west virginia department of environmental protection

Division of Air Quality
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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.:	R13-2720C
Plant ID No.:	061-00149
Applicant:	SWN Production Company
Facility Name:	Gans Compressor Station (Formerly Valley Point Compressor Station)
Location:	Near Springhill PA (site is in WV near state line), Monongalia County
SIC Code:	1311
Application Type:	Modification
Received Date:	October 6, 2014
Engineer Assigned:	David Keatley
Fee Amount:	$2,800
Date Fees Received:	October 9, 2014 and February 12, 2014
Complete Date:	February 12, 2015
Due Date:	April 29, 2015
Applicant Ad Date:	October 3, 2015
Newspaper:	*The Dominion Post*
UTM's:	Easting: 603.392 km Northing: 4397.435 km Zone: 17
Description:	Permit R13-2720C will supersede and replace R13-2720B. Proposed installation of one (1) 6.5 mmscfd TEG dehydration unit with associated 0.2 mmBtu/hr reboiler, and one (1) 13-bhp Kohler Command Pro 13 air compressor engine. Removal of one (1) 9.5 mmscfd TEG dehydration unit with associated 0.25 mmBtu/hr reboiler and one (1) 210-bbl condensate tank (EU-TK-3).

DESCRIPTION OF PROCESS

Natural gas enters the facility via pipeline. The natural gas is first sent to a inlet separator to reduce the liquid content of the natural gas. The natural gas is then compressed. The facility has two (2) 384-bhp AJAX DPC 2802 LE natural gas fired compressor engines which compress the natural gas to a higher pressure. After compression the natural gas will be sent to a 6.5 mmscfd TEG dehyration unit to reduce the water content of the natural gas stream.

In the dehydration process, gas flows countercurrent to TEG in a contactor. After the natural gas stream is dehydrated it leaves the facility via pipeline. The rich TEG goes to the regenerator which

is heated by a 0.2 mmBtu/hr reboiler (EU-RB1). The water vapor and some hydrocarbons exits the regenerator through the still vent (EU-DEHY1).

This facility also has a 13-bhp Kohler Command Pro 13 gasoline fired air compressor engine which starts the compressors with air pressure.

SITE INSPECTION

A site inspection was conducted in April 2007 by Bill Taylor of NCRO. The permittee met the siting requirements set forth in G30-B, therefore it was determined that a site inspection was not required at this time.

Directions as given in the permit application are as follows:

At Morgantown, going on I-68 East, take the Cheat Lake exit onto Route 857 North. Go approximately 6 miles and turn right into Laurel Aggregates Quarry. Stay to the left while going toward Lake Lynn Laboratory for 0.9 mile. Turn right, go 0.3 mile. Turn right, through gate to compressor site.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Emissions from EU-DEHY1 was estimated using GRI-GLYCalc 4.0. Emissions from reboiler EU-RB-1 was estimated with AP-42 emission factors. Emissions for the engine were estimated using 2,000 hr/yr with manufacturer emission factors and AP-42 emission factors.

Table 1: New/Modified Maximum Estimated Controlled Point Source Air Emissions

Emission Point ID	Emission Unit ID	Process Unit	Pollutant	Maximum Controlled Emission Rate	
				Hourly (lb/hr)	Annual (ton/year)
EP-RB1	EU-RB1	TEG Dehydrator Reboiler (New)	Nitrogen Oxides	0.02	0.09
			Carbon Monoxide	0.02	0.09
			Total Particulate Matter	<0.01	0.01
EP-DEHY1	EU-DEHY1	Glycol Dehydrator Still Vent (New)	Volatile Organic Compounds	0.08	0.35
			Benzene	<0.01	0.02
			Toluene	<0.01	0.03
			Ethylbenzene	0.01	0.03
			Xylenes	0.01	0.04

EP-ACE1	EU-ACE1	Kohler Command Pro 13 Air Compressor	Nitrogen Oxides	0.19	0.19
			Carbon Monoxide	7.85	7.85
			Volatile Organic Compounds	0.19	0.19
			Sulfur Dioxide	0.01	0.01
			Total Particulate Matter	0.01	0.01

Table 2: Maximum Estimated Controlled Facility Wide Air Emissions

Pollutant	Maximum Annual Facility Wide Emissions (tons/year)
Nitrogen Oxides	17.37
Carbon Monoxide	18.19
Volatile Organic Compounds	12.12
Particulate Matter	0.28
Sulfur Dioxide	0.09
Total HAPs	0.72
Formaldehyde	0.58

REGULATORY APPLICABILITY

The following rules and regulations apply to this facility:

45CSR4 (To Prevent and Control the Discharge of Air Pollutants into the Open Air which Causes or Contributes to an Objectionable Odor or Odors)

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. This is a new facility, therefore no odor has been deemed objectionable.

45CSR10 - *To Prevent and Control Air Pollution From the Emissions of Sulfur Oxides*

Reboiler EU-RB1 at this facility meets the definition for fuel burning unit (section 2.8). EU-RB1 is Type 'b' fuel burning unit, which are below the 10 MMBTU threshold and are therefore exempt from sections 3, 6, 7, and 8 (Section 10.1). The reboiler is not considered a manufacturing process, refinery, or process gas stream.

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)

This facility is subject to 40CFR63 subpart HH which is considered a substantive requirement and this permit action will be considered a modification.

45CSR22 (Air Quality Management Fee Program)

As can be seen from Table 2 this facility is a minor source of air pollution. This facility is subject to the requirements of 45CSR22. This source has a total reciprocating engine capacity of 781 hp which is less than 1,000 hp and is therefore a 9M source and shall pay an annual fee of $200. SWN will be required to keep their Certificate to Operate current.

40 CFR 63 Subpart HH - *National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities*

On June 1, 2013 the DAQ took delegation of the area source provisions of 40 CFR 63, Subpart HH. This facility is a natural gas production facility that processes, upgrades, or stores natural gas prior to transmission. This facility is an area source of HAPs refer to the previous facility wide emissions table.

Pursuant to §63.760(b)(2), each glycol dehydration unit (GDU) located at an area source that meets the requirements under §63.760(a)(3) is defined as an affected facility under Subpart HH. The requirements for affected sources at area sources are given under §63.764(d). However, for a GDU, exemptions to these requirements are given under §63.764(e)(2) "actual average emissions of benzene from the glycol dehydration unit process vent to the atmosphere are less than 0.90 megagram [1 TPY] per year."

As can be seen above in Table 1, the maximum PTE of benzene emissions from the GDU process vent from either TEG dehydration unit is 0.02 TPY. Therefore, the GDU is exempt from the Subpart HH requirements given under §63.764(d).

40CFR63 Subpart ZZZZ *National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines*

Subpart ZZZZ establishes national emission limitations and operating limitations for HAPs emitted from stationary RICE located at major and area sources of HAP emissions. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and operating limitations. This facility is subject to the area source requirements for non-emergency spark ignition engines.

Engines CE-1, CE-2, and EU-ACE are "New Stationary RICE" sources at an area source of HAPs and is an affected source because construction commenced after June 12, 2006 [63.6590(a)(2)(iii)] due to the installation dates of the engines being after June 12, 2006. Engines CE-1, CE-2, and EU-ACE must meet the requirements of 40CFR60 subpart JJJJ and has no additional requirements due to this regulation.

The following regulations do not apply to the facility:

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 25 hp and was manufactured before July 1, 2008 is not subject to this regulation. Engine EU-ACE1 based on engine manufacture date (2007) is not subject to this regulation and therefore engine EU-ACE1 has no requirements due to 40CFR60 subpart JJJJ or 40CFR63 subpart ZZZZ.
>
> 40CFR60.4230 states that a source that commenced construction after June 12, 2006 whose SI ICE was less than 500 hp but more than 100 hp and was manufactured before July 1, 2008 is not subject to this regulation. CE-1 and CE-2 based on engine manufacture date is not subject to this regulation and therefore engine CE-1 and CE-2 has no requirements due to 40CFR60 subpart JJJJ or 40CFR63 subpart ZZZZ.

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

There will be small amounts of various regulated hazardous air pollutants emitted from the operation of this facility as seen in Table 1 and Table 2. The facility is a minor source of HAPs as can be seen in Table 2. If you want to obtain additional information about certain hazardous air pollutants feel free to visit [http://www.epa.gov/ttn/atw/hlthef/hapindex.html].

AIR QUALITY IMPACT ANALYSIS

The facility will not be a major source as defined by 45CSR14 which can be seen in Table 2. Based on the nature of the emissions and the annual emission rate, no air quality impact analysis was performed.

RECOMMENDATION TO DIRECTOR

The information provided in the permit application indicates compliance with all state and federal air quality requirements will be satisfied and this facility is expected to meet the requirements of General Permit G35-A. Therefore ARP Mountaineer Production, Inc.'s request to modify and operate its natural gas compression/dehydration facility is recommended to the Director of Air Quality.

David Keatley
Engineer - NSR Permitting

February 12, 2015

Date