	LEED FABRICATION					
Unit/Lease:		Model No.:	L30-0007/8-00					
Ref. P&ID:	-	Remarks:	-					
<b>EQUIPMENT SPECIFICATION</b>								
56	Flame Detection:	<input type="checkbox"/> Thermocouple	<input checked="" type="checkbox"/> Ionization Rod	Auxiliary Equipment				
57		<input type="checkbox"/> UV Scanner		Valves	NA			
58	General Configuration:			Blowers	NA			
59				Dampers	NA			
60				Inlet KO / Liquid Seal	NA			
61				Flame / Detonation Arrestor	Yes			
62				<b>Instrumentation &amp; Controls</b>				
63				Solenoids / Shut-Off Valves	Check with Sales for available config.			
64				Flow Meters	NA			
65				Calorimeter	NA			
66				Pressure Switches/Transmitters	NA			
67				Thermocouples	Check with Sales for available config.			
68		Temperature Switches/Transmitters	NA					
69		BMS	Check with Sales for available config.					
70		CEMS	NA					
71		Other	NA					
72								
73								
74								
75								
<b>FABRICATION AND INSPECTION</b>								
76	Special requirements	<input type="checkbox"/> Skid Mounted	<input checked="" type="checkbox"/> Concrete Pad	<b>Equipment Info</b>				
77		<input type="checkbox"/> Other		<b>Component</b>	<b>Weight / Dimensions</b>			
78				<b>Burner</b>				
79	Inspection	<input checked="" type="checkbox"/> Vendor Standard		Burner Assembly				
80		<input type="checkbox"/> Other. Specify:		<b>Stack</b>				
81	Material Certification	<input checked="" type="checkbox"/> Vendor Standard		Stack Assembly	4" OD x 25' H			
82		<input type="checkbox"/> MTR		Pilot Tip				
83		<input type="checkbox"/> Certificate of Compliance		Pilot Line(s)				
84		<input type="checkbox"/> Other (Specify):		Stack Assembly				
85	NDE	<input checked="" type="checkbox"/> Vendor Standard		<b>Auxiliary Equipment</b>				
86		<input type="checkbox"/> Radiography. Specify:		Blowers				
87		<input type="checkbox"/> Ultrasonic. Specify:		Inlet KO / Liquid Seal				
88		<input type="checkbox"/> Liquid Penetrant.		Flame / Detonation Arrestor				
89		<input type="checkbox"/> Magnetic Particles.		Skid				
90		<input type="checkbox"/> PMI. Specify:		<b>Instrumentation &amp; Controls</b>				
91		<input type="checkbox"/> Other. Specify:		BMS				
92	Surface Preparation	<input checked="" type="checkbox"/> Vendor Standard		Control Panel				
93		<input type="checkbox"/> Other. Specify:						
94	Paint System	<input checked="" type="checkbox"/> Vendor Standard						
95		<input type="checkbox"/> Other. Specify:						
96	Finished Color	<input checked="" type="checkbox"/> Vendor Standard						
97		<input type="checkbox"/> Other. Specify:						
98								
99								
Additional Notes:								

 <p>Environmental Control Equipment Data Sheet</p>		Item/Tag No.:		Page	3	of	3	
		Project No.:		Revision:	B			
		Project:		Date:	27 February 2014			
		P.O. No.:	-	By:	JS			
		RFQ No.:	-	Checked:	SG			
Client:		Ref. P&ID:	-	Approved:	MS			
Site:				Supplier:	LEED FABRICATION			
Unit/Lease:		Remarks:	-	Model No.:	L30-0007/8-00			
<b>GENERAL ARRANGEMENT</b>								
								
								
L30-0007-00				L30-0008-00				



Department of Environmental Quality Air Quality Division

Permit Application Form

Is this a revision to an existing application?  
Yes \_\_\_\_\_ No X  
Previous Application #:

Date of Application: 7/28/2015

**COMPANY INFORMATION:**

Company Name: Peak Powder River Resources, LLC  
Address: 1910 Main Avenue  
City: Durango State: Colorado Zip Code: 81301  
Country: USA Phone Number: (970) 247-1500

**FACILITY INFORMATION:**

Facility Name: Nine Mile 1-1TH  
New Facility or Existing Facility: New  
Facility Description: Single Well, Oil Production  
Facility Class: Minor Operating Status: Operating  
Facility Type: Production Site

*For Oil & Gas Production Sites ONLY:*

First Date of Production (FDOP)/Date of Modification: 6/7/2015  
Does production at this facility contain H2S? No  
*\*If yes, contact the Division.*  
API Number(s): 049-005-62501

NAICS Code: 2111 Oil and Gas Extraction

**FACILITY LOCATION:**

*\*Enter the facility location in either the latitude/longitude area or section/township/range area. Both are not required.*

Physical Address: \_\_\_\_\_  
City: \_\_\_\_\_ Zip Code: \_\_\_\_\_  
State: WY County: Campbell  
**OR**  
Latitude: 43.636174 Longitude: -105.824936  
Quarter Quarter: SW Quarter: SW  
Section: 1 Township: 42N Range: 75W

*For longitude and latitude, use NAD 83/WGS84 datum and 5 digits after the decimal (i.e. 41.12345, -107.56789)*

**CONTACT INFORMATION:**

*\*Note that an Environmental AND NSR Permitting Contact is required for your application to be deemed complete by the agency.*

Title: Ms. First Name: Daneka  
Last Name: Ewert  
Company Name: Peak Powder River Resources, LLC  
Job Title: Environmental Manager  
Address: 1910 Main Avenue  
City: Durango State: Colorado  
Zip Code: 81301  
Primary Phone No.: (307) 231-0755 E-mail: Dewert@colopeaks.com  
Mobile Phone No.: \_\_\_\_\_ Fax No.: (970) 247-5424  
Contact Type: Environmental contact Start Date: \_\_\_\_\_

**ORIGINAL**

Additional Contact Type (if needed): NSR Permitting contact

Title:  First Name: same as above

Last Name: \_\_\_\_\_

Company Name: \_\_\_\_\_

Job Title: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State:

Zip Code: \_\_\_\_\_

Primary Phone No.: \_\_\_\_\_ E-mail: \_\_\_\_\_

Mobile Phone No.: \_\_\_\_\_ Fax No.: \_\_\_\_\_

Contact Type:  Start Date: \_\_\_\_\_

**FACILITY APPLICATION INFORMATION:**

**General Info:**

Has the facility changed location or is it a new/ greenfield facility?

Has a Land Use Planning document been included in this application?

Is the facility located in a sage grouse core area? \*

If the facility is in a sage grouse core area, what is the WER number? \_\_\_\_\_

*\* For questions about sage grouse core area, contact WY Game & Fish Department.*

**Federal Rules Applicability - Facility Level:**

Prevention of Significant Deterioration (PSD):

Non-Attainment New Source Review:

**Modeling Section:**

Has the Air Quality Division been contacted to determine if modeling is required?

Is a modeling analysis part of this application?

Is the proposed project subject to Prevention of Significant Deterioration (PSD) requirements?

Has the Air Quality Division been notified to schedule a pre-application meeting?

Has a modeling protocol been submitted to and approved by the Air Quality Division?

Has the Air Quality Division received a Q/D analysis to submit to the respective FLMs to determine the need for an AQRV analysis?

**Required Attachments:**

Facility Map	<input type="checkbox"/>	<input type="checkbox"/>
Process Flow Diagram	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Modeling Analysis (if applicable)	<input type="checkbox"/>	<input type="checkbox"/>
Land Use Planning Document	<input type="checkbox"/>	<input type="checkbox"/>
Detailed Project Description	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Emissions Calculations	<input checked="" type="checkbox"/>	<input type="checkbox"/>

I, Daneka Ewert Environmental Manager  
 Responsible Official (Printed Name) Title

an Official Representative of the Company, state that I have knowledge of the facts herein set forth and that the same are true and correct to the best of my knowledge and belief. I further certify that the operational information provided and emission rates listed on this application reflect the anticipated emissions due to the operation of this facility. The facility will operate in compliance with all applicable Wyoming Air Quality Standards and Regulations.

Signature: Cynthia Madison for Daneka Ewert Date: 7/27/2015  
 (ink)

**ORIGINAL**

**Specific Emission Unit Attributes:**

**Separator/Treater**

Company Equipment ID: HP Separator

Company Equipment Description: 2-phase unheated separator (1 of 2)

Operating Status: Operating

Initial Construction Commencement Date: \_\_\_\_\_

Initial Operation Commencement Date: 6/7/2015

Most Recent Construction/ Modification  
Commencement Date: \_\_\_\_\_

Most Recent Operation Commencement Date: \_\_\_\_\_

**Select reason(s) for this emissions unit being included in this application (must be completed regardless of date of installation or modification):**

Reason: Construction (Greenfield/New Facility)

If reason is **Reconstruction** or **Temporary Permit** or **Other**, please explain below:

Type of Vessel: 2-Phase Separator Is Vessel Heated? No

Operating Temperature (F): 90

Operating Pressure (psig): 80

**SCC Codes:** List all Source Classification Code(s) (SCC) that describe the process(es) performed by the emission source (e.g., 1-02-002-04).

31000129

**Potential Operating Schedule:** Provide the operating schedule for this emission unit.

Hours/day: 24

Hours/year: 8760



**Specific Emission Unit Attributes:**

**Separator/Treater**

Company Equipment ID: HP Separator

Company Equipment Description: 2-phase unheated separator (2 of 2)

Operating Status: Operating

Initial Construction Commencement Date: \_\_\_\_\_

Initial Operation Commencement Date: 6/7/2015

Most Recent Construction/ Modification  
Commencement Date: \_\_\_\_\_

Most Recent Operation Commencement Date: \_\_\_\_\_

**Select reason(s) for this emissions unit being included in this application (must be completed regardless of date of installation or modification):**

Reason: Construction (Greenfield/New Facility)

If reason is **Reconstruction** or **Temporary Permit** or **Other**, please explain below:

\_\_\_\_\_

Type of Vessel: 2-Phase Separator Is Vessel Heated? No

Operating Temperature (F): 90

Operating Pressure (psig): 80

**SCC Codes:** List all Source Classification Code(s) (SCC) that describe the process(es) performed by the emission source (e.g., 1-02-002-04).

31000129

\_\_\_\_\_

**Potential Operating Schedule:** Provide the operating schedule for this emission unit.

Hours/day: 24

Hours/year: 8760



**Specific Emission Unit Attributes:**

**Separator/Treater**

Company Equipment ID: LP Separator

Company Equipment Description: 3-phase unheated separator (1 of 2)

Operating Status: Operating

Initial Construction Commencement Date: \_\_\_\_\_

Initial Operation Commencement Date: 6/7/2015

Most Recent Construction/ Modification  
Commencement Date: \_\_\_\_\_

Most Recent Operation Commencement Date: \_\_\_\_\_

**Select reason(s) for this emissions unit being included in this application (must be completed regardless of date of installation or modification):**

Reason: Construction (Greenfield/New Facility)

If reason is **Reconstruction** or **Temporary Permit** or **Other**, please explain below:

\_\_\_\_\_

Type of Vessel: 3-Phase Separator Is Vessel Heated? No

Operating Temperature (F): 90

Operating Pressure (psig): 60

**SCC Codes:** List all Source Classification Code(s) (SCC) that describe the process(es) performed by the emission source (e.g., 1-02-002-04).

31000107

\_\_\_\_\_

**Potential Operating Schedule:** Provide the operating schedule for this emission unit.

Hours/day: 24

Hours/year: 8760



**Specific Emission Unit Attributes:**

**Separator/Treater**

Company Equipment ID: LP Separator

Company Equipment Description: 3-phase unheated separator (2 of 2)

Operating Status: Operating

Initial Construction Commencement Date: \_\_\_\_\_

Initial Operation Commencement Date: 6/7/2015

Most Recent Construction/ Modification  
Commencement Date: \_\_\_\_\_

Most Recent Operation Commencement Date: \_\_\_\_\_

**Select reason(s) for this emissions unit being included in this application (must be completed regardless of date of installation or modification):**

Reason: Construction (Greenfield/New Facility)

If reason is **Reconstruction** or **Temporary Permit** or **Other**, please explain below:

\_\_\_\_\_

Type of Vessel: 3-Phase Separator Is Vessel Heated? No

Operating Temperature (F): 90

Operating Pressure (psig): 60

**SCC Codes:** List all Source Classification Code(s) (SCC) that describe the process(es) performed by the emission source (e.g., 1-02-002-04).

31000107

\_\_\_\_\_

**Potential Operating Schedule:** Provide the operating schedule for this emission unit.

Hours/day: 24

Hours/year: 8760



**Specific Emission Unit Attributes:**

**Separator/Treater**

Company Equipment ID: Heater Treater

Company Equipment Description: 3-Phase Heater Treater

Operating Status: Operating

Initial Construction Commencement Date: \_\_\_\_\_

Initial Operation Commencement Date: 6/7/2015

Most Recent Construction/ Modification  
Commencement Date: \_\_\_\_\_

Most Recent Operation Commencement Date: \_\_\_\_\_

**Select reason(s) for this emissions unit being included in this application (must be completed regardless of date of installation or modification):**

Reason: Construction (Greenfield/New Facility)

If reason is **Reconstruction** or **Temporary Permit** or **Other**, please explain below:

\_\_\_\_\_

Type of Vessel: Heater-Treater Is Vessel Heated? Yes

Operating Temperature (F): 100

Operating Pressure (psig): 30

**SCC Codes:** List all Source Classification Code(s) (SCC) that describe the process(es) performed by the emission source (e.g., 1-02-002-04).

31000107

\_\_\_\_\_

**Potential Operating Schedule:** Provide the operating schedule for this emission unit.

Hours/day: 24

Hours/year: 8760



**Specific Emission Unit Attributes:**

**Heater/Chiller**

Company Equipment ID: Treater Burner  
Company Equipment Description: 0.5 MMBTU/HR Treater Burner

Operating Status: Operating

Initial Construction Commencement Date: \_\_\_\_\_

Initial Operation Commencement Date: 6/7/2015

Most Recent Construction/ Modification Commencement Date: \_\_\_\_\_

Most Recent Operation Commencement Date: \_\_\_\_\_

**Select reason(s) for this emissions unit being included in this application (must be completed regardless of date of installation or modification):**

Reason: Construction (Greenfield/New Facility)

If reason is **Reconstruction** or **Temporary Permit** or **Other**, please explain below:

\_\_\_\_\_

Firing Type:	<u>Indirect</u>	
Heat Input Rating:	<u>0.5</u>	Units: <u>MMBtu/hr</u>
Primary Fuel Type:	<u>Field Gas</u>	
Secondary Fuel Type:	<u>N/A</u>	
Heat Content of Fuel:	<u>1383</u>	Units: <u>BTU/scf</u>
Fuel Sulfur Content:	<u>0</u>	Units: _____

**SCC Codes:** List all Source Classification Code(s) (SCC) that describe the process(es) performed by the emission source (e.g., 1-02-002-04).

31000107 30600105

**Potential Operating Schedule:** Provide the operating schedule for this emission unit.

Hours/day: 24

Hours/year: 8760



**Specific Emission Unit Attributes:**

**Storage Tank/Silo**

Company Equipment ID: Oil Tanks  
Company Equipment Description: 8 400-BBL Oil Tanks

Operating Status: Operating

Initial Construction Commencement Date: \_\_\_\_\_

Initial Operation Commencement Date: 6/7/2015

Most Recent Construction/ Modification  
Commencement Date: \_\_\_\_\_

Most Recent Operation Commencement Date: \_\_\_\_\_

**Select reason(s) for this emissions unit being included in this application (must be completed regardless of date of installation or modification):**

Reason: Construction (Greenfield/New Facility)

If reason is **Reconstruction** or **Temporary Permit** or **Other**, please explain below:

Material Type: Liquid  
Description of Material Stored: 35.5 deg API crude oil

Capacity: 3200 Units: barrels

Maximum Throughput: 359,890 (projected) Units: barrels/yr

Maximum Hourly Throughput: 45 Units: barrels/hr

Is Tank Heated?: No

**SCC Codes:** List all Source Classification Code(s) (SCC) that describe the process(es) performed by the emission source (e.g., 1-02-002-04).

40400312

**Potential Operating Schedule:** Provide the operating schedule for this emission unit.

Hours/day: 24

Hours/year: 8760

**Control Equipment:** Yes

*If yes, please fill out and attach the appropriate Control Device and Release Point Information worksheets.*

**Best Available Control Technology (BACT):** Was a BACT Analysis completed for this emission unit?

Yes  No

Pollutant: \_\_\_\_\_

Proposed BACT: \_\_\_\_\_

\*If yes, attach BACT Analysis with this application.

**Lowest Achievable Emission Rate (LAER):** Was a LAER Analysis completed for this emission unit?

Yes  No

Pollutant: \_\_\_\_\_

Proposed LAER: \_\_\_\_\_

\*If yes, attach LAER Analysis with this application.

**Federal and State Rule Applicability:**

New Source Performance Standards (NSPS): Subject, but exempt

*New Source Performance Standard are listed under 40 CFR 60- Standards of Performance for New Stationary Sources.*

NSPS Subpart: 0000

National Emission Standards for Hazardous Air Pollutants (NESHAP Part 61): Not Affected

*National Emissions Standards for Hazardous Air Pollutants (NESHAP Part 61) are listed under 40 CFR 61. (These include asbestos, benzene, beryllium, mercury, and vinyl chloride).*

Part 61 NESHAP Subpart: \_\_\_\_\_

National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63): Not Affected

*National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63) standards are listed under 40 CFR 63*

Part 63 NESHAP Subpart: \_\_\_\_\_

Prevention of Significant Deterioration (PSD): Not Affected

*These rules are found under WAQSR Chapter 6, Section 4.*

Non-Attainment New Source Review: Not Affected

*These rules are found under WAQSR Chapter 6, Section 13.*

**Specific Emission Unit Attributes:**

**Storage Tank/Silo**

Company Equipment ID: Produced Water Tanks  
Company Equipment Description: two 400-BBL Produced Water Tanks

Operating Status: Operating

Initial Construction Commencement Date: \_\_\_\_\_

Initial Operation Commencement Date: 6/7/2015

Most Recent Construction/ Modification  
Commencement Date: \_\_\_\_\_

Most Recent Operation Commencement Date: \_\_\_\_\_

**Select reason(s) for this emissions unit being included in this application (must be completed regardless of date of installation or modification):**

Reason: Construction (Greenfield/New Facility)

If reason is **Reconstruction** or **Temporary Permit** or **Other**, please explain below:

\_\_\_\_\_

Material Type: Liquid  
Description of Material Stored: Produced Water

Capacity: 800 Units: barrels

Maximum Throughput: 200 Units: barrels/day

Maximum Hourly Throughput: 9 Units: barrels/hr

Is Tank Heated?: No

**SCC Codes:** List all Source Classification Code(s) (SCC) that describe the process(es) performed by the emission source (e.g., 1-02-002-04).

40400315

\_\_\_\_\_

**Potential Operating Schedule:** Provide the operating schedule for this emission unit.

Hours/day: 24

Hours/year: 8760



**Specific Emission Unit Attributes:**

**Fugitives**

Company Equipment ID: \_\_\_\_\_ Fugitives  
Company Equipment Description: \_\_\_\_\_ Fugitives

Operating Status: \_\_\_\_\_ Operating  
Initial Construction Commencement Date: \_\_\_\_\_  
Initial Operation Commencement Date: \_\_\_\_\_ 6/7/2015  
Most Recent Construction/ Modification  
Commencement Date: \_\_\_\_\_

Most Recent Operation Commencement Date: \_\_\_\_\_  
**Select reason(s) for this emissions unit being included in this application (must be completed regardless of date of installation or modification):**

Reason: \_\_\_\_\_ Construction (Greenfield/New Facility)

If reason is **Reconstruction** or **Temporary Permit** or **Other**, please explain below:

\_\_\_\_\_  
Type of Fugitive Emission: \_\_\_\_\_ Fugitive Leaks at O&G

**SCC Codes:** List all Source Classification Code(s) (SCC) that describe the process(es) performed by the emission source (e.g., 1-02-002-04).

31000101

**Potential Operating Schedule:** Provide the operating schedule for this emission unit.

Hours/day: \_\_\_\_\_ 24  
Hours/year: \_\_\_\_\_ 8760



**Specific Emission Unit Attributes:**

**Loading/Unloading/Dump**

Company Equipment ID: Truck Loading  
Company Equipment Description: Truck Loading

Operating Status: Operating

Initial Construction Commencement Date: \_\_\_\_\_

Initial Operation Commencement Date: 6/7/2015

Most Recent Construction/ Modification  
Commencement Date: \_\_\_\_\_

Most Recent Operation Commencement Date: \_\_\_\_\_

**Select reason(s) for this emissions unit being included in this application (must be completed regardless of date of installation or modification):**

Reason: Construction (Greenfield/New Facility)

If reason is **Reconstruction** or **Temporary Permit** or **Other**, please explain below:

\_\_\_\_\_  
Type of Material: Liquid  
Material Description: Crude Oil

Maximum Annual Throughput: 359,890 (projected) Units: barrels/yr

Maximum Hourly Throughput: 200 Units: barrels/hr

Detailed Description of Loading/Unloading/Dump Source: Submerged loading into tanker truck, dedicated service to crude oil

**SCC Codes:** List all Source Classification Code(s) (SCC) that describe the process(es) performed by the emission source (e.g., 1-02-002-04).

40600132

**Potential Operating Schedule:** Provide the operating schedule for this emission unit.

Hours/day: ≈5

Hours/year: 1800



**Control Equipment:**

**Flare/Combustor**

Manufacturer: LEED Date Installed: 6/1/2015  
 Model Name and Number: L30-0011 Company Control Equipment ID: 80044

Company Control Equipment Description: 36-IN by 25-FT Smokeless Combustor

Pollutant(s) Controlled:		<input type="checkbox"/> CO	<input type="checkbox"/> NOx	<input type="checkbox"/> Pb	<input type="checkbox"/> SO2	<input checked="" type="checkbox"/> VOC	<input type="checkbox"/> PM
<input type="checkbox"/> PM (FIL)	<input type="checkbox"/> PM Condensable	<input type="checkbox"/> PM 10 (FIL)		<input type="checkbox"/> PM 2.5 (FIL)		<input type="checkbox"/> PM 10	<input checked="" type="checkbox"/> PM 2.5
<input type="checkbox"/> Other							

Design Control Efficiency (%): 99+ Capture Efficiency (%): 100  
 Operating Control Efficiency (%): 98  
 Flare Type: Enclosed Elevated Flare Type: Non-Assisted  
 Ignition Device: Yes Flame Presence Sensor: Yes  
 Inlet Gas Temp (F): 100 Flame Presence Type: Thermocouple  
 Gas Flow Rate (acfm): 26 Outlet Gas Temp (F): 1000

This is the only control equipment on this air contaminant source  
 If not, this control equipment is:  Primary  Secondary  Parallel

List all other emission units that are also vented to this control equipment: \_\_\_\_\_

List all release point IDs associated with this control equipment: Oil Storage Tanks

**Control Equipment:**

**Flare/Combustor**

Manufacturer: LEED Date Installed: 4/7/2015

Model Name and Number: L30-007-00 Company Control Equipment ID: \_\_\_\_\_

Company Control Equipment Description: Emergency 4-IN by 25-FT Smokeless Flare (1 of 2)

Pollutant(s) Controlled:		<input type="checkbox"/> CO	<input type="checkbox"/> NOx	<input type="checkbox"/> Pb	<input type="checkbox"/> SO2	<input checked="" type="checkbox"/> VOC	<input type="checkbox"/> PM
<input type="checkbox"/> PM (FIL)	<input type="checkbox"/> PM Condensable	<input type="checkbox"/> PM 10 (FIL)	<input type="checkbox"/> PM 2.5 (FIL)	<input type="checkbox"/> PM 10	<input type="checkbox"/> PM 2.5		
<input type="checkbox"/> Other							

Design Control Efficiency (%): 99+ Capture Efficiency (%): 100

Operating Control Efficiency (%): 98

Flare Type: Enclosed Elevated Flare Type: Non-Assisted

Ignition Device: Yes Flame Presence Sensor: Yes

Inlet Gas Temp (F): 100 Flame Presence Type: Thermocouple

Gas Flow Rate (acfm): 0.1 Outlet Gas Temp (F): 1000

This is the only control equipment on this air contaminant source

If not, this control equipment is:  Primary  Secondary  Parallel

List all other emission units that are also vented to this control equipment: two 2- phase separators, two 3-phase separators, 1

List all release point IDs associated with this heater treater

control equipment: same as above

**Control Equipment:**

**Flare/Combustor**

Manufacturer: LEED Date Installed: 4/7/2015  
 Model Name and Number: L30-007-00 Company Control Equipment ID: \_\_\_\_\_

Company Control Equipment Description: Emergency 4-IN by 25-FT Smokeless Flare (2 of 2)

Pollutant(s) Controlled:		<input type="checkbox"/> CO	<input type="checkbox"/> NOx	<input checked="" type="checkbox"/> Pb	<input type="checkbox"/> SO2	<input checked="" type="checkbox"/> VOC	<input type="checkbox"/> PM
<input type="checkbox"/> PM (FIL)	<input type="checkbox"/> PM Condensable	<input type="checkbox"/> PM 10 (FIL)		<input type="checkbox"/> PM 2.5 (FIL)		<input type="checkbox"/> PM 10	<input type="checkbox"/> PM 2.5
<input type="checkbox"/> Other							

Design Control Efficiency (%): 99+ Capture Efficiency (%): 100  
 Operating Control Efficiency (%): 98  
 Flare Type: Enclosed Elevated Flare Type: Non-Assisted  
 Ignition Device: Yes Flame Presence Sensor: Yes  
 Inlet Gas Temp (F): 100 Flame Presence Type: Thermocouple  
 Gas Flow Rate (acfm): 0.1 Outlet Gas Temp (F): 1000

This is the only control equipment on this air contaminant source  
 If not, this control equipment is:  Primary  Secondary  Parallel

List all other emission units that are also vented to this control equipment: two 2- phase separators, two 3-phase separators, 1

List all release point IDs associated with this control equipment: heater treater  
same as above

**Emissions Information-** The following tables request information needed to determine the applicable requirements and the compliance status of this emission unit with those requirements.

\*EMISSIONS DETERMINATIONS ARE DESCRIBED IN THE CALCULATIONS SECTION OF THIS APPLICATION and BELOW.

Pre-Controlled Potential Emissions (tons/yr)	Efficiency Standards		Potential to Emit (lbs/hr)	Potential to Emit (tons/yr)	Basis for Determination
	Potential to Emit (PTE)	Units			

**Criteria Pollutants:**

1.)	Particulate emissions (PE/PM) (formerly particulate matter, PM)						
2.)	PM #10 microns in diameter (PE/PM10)						
3.)	PM #2.5 microns in diameter (PE/PM2.5)						
4.)	Sulfur dioxide (SO2)						
5.)	Nitrogen Oxides (NOx)	0.29	0.11	lb/ton of production	0.57	2.48	*
6.)	Carbon monoxide (CO)	0.24	0.03	lb/ton of production	0.18	0.79	*
7.)	Volatile organic compounds (VOC)	593.79	0.97	lb/ton of production	4.50	21.96	*
8.)	Lead (Pb)						
9.)	Total Hazardous Air Pollutants (HAPs)	10.70	0.02	lb/ton of production	0.12	0.53	*
10.)	Fluoride (F)						
11.)	Hydrogen Sulfide (H2S)						
12.)	Mercury (Hg)						
13.)	Total Reduced Sulfur (TRS)						
14.)	Sulfuric Acid Mist (SAM)						

**\*Provide your calculations as an attachment and explain how all process variables and emissions factors were selected.**

Nine Mile 1-1TH oil weighs 5.996 LB/GAL (42 GAL/BBL) = 252 LB/BBL

Projected oil production = 359,890 BBL

252 LB/BBL (359,890 BBL) (TON/2000 LB) = 45,346 TONS oil/YR

LB/TON of production = X TON/45,346 TONS (2000 LB/TON)

LB/HR = X TONS/8760 HR (2000 LB/TON)

**Release Point Information:**

Complete the table below for *each* release point. Please include release point information for each emission unit. Multiple attachments may be necessary. A release point is a point at which emissions from an emission unit are released into the ambient (outside) air. List each individual release point on a separate pair of lines (release point ID and description). *For longitude and latitude, use NAD 83/WGS84 datum and 5 digits after the decimal (i.e. 41.12345, -107.56789)*

Stack Release Point Information	
Company Release Point ID: LEED combustor	Release Point Type: <input type="text" value="Vertical"/> Release Point Latitude: <u>43.636174</u> Release Point Longitude: <u>-105.824936</u>
Company Release Point Description: vapors from 8 oil tanks routed to 36-IN by 25-FT combustor	Base Elevation (ft): <u>5349</u> Stack Height (ft): <u>25</u> Stack Diameter (ft): <u>3</u> Exit Gas Velocity (ft/s): <u>0.1</u> Exit Gas Temp (F): <u>1000</u> Exit Gas Flow Rate (acfm): <u>25.46</u>
Company Release Point ID: trtr burner	Release Point Type: <input type="text" value="Vertical"/> Release Point Latitude: <u>43.636174</u> Release Point Longitude: <u>-105.824936</u>
Company Release Point Description: fumes from the combustion of natural gas exiting the treater burner stack	Base Elevation (ft): <u>5349</u> Stack Height (ft): <u>20</u> Stack Diameter (ft): <u>0.83</u> Exit Gas Velocity (ft/s): <u>0.1</u> Exit Gas Temp (F): <u>1000</u> Exit Gas Flow Rate (acfm): <u>6.3</u>
Company Release Point ID: fugitives	Release Point Type: <input type="text" value="Horizontal"/> Release Point Latitude: <u>43.636174</u> Release Point Longitude: <u>-105.824936</u>
Company Release Point Description: multiple variable components - anywhere from ground level to 20+ feet.	Base Elevation (ft): <u>5349</u> Stack Height (ft): <u>4</u> Stack Diameter (ft): <u>0.00001</u> Exit Gas Velocity (ft/s): <u>0.01</u> Exit Gas Temp (F): <u>80</u> Exit Gas Flow Rate (acfm): <u>0.0001</u>

Company Release Point ID: <b>truckloading</b>	Release Point Type: <u>Vertical</u>
	Release Point Latitude: <u>43.636174</u>
Company Release Point Description: <b>submerged loading, dedicated service</b>	Release Point Longitude: <u>-105.824936</u>
	Base Elevation (ft): <u>5349</u>
	Stack Height (ft): <u>3</u>
	Stack Diameter (ft): <u>0.33</u>
	Exit Gas Velocity (ft/s): <u>0.01</u>
	Exit Gas Temp (F): <u>70</u>
	Exit Gas Flow Rate (acfm): <u>18.7</u>

Tanks:  $ACFM = (MSCF/DAY) (1000 SCF/MCF) (DAY/24 HR) (HR/60 MIN)$

Burners:  $ACFM = (MMBTU/HR)(HR/60 MIN)(SCF/BTU)(10^6 BTU/MMBTU)$

Truckloading:  $(200 BBL/HR)(HR/60 MIN)(5.61 CF/BBL) = 18.7 ACFM$

Company Release Point ID:	Release Point Type: _____
	Release Point Latitude: _____
	Release Point Longitude: _____
Company Release Point Description:	Base Elevation (ft): _____
	Stack Height (ft): _____
	Stack Diameter (ft): _____
	Exit Gas Velocity (ft/s): _____
	Exit Gas Temp (F): _____
	Exit Gas Flow Rate (acfm): _____

Complete the table below for each fugitive (area, volume, line) release point. List each individual release point on a separate line.

Fugitive Release Point Information	
Company Release Point ID:	Release Point Latitude: _____
	Release Point Longitude: _____
	Release Height (ft): _____
Company Release Point Description:	