



west virginia department of environmental protection

Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone (304) 926-0475 • FAX: (304) 926-0479

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.: G30-D194
Plant ID No.: 001-00134
Applicant: Mountaineer Keystone Holdings LLC (Mountaineer Keystone)
Facility Name: Mackey Wolfe Station
Location: Moatsville, Barbour County
NAICS Code: 211111
Application Type: Construction
Received Date: January 22, 2015
Engineer Assigned: David Keatley
Fee Amount: \$500
Date Received: February 9, 2015
Complete Date: April 21, 2015
Due Date: June 5, 2015
Applicant Ad Date: January 12, 2015
Newspaper: *The Barbour Democrat*
UTM's: Easting: 596.095 km Northing: 4,345.685 km Zone: 17
Description: Installation and operation of a 1,265 bhp compressor engine.

DESCRIPTION OF PROCESS

The purpose of this facility to compress the natural gas stream to a higher pressure. The compressor will be powered by a four-stroke lean-burn 1,265 bhp Caterpillar G3516TALE natural gas fired compressor engine. The facility will have a 2,100 lube oil tank. In addition there is a co-located natural gas production facility which based on the information provided the air emissions from the tanks are negligible.

SITE INSPECTION

A site inspection was conducted on April 20, 2015 by Karl L. Dettinger DAQ's Compliance and Enforcement Section. The site seems to meet the siting criteria of the G30-D.

At the intersection of I 79 and US 50. Travel east on US 50 towards Grafton. Past Evansville turn onto SR 92 S. Travel on SR 92 for approximately 7.3 miles the facility is on the left.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Emissions from the lube oil tank will be considered negligible due to vapor pressure. The Emissions for engine CE-1 were estimated with manufacture data (NOx, CO, and VOC) and AP-42 emission factors.

Table 1: Maximum Estimated Controlled Title V PTE

Emission Unit	Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (tpy)
CE-1 Caterpillar G3516TALE	Nitrogen Oxides	5.57	24.41
	Carbon Monoxide	5.24	22.94
1,265 bhp	Volatile Organic Compounds	0.81	3.54
	Formaldehyde	0.70	3.05

REGULATORY APPLICABILITY

The following rules and regulations apply to the facility:

45CSR4 *To Prevent and Control the Discharge of Air Pollutants Into the Open Air Which Causes or Contributes to an Objectionable Odor or Odors*

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

Fact Sheet G30-D194
Mountaineer Keystone Holdings LLC
Mackey Wolfe Station

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 exceeds the 1,000 lbs/year threshold for formaldehyde (6,132 lbs/year) and therefore is required to apply for a permit.

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

This facility is a minor source as can be seen in Table 1 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 has a maximum horsepower capacity greater than 1,000 hp (1,265 hp) and is therefore an 8D source which is required to pay a \$500 annual fee. Mountaineer Keystone is required to keep their Certificate to Operate current

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 Zien Station is subject to the area source requirements for non-emergency spark ignition engines.

Engine CE-1 is an "Existing Stationary RICE" source at an area source of HAPs and is an affected source because construction will commenced before June 12, 2006 [63.6590(a)(1)(iii)] due to the manufacturer's date (DOM December 10, 1996) of the engine.

Engine CE-1 due to the manufacturer's date of the engine must comply with the applicable emission limitations, operating limitations, and other requirements no later than October 19, 2013. Engine CE-1 is a non-emergency non-black start four-stroke lean-burn remote stationary RICE at an area source of HAPs and is greater than 500 horsepower and is therefore subject to Table 2d(8). Engine CE-1 will have oil, oil filter, spark plug, hose, and belt maintenance requirements.

The following regulation does not apply to the facility:

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

40CFR60.4230 states that a source that commenced construction after June 12, 2006 whose SI ICE was less than 500 hp and was manufactured on or after July 1, 2008 is subject to this rule. Engine CE-1, based on engine manufacture date is not subject to this regulation.

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. This facility has the the following HAPs as emitted in substantive amounts (at least 20 pounds (0.01 tons) per year) in their emissions estimate: Formaldehyde. The following table lists each HAP's carcinogenic risk (as based on analysis provided in the Integrated Risk Information System (IRIS)):

Table 4: Potential HAPs - Carcinogenic Risk

HAPs	Type	Known/Suspected Carcinogen	Classification
Formaldehyde	VOC	Yes	Category B1 - Probable Human Carcinogen

All HAPs have other non-carcinogenic chronic and acute effects. These adverse health affects may be associated with a wide range of ambient concentrations and exposure times and are influenced by source-specific characteristics such as emission rates and local meteorological conditions. Health impacts are also dependent on multiple factors that affect variability in humans such as genetics, age, health status (e.g., the presence of pre-existing disease) and lifestyle. As stated previously, *there are no federal or state ambient air quality standards for these specific chemicals*. For a complete discussion of the known health effects of each compound refer to the IRIS database located at www.epa.gov/iris.

RECOMMENDATION TO DIRECTOR

The information provided in the permit application indicates compliance with all state and federal air quality requirements will be satisfied and this facility is expected to meet the requirements of General Permit G30-D. Therefore Mountaineer Keystone's request to construct and operate its Mackey Wolfe Station natural gas compressor facility is recommended to the Director of Air Quality.



David Keatley
Permit Writer - NSR Permitting

April 21, 2015

Date

Fact Sheet G30-D194
Mountaineer Keystone Holdings LLC
Mackey Wolfe Station