west virginia department of environmental protection

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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.:	R13-3301
Plant ID No.:	103-00076
Applicant:	Trans Energy Inc.
Facility Name:	Dewhurst Well
Location:	Near Jacksonburg, Wetzel County, West Virginia
NAICS Code:	211111
Application Type:	Modification
Received Date:	March 8, 2016
Engineer Assigned:	David Keatley
Fee Amount:	$1,000
Date Received:	March 9, 2016
Complete Date:	May 12, 2016
Due Date:	August 10, 2016
Applicant Ad Date:	March 9, 2016
Newspaper:	Wetzel Chronicle
UTM's:	Easting: 531.70 Northing: 4,370.88 Zone: 17
Description:	This is the first permit for this facility. After-the-Fact installation and operation of: two (2) 1.5-mmBtu/hr gas production units (GPU) and four (4) 210-bbl produced liquid tanks.

DESCRIPTION OF PROCESS

This facility is a natural gas production facility. Two (2) natural gas wells will send raw natural gas to two (2) 1.5-mmBtu/hr natural gas fired GPU heaters. The liquids from the GPUs will be sent to four (4) 210-bbl produced liquid tanks. The produced liquids will be trucked off site at a maximum rate of 3,606,372 gallons/year and during truck loading will be controlled with vapor return.

SITE INSPECTION

Douglas Hammell of DAQ's Enforcement and Compliance Section performed a site visit on May 22, 2013 and the site was deemed in compliance.
From the intersection of WV 2 and WV 7 near New Martinsville. Travel on WV 7 east until you reach WV 20. Take WV 20 east to Jacksonburg. Turn right onto CR 82 (Buffalo Run Rd.) and travel for approximately 3.6 miles to the facility.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

GPU Heaters: Potential emissions from the GPU heaters 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.

Tank Emissions: Flash emissions were estimated using a sample from the facility using the GWR method. Working and Breathing losses were estimated using TANKS 4.0.9d.

Truck Loading Losses: Truck loading emissions were estimated with equation from AP-42 5.2 using vapor balance for a 70% control efficiency.

Table 1: Estimated New/Modified Maximum Controlled PTE

Emission Point ID	Emission Unit ID	Emission Source	Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (tpy)
1E through 4E	1S through 4S	Produced Liquid Tanks (Emission per Tank)	Volatile Organic Compounds	0.07	0.31
5E and 6E	5S and 6S	GPU Heaters 1.5 mmBtu/hr (Emissions from Each)	Nitrogen Oxides	0.15	0.64
			Carbon Monoxide	0.13	0.54
			Volatile Organic Compounds	0.01	0.04
7E	7S	Tank Truck Loading	Volatile Organic Compounds	1.00	4.37

Table 2: Proposed Summarized Estimated Maximum Controlled Facility Wide PTE

Pollutant	Facility Wide PTE (tons/year)
Nitrogen Oxides	0.64
Carbon Monoxide	0.54
Volatile Organic Compounds	4.71

REGULATORY APPLICABILITY

The following rules and regulations apply to the facility:

45CSR2 *Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers*

The purpose of 45CSR2 (Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers) is to establish emission limitations for smoke and particulate matter which are discharged from fuel burning units.

45CSR2 states that any fuel burning unit that has a heat input under ten (10) million B.T.U.'s per hour is exempt from sections 4 (weight emission standard), 5 (control of fugitive particulate matter), 6 (registration), 8 (testing, monitoring, recordkeeping, reporting) and 9 (startups, shutdowns, malfunctions). However, failure to attain acceptable air quality in parts of some urban areas may require the mandatory control of these sources at a later date.

The heat input of all of the proposed fuel burning units (5S and 6S) are below 10 mmBtu/hr. Therefore, these units are exempt from the aforementioned sections of 45CSR2. However, this facility is subject to the opacity requirements in 45CSR2, which is 10% opacity based on a six minute block average.

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 facility shall not cause the discharge of air pollutants which cause or contribute to an objectionable odor at any location occupied by the public. 45CSR4 states that an objectionable odor is an odor that is deemed objectionable when in the opinion of a duly authorized representative of the Air Pollution Control Commission (Division of Air Quality), based upon their investigations and complaints, such odor is objectionable.

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*

Trans Energy, Inc. has voluntarily applied for a air pollution permit.

45CSR22 *Air Quality Management Fee Program*

This facility is a minor source as can be seen in Table 2 and not subject to 45CSR30 since the regulations this facility is subject to are exempt from the obligation to obtain a permit under 40 CFR part 70 or 40 CFR part 71. This facility is not a natural gas compressor station and is a 9M source which is required to pay a $200 annual fee. Trans Energy, Inc. is required to keep their Certificate to Operate current.

40CFR60 Subpart OOOO *Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution*

EPA published in the Federal Register new source performance standards (NSPS) and air toxics rules for the oil and gas sector on August 16, 2012. 40CFR60 Subpart OOOO establishes emission standards and compliance schedules for the control of volatile organic compounds (VOC) and sulfur dioxide (SO_2) emissions from affected facilities that commence construction, modification or reconstruction after August 23, 2011. The following affected sources which commence construction, modification or reconstruction after August 23, 2011 are subject to the applicable provisions of this subpart:

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

The two (2) natural gas wells were drilled principally for the production of natural gas and condensate and were done so after August 23, 2011. Therefore, these wells would be considered affected facilities under this subpart. The compliance date for these hydraulically fractured wells is October 15, 2012. Trans Energy Inc. is required under §60.5410 to submit an initial notification, initial annual report, maintain a log of records for each well completion, and maintain records of location and method of compliance. §60.5420 requires Trans Energy Inc. demonstrate continuous compliance by submitting reports and maintaining records for each completion operation.

b. 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 kilopascals 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.

Produced liquid tanks (1S through 4S) located at this facility are estimated to emit less 6 tpy of VOC per tank controlled. Therefore this facilities tanks are not subject to this section of this regulation.

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

There will be small amounts of various non-criteria regulated pollutants emitted from the combustion of natural gas. However, due to the concentrations emitted, detailed toxicological information is not included in this evaluation.

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 Regulatory Discussion Section.

RECOMMENDATION TO DIRECTOR

The information provided in this facility's permit application indicates that compliance with all state and federal air quality requirements will be achieved. It is recommended that Trans Energy, Inc. should be granted a 45CSR13 Modification permit for their Dewhurst Well facility.

David Keatley
Permit Writer - NSR Permitting

May 12, 2016

Date