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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.:	G70-A044B
Plant ID No.:	085-00022
Applicant:	EQT Production Company
Facility Name:	PEN-15 Pad
Location:	Ritchie County
NAICS Code:	211111
Application Type:	Modification
Received Date:	December 31, 2015
Engineer Assigned:	Roy F. Kees, P.E.
Fee Amount:	$500.00
Date Received:	January 11, 2016
Complete Date:	March 3, 2016
Applicant Ad Date:	January 27, 2016
Newspaper:	*The Pennsboro News*
UTM's:	Easting: 504.160 km Northing: 4,345.858 km Zone: 17
Description:	EQT proposes modifying the existing PEN-15 Pad by adding one low pressure separator with associated 1.0 MMBtu/hr heater and one VRU powered by one 110 hp Ford Natural Gas-Fired Compressor.

DESCRIPTION OF PROCESS

This project involves the construction and operation of one (1) low pressure separator and associated heater, one (1) vapor recovery unit powered by a natural gas fired engine, and one (1) thermoelectric generator.

The PEN-15 wellpad is an existing natural gas production facility that consists often (10) wells, and will have two (2) modes of operation. The first operation will have wells dedicated to a high pressure separator, while the second operation will have wells dedicated to a high pressure separator and low pressure separator.

The incoming gas stream from the underground wells passes through a sand separator, where sand, water, and residual solids are displaced and transferred to the sand separator

tank The gas then flows into a high pressure separator which separates produced fluids (water and condensate) from the gas stream. The outlet gas stream from the high pressure separator flows into the sales pipeline to be transported downstream.

For one set of wells, the liquid stream from the high pressure separator flows into a low pressure separator where it is heated via a low pressure separator heater rated at 1 MMBtu/hr to volatilize (flash oft) lighter hydrocarbons and separate condensate from water in the combined liquid stream. The flash gas from the condensate stream is recovered by the Vapor Recovery Unit (VRU), which utilizes a natural gas-fired engine driven compressor to raise the pressure of the flash gas and route it back into the natural gas pipeline. The condensate is then transferred to the condensate storage tanks and the produced water is transferred to the produced water tanks.

There will be two (2) tank batteries at the PEN-15 wellpad. The first tank battery (six [6] produced fluids tank) will support gas wells that are dedicated to a high pressure separators, and will store condensate and water combined. The second tank battery (three (3) condensate tanks and three (3) produced water tanks) will support gas wells that are dedicated to a high and low pressure separators, and will store the condensate and produced water separately.

Once the tanks are filled, the contents are loaded into trucks for transport using vapor balanced loading. Vapors from the produced water tanks, the condensate tanks and liquid loading operations will be controlled by the enclosed combustors.

At the well pad, heat is provided by line heaters and electricity is provided by thermoelectric generators.

SITE INSPECTION

The PEN-15-Pad is known to the WV DAQ. James Robertson of the Compliance and Enforcement Section conducted a full on-site inspection on December 9, 2013 and found the facility to be in compliance at the time of the inspection. There is no site inspection planned as part of this permit application.

Directions to the facility: From Pennsboro, WV go east on Old US 50 for approximately 1 mile and then turn right onto Pullman Drive (Route 74) and go approximately 1.5 miles. Turn left onto access road to the site.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Line Heaters and TEGs: Potential emissions from the line heaters, low pressure separator heater and TEGs of all criteria pollutants and HAPs are calculated using U.S. EPA's AP-42 emission factors for natural gas combustion. These calculations are based on a site-specific heat content of natural gas of 1,050 Btu/scf and a maximum design heat input. Greenhouse gas emissions are calculated according to 40 CFR 98 Subpart C, General Stationary Fuel Combustion Sources, Tables C-1 and C-2.

Storage Tanks: Emissions of VOC and HAPs from the condensate/water stored in the tanks at the facility are calculated using EPA TANKS Version 4.0.9d. Emissions for VOC and HAPs from flashing of the liquids in the storage tanks are calculated using ProMax. A condensate sample from the PEN-15 pad dated 3/25/2013 was used to estimate emissions. Maximum throughput used to estimate emissions from the storage tank is 18,576,000 gallons of per year. Emissions of NOx, SO2, CO and PM are based on four (4) vapor combustors operating.

Fugitive Equipment Leaks: Emissions of VOC and HAPs from leaking equipment components have been estimated using facility estimated component counts and types along with Table 2-4: Oil & Gas Production Operations Average Emission Factors, Protocol for Equipment Leak Emission Estimates, EPA 453/R-95-017, November 1995. Emission factors used are based on average measured total organic carbon (TOC) from component types indicated in gas service at O&G Production operations. Greenhouse gas emission from component leaks are calculated according to the procedures in 40 CFR 98 Subpart W, Petroleum and Natural Gas Systems, Section 98.233(r), Population Count and Emission Factors.

Tank Truck Loadings: Emissions of VOC and HAPs from the loading of organic liquids from storage tanks to tank truck are calculated using U.S. EPA's AP-42 Chapter 5 Section 2 factors, Transportation and Marketing of Petroleum Liquids, June 2008. The emissions were calculated using a condensate sample from a representative well #512441 on the OXF131 pad. Maximum throughput used to estimate emissions from the tank truck loading area is 18,576,000 gallons per year.

VRU Engine: Emissions from the VRU engine were calculated using manufacturer data as well as AP-42. The engine is certified under 40CFR60 Subpart JJJJ.

Table 1: Summary of Facility Emissions (tpy)

Criteria Pollutant	Storage Tanks (S001-S006, S013-S018) w/Comb. (tpy)	Sand Separator Tanks (S026-S027) (tpy)	Line Heaters (S007-S011, S019-S023, S029) (tpy)	TEG (S012, S024-S025) (tpy)	VRU Engine (S030) (tpy)	Fugitive Comp. (tpy)	Liquid Loading (tpy)	Total Emissions (tpy) (Excl. Fugitives)
NOx	26.20	--	6.82	0.02	1.06	--	--	34.12
CO	22.00	--	5.75	0.01	2.12	--	--	29.89
PM Total	1.98	--	0.53	--	0.07	--	--	2.58
PM_{10} Total	1.98	--	0.53	--	0.07	--	--	2.58
$PM_{2.5}$ Total	1.98	--	0.53	--	0.07	--	--	2.58
SO_2	0.16	--	0.04	--	--	--	--	0.20
VOCs	23.22	0.40	0.42	--	0.81	26.64	16.38	41.20
CO_2e	31438	1.40	8404.98	19.94	394.99	953.98	--	40258.52
Total HAPs	1.85	0.02	0.11	--	0.11	1.13	1.07	3.22

Note: Particulate Matter emissions for PM2.5 were conservatively assumed the same as PM to estimate facility PTE (Potential to Emit) totals.

REGULATORY APPLICABILITY

The following rules and regulations apply to the facility.

45CSR2 To Prevent and Control Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers

This rules establishes emission limitations for smoke and particulate matter which are discharged from fuel burning units. Per §45-2-11, any fuel burning unit(s) having a heat input under ten (10) million Btu/hr will be exempt from sections 4, 5, 6, 8 and 9.

The facility has ten (10)1.54 MMBtu/hr Line Heaters, one (1) 1.0 mmBtu/hr LPS Heater and three (3) 0.013 MMBtu/hr Thermoelectric Generators. The heaters, thermoelectric generators and reboiler will be subject to the opacity requirements set forth in section §45-2-3 of this rule.

The facility will demonstrate compliance with this rule by conducting monthly visible emission checks in accordance with 40 CFR 60, Appendix A, Method 9 at the request of the Director. The facility will be required to conduct an initial and monthly visual emission checks at the facility to demonstrate compliance with this rule using Method 22.

45CSR4 To Prevent and Control the Discharge of Air Pollutants Into the Open Air Which Causes or Contributes to an Objectionable Odor or Odors

This rule is designed to prevent and control the discharge of pollutants into the open air which causes or contributes to an objectionable odor or odors.

No person shall be considered in violation of this rule unless notified that he is discharging an air pollutant or air pollutants which causes or contributes to an objectionable odor.

45CSR6 Control of Air Pollution from Combustion of Refuse

This rule establishes emission standards for particulate matter and requirements for particulate matter and requirements for activities involving incineration of refuse which are not subject to, or are exempted from regulation under a federal counterpart for specific combustion sources. This rule also prohibits open burning and sets forth the registration, permitting, reporting, testing, emergency, natural disaster and exemption provisions for activities involving the combustion of refuse and land clearing debris.

The facility has four (4) vapor combustors for controlling the working/breathing/flashing emissions from the condensate/produced water storage tanks and dehy drip tank. The vapor combustors must meet the requirements for the emission standards set forth in section 4.1 of this rule, were the allowable particulate matter emission rate to be discharged is determined below.

Emissions (lb/hr) = F x Incinerator Capacity (tons/hr)
Where, the factor, F, is as indicated in Table I below:
Table I: Factor, F, for Determining Maximum
Allowable Particulate Emissions.
Incinerator Capacity Factor F
A. Less than 15,000 lbs/hr 5.43
B. 15,000 lbs/hr or greater 2.72

VOC emissions to the incinerators are 500 lbs/hr maximum or 0.25 tons/hr, each.

Emissions (lb/hr) = 5.43 x 0.25 tons/hr = 1.36 lb/hr

The hourly particulate matter emission rate from each combustor is 0.37 lb/hr. The facility's proposed combustors will meet the emission requirements of this rule. The facility will demonstrate compliance by maintaining and operating the combustors properly.

The vapor combustors must meet the visible emissions requirements of this rule, which limits the combustor to 20% opacity during operation per section 4.3 of this rule. Since particulate matter is expected to be emitted at a negligible rate, the vapor combustors should meet the requirements of this section. The permittee will be required to operate the vapor combustors according to manufacturer specifications in order to maintain a smokeless operation. The permittee will also be required to conduct a Method 22 opacity check upon startup and monthly checks of the vapor combustors and Method 9 opacity checks upon request of the Director.

45CSR13 Permits for Construction, Modification, Relocation, and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permits, Permission to Commence Construction, and Procedures for Evaluation

The purpose of this rule is to set forth the procedures for stationary source reporting, and the criteria for obtaining a permit to construct and operate a new stationary source which is not a major stationary source, to modify a non-major stationary source, to make modifications which are not major modifications to an existing major stationary source, to relocate non-major stationary sources within the state of West Virginia, and to set forth procedures to allow facilities to commence construction in advance of permit issuance. Such construction, modification, relocation and operation without a required permit is a violation of this rule. This rule also establishes the requirements for obtaining an administrative update to an existing permit, a temporary permit or a general permit registration, and for filing notifications and maintaining records of changes not otherwise subject to the permit requirements of this rule. This rule does not apply to nonroad engines, nonroad vehicles, motor vehicles, or other emission sources regulated under Subchapter II of the federal Clean Air Act; provided, however that the Secretary may regulate such sources pursuant to another rule promulgated for that purpose.

The facility has the potential to emit greater than 6 pph and 10 tpy of VOC (uncontrolled) from the storage tanks. The facility is subject the permitting requirements under this regulation. The applicant has filed a permit application with the agency and published a public notice in the local paper per the requirements of §45-13-8.3. The facility published the Class I Legal Advertisement in *The Pennsboro News on January 27, 2016*

45CSR22 Air Quality Management Fee Program

This rule establishes a program to collect fees for certificates to operate and for permits to construct, modify or relocate sources of air pollution. Funds collected from these fees will be used to supplement the Director's budget for the purpose of maintaining an effective air quality management program.

The facility has paid a General Permit Registration modification fee of $500.

40 CFR 60 Subpart OOOO Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution

This subpart applies to the applicable provisions of this subpart if you are the owner or operator of one or more of the onshore affected facilities listed in paragraphs (a) through (g) of this section for which you commence construction, modification or reconstruction after August 23, 2011.

(a) Each gas well affected facility, which is a single natural gas well.

The pad consist of ten (10) natural gas wells. The wells were constructed after the August 23, 2011 applicability date. The construction of the facility will begin in November 2013. Therefore, the gas wells located at the facility will be subject to the requirements of this subpart.

(b) Each centrifugal compressor affected facility, which is a single centrifugal compressor using wet seals that is located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment. A centrifugal compressor located at a well site, or an adjacent well site and servicing more than one well site, is not an affected facility under this subpart.

The facility is not proposing the construction of a centrifugal compressor. Therefore, this subpart doesn't apply.

(c) Each reciprocating compressor affected facility, which is a single reciprocating compressor located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment. A reciprocating compressor located at a well site, or an adjacent well site and servicing more than one well site, is not an affected facility under this subpart.

The facility is not proposing the construction of a reciprocating compressor. Therefore, this subpart doesn't apply.

(d)

(1) For the oil production segment (between the wellhead and the point of custody transfer to an oil pipeline), each pneumatic controller affected facility, which is a single continuous bleed natural gas-driven pneumatic controller operating at a natural gas bleed rate greater than 6 scfh.

(2) For the natural gas production segment (between the wellhead and the point of custody transfer to the natural gas transmission and

storage segment and not including natural gas processing plants), each pneumatic controller affected facility, which is a single continuous bleed natural gas-driven pneumatic controller operating at a natural gas bleed rate greater than 6 scfh.

(3) For natural gas processing plants, each pneumatic controller affected facility, which is a single continuous bleed natural gas-driven pneumatic controller.

The facility is proposing approximately fifty (50) pneumatic devices at the site (see fugitive emissions summary). The facility has stated that the natural gas bleed rate will not exceed 6 scfh. Therefore, the facility is not subject to the requirements of this subpart.

(e) Each storage vessel affected facility, which is a single storage vessel, located in the oil and natural gas production segment, natural gas processing segment or natural gas transmission and storage segment. 40CFR60 Subpart OOOO defines a storage vessel as a unit that is constructed primarily of nonearthen materials (such as wood, concrete, steel, fiberglass, or plastic) which provides structural support and is designed to contain an accumulation of liquids or other materials. The following are not considered storage vessels:

- Vessels that are skid-mounted or permanently attached to something that is mobile (such as trucks, railcars, barges or ships), and are intended to be located at a site for less than 180 consecutive days. If the source does not keep or are not able to produce records, as required by §60.5420(c)(5)(iv), showing that the vessel has been located at a site for less than 180 consecutive days, the vessel described herein is considered to be a storage vessel since the original vessel was first located at the site.
- Process vessels such as surge control vessels, bottoms receivers or knockout vessels.
- Pressure vessels designed to operate in excess of 204.9 kilpascals and without emissions to the atmosphere.

This rule requires that the permittee determine the VOC emission rate for each storage vessel affected facility utilizing a generally accepted model or calculation methodology within 30 days of startup, and minimize emissions to the extent practicable during the 30 day period using good engineering practices. For each storage vessel affected facility that emits more than 6 tpy of VOC, the permittee must reduce VOC emissions by 95% or greater within 60 days of startup. The compliance date for applicable storage vessels is October 15, 2013.

The facility is proposing twelve (12) condensate storage vessels at the wellpad. These (12) twelve condensate storage vessels are considered Group 2 storage vessels. Group 2 storage vessels means a storage vessel is constructed after April 12, 2013. Construction of the proposed facility is planned in November 2013. The facility has estimated uncontrolled emissions from the storage vessels and each storage vessels emissions exceed an emission rate of 6 tpy. The facility is proposing to install two (2) enclosed vapor combustors onsite to control emissions from the storage vessels. The vapor combustors will have a control efficiency of 95%, each. Since the facility is proposing to install vapor combustors to control VOC emissions from the storage vessels and obtain a federally enforceable limit in their permit, the facility will not be required to reduce emissions by 95% or greater within 60 days of startup, as required by this regulation. Controlled VOC emissions from the tanks will be less than 6 tpy (each), therefore, the facility is not required by this subpart to reduced emissions further.

(f) The group of all equipment, except compressors, within a process unit is an affected facility.

(1) Addition or replacement of equipment for the purpose of process improvement that is accomplished without a capital expenditure shall not by itself be considered a modification under this subpart.

(2) Equipment associated with a compressor station, dehydration unit, sweetening unit, underground storage vessel, field gas gathering system, or liquefied natural gas unit is covered by §§ 60.5400, 60.5401, 60.5402, 60.5421, and 60.5422 of this subpart if it is located at an onshore natural gas processing plant. Equipment not located at the onshore natural gas processing plant site is exempt from the provisions of §§ 60.5400, 60.5401, 60.5402, 60.5421, and 60.5422 of this subpart.

(3) The equipment within a process unit of an affected facility located at onshore natural gas processing plants and described in paragraph (f) of this section are exempt from this subpart if they are subject to and controlled according to subparts VVa, GGG or GGGa of this part.

The PEN-15 is not an onshore natural gas processing plant. Therefore, the requirements of this subpart do not apply.

(g) Sweetening units located at onshore natural gas processing plants that process natural gas produced from either onshore or offshore wells.

(1) Each sweetening unit that processes natural gas is an affected facility; and

(2) Each sweetening unit that processes natural gas followed by a

sulfur recovery unit is an affected facility.

(3) Facilities that have a design capacity less than 2 long tons per day (LT/D) of hydrogen sulfide (H2 S) in the acid gas (expressed as sulfur) are required to comply with recordkeeping and reporting requirements specified in § 60.5423(c) but are not required to comply with §§ 60.5405 through 60.5407 and §§ 60.5410(g) and 60.5415(g) of this subpart.

(4) Sweetening facilities producing acid gas that is completely reinjected into oil-or-gas-bearing geologic strata or that is otherwise not released to the atmosphere are not subject to §§ 60.5405 through 60.5407, 60.5410(g), 60.5415(g), and 60.5423 of this subpart.

The PEN-15 is not a sweetening facility. Therefore, the requirements of this subpart do not apply.

40CFR60 Subpart JJJJ (Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (SI ICE))

40CFR60.4230 states that a source that commenced construction after June 12, 2006 whose SI ICE was less than 500 hp and was manufactured on or after July 1, 2008 is subject to this rule. EQT has proposed to install one (1) 110 HP Ford SI ICE. Since the SI ICE that EQT will install was manufactured after June 2012, EQT is subject to this rule. However, since the engine is certified, no performance testing will be required.

The following rules and regulations do not apply.

45CSR10 To Prevent and Control Air Pollution from the Emission of Sulfur Oxides

The purpose of this rule is to prevent and control air pollution from the emission of sulfur oxides. Per §45-10-10, any fuel burning units having a design heat input under ten (10) million Btu/hr will be exempt from section 3 and 6 - 8. Section 5 of this rule is for the combustion of refinery or process gas streams. The stream combusted is a waste gas stream comprised mainly of VOCs. The 1.54 MMBtu/hr Line Heaters, 1.0 mmBtu/hr LPS Heater and 0.013 MMBtu/hr TEG, at the site are not subject to the requirements under this rule.

45CSR14 Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution for the Prevention of Significant Deterioration

The facility-wide potential-to-emit is below the levels that would define the proposed source as a major source per the definition in this rule.

Potential Source Aggregation

Classifying multiple facilities as one "stationary source" under 45CSR13, 45CSR14, and 45CSR19 is based on the definition of "Building, structure, facility, or installation" as given in §45-14-2.13 and §45-19-2.12. The definition states:

"Building, Structure, Facility, or Installation" means all of the pollutant-emitting activities which belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control). Pollutant-emitting activities are a part of the same industrial grouping if they belong to the same "Major Group" (i.e., which have the same two (2)-digit code) as described in the Standard Industrial Classification Manual, 1987 (United States Government Printing Office stock number GPO 1987 0-185-718:QL 3).

"Contiguous or Adjacent" determinations are made on a case by case basis. These determinations are proximity-based, and it is important to focus on this and whether or not it meets the common sense notion of one stationary source. The terms "contiguous" or "adjacent" are not defined by USEPA. Contiguous has a dictionary definition of being in actual contact; touching along a boundary or at a point. Adjacent has a dictionary definition of not distant; nearby; having a common endpoint or border.

There are no EQT Marcellus facilities within a quarter-mile radius of the PEN-15 Pad. Therefore, the site is not contiguous or adjacent with another facility. Therefore, the PEN-15 Pad will be considered a separate source with respect

to permitting programs, including Title V and Prevention of Significant Deterioration (PSD).

45CSR19 Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution Which Cause or Contribute to Nonattainment

It is the intent of the Secretary that all applications filed by any person to construct major new or modified stationary air pollution sources, intending to locate in areas with air quality worse than the levels set to protect the public health and welfare, or that might impact those areas, must adequately meet the preconstruction review procedures and conditions of the Clean Air Act as amended and this rule.

These conditions are designed to ensure that the major new or modified source's emissions will be controlled to the greatest degree practicable; that more than equivalent offsetting emission reductions will be obtained from existing sources; that there will be progress toward achievement of the National Ambient Air Quality Standards; and that all applicable air pollution regulations adopted by the Secretary will be met.

The facility is not defined as a major source per section 2.35 and in not proposing to locate in a nonattainment area. Doddridge County is considered an attainment area. Attainment is a designation of an area that meets the National Ambient Air Quality Standards. National Ambient Air Quality Standards are set by EPA to protect human health and welfare.

Table 2: PSD and NANSR Threshold

Pollutant	PSD (45CSR14) Threshold (tpy)	NANSR (45CSR19) Threshold (tpy)	PEN-15 Pad(tpy)	45CSR14 or 45CSR19 Review Required
Carbon Monoxide	250	N/A (attainment)	29.89	No
Nitrogen Oxides	250	N/A (attainment)	34.12	No
Sulfur Dioxides	250	N/A (attainment)	0.20	No
Particulate Matter2.5	250	N/A (attainment)	2.58	No
Ozone (VOC)	250	N/A (attainment)	41.20	No
Greenhouse Gas (CO2e)	100,000	N/A (attainment)	40,258.52	No

45CSR30 Requirements for Operating Permits

This rule provides for the establishment of a comprehensive air quality permitting system consistent with the requirements of Title V of the Clean Air Act. All fees collected pursuant to this rule shall be expended solely to cover all reasonable direct and indirect costs required to administer the Title V operating permit program and accounted for in accordance with this rule.

The facility is not defined as a major stationary source per section 2.26 of this rule. Therefore, EQT Production Company is not subject to 45CSR30, however, any further changes to the facility will likely result in VOC emissions above 100 tpy, thereby making the facility subject.

Table 3: 45CSR30 Threshold

Pollutant	Title V (45CSR30) Threshold (tpy)	PEN-15 (tpy)	45CSR30 Review Required
Carbon Monoxide	100	29.89	No
Nitrogen Oxides	100	34.12	No
Sulfur Dioxides	100	0.20	No
Particulate Matter2.5	100	2.58	No
Total Particulate Matter	100	2.58	No
Ozone (VOC)	100	41.20	No
Total Hazardous Air Pollutants	25	4.35	No
Benzene	10	0.03	No
n-Hexane	10	3.43	No
Toluene	10	0.08	No
Xylene	10	0.08	No
Greenhouse Gas (CO2e)	100,000	40,258.52	No

The facility is subject to the requirements of NSPS OOOO, Crude Oil and Natural Gas Production, Transmission and Distribution (for sources initially constructed after Aug. 23, 2011) for gas wells. The facility is exempt from Title V permitting because they are a minor source of criteria pollutants and HAPs. The facility is not required to pay Title V fee, but are required to pay Rule 45CSR22 fees. See 45CSR22 for regulatory discussion.

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

The affected facility to which this subpart applies is each storage vessel with a capacity greater than or equal to 75 cubic meters (19,813 gallons) that is used to store volatile organic liquids (VOL) for which construction, reconstruction, or modification is commenced after July 23, 1984.

The facility is proposing the construction of (12) twelve 400 bbl (16,800 gallons) condensate storage tanks. The condensate is considered a VOC. Since the capacity is below the volume specified in the regulation, this regulation doesn't apply.

40 CFR 60 Subpart KKK Standards of Performance for Equipment Leaks of VOC from Onshore Natural Gas Processing Plants for Which Construction, Reconstruction, or Modification Commenced After January 20, 1984, and on or Before August 23, 2011

The provisions of this subpart apply to affected facilities in onshore natural gas processing plants. A natural gas processing plant means any processing site engaged in the extraction of natural gas liquids from field gas, fractionation of mixed natural gas liquids to natural gas products, or both. The facility is not a natural gas processing plant as defined by this rule. Therefore, the requirements of this rule do not apply.

40CFR60.18 General Control Device and Work Practice Requirements

The requirements apply only to flares that are required for compliance to an NSPS Standard. Enclosed combustion devices do not meet the definition of a flare, as defined in this subpart. The facility is installing an enclosed vapor combustor unit or enclosed flare. Therefore, the facility is not subject to the requirements of this subpart.

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

There will be small amounts of various non-criteria regulated pollutants emitted from the combustion of natural gas. Criteria pollutants are defined as Carbon Monoxide (CO), Lead (Pb), Oxides of Nitrogen (NOx), Ozone, Particulate Matter (PM), Particulate Matter less than 10 microns (PM10), Particulate Matter less than 2.5 microns (PM2.5), and Sulfur Dioxide (SO2). These pollutants have National Ambient Air Quality Standards (NAAQS) set for each that are designed to protect the public health and welfare. Other pollutants of concern, although designated as non-criteria and without national concentration standards, are regulated through various federal programs

designed to limit their emissions and public exposure. These programs include federal source-specific Hazardous Air Pollutants (HAPs) standards promulgated under 40 CFR 61 (NESHAPS) and 40 CFR 63 (MACT). Any potential applicability to these programs were discussed above in the Regulatory Applicability section.

The majority of the non-criteria pollutants emitted by EQT's PEN-15 Pad fall under the definition of HAPs. HAPs are identified under Section 112(b) of the Clean Air Act (CAA) as pollutants or groups of pollutants that EPA knows or suspects may cause cancer or other serious human health effects. EQT's PEN-15 Pad will emit the following HAPs in substantive amounts (≥0.01 tpy). In addition, the following table lists each HAP's carcinogenic risk (as based on analysis provided in the Integrated Risk Information System (IRIS)):

Table 4: EQT's PEN-15 Pad HAPs - Carcinogenic Risk

HAPs	Type	Known/Suspected Carcinogen	Classification
n-Hexane	VOC	No	Inadequate Data
Benzene	VOC	Yes	Category A - Known Human Carcinogen
Toluene	VOC	No	Inadequate Data
Xylenes	VOC	No	Inadequate Data
Trimethylpentane (2,2,4-)	VOC	No	Inadequate Data

All HAPs have other non-carcinogenic chronic and acute effects. These adverse health affects may be associated with a wide range of ambient concentrations and exposure times and are influenced by source-specific characteristics such as emission rates and local meteorological conditions. Health impacts are also dependent on multiple factors that affect variability in humans such as genetics, age, health status (e.g., the presence of pre-existing disease) and lifestyle. As stated previously, there are no federal or state ambient air quality standards for these specific chemicals. For a complete discussion of the known health effects of each compound refer to the IRIS database located at http://www.epa.gov/iris/.

AIR QUALITY IMPACT ANALYSIS

Modeling was not required of this source due to the fact that the facility is not subject to 45CSR14 (Permits for Construction and Major Modification of Major Stationary Sources of Air Pollutants) as seen in the table listed in the Regulatory Discussion Section.

MONITORING OF OPERATIONS

- Maintain constant pilot flame in the vapor combustors (C001-C004). Monitor using a thermocouple or equivalent device.
- Monthly throughput of gas (waste from storage tanks and auxiliary gas) to the vapor combustors (C001-C004).
- Visible emission checks of the vapor combustors per Method 22 upon startup and monthly emission checks of the vapor combustor per Method 22. Method 9 checks at the request of the Director. (C001-C004).
- Visible emission checks of the Line Heaters and TEG per Method upon startup and monthly emission checks of the Line Heaters and TEG per Method 22. Method 9 checks of the Line Heaters and Thermoelectric Generators (TEG) at the request of the Director.
- Monthly and yearly throughput of the amount of natural gas consumed in the natural gas heaters.
- Monthly and yearly throughput of condensate water loaded in the truck loading operations.
- Monthly and yearly condensate production.

RECOMMENDATION TO DIRECTOR

The information provided in the permit application indicates EQT Production Company meets all applicable requirements. Therefore, it is recommended that the Ritchie County location should be granted a G70-A General Permit Registration Modification for their facility.

Roy F. Kees, P.E.
Engineer - NSR Permitting

4/21/16
Date