



**west virginia** department of environmental protection

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**ENGINEERING EVALUATION / FACT SHEET**

BACKGROUND INFORMATION

Application No.: G70-A184  
Plant ID No.: 095-00064  
Applicant: Jay-Bee Oil & Gas, Inc. (Jay-Bee)  
Facility Name: Happy Well Pad  
Location: Alma, Tyler County  
NAICS Code: 211111  
Application Type: Construction  
Received Date: October 26, 2015  
Engineer Assigned: Jerry Williams, P.E.  
Fee Amount: \$1,500.00  
Date Received: October 26, 2015  
Complete Date: November 23, 2105  
Due Date: January 7, 2016  
Applicant Ad Date: November 4, 2015  
Newspaper: *Tyler Star News*  
UTM's: Easting: 534.492 km      Northing: 4,440.490 km      Zone: 17  
Latitude/Longitude: 39.469846/ -80.750799  
Description: This permitting action is for one (1) engine, two (2) gas processing units, one (1) thermoelectric generator, one (1) tank unloading area, two (2) condensate tanks, two (2) produced water tanks, and one (1) enclosed combustor.

DESCRIPTION OF PROCESS

The following process description was taken from Registration Application G70-A184:

At this facility, natural gas and produced fluids (condensate and water) will be received from two wells passed through Gas Processing Units (one per well) to avoid ice formation during subsequent pressure drops. These materials will then pass through a three-way separator where gas, condensate and water are separated. The gas will be routed to a gathering pipeline owned and operated by others.

Both Condensate and Produced Water will be accumulated in four 210 BBL tanks (two for Condensate and two for Produced Water), pending truck transportation by others. The Condensate will be transported to a regional processing facility and the Produced Water a regional disposal facility. Flash, working and breathing losses from these tanks will be routed to a Vapor Recovery Unit (VRU) with the captured vapors routed back to the raw gas discharge line. An enclosed combustor will be utilized as a backup control device for times when the VRU is not available (estimated max of 200 hours per year) and if a large slug of condensate production generates flash gas in excess of the capacity of the VRU. A capture and control efficiency of 95% is being claimed for the VRU and 98% for the combustor. Lastly, Jay-Bee is seeking approval for installation of a Thermo-electric generator to meet the minor electric demands for various monitoring and data tracking equipment.

There are no gas-fired compressor engines, other than a single engine for the VRU. Additionally, no dehydration units are proposed for this facility at this time.

All gas fired equipment (GPUs) use natural gas produced at the site as fuel.

40 CFR 60, Subpart OOOO requires that VOC emissions from each “storage vessel affected facility” installed after April 12, 2013 (GROUP 2) must be controlled by at least 95% by April 15, 2014 when the VOC uncontrolled emissions exceed 6 tpy. As described in 40 CFR 60.5365(e), *the determination may take into account requirements under a legally and practically enforceable limit in an operating permit or other requirement established under a Federal, State, local or tribal authority*. The control systems proposed in this application will reduce VOC emissions from the tanks described above to rates well below the 6 tpy limit and operation of these controls will become part of the permit. Thus, the tanks at this facility will not be regulated under 40 CFR 60, Subpart OOOO.

This permit application covers the following equipment:

- One (1) VRU compressor
- Two (2) Gas Processing Units (GPUs)
- One (1) Enclosed Combustor
- One (1) Thermoelectric Generator
- Two (2) Condensate Tanks
- Two (2) Produced Water Tanks
- Truck Loading
- Fugitive Emissions
- Fugitive Haul Road Emissions

## SITE INSPECTION

A site inspection was conducted by the writer. The closest residence is approximately 2,000 feet from the site.



## ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Emissions associated with this construction application consist of the emissions from one (1) VRU engine, two (2) GPU heaters, two (2) condensate storage tanks, two (2) produced water storage tanks, truck loading, one (1) enclosed combustor with pilot, blowdowns, truck traffic and fugitive emissions. Jay-Bee utilized direct measurements of the Gas to Oil ratio (GOR) and flash gas composition of a nearby Jay-Bee well pad to determine VOC and HAP flash emissions.

Each piece of equipment onsite are fitted with components such as flanges, valves, connectors, open-ended lines, and pressure relief valves to ensure a safe and efficient production process. These components are designed to have a small amount of gas vent to the atmosphere. The component counts were estimated.

The following table indicates which methodology was used in the emissions determination:

<b>Emission Unit ID#</b>	<b>Process Equipment</b>	<b>Calculation Methodology</b>
CE-1	84 hp Cummins G5.9 VRU compressor	Manufacturer's Data, EPA AP-42 Emission Factors
GPU-1, GPU-2	Two (2) 1.5 MMBTU/hr GPU	EPA AP-42 Emission Factors
TEG-1	0.013 MMBTU/hr Thermoelectric Generator	EPA AP-42 Emission Factors
EC-1	10 MMBTU/hr Enclosed Combustor and Pilot	EPA AP-42 Emission Factors
T01, T02	Two (2) 210 bbl Condensate Storage Tanks	Direct Measurement of GOR, EPA Tanks 4.0.9d
T03, T04	Two (2) 210 bbl Produced Water Storage Tanks	Direct Measurement of GOR, EPA Tanks 4.0.9d
TL-1	856,800 gal/yr Condensate Truck Loading	EPA AP-42 Emission Factors
TL-2	1,814,400 gal/yr Produced Water Truck Loading	EPA AP-42 Emission Factors
HR	Unpaved Haulroads	EPA AP-42 Emission Factors
BD	Blowdown Emissions	Engineering Estimate

Fugitive emissions for the facility are based on calculation methodologies presented in 40CFR98, Table W-1A.

The following table indicates the control device efficiencies that are required for this facility:

<b>Emission Unit</b>	<b>Pollutant</b>	<b>Control Device</b>	<b>Control Efficiency</b>
CE-1 VRU Compressor	Nitrogen Oxides	Non Selective Catalytic Reduction (NSCR)	91 %
	Carbon Monoxide		86 %
T01-T04 Storage Tanks	Volatile Organic Compounds	VRU/Enclosed Combustor	95.00 %
	Total HAPs		95.00 %

The total facility PTE for the Happy Well Pad is shown in the following table:

Pollutant	Maximum Annual Facility Wide Emissions (tons/year)
Nitrogen Oxides	5.40
Carbon Monoxide	19.17
Volatile Organic Compounds	22.99
Particulate Matter	4.28
Sulfur Dioxide	0.01
Formaldehyde	0.08
n-Hexane	0.62
Total HAPs	0.88

Maximum detailed controlled point source emissions were calculated by Jay-Bee and checked for accuracy by the writer and are summarized in the table on the next page.

**Jay-Bee Production Company, LLC – Happy Well Pad (G70-A184)**

Emission Point ID#	Source	NO <sub>x</sub>		CO		VOC		PM		SO <sub>2</sub>		Formaldehyde		Total HAPs		CO <sub>2</sub> e ton/year
		lb/hr	ton/year	lb/hr	ton/year	lb/hr	ton/year	lb/hr	ton/year	lb/hr	ton/year	lb/hr	ton/year	lb/hr	ton/year	
CE-1	VRU Compressor	0.19	0.81	0.37	1.62	0.05	0.21	<0.01	0.03	<0.01	<0.01	0.02	0.08	0.03	0.11	391
GPU-1	GPU Burner	0.15	0.66	0.13	0.55	<0.01	0.04	0.01	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	794
GPU-2	GPU Burner	0.15	0.66	0.13	0.55	<0.01	0.04	0.01	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	794
EC-1	Enclosed Combustor and Pilot	0.75	3.27	3.76	16.45	1.97	0.98	0.01	0.02	<0.01	<0.01	<0.01	<0.01	0.09	0.02	5120
TEG-1	Thermoelectric Generator	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	7
BD	Blowdowns	0.00	0.00	0.00	0.00	NA	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
TL-1	Condensate/PW Truck Loading	0.00	0.00	0.00	0.00	12.58	19.65	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.09	0
T01-T04	Storage Tanks	0.00	0.00	0.00	0.00	4.58	1.27	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.64	72
<b>Total Point Source</b>		<b>1.24</b>	<b>5.40</b>	<b>4.38</b>	<b>19.17</b>	<b>19.18</b>	<b>22.22</b>	<b>0.03</b>	<b>0.15</b>	<b>0.00</b>	<b>0.00</b>	<b>0.02</b>	<b>0.08</b>	<b>1.12</b>	<b>0.88</b>	<b>7178</b>
Fugitive	Fugitive Venting	0.00	0.00	0.00	0.00	0.17	0.77	0.00	0.00	0.00	0.00	0.00	0.00	<0.01	<0.01	21
HR	Hauroad Emissions	0.00	0.00	0.00	0.00	0.00	0.00	26.08	4.10	0.00	0.00	0.00	0.00	0.00	0.00	0
<b>Total Fugitive</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.17</b>	<b>0.77</b>	<b>26.08</b>	<b>4.10</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>21</b>
<b>Total Sitewide</b>		<b>1.24</b>	<b>5.40</b>	<b>4.38</b>	<b>19.17</b>	<b>19.35</b>	<b>22.99</b>	<b>26.11</b>	<b>4.25</b>	<b>0.00</b>	<b>0.00</b>	<b>0.02</b>	<b>0.08</b>	<b>1.12</b>	<b>0.88</b>	<b>7199</b>

## REGULATORY APPLICABILITY

The following rules 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 individual heat input of all of the proposed fuel burning units (GPU-1, GPU-2) are below 10 MMBTU/hr. Therefore, these units are exempt from the aforementioned sections of 45CSR2. However, Jay-Bee would be subject to the opacity requirements in 45CSR2, which is 10% opacity based on a six minute block average.

### **45CSR6 (To Prevent and Control Air Pollution from the Combustion of Refuse)**

45CSR6 prohibits open burning, establishes emission limitations for particulate matter, and establishes opacity requirements. Sources subject to 45CSR6 include completion combustion devices, enclosed combustion devices, and flares.

The facility-wide requirements of the general permit include the open burning limitations §§45-6-3.1 and 3.2.

All completion combustion devices, enclosed combustion devices, and flares are subject to the particulate matter weight emission standard set forth in §45-6-4.1; the opacity requirements in §§45-6-4-3 and 4-4; the visible emission standard in §45-6-4.5; the odor standard in §45-6-4.6; and the testing standard in §§45-6-7.1 and 7.2. Sections 5.0, 6.0 and 14.0 of the G70-A general permit include requirements for 45CSR6.

Enclosed combustion control devices and flares that are used to comply with emission standards of NSPS, Subpart OOOO are subject to design, operational, performance, recordkeeping and reporting requirements of the NSPS regulation that meet or exceed the requirements of 45CSR6.

Jay-Bee has one (1) combustor at the Happy Well Pad. The combustor has minimal particulate matter emissions. Therefore, the facility's combustor should demonstrate compliance with this section. The facility will demonstrate compliance by maintaining records of the amount of natural gas consumed by the combustor and the hours of operation. The facility will also monitor the flame of the combustor and record any malfunctions that may cause no flame to be present during operation.

#### **45CSR10 (To Prevent and Control Air Pollution from the Emissions of Sulfur Oxides)**

45CSR10 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 3 (weight emission standard), 6 (registration), 7 (permits), and 8 (testing, monitoring, recordkeeping, reporting). 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 individual heat input of all of the proposed fuel burning units (GPU-1, GPU-2) are below 10 MMBTU/hr. Therefore, these units are exempt from the aforementioned 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)**

45CSR13 applies to this source due to the fact that Jay-Bee is defined as a "stationary source" under 45CSR13 Section 2.24.b, which states that an owner or operator discharges or has the potential to discharge more than six (6) pounds per hour and ten (10) tons per year, or has the potential to discharge more than 144 pounds per calendar day of any regulated air pollutant. Jay-Bee's volatile organic compounds (VOC) emissions exceed 45CSR13 permit thresholds. Jay-Bee has published the required Class I legal advertisement notifying the public of their permit application, and paid the appropriate application fee (construction).

#### **45CSR22 (Air Quality Management Fee Program)**

This facility is a minor source and not subject to 45CSR30. Jay-Bee is required to keep their Certificate to Operate current.

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

40CFR60 Subpart JJJJ establishes emission standards for applicable SI ICE.

The 84 hp Cummins VRU (CE-1) was manufactured after January 1, 2011.

This subpart applies to new stationary spark ignition internal combustion engines (SI ICE) manufactured after July 1, 2007. The driver for the Vapor Recovery Unit will be SI ICE units manufactured after this date. Accordingly, this rule applies to this engine. More specifically, 60.4233(d) stipulates that non-emergency natural gas-fired rich burn engines 25-100 hp must comply with the emission standards of 40 CFR 1048.101(c). According to this rule, there are only NO<sub>x</sub> and CO limitations for engines fueled by natural gas. Thus, NO<sub>x</sub> must be less than 3.8 g/kW-hr and CO must be less than 6.5 g/kW-hr. Given that 1 kW equals 1.341 Hp, this is equivalent to 2.8 g/bhp-hr for NO<sub>x</sub> and 4.8 g/bhp-hr for CO. The controlled engine emissions will meet this standard.

**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:

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

*The gas wells that are proposed at the Happy Well Pad were drilled principally for the production of natural gas 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. JAY-BEE 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 Jay-Bee demonstrate continuous compliance by submitting reports and maintaining records for each completion operation.*

- b. Each centrifugal compressor affected facility, which is a single centrifugal compressor using wet seals that is located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment. For the purposes of this subpart, your centrifugal compressor is considered to have commenced construction on the date the compressor is installed (excluding relocation) at the facility. A centrifugal compressor located at a well site, or an adjacent well site and servicing more than one well site, is not an affected facility under this subpart.

*There are no centrifugal compressors at the Happy Well Pad. Therefore, all requirements regarding centrifugal compressors under 40 CFR 60 Subpart OOOO would not apply.*

- c. Each reciprocating compressor affected facility, which is a single reciprocating compressor located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment. For the purposes of this subpart, your reciprocating compressor is considered to have commenced construction on the date the compressor is installed (excluding relocation) at the facility. A reciprocating compressor located at a well site, or an adjacent well site and servicing more than one well site, is not an affected facility under this subpart.

*There is one (1) reciprocating compressor proposed at the Happy Well Pad. This engine will be delivered after the effective date of this rule. However, §60.5365(c) states that a reciprocating compressor located at a well site, or an adjacent well site and servicing more than one well site, is not an affected facility*

*under this subpart. Therefore, all requirements regarding reciprocating compressors under 40 CFR 60 Subpart OOOO would not apply.*

d. Pneumatic Controllers

- 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 which commenced construction after August 23, 2011, and is located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment and not located at a natural gas processing plant.
- Each pneumatic controller affected facility, which is a single continuous bleed natural gas-driven pneumatic controller which commenced construction after August 23, 2011, and is located at a natural gas processing plant.

*The pneumatic controllers located at the Happy Well Pad are required to meet this rule.*

- e. Each storage vessel affected facility, which is a single storage vessel, located in the oil and natural gas production segment, natural gas processing segment or natural gas transmission and storage segment.

40CFR60 Subpart OOOO defines a storage vessel as a unit that is constructed primarily of nonearthen materials (such as wood, concrete, steel, fiberglass, or plastic) which provides structural support and is designed to contain an accumulation of liquids or other materials. The following are not considered storage vessels:

- Vessels that are skid-mounted or permanently attached to something that is mobile (such as trucks, railcars, barges or ships), and are intended to be located at a site for less than 180 consecutive days. If the source does not keep or are not able to produce records, as required by §60.5420(c)(5)(iv), showing that the vessel has been located at a site for less than 180 consecutive days, the vessel described herein is considered to be a storage vessel since the original vessel was first located at the site.
- Process vessels such as surge control vessels, bottoms receivers or knockout vessels.
- Pressure vessels designed to operate in excess of 204.9 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.

*The storage vessels located at the Happy Well Pad are controlled by an enclosed combustor and emit less than 6 tpy of VOC. Therefore, Jay-Bee is not required by this section to reduce VOC emissions by 95%.*

- f. The group of all equipment, except compressors, within a process unit is an affected facility.
- Addition or replacement of equipment for the purpose of process improvement that is accomplished without a capital expenditure shall not by itself be considered a modification under this subpart.
  - Equipment associated with a compressor station, dehydration unit, sweetening unit, underground storage vessel, field gas gathering system, or liquefied natural gas unit is covered by §§60.5400, 60.5401, 60.5402, 60.5421 and 60.5422 of this subpart if it is located at an onshore natural gas processing plant. Equipment not located at the onshore natural gas processing plant site is exempt from the provisions of §§60.5400, 60.5401, 60.5402, 60.5421 and 60.5422 of this subpart.
  - The equipment within a process unit of an affected facility located at onshore natural gas processing plants and described in paragraph (f) of this section are exempt from this subpart if they are subject to and controlled according to subparts VVa, GGG or GGGa of this part.

*The Happy Well Pad is not a natural gas processing plant. Therefore, Leak Detection and Repair (LDAR) requirements for onshore natural gas processing plants would not apply.*

- g. Sweetening units located at onshore natural gas processing plants that process natural gas produced from either onshore or offshore wells.
- Each sweetening unit that processes natural gas is an affected facility; and
  - Each sweetening unit that processes natural gas followed by a sulfur recovery unit is an affected facility.
  - Facilities that have a design capacity less than 2 long tons per day (LT/D) of hydrogen sulfide (H<sub>2</sub>S) in the acid gas (expressed as sulfur) are required to comply with recordkeeping and reporting requirements specified in §60.5423(c) but are not required to comply with §§60.5405 through 60.5407 and paragraphs 60.5410(g) and 60.5415(g) of this subpart.
  - Sweetening facilities producing acid gas that is completely reinjected into oil-or-gas-bearing geologic strata or that is otherwise not released to the

atmosphere are not subject to §§60.5405 through 60.5407, 60.5410(g), 60.5415(g), and 60.5423 of this subpart.

*There are no sweetening units at the Happy Well Pad. Therefore, all requirements regarding sweetening units under 40 CFR 60 Subpart OOOO would not apply.*

**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. The engines at the Happy Well Pad are subject to the area source requirements for non-emergency spark ignition engines.

The applicability requirements for new stationary RICEs located at an area source of HAPs, is the requirement to meet the standards of 40CFR60 Subpart JJJJ. These requirements were outlined above. The proposed engines meet these standards.

The following rules do not apply to the facility:

**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 tanks that Jay-Bee has proposed to install are 33.39 cubic meters each. Therefore, Jay-Bee would not be subject to this rule.

**40CFR60 Subpart KKK** (Standards of Performance for Equipment Leaks of VOC from Onshore Natural Gas Processing Plants)

40CFR60 Subpart KKK applies to onshore natural gas processing plants that commenced construction after January 20, 1984, and on or Before August 23, 2011. The Happy Well Pad was constructed after August 23, 2011 and is not a natural gas processing plant, therefore, Jay-Bee would not be subject to this rule.

**40CFR63 Subpart HH** (National Emission Standards for Hazardous Air Pollutants for Oil and Natural Gas Production Facilities)

Subpart HH establishes national emission limitations and operating limitations for HAPs emitted from oil and natural gas production facilities located at major and area sources of HAP emissions. There are no glycol dehydration units at this facility, therefore, this rule does not apply.

**45CSR14** (Permits for Construction and Major Modification of Major Stationary Sources of Air Pollutants)

**45CSR19** (Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution which Cause or Contribute to Nonattainment)

The Happy Well Pad is located in Tyler County which is an unclassified county for all criteria pollutants, therefore it is not applicable to 45CSR19.

As shown in the table below, Jay-Bee is not subject to 45CSR14 or 45CSR19 review. According to 45CSR14 Section 2.43.e, fugitive emissions are not included in the major source determination because it is not listed as one of the source categories in Table 1. Therefore, the fugitive emissions are not included in the PTE below.

Pollutant	PSD (45CSR14) Threshold (tpy)	NANSR (45CSR19) Threshold (tpy)	Happy Well Pad PTE (tpy)	45CSR14 or 45CSR19 Review Required?
Carbon Monoxide	250	NA	5.40	No
Nitrogen Oxides	250	100	19.17	No
Sulfur Dioxide	250	100	0.01	No
Particulate Matter 2.5	250	100	0.15	No
Ozone (VOC)	250	NA	22.22	No

**TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS**

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. The following table lists common HAP's emitted from these types of facilities and each HAP's carcinogenic risk (as based on analysis provided in the Integrated Risk Information System (IRIS)):

HAPs	Type	Known/Suspected Carcinogen	Classification
Formaldehyde	VOC	Yes	Category B1 - Probable Human Carcinogen
Benzene	VOC	Yes	Category A - Known Human Carcinogen
Ethylbenzene	VOC	No	Inadequate Data
Toluene	VOC	No	Inadequate Data
Xylenes	VOC	No	Inadequate Data

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.

### SOURCE AGGREGATION

“Building, structure, facility, or installation” is defined as all the pollutant emitting activities which belong to the same industrial grouping, are located on one or more contiguous and adjacent properties, and are under the control of the same person.

1. The Happy Well Pad will operate under SIC code 1311 (Crude Petroleum and Natural Gas Extraction). There are surrounding wells and compressor stations operated by Jay-Bee that share the same two-digit major SIC code of 13 for oil and gas exploration and production. Therefore, the Happy Well Pad does share the same SIC code as the wells and surrounding compressor stations.
2. “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 a plant. The terms “contiguous” or “adjacent” are not defined by USEPA. Contiguous has a dictionary definition of being in actual contact; touching along a boundary or at a point. Adjacent has a dictionary definition of not distant; nearby; having a common endpoint or border.

There are no Jay-Bee facilities that are contiguous or adjacent with the Happy Well Pad. Additionally, there are no co-located facilities with the Happy Well Pad.

3. There are other wells and compressor stations that are under common control of Jay-Bee.

Because the facilities are not considered to be on contiguous or adjacent properties, the emissions from the Happy Well Pad should not be aggregated with other facilities in determining major source or PSD status.

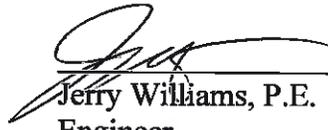
## MONITORING OF OPERATIONS

Jay-Bee will be required to perform the following monitoring and recordkeeping associated with this permit application:

- Monitor and record quantity of natural gas consumed for all combustion sources
- Monitor the presence of the combustor pilot flame with a thermocouple or equivalent
- Monitor opacity from all fuel burning units
- Monitor the throughput to the storage tanks
- Monitor all applicable requirements of 40CFR60 Subparts JJJJ and OOOO.
- Monitor and record the operating hours of the combustor
- Maintain records of testing conducted in accordance with the permit
- Maintain a record of all potential to emit (PTE) HAP calculations for the entire facility. These records shall include the natural gas compressor engines and ancillary equipment.
- Monitor the condensate and produced water truck loading
- The records shall be maintained on site or in a readily available off-site location maintained by Jay-Bee for a period of five (5) years.

## RECOMMENDATION TO DIRECTOR

The information provided in the permit application indicates Jay-Bee's Happy Well Pad meets all the requirements of applicable regulations. Therefore, impact on the surrounding area should be minimized and it is recommended that the Tyler County location should be granted registration under General Permit G70-A.

  
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Jerry Williams, P.E.  
Engineer

*DEC 8, 2015*  
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Date