



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

Jim Justice, Governor
Austin Caperton, Cabinet Secretary
www.dep.wv.gov

ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.:	R13-3081E
Plant ID No.:	051-00143
Applicant:	CONE Gathering LLC
Facility Name:	Majorsville Station
Location:	Marshall County
NAICS Code:	486210
Application Type:	Modification
Received Date:	July 25, 2017
Engineer Assigned:	Steven R. Pursley, PE
Fee Amount:	\$2,000.00
Date Received:	July 31, 2017
Complete Date:	August 1, 2017
Due Date:	October 30, 2017
Applicant Ad Date:	September 15, 2017
Newspaper:	<i>Moundsville Daily Echo</i>
UTM's:	Easting:539.827 Northing: 4,424.302 Zone:17
Description:	Modification to add a new VRU, four methanol tanks and four lube oil tanks, replace a backup generator and increase the heat input capacity of the condensate stabilizer reboiler.

DESCRIPTION OF PROCESS

The process begins with natural gas entering the station by pipeline and going through an inlet separator slug catcher that removes any entrained liquids. Next, the gas is compressed by natural-gas fired and electric driven compressors before entering a glycol dehydration column where it is contacted with triethylene glycol (TEG) to strip water from the gas. The dry gas outlet from the dehydration column is sent to the natural gas sales line and exits the facility. The rich TEG from the dehydration unit is fed into a reboiler to remove water so the lean TEG can be recycled back to the column. The emissions from the reboiler stills (DEHY-1,2,3) are sent into FL-1 through FL-3. Condensate liquids separated from the gas streams are sent to stabilization where the stream undergoes a pressure reduction step which releases flash gas to VRU-3 through VRU-5 to be recycled

back into the gas inlet line prior to compression. Produced water and condensate leave stabilization and are placed into tanks so they can be removed from the facility via tanker truck. Emissions from the tanks, as well as the truck loading emissions, are controlled by VRU-1 and VRU-2 which recycles the vapors back into the gas inlet line prior to compression.

Description of Change

CONE Gathering LLC (CONE) has applied for a modification of its current air permit for the Majorsville Station (R13-3081D) to incorporate the addition of new equipment and recognition of existing equipment at the facility. CONE plans to add a new 200 hp electric vapor recovery unit (VRU-5) to the facility as well as a new 1,490 hp Cummins QST30-G5-NR2 diesel generator. With the addition of the new diesel generator, CONE would like to remove the existing generator, EG-1 from the permit. Also, CONE would like to change the rating of the existing condensate stabilizer reboiler (BLR-2) from 0.75 mmbtu/hr to 1.43 mmbtu/hr. Lastly, CONE would like to add eight (8) storage tanks to the facility. These storage tanks will consist of four (4) 330 gallon methanol tanks and four (4) 500 gallon lube oil tanks.

SITE INSPECTION

The facility was inspected by Greigory Paetzold of DAQs Compliance and Enforcement section on May 24, 2017. The facility was determined to be in compliance. To get to the facility from Wheeling take I-70 east to exit 11. Then proceed south on County Route 41 (Dallas Pike Road) for approximately 5.1 miles. Next, turn right on County Route 26 and go approximately 3.8 miles and the facility will be on the left.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Emissions due to the proposed modification will be as follows:

Emergency Generators

Emissions from the existing engine (EG-1) are based on permit R13-3081D. Emissions from the new engine (EG-2) are based on manufacturer specifications for NO_x, CO and particulate. Emissions of VOCs and SO₂ are based on AP-42.

Fact Sheet R13-3081E
CONE Gathering, LLC
Majorsville Station

Source	PM/PM ₁₀ /PM _{2.5}		SO ₂		NO _x		CO		VOC	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
EG-1	-0.08	-0.02	-0.04	-0.01	-7.82	-1.95	-0.50	-0.12	-0.18	-0.04
EG-2	0.49	0.12	0.36	0.09	15.67	3.92	8.57	2.14	3.65	0.91
Total	0.41	0.10	0.32	0.08	7.85	1.97	8.07	2.02	3.47	0.87

Condensate Stabilization Heater (BLR-2)

Emissions from BLR-2 are based on AP-42. The “negative emissions” represent currently permitted emissions based on an MDHI of 0.75 mmbtu/hr which are being removed. The new emissions are based on an MDHI of 1.43 mmbtu/hr.

PM/PM ₁₀ /PM _{2.5}		SO ₂		NO _x		CO		VOC	
lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
-0.01	-0.02	--	--	-0.07	-0.27	-0.05	-0.22	-0.01	-0.01
0.01	0.05	0.01	0.01	0.14	0.63	0.12	0.53	0.01	0.03
0.00	0.03	0.01	0.01	0.07	0.36	0.07	0.31	0.00	0.02

Tanks

VOC emissions from the tanks were based on TANKS 4.0.9.d.

Emission Point	Contents	lb/yr	lb/hr	tpy
T11	Methanol	9.47	<0.01	<0.01
T12	Methanol	9.47	<0.01	<0.01
T13	Methanol	9.47	<0.01	<0.01
T14	Methanol	9.47	<0.01	<0.01
T15	Lube Oil	0.17	<0.01	<0.01
T16	Lube Oil	0.17	<0.01	<0.01
T17	Lube Oil	0.17	<0.01	<0.01
T18	Lube Oil	0.17	<0.01	<0.01
Total		38.56	0.01	0.02

Fugitives

Fugitive emissions occur from the 200 hp electric vapor recovery unit (VRU-5). Those VOC emissions were calculated based on an emission factor from the 1995 EPA Protocol for Equipment Leak Emission Estimates, Table 2-4. Total VOC emissions were estimated at less than 0.01 pound per hour and 0.01 tons per year.

Therefore, total emissions from the facility due to this modification will be as follows:

Source	PM/PM ₁₀ /PM _{2.5}		SO ₂		NO _x		CO		VOC	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
EG	0.41	0.10	0.32	0.08	7.85	1.97	8.07	2.02	3.47	0.87
BLR-2	--	0.03	0.01	0.01	0.07	0.36	0.07	0.31	--	0.02
Tanks	--	--	--	--	--	--	--	--	0.01	0.02
Fugitive	--	--	--	--	--	--	--	--	0.01	0.01
Total	0.41	0.13	0.33	0.09	7.92	2.33	8.14	2.33	3.49	0.92

Pigging emissions were included in previous applications (since they are routed to the flare, they are included in the flare emissions) and are not changed by this application.

REGULATORY APPLICABILITY

The following state and federal rules apply to the modification.

STATE RULES

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

The purpose of 45CSR2 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 proposed heat input of reboiler (BLR-2) is below 10 MMBTU/hr. Therefore, this unit is exempt from the aforementioned sections of 45CSR2.

Fact Sheet R13-3081E
CONE Gathering, LLC
Majorsville Station

CONE is also subject to the opacity requirements in 45CSR2, which is 10% opacity based on a six minute block average.

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

The purpose of 45CSR10 is to establish emission limitations for sulfur dioxide which are discharged from fuel burning units. 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 proposed heat input of reboiler (BLR-2) is below 10 MMBTU/hr. Therefore, this unit is 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)

The proposed modification of the Majorsville station has the potential to emit a regulated pollutant in excess of six (6) lbs/hour and ten (10) TPY (emissions from the generator would exceed 10 tpy if hours of operation were not limited) and, therefore, pursuant to §45-13-2.24, the proposed modification is defined as a "stationary source" under 45CSR13. Pursuant to §45-13-5.1, "[n]o person shall cause, suffer, allow or permit the construction . . . and operation of any stationary source to be commenced without . . . obtaining a permit to construct." Therefore, CONE is required to obtain a permit under 45CSR13 for the modification and operation of the proposed facility.

As required under §45-13-8.3 ("Notice Level A"), CONE placed a Class I legal advertisement in a "newspaper of general circulation in the area where the source is . . . located." The ad ran on September 15, 2017 in the *Moundsville Daily Echo* and the affidavit of publication for this legal advertisement was submitted on September 21, 2017.

45CSR30 (Requirements for Operating Permits)

The source is a nonmajor source subject to 45CSR30. This facility is a deferred Title V source (40CFR60 Subpart Kb).

FEDERAL RULES

40 CFR 60 Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.

This diesel fired compression ignition engine is considered a new unit subject to the NSPS having been manufactured after April 1, 2006 as defined in 40CFR60.4200(a)(2)(i) for stationary units and is subject to the applicable requirements as defined in this subpart. The engine was manufactured in March of 2013 and complies by operating as an EPA Certified Emission Unit (Certificate No: CEX-STATCI11-05). The emission limits per 40 CFR 89.112 is as follows (g/hp-hr):

NO _x + HC	CO	PM
4.77	2.61	0.15

40 CFR 60 Subpart OOOOa - Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification, or Reconstruction Commenced after September 18, 2015.

The new VRU compressor triggers a modification under the NSPS since it was newly installed at the facility in April of 2017.

Since the newly added electrically driven vapor recovery unit compressor (VRU-5) at this station will constitute a modification to the site in accordance with the definition 40CFR§60.5365a(j) after September 18, 2015, the collection of fugitive components at the site will become subject to the equipment leak standards of §60.5397a. As a result of this modification, the source will be required to develop and implement a fugitive monitoring plan and conduct quarterly OGI surveys.

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

The only change in emissions of non-criteria regulated pollutants due to this modification is an increase in HAPs of 0.03 tons per year. This increase is due to the replacement of the existing emergency generator with a larger unit, the very small increase in BLR-2 rating and the new methanol tanks.

AIR QUALITY IMPACT ANALYSIS

Because this is a minor modification to an existing minor source, no modeling was performed.

Fact Sheet R13-3081E
CONE Gathering, LLC
Majorsville Station

MONITORING OF OPERATIONS

Since the newly added electrically driven vapor recovery unit compressor (VRU-5) at this station will constitute a modification to the site in accordance with the definition 40CFR§60.5365a(j) after September 18, 2015, the collection of fugitive components at the site will become subject to the equipment leak standards of §60.5397a. As a result of this modification, the source will be required to develop and implement a fugitive monitoring plan and conduct quarterly OGI surveys.

Additionally, CONE will monitor hours of operation for VRU-5 and the emergency generator EG-2, malfunctions of equipment, as well as planned and unplanned maintenance of permitted equipment comprising the facility.

CHANGES TO PERMIT R13-3081D

The following changes will be made to R13-3081D:

- * Table 1.0 will be updated to add the new VRU, and tanks. Additionally, the new emergency generator will replace the old emergency generator and the MDHI of BLR-2 will be updated.
- * Section 7.0 was updated to replace EG-1 with EG-2. Specifically, conditions 7.1.3 and 7.1.4 were changed.
- * Section 8.0 was updated to remove EG-1.
- * Condition 10.1.2 was changed to reference the new emergency engine and add the reference to Subpart IIII in addition to Subpart JJJJ.
- * Condition 12.1.1 will be updated to reflect the new MDHI for BLR-2.
- * Section 14 was added to incorporate the requirements of Subpart OOOOa.
- * Section 15 was added to the permit to incorporate the requirements of Subpart IIII.

RECOMMENDATION TO DIRECTOR

The information provided in the permit application indicates that compliance with all applicable state and federal air quality regulations will be achieved. Therefore, I recommend to the Director the issuance of Permit Number R13-3081E to CONE Gathering, LLC. for the proposed modification and operation of the Majorsville Station located in Marshall County, WV.

Steven R. Pursley, PE
Engineer

October 3, 2017

Fact Sheet R13-3081E
CONE Gathering, LLC
Majorsville Station