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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.:	R13-2997
Plant ID No.:	085-00022
Applicant:	EQT Production Company
Facility Name:	PEN-15 Pad
Location:	Ritchie County
NAICS Code:	211111
Application Type:	After-the-Fact Construction
Received Date:	September 26, 2012
Engineer Assigned:	Joe Kessler
Fee Amount:	$2,000
Date Received:	October 23, 2012
Complete Date:	November 26, 2012
Due Date:	February 24, 2013
Applicant Ad Date:	October 24, 2012
Newspaper:	*The Pennsboro News*
UTM's:	Easting: 504.2 km Northing: 4,345.8 km Zone: 17
Description:	Permit for construction and operation of a natural gas production facility at the PEN-15 well-pad.

DESCRIPTION OF PROCESS

EQT Production Company (EQT) has submitted an after-the-fact permit application for the construction and operation of a natural gas production facility primarily consisting of five (5) 1.54 mmBtu/hr natural gas-fired line heaters (S006 through S010), five (5) 17,220-gallon condensate storage tanks (S001 through S005), an 11.66 mmBtu/hr enclosed vapor combustor (C001), and one (1) 0.013 mmBtu/hr natural gas-fired thermoelectric generator (S011). Truck loading of condensate will also take place at the site. The facility was expected to begin operation on October 15, 2012.

When in production, raw gas from the wells pass through a separator where the condensate is removed from the gas and sent to one of the storage tanks. Gas passing through the separator will be sent to pipeline for transportation. Working, breathing, and flashing losses from the storage tanks shall be captured and sent to an enclosed vapor combustor for control. The combustor will have a minimum hydrocarbon destruction efficiency of 95.0%. The line heaters shall be used to keep the

lines at the facility from freezing and to promote gas/liquids flow.

From the storage tanks, condensate is loaded into trucks for removal from the site. Emissions from the truck loading are uncontrolled but mitigated by using pipe racks and submerged fill methods. The thermoelectric generator is used to provide small amounts of electricity for switching/monitoring purposes when the facility is unable to generate sufficient solar power.

SITE INSPECTION

On November 1, 2012, the writer conducted an inspection of the PEN-15 natural gas production facility. The PEN-15 site is rurally located in Ritchie County approximately 2.0 miles south-southeast of Pennsboro, WV at the end of a new access road created off of WV State Route (SR) 74. The pad, at the time of the inspection, appeared to have been top-drilled and capped prior to fracturing. The storage tanks and the vapor combustor were in the process of being erected. There are several farms and occupied residences with 0.5 miles of the pad with the closest heavily populated area being Pennsboro. The following is a picture of the PEN-15 well-pad taken on the day of the inspection:

Directions: [Latitude: 39.26152, Longitude: -80.95131] From the junction of SR 74 and US 50, travel south on SR 74 for approximately 1.0 mile and turn left onto the PEN-15 access road. The pad lies at the top of a hill approximately 0.5 miles along the access road.

AIR EMISSIONS AND CALCULATION METHODOLOGIES

EQT included in Attachment N of the permit application air emissions calculations for the equipment and processes at the PEN-15 natural gas production facility. The following will summarize the calculation methodologies used by EQT to calculate the potential-to-emit (PTE) of the proposed facility.

Gas-Fired Line Heaters/Thermoelectric Generator

Criteria Pollutant emissions from the natural gas-fired line heaters (E006 through E010) and the thermoelectric generator (E011) were based on the emission factors provided for natural gas combustion as given in AP-42 (AP-42 is a database of emission factors maintained by USEPA) Section 1.4. Emissions of Greenhouse Gases (GHGs) were based on Tables C-1 and C-2 of 40 CFR 98 - Federal GHG Reporting Rule.

Hourly emissions were based on the maximum design heat input (MDHI) of each unit and annual emissions were based on an annual operation of 8,760 hours. A heat content of the gas of 1,050 Btu/scf was used in the calculations.

Storage Tanks

Working and breathing emissions from the five (5) 16,800 gallon condensate storage tanks were based on the TANKS 4.09d program as provided under AP-42, Section 7. Emissions from flashing in the tanks were calculated using CHEMCAD - a chemical process simulation software. Input and summary sheets for both programs were included in the permit application. As all uncontrolled emissions from the storage tanks are routed to the vapor combustor for control, the controlled emissions from the tanks are based on the vapor combustor's minimum 95% control efficiency. An aggregate annual throughput of 3,300,000 gallons of condensate was used in the calculations for each storage tank.

Truck Loading

Air emissions from condensate truck loading operations occur as fugitive emissions generated by displacement of vapors when loading trucks. The emission factor used to generate the VOC emissions is based on Equation (1) of AP-42 Section 5.2-4. In this equation, EQT used variables specific to the liquids loaded and to the method of loading - in this case "submerged filling - dedicated normal service." Additionally, worst-case annual emissions were based on a maximum loading rate of 16,380,000 gal/year of and condensate. As no maximum hourly pumping rate was provided, hourly emissions were based on 1,000 hours of loading per year.

Fugitives

EQT based their fugitive equipment leak calculations on emission factors taken from the document EPA-453/R-95-017 - "Protocol for Equipment Leak Emission Estimates." Emission factors were taken from Table 2-4 and no control efficiency, as based on a Leak Detection and Repair (LDAR) protocol, was applied. Emissions of Greenhouse Gases (GHGs) were based on Subpart W of 40 CFR 98 - Federal GHG Reporting Rule.

Vapor Combustor

The vapor combustor will receive captured vapors from the storage tanks. The amount of emissions received is determined by the calculation methodologies described above. A 95% control was applied to the uncontrolled VOC/HAP/methane emissions received by the vapor combustor to determine the amount of pass-through emissions of the combustor. The emissions of NO_x, CO, particulate matter, SO_2, and GHGs from the combustion of the vapors were based on emission factors taken from AP-42 Section 1.4.

Haul Roads

EQT included in their application an estimate of fugitive emissions created by truck traffic an employee vehicles at the facility. As all the roadways around the building are unpaved, EQT used the equation given in Section 13.2.2 of AP-42 and appropriate variables to estimate potential emissions.

Emissions Summary

Based on the above estimation methodology, which is determined to be appropriate, the PTE of the PEN-15 natural gas production facility is given in the following tables:

Table 2: Facility-Wide Aggregate Hourly (lb/hr) Criteria Pollutant PTE Summary.

Source	CO	NO_x	PM[(1)]	SO_2	VOCs	HAPs
Process Heaters/Generator[(2)]	0.62	0.73	0.05	<0.01	0.04	<0.01
Vapor Combustor[(3)]	0.93	1.11	0.08	<0.01	12.53	0.39
Fugitive Emissions	0.00	0.00	0.00	0.00	1.37	0.00
Truck Loading[(4)]	0.00	0.00	0.00	0.00	18.26	0.00
Haul Roads	0.00	0.00	0.71	0.00	0.00	0.00
Facility-Wide Totals →	**1.55**	**1.84**	**0.85**	**0.02**	**32.19**	**0.40**

(1) Conservatively, all particulate matter emissions are assumed to be less than 2.5 microns. Includes condensables.
(2) Aggregate emission rate of all such units.
(3) Includes both pass-through emissions generated by storage tanks and products of combustion.
(4) As a maximum hourly pump rate was not provided, hourly emissions based on 1,000 hours/year.

Table 3: Facility-Wide Aggregate Annual (ton/yr) Criteria Pollutant/GHG PTE Summary.

Source	CO	NO_x	PM[1]	SO_2	VOCs	HAPs	CO_2e
Process Heaters/Generator[2]	2.70	3.21	0.24	0.02	0.18	<0.01	3,942.80
Vapor Combustor[3]	4.09	4.86	0.37	0.03	54.87	1.71	6,169.71
Fugitive Emissions	0.00	0.00	0.00	0.00	5.98	0.00	494.80
Truck Loading	0.00	0.00	0.00	0.00	9.13	0.00	0.00
Haul Roads	0.00	0.00	3.12	0.00	0.00	0.00	0.00
Facility-Wide Totals →	**6.79**	**8.07**	**3.73**	**0.05**	**70.16**	**1.72**	**11,832.30**

(1) Conservatively, all particulate matter emissions are assumed to be less than 2.5 microns. Includes condensables.
(2) Aggregate emission rate of all such units.
(3) Includes both pass-through emissions generated by storage tanks and products of combustion.

Table 4: Facility-Wide Aggregate Annual (ton/yr) HAP PTE Summary[1]

Source	Hexane	Benzene	Toluene	Ethyl-benzene	Xylene	Formal dehyde	Total HAPs
Process Heaters/Generator[2]	~0.00	~0.00	~0.00	~0.00	~0.00	~0.00	0.00
Vapor Combustor[3]	1.60	0.04	0.05	~0.00	0.02	0.00	1.71
Fugitive Emissions	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck Loading	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Haul Roads	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Facility-Wide Totals →	**1.60**	**0.04**	**0.05**	**0.00**	**0.02**	**0.00**	**1.71**

(1) As the PTE of all individual HAPs is less than 10 TPY and the PTE of total HAPs is less than 25 TPY, the proposed PEN-15 natural gas production facility is defined as a minor source of HAPs for purposes of 40 CFR 61, 40CFR63, and Title V.
(2) Aggregate emission rate of all such units.
(3) Includes both pass-through emissions generated by storage tanks and products of combustion.

REGULATORY APPLICABILITY

The proposed EQT natural gas production facility is subject to substantive requirements in the following state and federal air quality rules and regulations: 45CSR2, 45CSR6, 45CSR13, and 40 CFR 60 Subpart OOOO. Each applicable rule (and ones that have reasoned non-applicability), and EQT's compliance therewith, will be discussed in detail below.

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

The Line Heaters (S006 through S0010) each have been determined to meet the definition of a "fuel burning unit" under 45CSR2 and are, therefore, subject to the applicable requirements therein. However, pursuant to the exemption given under §45-2-11, as the MDHI of the units are less than 10 mmBtu/hr, they are not subject to sections 4, 5, 6, 8 and 9 of 45CSR2. The only

remaining substantive requirement is under Section 3.1 - Visible Emissions Standards.

Pursuant to 45CSR2, Section 3.1, the line heaters are subject to an opacity limit of 10%. Proper maintenance and operation of the units (and the use of natural gas as fuel) should keep the opacity of the units well below 10% during normal operations.

45CSR6: To Prevent and Control Particulate Air Pollution from Combustion of Refuse

EQT has proposed an enclosed combustor for controlling the working/breathing/flashing emissions produced from the condensate storage tanks. The vapor combustor meets the definition of an "incinerator" under 45CSR6 and is, therefore, subject to the requirements therein. The substantive requirements applicable to the vapor combustor are discussed below.

45CSR6 Emission Standards for Incinerators - Section 4.1

Section 4.1 limits PM emissions from incinerators to a value determined by the following formula:

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

While particulate matter emissions from the combustor are expected to be nominal, for a conservative estimate, EQT calculated potential particulate matter emissions from the combustor based on an emission factor taken from AP-42, Section 1.4. The hourly particulate matter emission rate from the combustor is 0.37 lbs/hr. Based on information included in the application, the maximum vapor mass sent to the flare will be 500 lb/hr (0.25 tons/hour). Based on the above, the aggregate particulate matter limit of the flares is 1.36 lbs/hr. As the total hourly particulate matter emission rate from the combustor is 0.37 lbs/hr, the combustor is in compliance with this emission limit.

45CSR6 Opacity Limits for - Section 4.3, 4.4

Pursuant to Section 4.3, and subject to the exemptions under 4.4, the combustor has a 20% limit on opacity during operation. As the primary constituent in the vapors combusted in the unit shall be clean burning methane/ethane, particulate matter emissions from the combustor are expected to be nominal. Therefore, the vapor combustor should easily meet this requirement.

45CSR10: To Prevent and Control Air Pollution from the Emission of Sulfur Oxides (non-applicability)

Pursuant to the exemption given under §45-10-10.1, as the MDHI of the Line Heaters (S006 through S0010) are less than 10 mmBtu/hr, the units are not subject to the substantive sections of 45CSR10.

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

The construction of the PEN-15 natural gas production facility has a potential to emit a regulated pollutant in excess of six (6) lbs/hour and ten (10) TPY and, therefore, pursuant to §45-13-2.24, the facility is defined as a "stationary source" under 45CSR13. Pursuant to §45-13-5.1, "[n]o person shall cause, suffer, allow or permit the construction . . . and operation of any stationary source to be commenced without . . . obtaining a permit to construct." Therefore, EQT is required to obtain a permit under 45CSR13 for the construction and operation of the natural gas production facility.

As required under §45-13-8.3 ("Notice Level A"), EQT placed a Class I legal advertisement in a "newspaper of general circulation in the area where the source is . . . located." The ad ran on October 24, 2012 in *The Pennsboro News* and the affidavit of publication for this legal advertisement was submitted on November 7, 2012.

45CSR14 (NON APPLICABILITY)

The facility-wide potential-to-emit of the PEN-15 natural gas production facility (see Table 3 above) is below the levels that would define the source as "major" under 45CSR14 and, therefore, the construction evaluated herein is not subject to the provisions of 45CSR14.

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).

The proposed PEN-15 natural gas production facility will be located approximately 9.43 miles from the known nearest other EQT facility (OXF-152 well-pad and production facility). OXF-152 shares the same SIC code as PEN-15 and is owned by EQT. Therefore, the potential classification of the PEN-15 facility as one stationary source with either OXF-152 depends on the determination if these stations are considered "contiguous or adjacent properties."

"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*.

The proposed PEN-15 natural gas production facility is not located contiguous with, or *directly* adjacent to the proposed OXF-152 facility. As noted above, the facilities are 9.43 miles apart. Facilities separated by this distance do not meet the common sense notion of a single plant. Therefore, the PEN-15 and OXF-152 facilities are not considered to be on contiguous or adjacent property.

45CSR17: To Prevent and Control Particulate Matter Air Pollution from Materials Handling, Preparation, Storage and Other Sources of Fugitive Particulate Matter

45CSR17 requires facilities to "prevent and control particulate matter air pollution from materials handling, preparation, storage and other sources of fugitive particulate matter." Specifically, §45-17-3.2b requires "[a]pplication of . . . water or suitable chemicals on unpaved roads. . . and other surfaces which can create airborne particulate matter." To meet this requirement, the draft permit, pursuant to 4.1.8, requires EQT to maintain all paved roads/work areas and use a water truck on all unpaved roads/work areas when necessary.

45CSR30: Requirements for Operating Permits - (NON APPLICABILITY)

45CSR30 provides for the establishment of a comprehensive air quality permitting system consistent with the requirements of Title V of the Clean Air Act. The proposed facility does not meet the definition of a "major source under § 112 of the Clean Air Act" as outlined under §45-30-2.26 and clarified (fugitive policy) under 45CSR30b. However, as the facility is subject to a New Source Performance Standard (NSPS) - 40 CFR 60, Subpart OOOO - the facility would, in most cases, be subject to Title V as a "deferred source." However, pursuant to §60.5370(c), as a non-major "area source," EQT is not required to obtain a Title V permit for the proposed facility. Therefore, the PEN-15 natural gas production facility is not subject to 45CSR30.

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 - (NON APPLICABILITY)

Pursuant to §60.110b, 40 CFR 60, Subpart Kb applies to "each storage vessel with a capacity greater than or equal to 75 cubic meters (m^3) that is used to store volatile organic liquids (VOL) for which construction, reconstruction, or modification is commenced after July 23, 1984." The storage tanks located at the PEN-15 facility are each 16,880 gallons, or 64 m^3. Therefore, Subpart Kb does not apply to the storage tanks.

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

On April 27, 2012 the USEPA issued a final rule (published in the Federal Register on August 16, 2012) that consists of federal air standards for natural gas wells that are hydraulically fractured, along with requirements for several other sources of pollution in the oil and gas industry that currently are not regulated at the federal level. Pursuant to §60.5365(a) each "gas well affected facility, which is a single natural gas well" that is constructed after August 23, 2011 is subject to the applicable provisions of Subpart OOOO as well as "[e]ach 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."

Gas Wells - §60.5370

EQT has drilled five gas wells at the PEN-15 well-pad and, therefore, these are defined as "affected facilities" under Subpart OOOO and subject to applicable provisions. The substantive requirements for gas wells drilled prior to January 1, 2015 are given under §60.5375(a)(3) of the rule. It requires that flowback emissions (gas produced from the well after fracturing) must be directed to the flow line or a completion combustion device. EQT shall direct all gas from wells during flowback at the PEN-15 site into the flow line. Other requirements pertaining to the gas well include:

- EQT must maintain a log for each well completion operation at each gas well affected facility. The log must be completed on a daily basis for the duration of the well completion operation and must contain the records specified in §60.5420(c)(1)(iii).
  [40CFR§60.5375(b)]

- EQT must demonstrate initial compliance with the standards that apply to gas well affected facilities as required by §60.5410.
  [40CFR§60.5375(c)]

- EQT must demonstrate continuous compliance with the standards that apply to gas well affected facilities as required by §60.5415.
  [40CFR§60.5375(d)]

- EQT must perform the required notification, recordkeeping and reporting as required by §60.5420.
  [40CFR§60.5375(e)]

Storage Tanks - §60.5395

Under §60.5395, the requirements for storage tanks take effect on October 15, 2013. However, as the site is expected to be in production at that time, the storage tank requirements will be reviewed. The substantive requirement for storage tanks is given under §60.5395(a) of the rule. It requires that for each storage vessel "emitting more than 6 tpy VOC, [the permittee] must reduce VOC emissions by 95.0 percent of greater. . ." Based on a letter from USEPA to the American Petroleum Instituted dated September 28, 2012, applicability of storage vessels to Subpart OOOO is based on individual tank PTE - which includes federally enforceable control devices.

The five (5) condensate tanks are each calculated to have a PTE (including controls) of more than 6 TPY of VOCs and, therefore, as of October 15, 2013, shall be subject to the requirement to

reduce VOC emissions by 95%. EQT has proposed to meet this requirement through the use of a vapor combustor on all working/breathing/flashing emissions emitted from the tanks with a minimum organics combustion efficiency of 95.0%. EQT must additionally meet the requirements relating to the use of a vapor combustion device under §60.5411(a), (b), and §60.5412.

Additionally, EQT must meet the compliance, notification, recordkeeping, and reporting requirements relating to applicable storage tanks as given under §60.5410, §60.5415, and §60.5420.

Pneumatic Controllers

Pursuant to §60.5365(d)(2), "[f]or 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" that is constructed after August 23, 2011 is subject to the applicable provisions of Subpart OOOO. The substantive requirements for pneumatic controllers are given under §60.5390. While not identified, it is assumed the facility will use pneumatic controllers and will be required to meet this requirement.

TOXICITY ANALYSIS OF NON-CRITERIA REGULATED POLLUTANTS

This section provides an analysis for those regulated pollutants that may be emitted from the PEN-15 natural gas production facility and that are not classified as "criteria pollutants." Criteria pollutants are defined as Carbon Monoxide (CO), Lead (Pb), Oxides of Nitrogen (NO_x), Ozone, Particulate Matter (PM), Particulate Matter less than 10 microns (PM_{10}), Particulate Matter less than 2.5 microns ($PM_{2.5}$), and Sulfur Dioxide (SO_2). 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 under REGULATORY APPLICABILITY.

The majority of non-criteria regulated pollutants fall under the definition of HAPs which, with some revision since, were 188 compounds 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 included the following HAPs as emitted in substantive amounts in their emissions estimate: Benzene, n-Hexane, Toluene, and Xylenes. The following table lists each HAP's carcinogenic risk (as based on analysis provided in the Integrated Risk Information System (IRIS)):

Table 5: Potential 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

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 *www.epa.gov/iris*.

AIR QUALITY IMPACT ANALYSIS

The estimated maximum emissions from the proposed PEN-15 natural gas production facility are less than applicability thresholds that would define the proposed facility as a "major stationary source" under 45CSR14 and, therefore, no air quality impacts modeling analysis was required. Additionally, based on the nature of the proposed construction, modeling was not required under 45CSR13, Section 7.

MONITORING, COMPLIANCE DEMONSTRATIONS, REPORTING, AND RECORDING OF OPERATIONS

The following substantive monitoring, compliance demonstration, and record-keeping requirements (MRR) shall be required:

- For the purposes of demonstrating compliance with maximum limit for the aggregate production of condensate/liquids from the wells set forth in 4.1.3 of the draft permit, EQT shall be required to monitor and record the daily, monthly, and rolling twelve month total of condensate/liquids (in gallons) produced in the wells.

- For the purposes of demonstrating compliance with visible emissions limitations set forth in 4.1.2(d) of the draft permit, EQT shall be required to:

  (1) Conduct an initial Method 22 visual emission observation on the line heaters to determine the compliance with the visible emission provisions. EQT shall be required to take a minimum of two (2) hours of visual emissions observations on the line heaters.

  (2) Conduct monthly Method 22 visible emission observations of the line heaters stack to ensure proper operation for a minimum of ten (10) minutes each month the line heaters are in operation.

(3) In the event visible emissions are observed in excess of the limitations given under 4.1.2(d) of the draft permit, EQT shall be required to take immediate corrective action.

- EQT shall be required to maintain records of all startups, shutdowns, and/or malfunctions of the vapor combustor. These records shall include the date, time, and duration of each event.

- EQT shall be required to maintain records of the date, time, and duration each time the permittee does not detect the presence of a pilot flame in the vapor combustor.

- For the purposes of demonstrating compliance with visible emissions limitations set forth in 4.1.6(f) of the draft permit, EQT shall be required to:

  (1) Conduct an initial Method 22 visual emission observation on the vapor combustor to determine the compliance with the visible emission provisions. EQT shall be required to take a minimum of two (2) hours of visual emissions observations on the vapor combustor.

  (2) Conduct monthly Method 22 visible emission observations of the vapor combustor stack to ensure proper operation for a minimum of ten (10) minutes each month the vapor combustor is in operation.

  (3) In the event visible emissions are observed in excess of the limitations given under 4.1.6(f) of the draft permit, EQT shall be required to take immediate corrective action.

- EQT shall be required to maintain records of all visual emission observations pursuant to the monitoring required under 4.22 and 4.2.3(c) of the draft permit including any corrective action taken.

- EQT shall be required to meet all applicable Monitoring, Compliance Demonstration and Source-Specific Recordkeeping Requirements as given under 40 CFR 60, Subpart OOOO.

PERFORMANCE TESTING OF OPERATIONS

The following substantive performance testing requirements shall be required:

- Within sixty (60) days of production of natural gas in any well at the PEN-15 natural gas production facility, in accordance with the provisions of 3.3 of this permit, EQT shall be required to perform or have performed an analysis to determine the constituent properties of the condensate/produced liquids. The analysis shall, at a minimum, include the same components as the analysis submitted in Permit Application R13-2997. Where applicable, if the analysis shows average constituent properties that, when used to calculate emissions in the same manner as submitted in Permit Application R13-2997, result in emissions that are emissions 10% greater than those used in the permit application, the permittee shall, within

thirty (30) days of receiving the results of the analysis, submit to the Director an appropriate permit application to increase emissions.

- EQT shall be required to meet all applicable Testing Requirements as given under 40 CFR 60, Subpart OOOO.

RECOMMENDATION TO DIRECTOR

The information provided in permit application R13-2997 indicates that compliance with all applicable regulations will be achieved. Therefore, I recommend to the Director the issuance of Permit Number R13-2997 to EQT Production Company for the after-the-fact construction and operation of the PEN-15 natural gas production facility located near Pennsboro, Ritchie County, WV.

Joseph Kessler, PE
Engineer

Date