EQT Plaza
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Pittsburgh PA 15212
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April 28, 2016

Mr. William F. Durham
Director
WV Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304

Re: Permit Determination Request
EQT Production Company – PEN13 Pad
R13 Permit Number R13-3128; Plant ID No. 085-00028

Dear Mr. Durham:

EQT Production Company (EQT) is submitting this permit determination request to the West Virginia Department of Environmental Protection (WVDEP) for the installation of one (1)140 barrel (bbl) sand separator storage tank and modifying existing storage tank hatches at the existing wellpad, PEN-13, located in Ritchie County, West Virginia. The PEN-13 pad is currently operating under Permit No. R13-3128, issued on January 6, 2014. Under the recent Consent Order CO-R13-E-2016-04 (Consent Order), EQT anticipated the potential for an additional Vapor Destruction Unit (VDU) for the site, but based upon actual operating conditions an additional VDU is not required. This was discussed in the inspection report, and EQT indicated that an RFD would be provided. This RFD satisfies those obligations and the requirement in Consent Order, in which EQT is required to submit an application and/or RFD to request to remove the requirement for controls. EQT requests that the VDU control requirement be removed.

Project Description

Under the Consent Order EQT has installed latch down hatches and pilot operated valves on the produced liquid tanks at the facility. EQT is proposing to install a sand separator storage tank, which will store sand and produced fluids from the sand separator (vapors from this tank may be controlled by the existing combustor but are not represented as controlled in this permit determination).

EQT is also upgrading the hatches on the existing storage vessels at the facility (S001-S004). The existing hatches will be replaced with lock-down hatches. The latch down hatches will ensure that the emissions from the storage vessels are captured and routed to the enclosed flare (C001) for control.

Emission Calculations

Emission calculations are included as Attachment E to this package. Emissions of VOC and HAPs from the sand separator tank are calculated using E&P TANK v2.0. The composition for the analysis was from a sample taken at PEN-13. The modifications to the hatches on the existing tanks (S001-S004) will not result in a change in emissions from the storage tanks.

Regulatory Applicability

As noted in the attached emission calculations, the change in potential emissions as a result of the proposed equipment changes is less than the modification thresholds in 45 CSR 13-2.17 as it results in an emissions increase of less than six (6) pounds per hour, less than ten (10) tons per year, and less than 144 pounds per

calendar day, of any regulated air pollutant and less than two (2) pounds per hour and five (5) tons per year of hazardous air pollutants (HAPs).

Potential emissions from the storage tanks will remain below all current permit limits and EQT will comply with the liquid throughput limits in the current permit.

NSPS OOOOa - Crude Oil and Natural Gas Facilities

The proposed sand separator storage vessel at the facility is potentially subject to the requirements of storage vessel affected facilities under 40 CFR Subpart OOOOa – Crude Oil and Natural Gas Facilities. This regulation has yet to be finalized. The sand separator storage vessel has potential VOC emissions less than 6 tpy. As such, per 60.5365a(e), the tanks will not be storage vessel affected facilities under the rule.

Note that the proposed changes to the well pad do not met the definition of modification under 40 CFR 60.5365a(i)(3). Therefore, EQT will not be subject to the leak detection and repair program under OOOOa.

Summary

The proposed equipment at the PEN-13 wellpad does not exceed the hourly and annual limits, nor the daily limits specified in the modification definition of 45 CSR 13 (note that haul roads are not included in applicability determinations). Based on the emission levels and lack of substantive requirements, the proposed equipment at the wellpad are exempt from Rule 13 permitting. EQT will continue to comply with the applicable emission limitations in the PEN-13 pad's current permit.

EQT appreciates WVDEP's review of this permit determination request. If you have any questions or comments about the attached information or have additional information requirements, please feel free to contact me at (412) 395-3699.

Sincerely,

Alex Bosiljevac
EQT Corporation

cc: Robert Keatley
James Robertson

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF AIR QUALITY 601 57th Street, SE Charleston, WV 25304 Phone: (304) 926-0475 www.dep.wv.gov/daq	***PERMIT DETERMINATION FORM (PDF)*** **FOR AGENCY USE ONLY:** PLANT I.D. # _____ PDF # _____ PERMIT WRITER: _____

1. NAME OF APPLICANT (AS REGISTERED WITH THE WV SECRETARY OF STATE'S OFFICE):

EQT Production Company

2. NAME OF FACILITY (IF DIFFERENT FROM ABOVE): PEN-13 Pad	3. NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM (**NAICS**) CODE: 211111
4A. MAILING ADDRESS: 625 Liberty Ave, Suite 1700 Pittsburgh PA, 15222	4B. PHYSICAL ADDRESS: Co Rd 7/24, Pennsboro, WV

5A. DIRECTIONS TO FACILITY (PLEASE PROVIDE **MAP** AS **ATTACHMENT A**):

From Pennsboro, WV. Head southeast on Collins Avenue toward Broadway street. Turn right on Broadway Street. Turn left onto Masonic avenue. Turn right onto Main street. Turn left onto E Myles Avenue and continue for 0.7 miles. Turn right onto WV-74 S/Pullman Drive and continue for 2.1 miles. Turn right onto Co Rd 7/24 and continue for 0.2 miles. Access road will be on the right.

5B. NEAREST ROAD: Co Rd 7/24	5C. NEAREST CITY OR TOWN: Pennsboro	5D. COUNTY: Ritchie
5E. UTM NORTHING (KM): 4,345.223	5F. UTM EASTING (KM): 502.967	5G. UTM ZONE: 17
6A. INDIVIDUAL TO CONTACT IF MORE INFORMATION IS REQUIRED: Alex Bosiljevac		6B. TITLE: Environmental Coordinator
6C. TELEPHONE: 412-395-3699	6D. FAX:	6E. E-MAIL: ABosiljevac@eqt.com

7A. DAQ PLANT I.D. NO. (FOR AN EXISTING FACILITY ONLY): 085-00028	7B. PLEASE LIST ALL CURRENT 45CSR13, 45CSR14, 45CSR19 AND/OR TITLE V (45CSR30) PERMIT NUMBERS ASSOCIATED WITH **THIS** PROCESS (FOR AN EXISTING FACILITY ONLY): R13-3128

7C. IS THIS PDF BEING SUBMITTED AS THE RESULT OF AN ENFORCEMENT ACTION? IF YES, PLEASE LIST:

CO-R13-E-2016-04

8A. TYPE OF EMISSION SOURCE (CHECK ONE): ☐ **NEW SOURCE** ☒ **ADMINISTRATIVE UPDATE** ☐ **MODIFICATION** ☐ **OTHER** (PLEASE EXPLAIN IN 11B)	8B. IF ADMINISTRATIVE UPDATE, DOES DAQ HAVE THE APPLICANT'S CONSENT TO UPDATE THE EXISTING PERMIT WITH THE INFORMATION CONTAINED HEREIN? ☒ **YES** ☐ **NO**

9. IS *DEMOLITION* OR PHYSICAL *RENOVATION* AT AN EXISTING FACILITY INVOLVED? ☐ **YES** ☒ **NO**

10A. DATE OF ANTICIPATED INSTALLATION OR CHANGE: TBD	10B. DATE OF ANTICIPATED START-UP: TBD

11A. PLEASE PROVIDE A **DETAILED PROCESS FLOW DIAGRAM** SHOWING EACH PROPOSED OR MODIFIED PROCESS EMISSION POINT AS **ATTACHMENT B**.

11B. PLEASE PROVIDE A **DETAILED PROCESS DESCRIPTION** AS **ATTACHMENT C**.

12. PLEASE PROVIDE **MATERIAL SAFETY DATA SHEETS (MSDS)** FOR ALL MATERIALS PROCESSED, USED OR PRODUCED AS **ATTACHMENT D**. FOR CHEMICAL PROCESSE, PLEASE PROVIDE A MSDS FOR EACH COMPOUND EMITTED TO AIR. - **Not Applicable**

13A. **REGULATED AIR POLLUTANT EMISSIONS:**

⇒ **FOR A NEW FACILITY**, PLEASE PROVIDE PLANT WIDE EMISSIONS BASED ON THE POTENTIAL TO EMIT (PTE) FOR THE FOLLOWING AIR POLLUTANTS INCLUDING ALL PROCESSES.

⇒ **FOR AN EXISTING FACILITY**, PLEASE PROVIDE THE PROPOSED CHANGE IN EMISSIONS BASED ON THE PTE OF ALL PROCESS CHANGES FOR THE FOLLOWING AIR POLLUTANTS.

PTE FOR A GIVEN POLLUTANT IS TYPICALLY BEFORE AIR POLLUTION CONTROL DEVICES AND IS COLLECTED BASED ON THE MAXIMUM DESIGN CAPACITY OF PROCESS EQUIPMENT.

POLLUTANT	HOURLY PTE (LB/HR)	YEARLY PTE (TON/YR) (HOURLY PTE MULTIPLIED BY 8760 HR/YR) DIVIDED BY 2000 LB/TON
PM	0.00	0.00
PM_{10}	0.00	0.00
VOCs	0.19	0.85
CO	0.00	0.00
NO_x	0.00	0.00
SO_2	0.00	0.00
Pb		
HAPs (AGGREGATE AMOUNT)	0.002	0.010
TAPs (INDIVIDUALLY)*		
OTHER (INDIVIDUALLY)*		

* ATTACH ADDITIONAL PAGES AS NEEDED

13B. PLEASE PROVIDE ALL **SUPPORTING CALCULATIONS** AS **ATTACHMENT E**.

CALCULATE AN HOURLY AND YEARLY PTE OF EACH PROCESS EMISSION POINT (SHOWN IN YOUR DETAILED PROCESS FLOW DIAGRAM) FOR ALL AIR POLLUTANTS LISTED ABOVE INCLUDING INDIVIDUAL HAP'S (LISTED IN SECTION 112[b] OF THE 1990 CAAA), TAP'S (LISTED IN 45CSR27), AND OTHER AIR POLLUTANTS (E.G. POLLUTANTS LISTED IN TABLE 45-13A OF 45CSR13, MINERAL ACIDS PER 45CSR7, ETC.).

14. **CERTIFICATION OF DATA**

I, KENNETH KIRK (*TYPE NAME*) ATTEST THAT ALL THE REPRESENTATIONS CONTAINED IN THIS APPLICATION, OR APPENDED HERETO, ARE TRUE, ACCURATE, AND COMPLETE TO THE BEST OF MY KNOWLEDGE BASED ON INFORMATION AND BELIEF AFTER REASONABLE INQUIRY, AND THAT I AM A ***RESPONSIBLE OFFICIAL*** (*PRESIDENT, VICE PRESIDENT, SECRETARY OR TREASURER, GENERAL PARTNER OR SOLE PROPRIETOR*) OF THE APPLICANT.

SIGNATURE OF RESPONSIBLE OFFICIAL: _____

TITLE: Executive Vice President DATE: 4 / 28 / 2016

** THE DEFINITION OF THE PHRASE '***RESPONSIBLE OFFICIAL***' CAN BE FOUND AT 45CSR13, SECTION 2.23.

NOTE: PLEASE CHECK ENCLOSED ATTACHMENTS:

☒ **ATTACHMENT A** ☒ **ATTACHMENT B** ☒ **ATTACHMENT C** ☐ **ATTACHMENT D (Not applicable)** ☒ **ATTACHMENT E**

RECORDS ON ALL CHANGES ARE REQUIRED TO BE KEPT AND MAINTAINED ON-SITE FOR TWO (2) YEARS.

THE PERMIT DETERMINATION FORM WITH THE INSTRUCTIONS CAN BE FOUND ON DAQ'S PERMITTING SECTION WEB SITE:

www.dep.wv.gov/daq

ATTACHMENT A – AREA MAP

ATTACHMENT A: AREA MAP

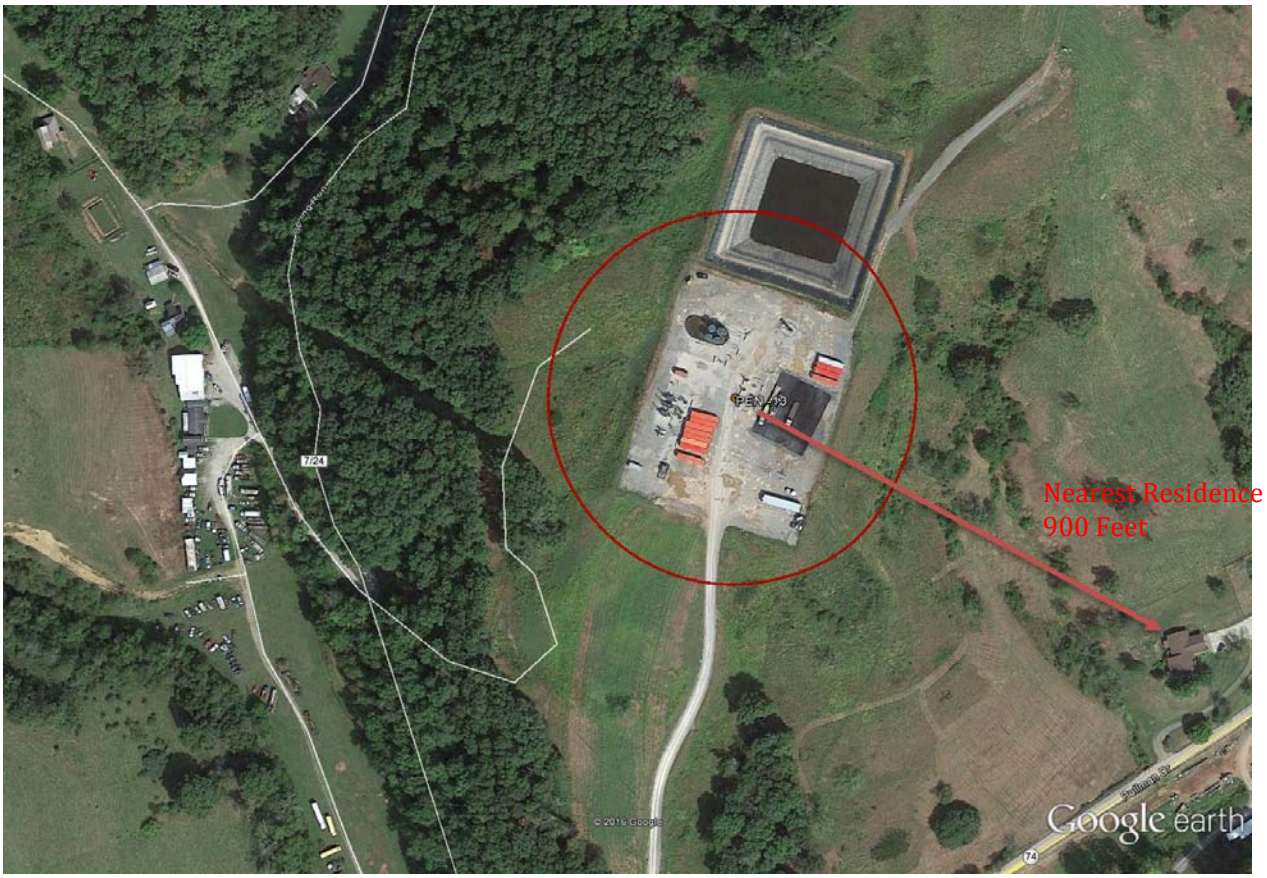
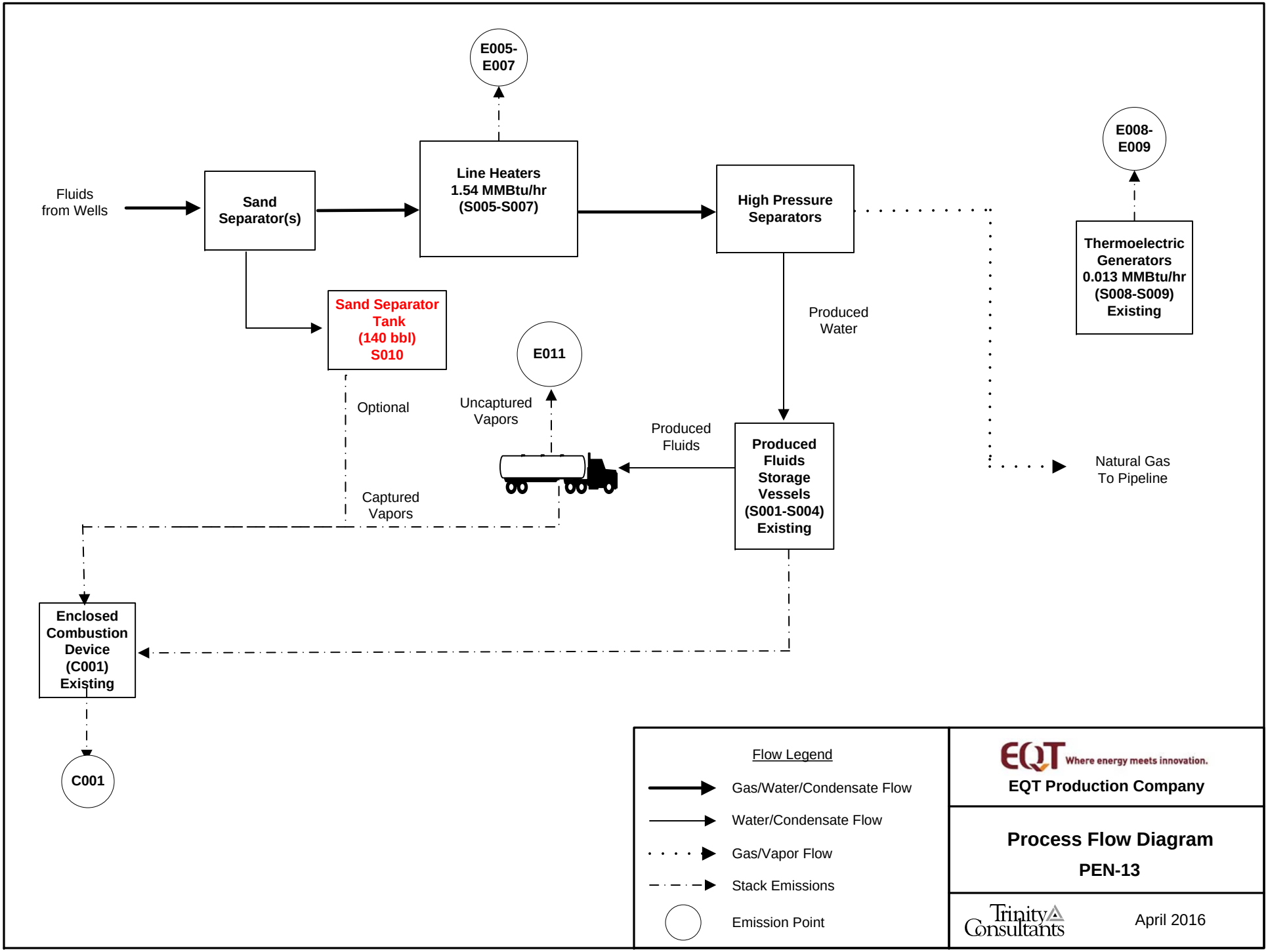


Figure 1 - Map of PEN-13 Location

UTM Northing (KM):	4,345.223
UTM Easting (KM):	502.967
Elevation:	~930 ft

ATTACHMENT B – PROCESS FLOW DIAGRAM


E005-
E007
Fluids
from Wells
Sand
Separator(s)
Line Heaters
1.54 MMBtu/hr
(S005-S007)
High Pressure
Separators
E008-
E009
Thermoelectric
Generators
0.013 MMBtu/hr
(S008-S009)
Existing
Sand Separator
Tank
(140 bbl)
S010
Produced
Water
E011
Optional
Uncaptured
Vapors
Produced
Fluids
Produced
Fluids
Storage
Vessels
(S001-S004)
Existing
Natural Gas
To Pipeline
Captured
Vapors
Enclosed
Combustion
Device
(C001)
Existing
C001
Flow Legend
Gas/Water/Condensate Flow
Water/Condensate Flow
Gas/Vapor Flow
Stack Emissions
Emission Point
EQT Where energy meets innovation.
EQT Production Company
Process Flow Diagram
PEN-13
Trinity Consultants
April 2016

ATTACHMENT C – PROCESS DESCRIPTION

ATTACHMENT C: PROCESS DESCRIPTION

This permit determination request involves the installation of a proposed storage tank (S010) at an existing natural gas production wellpad (PEN-13). The wellpad consists of three (3) wells, each with the same basic operation.

The incoming gas/liquid stream from the underground well will pass through a sand separator, where sand, water, and residual solids are displaced and transferred to the sand separator tank (S010). The gas stream will then pass through a line heater (S005-S007) to raise/maintain temperature. The stream will then pass through a high pressure separator, which will separate gas (natural gas from the separator is sent to the sales line) from liquids (condensate and produced water). The liquids are then transferred to the produced fluid storage vessels (S001-S004).

Emissions from the storage vessels are controlled by an enclosed combustor (C001). Once the tanks are filled, the contents are loaded into trucks for transport. EQT utilizes vapor balancing in the truck loading operations, which means the vapors displaced by the filling of tanker trucks (S011) are routed back into the battery of tanks and ultimately to the combustor. Facility electricity is provided by thermoelectric generators (S008-S009).

ATTACHMENT E – EMISSION CALCULATIONS

Company Name: EQT Production, LLC
Facility Name: PEN-13 Wellpad
Project Description: Permit Determination

Facility-Wide Emission Summary - Controlled

Wells	3	per pad
Storage Tanks	4	per pad
Sand Separator Tank	1	per pad
Line Heaters	3	per pad
TEGs	2	per pad
Dehy Reboiler	0	per pad
Glycol Dehy	0	per pad
Dehy Drip Tank	0	per pad
Dehy Combustor	0	per pad
Compressor	0	per pad
High Pressure Separator	3	per pad
Low Pressure Separator	0	per pad
Vapor Recovery Unit	0	per pad
Tank Combustor	1	per pad
Length of lease road	1,385	feet

Carbon equivalent emissions (CO_2e) are based on the following Global Warming Potentials (GWP) from 40 CFR Part 98, Table A-1:

CO_2	1
CH_4	25
N_2O	298

Emission Point ID #	Emission Source ID#s	Emission Source Description	NO_X lb/hr	NO_X tpy	CO lb/hr	CO tpy	VOC lb/hr	VOC tpy	SO_2 lb/hr	SO_2 tpy	PM_{10} lb/hr	PM_{10} tpy	$PM_{2.5}$ lb/hr	$PM_{2.5}$ tpy	CO_2e lb/hr	CO_2e tpy
C001-C002	S001-S004	Storage Vessels	---	---	---	---	4.85	21.23	---	---	---	---	---	---	29.32	128.42
C001-C002	S011	Captured Liquid Loading	---	---	---	---	1.66	0.43	---	---	---	---	---	---	---	---
C001	C001	Tank Combustor	1.15	5.03	0.96	4.22	2.8E-04	1.2E-03	0.01	0.03	0.09	0.38	0.09	0.38	1,371.10	6,005.43
C001	**S001-S004, S011, C001**	**---**	**1.15**	**5.03**	**0.96**	**4.22**	**6.51**	**21.66**	**0.01**	**0.03**	**0.09**	**0.38**	**0.09**	**0.38**	**1,400.42**	**6,133.85**
E005	S005	Line Heater	0.15	0.64	0.12	0.54	0.01	0.04	8.8E-04	3.9E-03	0.01	0.05	0.01	0.05	180.18	789.20
E006	S006	Line Heater	0.15	0.64	0.12	0.54	0.01	0.04	8.8E-04	3.9E-03	0.01	0.05	0.01	0.05	180.18	789.20
E007	S007	Line Heater	0.15	0.64	0.12	0.54	0.01	0.04	8.8E-04	3.9E-03	0.01	0.05	0.01	0.05	180.18	789.20
E008	S008	TEG	1.2E-03	5.4E-03	1.0E-03	4.5E-03	6.8E-05	3.0E-04	7.4E-06	3.2E-05	9.4E-05	4.1E-04	9.4E-05	4.1E-04	1.52	6.64
E009	S009	TEG	1.2E-03	5.4E-03	1.0E-03	4.5E-03	6.8E-05	3.0E-04	7.4E-06	3.2E-05	9.4E-05	4.1E-04	9.4E-05	4.1E-04	1.52	6.64
E010	S010	Sand Separator Tank	---	---	---	---	0.19	0.85	---	---	---	---	---	---	2.18	9.58
E011	S011	Uncaptured Liquid Loading	---	---	---	---	35.61	9.26	---	---	---	---	---	---	---	---
---	---	Fugitives	---	---	---	---	---	10.12	---	---	---	---	---	---	---	140.90
---	---	Haul Roads	---	---	---	---	---	---	---	---	---	0.71	---	0.07	---	---
Facility Total			1.59	6.97	1.34	5.85	42.34	42.00	0.01	0.04	0.12	1.24	0.12	0.60	1,946.18	8,665.20
Facility Total (excluding fugitive emissions)			1.59	6.97	1.34	5.85	6.73	22.62	0.01	0.04	0.12	0.53	0.12	0.53	1,946.18	8,524.30

Company Name: EQT Production, LLC
Facility Name: PEN-13 Wellpad
Project Description: Permit Determination

Facility-Wide Emission Summary - Controlled

Emission Point ID #	Emission Source ID#s	Emission Source Description	Formaldehyde		Benzene		Toluene		Ethylbenzene		Xylenes		n-Hexane		Total HAP	
			lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
C001-C002	S001-S004	Storage Vessels	---	---	5.2E-03	2.3E-02	9.0E-03	4.0E-02	4.2E-04	1.8E-03	2.0E-03	8.6E-03	0.20	0.85	0.39	1.71
C001-C002	S011	Captured Liquid Loading	---	---	1.0E-03	2.7E-04	1.8E-03	4.7E-04	9.0E-05	2.3E-05	4.1E-04	1.1E-04	0.06	0.02	0.12	0.03
C001	C001	Tank Combustor	---	---	---	---	---	---	---	---	---	---	---	---	---	---
C001	**S001-S004, S011, C001**	**---**	---	---	**6.3E-03**	**2.3E-02**	**1.1E-02**	**4.0E-02**	**5.1E-04**	**1.9E-03**	**2.4E-03**	**8.7E-03**	**0.26**	**0.87**	**0.51**	**1.74**
E005	S005	Line Heater	1.1E-04	4.8E-04	3.1E-06	1.3E-05	5.0E-06	2.2E-05	---	---	---	---	2.6E-03	0.01	2.8E-03	0.01
E006	S006	Line Heater	1.1E-04	4.8E-04	3.1E-06	1.3E-05	5.0E-06	2.2E-05	---	---	---	---	2.6E-03	0.01	2.8E-03	0.01
E007	S007	Line Heater	1.1E-04	4.8E-04	3.1E-06	1.3E-05	5.0E-06	2.2E-05	---	---	---	---	2.6E-03	0.01	2.8E-03	0.01
E008	S008	TEG	9.3E-07	4.1E-06	2.6E-08	1.1E-07	4.2E-08	1.8E-07	---	---	---	---	2.2E-05	9.7E-05	2.3E-05	1.0E-04
E009	S009	TEG	9.3E-07	4.1E-06	2.6E-08	1.1E-07	4.2E-08	1.8E-07	---	---	---	---	2.2E-05	9.7E-05	2.3E-05	1.0E-04
E010	S010	Sand Separator Tank	---	---	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	1.0E-03	<0.01	2.0E-03	1.0E-02
E011	S011	Uncaptured Liquid Loading	---	---	0.02	0.01	0.04	0.01	1.9E-03	5.0E-04	8.9E-03	2.3E-03	1.30	0.34	2.50	0.65
---	---	Fugitives	---	---	---	0.01	---	0.02	---	2.8E-03	---	0.02	---	0.21	---	0.65
---	---	Haul Roads	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Facility Total			3.3E-04	1.5E-03	0.03	0.04	0.05	0.07	2.4E-03	5.1E-03	0.01	0.03	1.57	1.45	3.01	3.09
Facility Total (excluding fugitive emissions)			3.3E-04	1.5E-03	6.3E-03	0.02	1.1E-02	4.0E-02	5.1E-04	1.9E-03	2.4E-03	8.7E-03	0.26	0.91	0.52	1.79

Company Name: EQT Production, LLC
Facility Name: PEN-13 Wellpad
Project Description: Permit Determination

Sand Separator Tank

Throughput Parameter	Value	Units
Tank Capacity	5,880	gallons
Operational Hours	8,760	hrs/yr
Throughput	280	bbl/month
Percent Produced Water	50%	
Total Produced Water Throughput	140	bbl/month

[1] Conservatively assumes 2 turnovers/month of sand and produced water.

Description	Potential Throughput (gal/yr)
Produced Water and Sand	141,120

Sand Separator Tank (140 bbl) - Uncontrolled *(Per tank)* [2, 3]

Constituent	Total Emissions [1] lb/hr	tpy
Methane	0.087	0.383
Ethane	0.098	0.428
Propane	0.108	0.475
Isobutane	0.023	0.099
n-Butane	0.043	0.187
Isopentane	0.008	0.033
n-Pentane	0.007	0.030
Hexanes	0.002	0.010
Heptanes	0.001	0.005
Octane	<0.001	<0.001
Nonane	<0.001	<0.001
Decane	<0.001	<0.001
Benzene	<0.001	<0.001
Toluene	<0.001	<0.001
Ethylbenzene	<0.001	<0.001
Xylenes	<0.001	<0.001
n-Hexane	0.001	0.006
2,2,4-Trimethylpentane	0.001	0.004
Total HC Emissions:	0.379	1.661
Total VOC Emissions:	0.194	0.849
Total HAP Emissions:	0.002	0.010

[2] E&P TANK 2.0 calculates working, breathing and flashing losses and reports the sum as one total.
[3] E&P TANK v2.0 emission calculations are based on PEN-13 sample from 03/18/2014.

Company Name: EQT Production, LLC
Facility Name: PEN-13 Wellpad
Project Description: Permit Determination

Sand Separator Tank

Sand Separator Tank (140 bbl) - Controlled *(Per tank)*

Constituent	Total Emissions lb/hr	Total Emissions tpy
Methane	0.087	0.383
Ethane	0.098	0.428
Propane	0.108	0.475
Isobutane	0.023	0.099
n-Butane	0.043	0.187
Isopentane	0.008	0.033
n-Pentane	0.007	0.030
Hexanes	0.002	0.010
Heptanes	0.001	0.005
Octane	<0.001	<0.001
Nonane	<0.001	<0.001
Decane	<0.001	<0.001
Benzene	<0.001	<0.001
Toluene	<0.001	<0.001
Ethylbenzene	<0.001	<0.001
Xylenes	<0.001	<0.001
n-Hexane	0.001	0.006
2,2,4-Trimethylpentane	0.001	0.004
Total Emissions:	0.380	1.663
Total VOC Emissions:	0.194	0.849
Total HAP Emissions:	0.002	0.010

```
*****************************************************************************************
*    Project Setup Information                                                          *
*****************************************************************************************
Project File            : Z:\Client\EQT Corporation\West Virginia\WV Wells\163901.0058 WV Wells 2016\PEN 13\02
Draft\Att S Emission Calcs\01 E&P TANK\20160310_EQT_PEN 13 _Sand Separator Tank.ept
Flowsheet Selection      : Oil Tank with Separator
Calculation Method       : RVP Distillation
Control Efficiency       : 0.0%
Known Separator Stream   : Low Pressure Oil
Entering Air Composition  : No

Filed Name               : PEN 13 Wellpad
Well ID                  : PEN 13 Wellpad Sample
Date                     : 2016.03.10


*****************************************************************************************
*    Data Input                                                                         *
*****************************************************************************************

Separator Pressure       : 690.00[psig]
Separator Temperature    : 60.00[F]
Ambient Pressure         : 14.70[psia]
Ambient Temperature      : 55.00[F]
C10+ SG                  : 0.7664
C10+ MW                  : 142.22

-- Low Pressure Oil ----------------------------------------------------------------
  No.   Component          mol %
  1     H2S                0.0000
  2     O2                 0.0000
  3     CO2                0.0680
  4     N2                 0.0000
  5     C1                 23.4510
  6     C2                 13.9720
  7     C3                 10.7440
  8     i-C4               2.5730
  9     n-C4               7.3420
  10    i-C5               3.4450
  11    n-C5               4.6880
  12    C6                 4.4890
  13    C7                 7.4170
  14    C8                 1.7320
  15    C9                 4.3220
  16    C10+               5.4870
  17    Benzene            0.0750
  18    Toluene            0.4263
  19    E-Benzene          0.0450
  20    Xylenes            0.1880
  21    n-C6               3.6330
  22    224Trimethylp      5.9060
```

-- Sales Oil ----------
Production Rate : 0.1[bbl/day]
Days of Annual Operation : 365 [days/year]
API Gravity : 59.11
Reid Vapor Pressure : 10.60[psia]

****
* Calculation Results *
****

-- Emission Summary ----------

Item	Uncontrolled [ton/yr]	Uncontrolled [lb/hr]	Controlled [ton/yr]	Controlled [lb/hr]
Total HAPs	0.010	0.002	0.010	0.002
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Total HC	1.661	0.379	1.661	0.379
VOCs, C2+	1.277	0.292	1.277	0.292
VOCs, C3+	0.849	0.194	0.849	0.194

Uncontrolled Recovery Info.
Vapor 114.3300 x1E-3 [MSCFD]
HC Vapor 114.1900 x1E-3 [MSCFD]
GOR 1143.30 [SCF/bbl]

-- Emission Composition ----------

No	Component	Uncontrolled [ton/yr]	Uncontrolled [lb/hr]	Controlled [ton/yr]	Controlled [lb/hr]
1	H2S	0.000	0.000	0.000	0.000
2	O2	0.000	0.000	0.000	0.000
3	CO2	0.003	0.001	0.003	0.001
4	N2	0.000	0.000	0.000	0.000
5	C1	0.383	0.087	0.383	0.087
6	C2	0.428	0.098	0.428	0.098
7	C3	0.475	0.108	0.475	0.108
8	i-C4	0.099	0.023	0.099	0.023
9	n-C4	0.187	0.043	0.187	0.043
10	i-C5	0.033	0.008	0.033	0.008
11	n-C5	0.030	0.007	0.030	0.007
12	C6	0.010	0.002	0.010	0.002
13	C7	0.005	0.001	0.005	0.001
14	C8	0.000	0.000	0.000	0.000
15	C9	0.000	0.000	0.000	0.000
16	C10+	0.000	0.000	0.000	0.000
17	Benzene	0.000	0.000	0.000	0.000
18	Toluene	0.000	0.000	0.000	0.000
19	E-Benzene	0.000	0.000	0.000	0.000
20	Xylenes	0.000	0.000	0.000	0.000
21	n-C6	0.006	0.001	0.006	0.001
22	224Trimethylp	0.004	0.001	0.004	0.001
	Total	1.663	0.380	1.663	0.380

-- Stream Data ----------

No.	Component	MW	LP Oil	Flash Oil	Sale Oil	Flash Gas	W&S Gas	Total Emissions

			mol %	mol %	mol %	mol %	mol %	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	0.0680	0.0061	0.0000	0.1441	0.0367	0.1259
4	N2	28.01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	C1	16.04	23.4510	0.4854	0.0000	51.6690	2.9261	43.4170
6	C2	30.07	13.9720	2.7768	0.0009	27.7275	16.7349	25.8665
7	C3	44.10	10.7440	7.9511	0.3764	14.1751	46.0463	19.5709
8	i-C4	58.12	2.5730	3.2903	1.9551	1.6913	10.0065	3.0991
9	n-C4	58.12	7.3420	10.6126	9.1187	3.3226	18.1273	5.8290
10	i-C5	72.15	3.4450	5.8204	6.5138	0.5259	2.3332	0.8319
11	n-C5	72.15	4.6880	8.1207	9.3035	0.4696	2.1720	0.7578
12	C6	86.16	4.4890	8.0419	9.5111	0.1230	0.6528	0.2127
13	C7	100.20	7.4170	13.4149	16.0205	0.0463	0.3106	0.0911
14	C8	114.23	1.7320	3.1396	3.7599	0.0023	0.0199	0.0053
15	C9	128.28	4.3220	7.8379	9.3932	0.0013	0.0161	0.0038
16	C10+	142.22	5.4870	9.9516	11.9285	0.0006	0.0088	0.0020
17	Benzene	78.11	0.0750	0.1349	0.1602	0.0014	0.0078	0.0025
18	Toluene	92.13	0.4263	0.7720	0.9234	0.0015	0.0107	0.0030
19	E-Benzene	106.17	0.0450	0.0816	0.0977	0.0000	0.0003	0.0001
20	Xylenes	106.17	0.1880	0.3409	0.4084	0.0001	0.0012	0.0003
21	n-C6	86.18	3.6330	6.5331	7.7536	0.0692	0.3946	0.1243
22	224Trimethylp	114.24	5.9060	10.6884	12.7750	0.0290	0.1943	0.0570

MW	60.93	88.69	97.00	26.82	46.91	30.22
Stream Mole Ratio	1.0000	0.5513	0.4599	0.4487	0.0914	0.5401
Heating Value [BTU/SCF]				1587.53	2664.77	1769.90
Gas Gravity [Gas/Air]			0.93	1.62	1.04	
Bubble Pt. @ 100F [psia]	861.35	54.64	11.12			
RVP @ 100F [psia]	252.69	34.44	10.59			

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Spec. Gravity @ 100F	0.580	0.660	0.674