

Permit Writer	David Keatley
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Company Name	Jay-Bee Oil & Gas Inc.
Company ID	095-00023
Facility Name	Ketel Site
Permit Number	R13-3257
County	Tyler County
Newspaper	<i>Tyler Star News</i> 652-4141
Company Contact & Email	Shane Dowell sdowell@jaybeoil.com
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Regional Office (if applicable)	NA

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# INTERNAL PERMITTING DOCUMENT TRACKING MANIFEST

Company Name Jay-Bee Oil & Gas Inc

Permitting Action Number R13-3257 Total Days 289 DAQ Days 1

**Permitting Action:**

- |                                             |                                    |                                               |
|---------------------------------------------|------------------------------------|-----------------------------------------------|
| <input type="radio"/> Permit Determination  | <input type="radio"/> Temporary    | <input checked="" type="radio"/> Modification |
| <input type="radio"/> General Permit        | <input type="radio"/> Relocation   | <input type="radio"/> PSD (Rule 14)           |
| <input type="radio"/> Administrative Update | <input type="radio"/> Construction | <input type="radio"/> NNSR (Rule 19)          |

**Documents Attached:**

- |                                                                |                                                |
|----------------------------------------------------------------|------------------------------------------------|
| <input checked="" type="radio"/> Engineering Evaluation/Memo   | <input type="radio"/> Completed Database Sheet |
| <input checked="" type="radio"/> Draft Permit                  | <input type="radio"/> Withdrawal               |
| <input checked="" type="radio"/> Notice                        | <input type="radio"/> Letter                   |
| <input type="radio"/> Denial                                   | <input type="radio"/> Other (specify) _____    |
| <input type="radio"/> Final Permit/General Permit Registration | _____                                          |

Date	From	To	Action Requested
4-14-2015	David Keatley	Bev McKeone	Review Engineering Evaluation and Permit and Go To Notice.
4/20	Bev	David	See comments - Address - Go to notice
4/20	David	Sandy	Go To Notice

NOTE: Retain a copy of this manifest for your records when transmitting your document(s).



**west virginia** department of environmental protection

Division of Air Quality  
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Earl Ray Tomblin, Governor  
Randy C. Huffman, Cabinet Secretary  
www.wvdep.org

**GENERAL PERMIT REGISTRATION APPLICATION  
ENGINEERING EVALUATION / FACT SHEET**

BACKGROUND INFORMATION

Registration No.:	R13-3257
Plant ID No.:	095-00023
Applicant:	Jay-Bee Oil & Gas, Inc. (Jay-Bee)
Facility Name:	Ketel Compressor Site
Location:	Alvy, Tyler County
SIC Code:	1311
NAICS Code:	211111
Application Type:	Modification
Received Date:	June 30, 2015
Engineer Assigned:	David Keatley
Fee Amount:	\$4,500
Fees Received:	July 1, 2015
Complete Date:	April 13, 2016
Due Date:	July 12, 2016
Applicant Ad Date:	July 1, 2015
Newspaper:	<i>Tyler Star News</i>
UTM's:	Easting: 523.570 km      Northing: 4,365.864 km      Zone: 17
Description:	Permit R13-3257 will supersede and replace G35-A089A. Installation and operation of: one (1) 1,775-bhp compressor engine, one (1) 210-bbl produced liquid tank, and one (1) 2.39-mmBtu/hr enclosed combustor. Removal of one (1) 1,380-bhp compressor engine.

TYPE OF PROCESS

This facility compresses and dehydrates natural gas. Natural gas enters the facility via pipeline. The natural gas flows through an inlet separator. The liquids from the inlet separator go to one (1) 210-bbl produced liquid tank and will be trucked off site at a maximum rate of 140,000 gallons/year. The vapors from this produce liquid tank will be controlled by one (1) 2.39-mmBtu/hr enclosed combustor. The gas from the inlet separator is sent to three compressors to raise the pressure of the natural gas. The compressors are powered by two (2) four-stroke lean-burn Caterpillar G3516BLE (CE-1 and CE-2) reciprocating internal combustion engine (RICE) and one (1) four-stroke lean-burn 1,775-bhp Caterpillar 3606 TALE natural gas

		Normal Service
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Table 2: Maximum Controlled Estimated Air Emissions

Source ID	Emission Source	Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (tpy)
CE-4	Compressor Engine Caterpillar 3606 TALE 1,775 bhp	Nitrogen Oxides	1.96	8.57
		Carbon Monoxide	0.75	3.30
		Volatile Organic Compounds	1.66	7.28
		Sulfur Dioxide	0.01	0.04
		PM	0.13	0.59
		PM <sub>10</sub>	0.13	0.59
		Formaldehyde	0.25	1.07
		CO <sub>2e</sub>	2,144	9,392
VCU-2	Enclosed Combustor (Controlling Produced Liquid Tank T05)	Nitrogen Oxides	0.03	0.13
		Carbon Monoxide	0.16	0.69
		Volatile Organic Compounds	0.22	2.03
		CO <sub>2e</sub>	52	224
TL-1	Truck Loading	Volatile Organic Compounds	0.05	0.20

Table 3: Total Facility Wide PTE

Pollutant	Annual Emissions (tons/year)
Nitrogen Oxides	23.90
Carbon Monoxide	10.90
Volatile Organic Compounds	20.14
Total Particulate Matter	1.78
Sulfur Dioxide	0.10
Acrolein	0.81
Acetaldehyde	1.32
Formaldehyde	3.76
n-Hexane	0.39
Benzene	0.54
n-Hexane	0.33
Toluene	0.70
Ethylbenzene	0.04
Methanol	0.40
Xylenes	0.33
Total HAPs	8.35
Carbon Dioxide Equivalent	28, 022

## REGULATORY APPLICABILITY

The following rules and regulation were reviewed for this modification:

### **45CSR4 - *To Prevent an Control the Discharge of Air Pollutants into the Open Air which Causes or Contributes to the 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.

### **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 proposed an enclosed combustor for controlling the working/breathing/flashing emissions from the condensate/produced water storage tanks. The enclosed combustor 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

Emissions to the incinerator are 116 lbs/hr.

Emissions (lb/hr) = 5.43 x 0.13 tons/hr = 0.32 lb/hr

The estimated hourly particulate matter emission rate from the enclosed combustor is negligible. The facility's proposed enclosed combustor should meet the emission requirements of this rule. The facility will demonstrate compliance by maintaining and operating the combustor properly.

The enclosed combustor 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. The permittee will be required to operate the enclosed combustor according to manufacturer specifications in order to maintain a smokeless operation. The permittee will also be required to conduct 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, and Procedures for Evaluation*

This facility is subject to a substantive requirement (subpart JJJJ) and therefore this permitting action is required to be a modification.

**45CSR22**     *Air Quality Management Fee Program*

This facility is a minor source as can be seen in Table 3 and not subject to 45CSR30 since they are exempt from the obligation to obtain a permit under 40 CFR part 70 or 40 CFR part 71. This facility is a natural gas compressor station and has a total reciprocating engine capacity greater than 1,000 hp, is an 8D source, and is required to pay a \$500 annual fee. This facility is required to keep their Certificate to Operate current.

The following rules and regulations do not apply to the facility:

**40CFR60 Subpart A §60.18** *General Control Device and Work Practice Requirements*

40CFR60 Subpart A §60.18 contains requirements for control devices when they are used to comply with applicable subparts of 40CFR60 and 40CFR61. The enclosed combustor that this facility has proposed is not used to comply with one of these regulations. The purpose of the enclosed combustor is to control emissions from the tanks that are routed to it. In addition 40CFR60.18 refers to flares but makes no mention of enclosed combustion devices. Therefore this facility is not subject to this regulation.

**40CFR60 Subpart Kb**     *Standards of Performance for VOC Liquid Storage Vessels*

40CFR60 Subpart Kb does not apply to storage vessels with a capacity less than 75 cubic meters. The proposed tank T05 at this facility is less than 75 cubic meters; therefore this tank is not subject to this regulation.

**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<sub>2</sub>) 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:

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 tank T05 located at this facility are estimated to emit less than 6 tpy of VOC. Therefore this facilities tanks are not subject to this section of this regulation.*

#### **40CFR60 Subpart JJJJ - *Standards of Performance for Stationary Spark Ignition Internal Combustion Engines***

40CFR60 Subpart JJJJ sets forth emission limits, fuel requirements, installation requirements, and monitoring requirements based on the year of installation of the subject spark ignition internal combustion engine. This subpart applies to engine CE-4 because it was manufactured on or after July 1, 2010 is greater than 1,350 hp non-emergency spark ignition natural gas engine. Engine CE-4 will have to meet the following emission standards in g/hp-hr: NO<sub>x</sub> 1.0, CO 2.0, and VOC 0.7. The emissions standards will have to be met over the entire life of the engine.

#### **40CFR63 Subpart ZZZZ *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines***

Subpart ZZZZ establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emitted from stationary reciprocating internal combustion engines (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.

The facility is an area source of hazardous air pollutants (HAPS < 10 tpy of an individual HAP and < 25 tpy of aggregate HAPs) as can be seen in Table 3. The facility is therefore considered an area source (§63.6585(c)). The engine is a new stationary RICE (§63.6590(a)(2)(iii)) due to the installation date of engine CE-4 being after June 12, 2006.

Stationary RICE subject to Regulations under 40 CFR Part 60 must meet the requirements of those subparts that apply (40 CFR 60 Subpart JJJJ, for spark ignition engines) if the engine is a new stationary RICE located at an area source (§63.6590(c)(1)). No additional requirements apply for these engines under this subpart.

#### **TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS**

The majority of non-criteria regulated pollutants fall under the definition of Hazardous Air Pollutant (HAP)s 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. HAPs are those pollutants that are specifically identified in section 112(b) of the Clean Air Act. To be listed as a HAP, EPA must find that the chemical in question may present a threat to human health and cause adverse environmental effects. As can be seen in Table 4 this facility is an area source of HAPs (potential to emit (PTE) less than 10 tons per year of any pollutant on the HAP list, or less 25 tons per year for all HAPs)

The following table lists each HAP's carcinogenic risk (as based on analysis provided in the Integrated Risk Information System (IRIS)):

Table 4: IRIS HAP Carcinogenic Risk

HAPs	Type	Known/Suspected Carcinogen	Classification
Formaldehyde	HAP/TAP	Yes	Category B - Probable Human Carcinogen

All HAPs have other non-carcinogenic chronic and acute effects. These adverse health effects 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](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.

#### 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 Jay-Bee should be granted a modification permit.

\_\_\_\_\_  
 David Keatley  
 Permit Writer – NSR Permitting

April 13, 2016

\_\_\_\_\_  
 Date

*West Virginia Department of Environmental Protection*  
*Earl Ray Tomblin*  
*Governor*

*Division of Air Quality*

*Randy C. Huffman*  
*Cabinet Secretary*

# Permit to Modify



**R13-3257**

*This permit is issued in accordance with the West Virginia Air Pollution Control Act (West Virginia Code §§22-5-1 et seq.) and 45 C.S.R. 13 – Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits and Procedures for Evaluation. The permittee identified at the above-referenced facility is authorized to construct the stationary sources of air pollutants identified herein in accordance with all terms and conditions of this permit.*

*Issued to:*

**Jay-Bee Oil & Gas Inc.**  
**Ketel Site**  
**095-00023**

---

*William F. Durham*  
*Director*

*Issued: Draft*

This permit will supersede and replace G35-A089A.

Facility Location: near Alma, Tyler County, West Virginia

Mailing Address: 3570 Shields Hill

Cairo, WV 26337

Facility Description: Natural Gas Compressor Station

SIC Codes: 1311

UTM Coordinates: 518.180 km Easting • 4,364.529 km Northing • Zone 17

Permit Type: Modification

Description of Change: Installation and operation of: one (1) 1,775-bhp compressor engine, one (1) 210-bbl produced liquid tank, and one (1) 2.39-mmBtu/hr enclosed combustor. Removal of one (1) 1,380-bhp compressor engine.

*Any person whose interest may be affected, including, but not necessarily limited to, the applicant and any person who participated in the public comment process, by a permit issued, modified or denied by the Secretary may appeal such action of the Secretary to the Air Quality Board pursuant to article one [§§22B-1-1 et seq.], Chapter 22B of the Code of West Virginia. West Virginia Code §§22-5-14.*

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*The source is not subject to 45CSR30.*

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**DRAFT**

**1.0. Emission Units**

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
CE-1	1E	Compressor Engine Caterpillar G3516 B	2013	1,380 bhp	1C (Cat)
CE-2	2E	Compressor Engine Caterpillar G3516 B	2013	1,380 bhp	2C (Cat)
CE-4	3E	Compressor Engine Caterpillar G3606 LE	2016	1,775 bhp	4C (Cat)
RSV-1	5E	TEG Dehydration Unit Still Vent (Controlled by Combustor VCU-1)	2013	40 mmscf/day	VCU-1
RBV-1	6E	TEG Dehydration Unit Reboiler	2013	0.75 mmBtu/hr	None
T05	7E	Produced Liquid Tank (Controlled by Combustor VCU-2)	2016	210 bbl	VCU-2
TL-1	8E	Truck Loading	2016	140,000 gallons/year	None
VCU-1	5E	Enclosed Combustor (Controlling Dehydration Unit Still Vent)	2013	2.39 mmBtu/hr	None
VCU-2	7E	Enclosed Combustor (Controlling Produced Liquid Tank T05 )	2015	2.39 mmBtu/hr	None

**1.1. Control Devices**

Emission Unit	Pollutant	Control Device	Control Efficiency
Compressor Engines CE-1 and CE-2 Caterpillar G3516 B 1,380 bhp (each)	Carbon Monoxide	EMIT Oxidation Catalysts 1C and 2C	93%
	Volatile Organic Compounds		50%
	Formaldehyde		76%
Compressor Engine CE-4 Caterpillar G3606 LE 1,775 bhp	Carbon Monoxide	DCL Oxidation Catalyst 4C	93%
	Volatile Organic Compounds		50%
	Formaldehyde		76%
TEG Dehydration Unit Still Vent RSV-1	Volatile Organic Compounds	Enclosed Combustor (VCU-1)	98%
Produced Water Tank T05	Volatile Organic Compounds	Enclosed Combustor (VCU-2)	98%

## 2.0. General Conditions

### 2.1. Definitions

- 2.1.1. All references to the “West Virginia Air Pollution Control Act” or the “Air Pollution Control Act” mean those provisions contained in W.Va. Code §§ 22-5-1 to 22-5-18.
- 2.1.2. The “Clean Air Act” means those provisions contained in 42 U.S.C. §§ 7401 to 7671q, and regulations promulgated thereunder.
- 2.1.3. “Secretary” means the Secretary of the Department of Environmental Protection or such other person to whom the Secretary has delegated authority or duties pursuant to W.Va. Code §§ 22-1-6 or 22-1-8 (45CSR§30-2.12.). The Director of the Division of Air Quality is the Secretary’s designated representative for the purposes of this permit.

### 2.2. Acronyms

<b>CAAA</b>	Clean Air Act Amendments	<b>NO<sub>x</sub></b>	Nitrogen Oxides
<b>CBI</b>	Confidential Business Information	<b>NSPS</b>	New Source Performance Standards
<b>CEM</b>	Continuous Emission Monitor	<b>PM</b>	Particulate Matter
<b>CES</b>	Certified Emission Statement	<b>PM<sub>2.5</sub></b>	Particulate Matter less than 2.5 μm in diameter
<b>C.F.R. or CFR</b>	Code of Federal Regulations	<b>PM<sub>10</sub></b>	Particulate Matter less than 10μm in diameter
<b>CO</b>	Carbon Monoxide	<b>Ppb</b>	Pounds per Batch
<b>C.S.R. or CSR</b>	Codes of State Rules	<b>Pph</b>	Pounds per Hour
<b>DAQ</b>	Division of Air Quality	<b>Ppm</b>	Parts per Million
<b>DEP</b>	Department of Environmental Protection	<b>Ppmv or ppmv</b>	Parts per Million by Volume
<b>dscm</b>	Dry Standard Cubic Meter	<b>PSD</b>	Prevention of Significant Deterioration
<b>FOIA</b>	Freedom of Information Act	<b>Psi</b>	Pounds per Square Inch
<b>HAP</b>	Hazardous Air Pollutant	<b>SIC</b>	Standard Industrial Classification
<b>HON</b>	Hazardous Organic NESHAP	<b>SIP</b>	State Implementation Plan
<b>HP</b>	Horsepower	<b>SO<sub>2</sub></b>	Sulfur Dioxide
<b>lbs/hr</b>	Pounds per Hour	<b>TAP</b>	Toxic Air Pollutant
<b>LDAR</b>	Leak Detection and Repair	<b>TPY</b>	Tons per Year
<b>M</b>	Thousand	<b>TRS</b>	Total Reduced Sulfur
<b>MACT</b>	Maximum Achievable Control Technology	<b>TSP</b>	Total Suspended Particulate
<b>MDHI</b>	Maximum Design Heat Input	<b>USEPA</b>	United States Environmental Protection Agency
<b>MM</b>	Million	<b>UTM</b>	Universal Transverse Mercator
<b>MMBtu/hr or mmbtu/hr</b>	Million British Thermal Units per Hour	<b>VEE</b>	Visual Emissions Evaluation
<b>MMCF/hr or mmcf/hr</b>	Million Cubic Feet per Hour	<b>VOC</b>	Volatile Organic Compounds
<b>NA</b>	Not Applicable	<b>VOL</b>	Volatile Organic Liquids
<b>NAAQS</b>	National Ambient Air Quality Standards		
<b>NESHAPS</b>	National Emissions Standards for Hazardous Air Pollutants		

### 2.3. Authority

This permit is issued in accordance with West Virginia air pollution control law W.Va. Code §§ 22-5-1. et seq. and the following Legislative Rules promulgated thereunder:

- 2.3.1. 45CSR13 – *Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits and Procedures for Evaluation;*

### 2.4. Term and Renewal

- 2.4.1. This permit supersedes and replaces previously issued General Permit Registration R13-2720. This Permit shall remain valid, continuous and in effect unless it is revised, suspended, revoked or otherwise changed under an applicable provision of 45CSR13 or any other applicable legislative rule;

### 2.5. Duty to Comply

- 2.5.1. The permitted facility shall be constructed and operated in accordance with the plans and specifications filed in Permit Application G35-A089A, R13-3225, and any modifications, administrative updates, or amendments thereto. The Secretary may suspend or revoke a permit if the plans and specifications upon which the approval was based are not adhered to; [45CSR§§13-5.11 and -10.3.]
- 2.5.2. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the West Virginia Code and the Clean Air Act and is grounds for enforcement action by the Secretary or USEPA;
- 2.5.3. Violations of any of the conditions contained in this permit, or incorporated herein by reference, may subject the permittee to civil and/or criminal penalties for each violation and further action or remedies as provided by West Virginia Code 22-5-6 and 22-5-7;
- 2.5.4. Approval of this permit does not relieve the permittee herein of the responsibility to apply for and obtain all other permits, licenses, and/or approvals from other agencies; i.e., local, state, and federal, which may have jurisdiction over the construction and/or operation of the source(s) and/or facility herein permitted.

### 2.6. Duty to Provide Information

The permittee shall furnish to the Secretary within a reasonable time any information the Secretary may request in writing to determine whether cause exists for administratively updating, modifying, revoking, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Secretary copies of records to be kept by the permittee. For information claimed to be confidential, the permittee shall furnish such records to the Secretary along with a claim of confidentiality in accordance with 45CSR31. If confidential information is to be sent to USEPA, the permittee shall directly provide such information to USEPA along with a claim of confidentiality in accordance with 40 C.F.R. Part 2.

## 2.7. Duty to Supplement and Correct Information

Upon becoming aware of a failure to submit any relevant facts or a submittal of incorrect information in any permit application, the permittee shall promptly submit to the Secretary such supplemental facts or corrected information.

## 2.8. Administrative Update

The permittee may request an administrative update to this permit as defined in and according to the procedures specified in 45CSR13.  
[45CSR§13-4.]

## 2.9. Permit Modification

The permittee may request a minor modification to this permit as defined in and according to the procedures specified in 45CSR13.  
[45CSR§13-5.4.]

## 2.10 Major Permit Modification

The permittee may request a major modification as defined in and according to the procedures specified in 45CSR14 or 45CSR19, as appropriate.  
[45CSR§13-5.1]

## 2.11. Inspection and Entry

The permittee shall allow any authorized representative of the Secretary, upon the presentation of credentials and other documents as may be required by law, to perform the following:

- a. At all reasonable times (including all times in which the facility is in operation) enter upon the permittee's premises where a source is located or emissions related activity is conducted, or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect at reasonable times (including all times in which the facility is in operation) any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit;
- d. Sample or monitor at reasonable times substances or parameters to determine compliance with the permit or applicable requirements or ascertain the amounts and types of air pollutants discharged.

## 2.12. Emergency

- 2.12.1. An "emergency" means any situation arising from sudden and reasonable unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by

improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

2.12.2. Effect of any emergency. An emergency constitutes an affirmative defense to an action brought for noncompliance with such technology-based emission limitations if the conditions of Section 2.12.3 are met.

2.12.3. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

- a. An emergency occurred and that the permittee can identify the cause(s) of the emergency;
- b. The permitted facility was at the time being properly operated;
- c. During the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and
- d. The permittee submitted notice of the emergency to the Secretary within one (1) working day of the time when emission limitations were exceeded due to the emergency and made a request for variance, and as applicable rules provide. This notice must contain a detailed description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

2.12.4. In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency has the burden of proof.

2.12.5 The provisions of this section are in addition to any emergency or upset provision contained in any applicable requirement.

### **2.13. Need to Halt or Reduce Activity Not a Defense**

It shall not be a defense for a permittee in an enforcement action that it should have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. However, nothing in this paragraph shall be construed as precluding consideration of a need to halt or reduce activity as a mitigating factor in determining penalties for noncompliance if the health, safety, or environmental impacts of halting or reducing operations would be more serious than the impacts of continued operations.

### **2.14. Suspension of Activities**

In the event the permittee should deem it necessary to suspend, for a period in excess of sixty (60) consecutive calendar days, the operations authorized by this permit, the permittee shall notify the Secretary, in writing, within two (2) calendar weeks of the passing of the sixtieth (60) day of the suspension period.

### **2.15. Property Rights**

This permit does not convey any property rights of any sort or any exclusive privilege.

**2.16. Severability**

The provisions of this permit are severable and should any provision(s) be declared by a court of competent jurisdiction to be invalid or unenforceable, all other provisions shall remain in full force and effect.

**2.17. Transferability**

This permit is transferable in accordance with the requirements outlined in Section 10.1 of 45CSR13. [45CSR§13-10.1.]

**2.18. Notification Requirements**

The permittee shall notify the Secretary, in writing, no later than thirty (30) calendar days after the actual startup of the operations authorized under this permit.

**2.19. Credible Evidence**

Nothing in this permit shall alter or affect the ability of any person to establish compliance with, or a violation of, any applicable requirement through the use of credible evidence to the extent authorized by law. Nothing in this permit shall be construed to waive any defense otherwise available to the permittee including, but not limited to, any challenge to the credible evidence rule in the context of any future proceeding.

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### 3.0. Facility-Wide Requirements

#### 3.1. Limitations and Standards

- 3.1.1. **Open burning.** The open burning of refuse by any person, firm, corporation, association or public agency is prohibited except as noted in 45CSR§6-3.1.  
[45CSR§6-3.1.]
- 3.1.2. **Open burning exemptions.** The exemptions listed in 45CSR§6-3.1 are subject to the following stipulation: Upon notification by the Secretary, no person shall cause, suffer, allow or permit any form of open burning during existing or predicted periods of atmospheric stagnation. Notification shall be made by such means as the Secretary may deem necessary and feasible.  
[45CSR§6-3.2.]
- 3.1.3. **Asbestos.** The permittee is responsible for thoroughly inspecting the facility, or part of the facility, prior to commencement of demolition or renovation for the presence of asbestos and complying with 40 C.F.R. § 61.145, 40 C.F.R. § 61.148, and 40 C.F.R. § 61.150. The permittee, owner, or operator must notify the Secretary at least ten (10) working days prior to the commencement of any asbestos removal on the forms prescribed by the Secretary if the permittee is subject to the notification requirements of 40 C.F.R. § 61.145(b)(3)(i). The USEPA, the Division of Waste Management, and the Bureau for Public Health - Environmental Health require a copy of this notice to be sent to them.  
[40CFR§61.145(b) and 45CSR§15]
- 3.1.4. **Odor.** No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor at any location occupied by the public.  
[45CSR§4-3.1] *[State Enforceable Only]*
- 3.1.5. **Permanent shutdown.** A source which has not operated at least 500 hours in one 12-month period within the previous five (5) year time period may be considered permanently shutdown, unless such source can provide to the Secretary, with reasonable specificity, information to the contrary. All permits may be modified or revoked and/or reapplication or application for new permits may be required for any source determined to be permanently shutdown.  
[45CSR§13-10.5.]
- 3.1.6. **Standby plan for reducing emissions.** When requested by the Secretary, the permittee shall prepare standby plans for reducing the emissions of air pollutants in accordance with the objectives set forth in Tables I, II, and III of 45CSR11.  
[45CSR§11-5.2.]

#### 3.2. Monitoring Requirements

*[Reserved]*

#### 3.3. Testing Requirements

- 3.3.1. **Stack testing.** As per provisions set forth in this permit or as otherwise required by the Secretary, in accordance with the West Virginia Code, underlying regulations, permits and orders, the permittee shall conduct test(s) to determine compliance with the emission limitations set forth in this permit and/or established or set forth in underlying documents. The Secretary, or his duly authorized representative, may at his option witness or conduct such test(s). Should the Secretary

exercise his option to conduct such test(s), the operator shall provide all necessary sampling connections and sampling ports to be located in such manner as the Secretary may require, power for test equipment and the required safety equipment, such as scaffolding, railings and ladders, to comply with generally accepted good safety practices. Such tests shall be conducted in accordance with the methods and procedures set forth in this permit or as otherwise approved or specified by the Secretary in accordance with the following:

- a. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with 40 C.F.R. Parts 60, 61, and 63 in accordance with the Secretary's delegated authority and any established equivalency determination methods which are applicable. If a testing method is specified or approved which effectively replaces a test method specified in the permit, the permit may be revised in accordance with 45CSR§13-4. or 45CSR§13-5.4 as applicable.
- b. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with applicable requirements which do not involve federal delegation. In specifying or approving such alternative testing to the test methods, the Secretary, to the extent possible, shall utilize the same equivalency criteria as would be used in approving such changes under Section 3.3.1.a. of this permit. If a testing method is specified or approved which effectively replaces a test method specified in the permit, the permit may be revised in accordance with 45CSR§13-4. or 45CSR§13-5.4 as applicable.
- c. All periodic tests to determine mass emission limits from or air pollutant concentrations in discharge stacks and such other tests as specified in this permit shall be conducted in accordance with an approved test protocol. Unless previously approved, such protocols shall be submitted to the Secretary in writing at least thirty (30) days prior to any testing and shall contain the information set forth by the Secretary. In addition, the permittee shall notify the Secretary at least fifteen (15) days prior to any testing so the Secretary may have the opportunity to observe such tests. This notification shall include the actual date and time during which the test will be conducted and, if appropriate, verification that the tests will fully conform to a referenced protocol previously approved by the Secretary.

[WV Code § 22-5-4(a)(15)]

### 3.4. Recordkeeping Requirements

- 3.4.1. **Retention of records.** The permittee shall maintain records of all information (including monitoring data, support information, reports, and notifications) required by this permit recorded in a form suitable and readily available for expeditious inspection and review. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation. The files shall be maintained for at least five (5) years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. Said records shall be maintained on site or in a readily accessible off-site location maintained by the registrant for a period of five (5) years. Where appropriate, the permittee may maintain records electronically (on a computer, on computer floppy disks, CDs, DVDs, or magnetic tape disks), on microfilm, or on microfiche.
- 3.4.2. **Odors.** For the purposes of 45CSR4, the permittee shall maintain a record of all odor complaints received, any investigation performed in response to such a complaint, and any responsive action(s) taken.

[45CSR§4. State Enforceable Only.]

**3.5. Reporting Requirements**

- 3.5.1. **Responsible official.** Any application form, report, or compliance certification required by this permit to be submitted to the DAQ and/or USEPA shall contain a certification by the responsible official that states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
- 3.5.2. **Confidential information.** A permittee may request confidential treatment for the submission of reporting required by this permit pursuant to the limitations and procedures of W.Va. Code § 22-5-10 and 45CSR31.
- 3.5.3. **Correspondence.** All notices, requests, demands, submissions and other communications required or permitted to be made to the Secretary of DEP and/or USEPA shall be made in writing and shall be deemed to have been duly given when delivered by hand, or mailed first class with postage prepaid to the address(es) set forth below or to such other person or address as the Secretary of the Department of Environmental Protection may designate:

**If to the DAQ:**  
Director  
WVDEP  
Division of Air Quality  
601 57<sup>th</sup> Street  
Charleston, WV 25304-2345

**If to the US EPA:**  
Associate Director  
Office of Enforcement and Compliance Assistance  
(3AP20)  
U.S. Environmental Protection Agency  
Region III  
1650 Arch Street  
Philadelphia, PA 19103-2029

**3.5.4. Operating Fee**

- 3.5.4.1. In accordance with 45CSR22 – Air Quality Management Fee Program, the permittee shall not operate nor cause to operate the permitted facility or other associated facilities on the same or contiguous sites comprising the plant without first obtaining and having in current effect a Certificate to Operate (CTO). Such Certificate to Operate (CTO) shall be renewed annually, shall be maintained on the premises for which the certificate has been issued, and shall be made immediately available for inspection by the Secretary or his/her duly authorized representative.
- 3.5.5. **Emission inventory.** At such time(s) as the Secretary may designate, the permittee herein shall prepare and submit an emission inventory for the previous year, addressing the emissions from the facility and/or process(es) authorized herein, in accordance with the emission inventory submittal requirements of the Division of Air Quality. After the initial submittal, the Secretary may, based upon the type and quantity of the pollutants emitted, establish a frequency other than on an annual basis.

#### 4.0. Source-Specific Requirements [All Emission Units listed in Section 1.0]

##### 4.1. Recordkeeping Requirements

4.1.1. **Record of Monitoring.** The permittee shall keep records of monitoring information that include the following:

- a. The date, place as defined in this permit, and time of sampling or measurements;
- b. The date(s) analyses were performed;
- c. The company or entity that performed the analyses;
- d. The analytical techniques or methods used;
- e. The results of the analyses; and
- f. The operating conditions existing at the time of sampling or measurement.

4.1.2. **Operation and Maintenance of Air Pollution Control Equipment.** The permittee shall, to the extent practicable, install, maintain, and operate all pollution control equipment listed in Section 1.0 and associated monitoring equipment in a manner consistent with safety and good air pollution control practices for minimizing emissions, or comply with any more stringent limits set forth in this permit or as set forth by any State rule, Federal regulation, or alternative control plan approved by the Secretary [45CSR§13-5.11.]

4.1.3. **Record of Malfunctions of Air Pollution Control Equipment.** For all air pollution control equipment listed in Section 1.0, the permittee shall maintain records of the occurrence and duration of any malfunction or operational shutdown of the air pollution control equipment during which excess emissions occur. For each such case, the following information shall be recorded:

- a. The equipment involved.
- b. Steps taken to minimize emissions during the event.
- c. The duration of the event.
- d. The estimated increase in emissions during the event.

For each such case associated with an equipment malfunction, the additional information shall also be recorded:

- e. The cause of the malfunction.
- f. Steps taken to correct the malfunction.
- g. Any changes or modifications to equipment or procedures that would help prevent future recurrences of the malfunction.

**5.0. Source-Specific Requirements (Engines; CE-1, CE-2, and CE-4)**

**5.1. Limitations and Standards**

5.1.1. **Maximum Brake Horsepower Limit.** The four-stroke lean-burn Caterpillar G3516 LE natural gas fired compressor engines (CE-1 and CE-2) shall not exceed 1,380 bhp each.

5.1.2. **Emission Limits.** The maximum emissions for each engine (CE-1 and CE-2) shall not exceed the following limits:

Emission Unit IDs	Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (ton/year)
CE-1 and CE-2	Nitrogen Oxides	1.52	6.66
	Carbon Monoxide	0.61	2.67
	Volatile Organic Compounds	0.88	3.86
	Formaldehyde	0.31	1.34

5.1.3. **Maximum Brake Horsepower Limit.** The four-stroke lean-burn Caterpillar G3606 LE natural gas fired compressor engine (CE-4) shall not exceed 1,775 bhp.

5.1.4. **Emission Limits.** The maximum emissions for each engine (CE-4) shall not exceed the following limits:

Emission Unit IDs	Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (ton/year)
CE-4	Nitrogen Oxides	1.96	8.57
	Carbon Monoxide	0.75	3.30
	Volatile Organic Compounds	1.66	7.28
	Formaldehyde	0.25	1.07

**5.1.5. Requirements for Use of Catalytic Oxidation Devices**

a. For engines (CE-1, CE-2, and CE-4), the permittee shall monitor the temperature to the inlet of the catalyst and in accordance with manufacturer's specifications; a high temperature alarm shall shut off the engine before thermal deactivation of the catalyst occurs. If the engine shuts off due to high temperature, the permittee shall also check for thermal deactivation of the catalyst before normal operations are resumed.

b. No person shall knowingly:

1. Remove or render inoperative any air pollution or auxiliary air pollution control device installed subject to the requirements of this permit;
2. Install any part or component when the principal effect of the part or component is to bypass, defeat or render inoperative any air pollution control device or auxiliary air pollution control device installed subject to the requirements of this permit; or

3. Cause or allow engine exhaust gases to bypass any catalytic oxidation device.

## **5.2. Monitoring Requirements**

### **5.2.1. Catalytic Reduction Control Device**

- a. The permittee shall regularly inspect, properly maintain and/or replace catalytic reduction devices and auxiliary air pollution control devices to ensure functional and effective operation of the engine's physical and operational design. The permittee shall ensure proper operation, maintenance and performance of catalytic reduction devices and auxiliary air pollution control devices by:
  1. Maintaining proper operation of the automatic air/fuel ratio controller or automatic feedback controller.
  2. Following operating and maintenance recommendations of the catalyst element manufacturer.
  3. The automatic air/fuel ratio controller or closed-loop automatic feedback controller shall provide a warning or indication to the operator and/or be interlocked with the engine ignition system to cease engine operation in case of masking, poisoning or overrich air/fuel ratio situation which results in performance degradation or failure of the catalyst element.

## **5.3. Testing Requirements**

- 5.3.1. Upon request by the Director, testing shall be conducted using a portable analyzer in accordance with a protocol approved by the Director. Such controls shall ensure proper and efficient operation of the engine and air pollution control devices.

## **5.4. Recordkeeping Requirements**

- 5.4.1. To demonstrate compliance with sections 5.2.1, all maintenance shall be recorded. Said records shall be maintained on site or in a readily accessible off-site location maintained by the permittee for a period of five (5) years. Said records shall be readily available to the Director of the Division of Air Quality or his/her duly authorized representative for expeditious inspection and review. Any records submitted to the agency pursuant to a requirement of this permit or upon request by the Director shall be certified by a responsible official.

## 6.0. Source-Specific Hazardous Air Pollutant Requirements (TEG Dehydration Unit, RSV-1)

### 6.1. Limitations and Standards

- 6.1.1. **Maximum Throughput Limits.** The maximum wet natural gas throughput to the glycol dehydration unit/still column shall not exceed the following limit for each dehydration unit.

Emission Unit ID	Maximum Wet Natural Gas Throughput
RSV-1	40 mmscf/day

Compliance with the Maximum Throughput Limitation shall be determined using a twelve month rolling total. A twelve month rolling total shall mean the sum of the monthly throughput at any given time during the previous twelve consecutive calendar months.

- 6.1.2. **Maximum Design Heat Input.** The maximum design heat input for each of the Dehydration Unit Reboiler shall not exceed the following limit for each reboiler:

Emission Unit ID	Maximum Design Heat Input
RBV-1	0.75 mmBtu/hr

- 6.1.3. **Emission Limits.** The maximum emissions from each of the Dehydration Unit Reboiler RBV-1 shall not exceed the following limits:

Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (ton/year)
Nitrogen Oxides	0.08	0.33
Carbon Monoxide	0.06	0.28

- 6.1.4. **Emission Limits.** The maximum emissions from each of the TEG regenerator still vent being controlled by enclosed combustor VCU-1 shall not exceed the following limits:

Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (ton/year)
Nitrogen Oxides	0.35	1.52
Carbon Monoxide	0.29	1.28
Volatile Organic Compounds	1.55	6.80
Benzene	0.11	0.47
n-Hexane	0.03	0.11
Toluene	0.15	0.63
Xylenes	0.07	0.30

- 6.1.5. For purposes of determining potential HAP emissions at production-related facilities, the methods specified in 40 CFR 63, Subpart HH (i.e. excluding compressor engines from HAP PTE) shall be used.
- 6.1.6. Any source that determines it is not a major source but has actual emissions of 5 tons per year or more of a single HAP, or 12.5 tons per year or more of a combination of HAP (i.e., 50 percent of the major source thresholds), shall update its major source determination within 1 year of the prior determination or October 15, 2012, whichever is later, and each year thereafter, using gas composition data measured during the preceding 12 months.  
[40CFR§63.760(c)]
- 6.1.7. The permittee is exempt from the requirements of 40CFR§63.760(b)(2) if the criteria below is met, except that the records of the determination of these criteria must be maintained as required in 40CFR§63.774(d)(1).
- a. The actual average emissions of benzene from the glycol dehydration unit process vent to the atmosphere are less than 0.90 megagram per year (1 ton/yr), as determined by the procedures specified in §63.772(b)(2) of this subpart.  
[40CFR§63.764(e)]
- 6.1.8. Enclosed Combustor VCU-1 shall all achieve a minimum control efficiency of 98%.
- 6.1.9. **Reboiler Opacity Limit.** Reboilers RBV-1 shall not emit particulate matter into the open air greater than ten (10) percent opacity based on a six minute block average.  
[45CSR§2-3.1.]

## 6.2. Monitoring Requirements

- 6.2.1. The permittee shall monitor the throughput of wet natural gas fed to the dehydration system on a monthly basis for the glycol dehydration unit RSV-1.
- 6.2.2. In order to demonstrate compliance with the area source status, claimed within sections 6.1.5. and 6.1.6., as well as the benzene exemption provided under section 6.1.8., the following parameters shall be measured at least once quarterly, with the exception of the natural gas flowrate annual daily average, natural gas flowrate maximum design capacity, and wet gas composition, in order to define annual average values or, if monitoring is not practical, some parameters may be assigned default values as listed below.
- a. Natural Gas Flowrate
- Number of hours operated per quarter
  - Quarterly throughput (MMscf/quarter)
  - Annual daily average (MMscf/day), and
  - Maximum design capacity (MMscf/day)
- b. Absorber temperature and pressure
- c. Lean glycol circulation rate
- d. Glycol pump type and maximum design capacity (gpm)
- e. Flash tank temperature and pressure, if applicable
- f. Stripping Gas flow rate, if applicable
- g. Wet gas composition (upstream of the absorber – dehydration column) sampled in accordance with GPA method 2166 and analyzed consistent with GPA extended method 2286 as well as the procedures presented in the GRI-GLYCalc™ Technical Reference User Manual and Handbook V4
- h. Wet gas water content (lbs H<sub>2</sub>O/MMscf)
- Dry gas water content (lbs H<sub>2</sub>O/MMscf) at a point directly after exiting the dehydration column and before any additional separation points

The following operating parameter(s) may be assigned default values when using GRI-GLYCalc:

- a. Dry gas water content can be assumed to be equivalent to pipeline quality at 7 lb H<sub>2</sub>O / MMscf
- b. Wet gas water content can be assumed to be saturated
- c. Lean glycol water content if not directly measured may use the default value of 1.5 % water as established by GRI
- d. Lean glycol circulation rate may be estimated using the TEG recirculation ratio of 3 gal TEG / lb H<sub>2</sub>O removed.

Note: If you are measuring and using actual wet or dry gas water content, then you should also measure the glycol recirculation rate rather than using the default TEG recirculation ratio.

[45CSR§13-5.11, §63.772(b)(2)(i)]

### 6.3. Testing Requirements

- 6.3.1. The permittee shall determine the composition of the wet natural gas by sampling in accordance with GPA Method 2166 and analyzing according to extended GPA Method 2286 analysis as specified in the GRI-GLYCalc™ V4 Technical Reference User Manual and Handbook. As specified in the handbook, the permittee shall sample the wet gas stream at a location prior to the glycol dehydration contactor column, but after any type of separation device, in accordance with GPA method 2166. The permittee may utilize other equivalent methods provided they are approved in advance by DAQ as part of a testing protocol. If alternative methods are proposed, a test protocol shall be submitted for approval no later than 60 days before the scheduled test date. The initial compliance test must be conducted within 180 days of permit issuance or within 180 days of startup of the glycol dehydration unit, whichever is later.

Note: The DAQ defines a representative wet gas sample to be one that is characteristic of the average gas composition dehydrated throughout a calendar year. If an isolated sample is not indicative of the annual average composition, the permittee may opt to produce a weighted average based on throughput between multiple sampling events, which can be used to define a more representative average annual gas composition profile.

[45CSR§13-5.11]

- 6.3.2. The following testing and compliance provisions of Part 63 Subpart HH National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities are applicable to the facility:

§ 63.772 Test methods, compliance procedures, and compliance demonstrations.

- (b) Determination of glycol dehydration unit flowrate, benzene emissions, or BTEX emissions. The procedures of this paragraph shall be used by an owner or operator to determine glycol dehydration unit natural gas flowrate, benzene emissions, or BTEX emissions.
  - (2) The determination of actual average benzene emissions or BTEX emissions from a glycol dehydration unit shall be made using the procedures of paragraph (b)(2)(i) of this requirement. Emissions shall be determined either uncontrolled, or with federally enforceable controls in place.
    - (i) The owner or operator shall determine actual average benzene emissions using the model GRI-GLYCalc™, Version 3.0 or higher, and the procedures presented in the associated GRI-GLYCalc™ Technical Reference Manual. Inputs to the model shall be representative of actual operating conditions of the glycol dehydration unit and may be determined using the procedures documented in Gas Research Institute

(GRI) report entitled "Atmospheric Rich/Lean Method for Determining Glycol Dehydrator Emissions" (GRI-95/0368.1).  
[§63.772(b)(2)(i)]

#### 6.4. Recordkeeping Requirements

- 6.4.1. The permittee shall maintain a record of the wet natural gas throughput through the glycol dehydration unit RSV-1 to demonstrate compliance with section 6.1.1. of this permit.
- 6.4.2. For the purpose of demonstrating compliance with section 6.1.4. through 6.1.7., the permittee shall maintain a record of all potential to emit (PTE) HAP calculations for the entire affected facility. These records shall include the natural gas compressor engines and ancillary equipment.
- 6.4.3. For the purpose of documenting compliance with the emission limitations, HAP major source thresholds, as well as the benzene exemption, the permittee shall maintain records of all monitoring data, wet gas sampling, and annual GRI-GLYCalc™ emission estimates.
- 6.4.4. All records in section 6.4. shall be readily available to the Director of the Division of Air Quality or his/her duly authorized representative for expeditious inspection and review. Any records submitted to the agency pursuant to a requirement of this permit or upon request by the Director shall be certified by a responsible official. Said records shall be maintained for a period of five (5) years on site or in a readily accessible off-site location maintained by the permittee.

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## 7.0. Source-Specific Requirements (Tanks and Truck Loading; T05, TL-1, and VCU-2)

### 7.1. Limitations and Standards

- 7.1.1. Produced Liquid Tank Emission Limits. Maximum emissions from the enclosed combustor VCU-2 associated with the 210-bbl produced liquids tank T05 shall not exceed the following limits:

Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (ton/year)
Nitrogen Oxides	0.04	0.16
Carbon Monoxide	0.16	0.72
Volatile Organic Compounds	0.22	2.03

- 7.1.2. Maximum Produced Water Truck Loading Throughput Limitation. The maximum throughput limitation for tank T05 shall not exceed 140,000 gallons per year. Compliance with this annual throughput limitation shall be determined using the truck loading TL-01 using a twelve month rolling total. A twelve month rolling total shall mean the sum of the tank throughput at any given time during the previous twelve consecutive calendar months.
- 7.1.3. Tank Size Limitation. Tank T05 shall not exceed 210-bbl design volume.
- 7.1.4. The potential for VOC emissions shall be calculated using a generally accepted model or calculation methodology, based on the maximum average daily throughput determined for a 30-day period of production prior to the applicable emission determination deadline.
- 7.1.5. Combustor VCU-2 shall achieve a minimum control efficiency of 98%.

### 7.2. Monitoring Requirements

- 7.2.1. For the purpose of demonstrating compliance with section 7.1.2, the permittee shall monitor the volume of produced liquids loaded into tank trucks on at least a monthly basis.

### 7.3. Recordkeeping Requirements

- 7.3.1. To demonstrate compliance with section 7.1.2, the permittee shall record the volume and date of each truck of produced liquid.

## 8.0. Source-Specific Requirements (40CFR60 Subpart JJJJ Requirements; Engines)

### 8.1. Limitations and Standards

- 8.1.1. Each engine (CE-1, CE-2, and CE-4) is required to meet the following emission standards: NO<sub>x</sub> 1.0 g/bhp-hr, CO 2.0 g/bhp-hr, and VOC 0.7 g/bhp-hr. [40CFR§60.4233(e)]
- 8.1.2. This facility must operate and maintain each engine (CE-1, CE-2, and CE-4) over the entire life of the engine. [40CFR§60.4234]

### 8.2. Compliance Requirements

- 8.2.1. The permittee shall keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, the permittee must conduct an initial performance test and conduct subsequent performance testing every 8,760 hours of operation or 3 years, whichever comes first, thereafter to demonstrate compliance. [40CFR§60.4243(b)(2)(ii)]
- 8.2.2. It is expected that the air-to-fuel ratio (AFR) controllers will be used with the operation of three-way catalysts/non-selective catalytic reduction. The AFR controller must be maintained and operated in a manner to ensure proper operation of the engine and control device to minimize emissions at all times. [40CFR§60.4243(g)]

### 8.3. Testing Requirements

To demonstrate compliance with section 8.1.1., the permittee shall conduct the following testing.

- 8.3.1. The permittee shall conduct performance tests following the procedures in paragraphs (a) through (g) of this section.
- Each performance test shall be conducted within 10 percent of 100 percent peak (or the highest achievable) load and according to the requirements in §60.8 and under the specific conditions that are specified by Table 2 to this subpart. [40CFR§60.4244(a)]
  - The permittee may not conduct performance tests during periods of startup, shutdown, or malfunction, as specified in §60.8(c). If the stationary SI internal combustion engine is non-operational, it is not necessary to start up the engine solely to conduct a performance test; however, the performance test must be conducted immediately upon startup of the engine. [40CFR§60.4244(b)]
  - The permittee shall conduct three separate test runs for each performance test required in this section, as specified in §60.8(f). Each test run shall be conducted within 10 percent of 100 percent peak (or the highest achievable) load and last at least 1 hour. [40CFR§60.4244(c)]
  - To determine compliance with the NO<sub>x</sub> mass per unit output emission limitation, convert the concentration of NO<sub>x</sub> in the engine exhaust using Equation 1 of this section:

$$ER = \frac{C_a \times 1.912 \times 10^{-3} \times Q \times T}{HP - hr} \quad (Eq. 1)$$

Where:

ER = Emission rate of NO<sub>x</sub> in g/HP-hr.

C<sub>d</sub> = Measured NO<sub>x</sub> concentration in parts per million by volume (ppmv).

1.912×10<sup>-3</sup> = Conversion constant for ppm NO<sub>x</sub> to grams per standard cubic meter at 20 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meter per hour, dry basis.

T = Time of test run, in hours.

HP-hr = Brake work of the engine, horsepower-hour (HP-hr).

[40CFR§60.4244(d)]

- e. To determine compliance with the CO mass per unit output emission limitation, convert the concentration of CO in the engine exhaust using Equation 2 of this section:

$$ER = \frac{C_d \times 1.164 \times 10^{-3} \times Q \times T}{HP - hr} \quad (\text{Eq. 2})$$

Where:

ER = Emission rate of CO in g/HP-hr

C<sub>d</sub> = Measured CO concentration in ppmv

1.164×10<sup>-3</sup> = Conversion constant for ppm CO to grams per standard cubic meter at 20 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meters per hour, dry basis.

T = Time of test run, in hours.

HP-hr = Brake work of the engine, in HP-hr.

[40CFR§60.4244(e)]

- f. For purposes of this subpart, when calculating emissions of VOC, emissions of formaldehyde should not be included. To determine compliance with the VOC mass per unit output emission limitation, convert the concentration of VOC in the engine exhaust using Equation 3 of this section:

$$ER = \frac{C_d \times 1.833 \times 10^{-3} \times Q \times T}{HP - hr} \quad (\text{Eq. 3})$$

Where:

ER = Emission rate of VOC in g/HP-hr.

C<sub>d</sub> = VOC concentration measured as propane in ppmv.

1.833×10<sup>-3</sup> = Conversion constant for ppm VOC measured as propane, to grams per standard cubic meter at 20 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meters per hour, dry basis.

T = Time of test run, in hours.

HP-hr = Brake work of the engine, in HP-hr.

[40CFR§60.4244(f)]

- g. If the owner/operator chooses to measure VOC emissions using Method 18 of 40 CFR part 60, appendix A, or Method 320 of 40 CFR part 63, appendix A, then it has the option of correcting the measured VOC emissions to account for the potential differences in measured values between these methods and Method 25A. The results from Method 18 and Method 320 can be corrected for response factor differences using Equations 4 and 5 of this section. The corrected VOC concentration can then be placed on a propane basis using Equation 6 of this section.

$$RF_i = \frac{C_m}{C_{Ai}} \quad (\text{Eq. 4})$$

Where:

RF<sub>i</sub> = Response factor of compound i when measured with EPA Method 25A.

C<sub>Mi</sub> = Measured concentration of compound i in ppmv as carbon.

C<sub>Ai</sub> = True concentration of compound i in ppmv as carbon.

$$C_{corr} = RF_i \times C_{meas} \quad (\text{Eq. 5})$$

Where:

C<sub>corr</sub> = Concentration of compound i corrected to the value that would have been measured by EPA Method 25A, ppmv as carbon.

C<sub>meas</sub> = Concentration of compound i measured by EPA Method 320, ppmv as carbon.

$$C_{Peq} = 0.6098 \times C_{corr} \quad (\text{Eq. 6})$$

Where:

C<sub>Peq</sub> = Concentration of compound i in mg of propane equivalent per DSCM.

[40CFR§60.4244(g)]

#### 8.4. Recordkeeping

The permittee shall keep the following records pursuant to section 3.4.1.

[40CFR§60.4245(a)]

- 8.4.1. All notifications to comply with 40CFR60 Subpart JJJJ and all documentation supporting any notification.
- 8.4.2. Maintenance conducted on each engine (CE-1, CE-2, and CE-4).
- 8.4.3. Documentation that each engine (CE-1, CE-2, and CE-3) meets the emission standards set forth in 8.1.1.

## 8.5. Reporting

8.5.1 The permittee shall submit an initial notification to the Director of the Division of Air Quality as required by §60.7(a)(1) and include the following.  
[40CFR§60.4245(c)]

8.5.1.1. Name and address of the owner or operator,

8.5.1.2. The address of the affected source,

8.5.1.3. Make, model, engine family, serial number, model year, maximum engine power, and engine displacement.

8.5.1.4. Emission control equipment.

8.5.1.5. Fuel used.

8.5.2. The permittee shall submit a copy of each performance test as conducted in accordance with §60.4244 to the Director of the Division of Air Quality within 60 days after the test has been completed.

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**9.0. Source-Specific Requirements (40CFR60 Subpart OOOO, Compressors Associated with CE-1, CE-2, and CE-4)**

**9.1. Limitations and Standards**

- 9.1.1. The compressors associated with engines CE-1, CE-2, and CE-4 must replace the compressor rod packing before the compressor has operated 26,000 hours from installation or repacking; or 36 months from the date of installation or repacking whichever one comes first.

**9.2. Recordkeeping Requirements**

- 9.2.1. From the date the compressors are installed the hours of operation and months of service shall be recorded continuously.
- 9.2.2. Records of the date and time of each reciprocating compressor rod packing replacement.

**9.3. Reporting**

- 9.3.1. **Annual Report.** The initial annual report is due 30 days after the initial compliance period and the subsequent reports are due on the same date as the initial report. The information needed in the annual report is the following: The hours of operation from installation or from the previous repacking and records of deviations.

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### CERTIFICATION OF DATA ACCURACY

I, the undersigned, hereby certify that, based on information and belief formed after reasonable inquiry, all information contained in the attached \_\_\_\_\_, representing the period beginning \_\_\_\_\_ and ending \_\_\_\_\_, and any supporting documents appended hereto, is true, accurate, and complete.

**Signature<sup>1</sup>**  
(please use blue ink) \_\_\_\_\_  
Responsible Official or Authorized Representative \_\_\_\_\_ Date \_\_\_\_\_

**Name & Title**  
(please print or type) \_\_\_\_\_  
Name \_\_\_\_\_ Title \_\_\_\_\_

**Telephone No.** \_\_\_\_\_ **Fax No.** \_\_\_\_\_

- <sup>1</sup> This form shall be signed by a "Responsible Official." "Responsible Official" means one of the following:
- a. For a corporation: The president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either:
    - (i) the facilities employ more than 250 persons or have a gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars), or
    - (ii) the delegation of authority to such representative is approved in advance by the Director;
  - b. For a partnership or sole proprietorship: a general partner or the proprietor, respectively;
  - c. For a municipality, State, Federal, or other public entity: either a principal executive officer or ranking elected official. For the purposes of this part, a principal executive officer of a Federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a Regional Administrator of U.S. EPA); or
  - d. The designated representative delegated with such authority and approved in advance by the Director.

# AIR QUALITY PERMIT NOTICE

## Notice of Intent to Approve

On June 30, 2015, Jay-Bee Oil & Gas Inc. applied to the WV Department of Environmental Protection, Division of Air Quality (DAQ) for a permit to Modify and Operate a natural gas compression/dehydration facility located near Alvy, Tyler County, WV at latitude 39.44200 and longitude -80.72609. A preliminary evaluation has determined that all State and Federal air quality requirements will be met by the proposed facility. The DAQ is providing notice to the public of its preliminary determination to issue the permit as R13-3257.

The following increase in potential emissions will be authorized by this permit action: Particulate Matter less than 10 microns, 0.14 tons per year (TPY); Particulate Matter, 0.14 TPY; Oxides of Nitrogen, 2.01 TPY; Carbon Monoxide, 1.28 TPY; Volatile Organic Compounds, 5.66 TPY; Sulfur Dioxide, 0.01 TPY; Benzene, 0.01 TPY; and n-Hexane, 0.12 TPY.

Written comments or requests for a public meeting must be received by the DAQ before 5:00 p.m. on KEYBOARD (Day of Week, Month, Day, Year). A public meeting may be held if the Director of the DAQ determines that significant public interest has been expressed, in writing, or when the Director deems it appropriate.

The purpose of the DAQ's permitting process is to make a preliminary determination if the proposed Construction will meet all State and Federal air quality requirements. The purpose of the public review process is to accept public comments on air quality issues relevant to this determination. Only written comments received at the address noted below within the specified time frame, or comments presented orally at a scheduled public meeting, will be considered prior to final action on the permit. All such comments will become part of the public record.

David Keatley  
WV Department of Environmental Protection  
Division of Air Quality  
601 57th Street, SE  
Charleston, WV 25304  
Telephone: 304/926-0499, ext. 1224  
FAX: 304/926-0478

Additional information, including copies of the draft permit, application and all other supporting materials relevant to the permit decision may be obtained by contacting the engineer listed above. The draft permit and engineering evaluation can be downloaded at:

[www.dep.wv.gov/daq/Pages/NSRPermitsforReview.aspx](http://www.dep.wv.gov/daq/Pages/NSRPermitsforReview.aspx)