



west virginia department of environmental protection

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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.: R13-2968B
Plant ID No.: 033-00207
Applicant: Mountaineer Midstream Company, LLC
Facility Name: Zinnia Compressor Station
Location: Salem, Harrison County
SIC Code: 211111
Application Type: Class II Administrative Update
Received Date: February 20, 2015
Engineer Assigned: Laura Jennings
Fee Amount: \$2,800
Date Received: April 17, 2015
Complete Date: April 23, 2015
Due Date: June 22, 2015
Applicant Ad Date: March 10, 2015
Newspaper: *The Exponent Telegram*
UTM's: Easting: 538.559 km Northing: 4341.917 km Zone: 17
Description: Increase emissions for existing dehydration unit [DH-001]/Flare [FL-01]

DESCRIPTION OF PROCESS

Per section 6.3.3 of permit R13-2968A, Summit Midstream collected an inlet wet natural gas sample in December 2014. The results of the gas analysis showed a change in the natural gas composition received by Zinnia Compressor Station. As a result of this gas composition change, Summit Midstream respectfully requests that the following change be made to the permitted emissions for the TEG Dehydration Unit [DH-001] and the Flare [FL-1]:

- Section 6.1.2: Increase the permitted emission limits for Volatile Organic Compounds (VOCs), Nitrogen Oxides, and Carbon Monoxide (CO) to reflect actual conditions at the facility.

Emission Units Table:

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed / Modified	Design Capacity	Type and Date of Change	Control Device
DH-001	FL-1	TEG Dehydration Unit	2012/ 2014	120 MMscf/day	Increased emissions	Flare
FL-1	FL-1	Flare	2012/ 2014	7.00 MMBtu/hr	Increased Emissions	N/A

SITE INSPECTION

This application **does** not involve a new site. The existing facility was conducted on February 11, 2013 by Lou Ann Lee of the Compliance and Enforcement Group of DAQ's North Central Regional Office as part of the original construction permit application. A site inspection of this facility is not required for this administrative update application.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Potential emissions for the TEG dehydration unit [DH-001] that is controlled with a flare [FL-1] were calculated using an updated wet gas sample analysis. The site was sampled on December 9, 2014 and the extended fractional analysis was provided with the application. There were no physical changes to either the dehydration system or to the flare. GRI-GLYCAL, Version 4.0 was used to calculate the revised potential emissions. A buffer of 20% was added to the TEG dehydration emissions to account for potential differences in gas composition; this is within DAQ guidelines. A control efficiency of 98% was used for the flare in the calculations.

Emission factors for NO_x and CO are from AP-42, Table 13.5-1 (Emission Factors for Flare Operations) and emission factors for the remaining pollutants are from AP-42, Table 1.4-1 (Emission Factors from Natural Gas Combustion, External Sources) .

The increases in emissions was calculated using the current permit limits or the original engineering evaluation. The increase in potential emissions for NO_x and CO are a result of the change in emission factors from the previous permit application and not a result of any physical or operational changes. The net change for the Dehydration unit is driven by a change in the recirculation rate for the glycol pumps and a more accurate gas analysis and is not considered an operational change.

Emissions Table:

Emission Point ID	Emission Unit ID	Control Device	Regulated Pollutant	Maximum Potential Uncontrolled Emissions		Maximum Potential Controlled Emissions		Increase from "A"	
				lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
FL-1	DH-001 FL-1	Flare	Total VOCs	123	538	2.95	12.90	0.90	3.92
			Benzene	1.08	4.73	0.03	0.11	0	-0.04
			Toluene	6.88	30.15	0.17	0.72	n/a	n/a
			Ethylbenzene	0.90	3.93	0.02	0.09	n/a	n/a
			Xylenes	11.01	48.22	0.26	1.16	n/a	n/a
			n-Hexane	1.03	4.49	0.02	0.11	n/a	n/a
			Total HAPs	20.90	91.50	0.50	2.20	0.18	0.83
			NOx	0.67	2.92	0.67	2.92	0.08	0.36
			CO	3.63	15.88	3.63	15.88	3.14	13.7
			PM _{2.5}	0.04	0.19	0.04	0.19	n/a	n/a
			SO ₂	0.01	0.02	0.01	0.02	n/a	n/a
			CO ₂ e	963	4,219	963	4,219	n/a	n/a

Facility PTE:

Regulated Pollutant	Proposed R13-2968B	Facility PTE w/ Fugitives
	tpy	tpy
NOx	90.47	90.47
CO	49.13	49.13
VOC	67.51	69.32
SO ₂	2.77	2.77
PM _{2.5}	0.25	0.25
Formaldehyde	6.07	6.07
Toluene	0.17	0.72
Xylenes	0.26	1.16
CO ₂ e	15,022	65,794
Total HAPs*	9.13	9.28

* Formaldehyde is included in the Total HAP PTE

REGULATORY APPLICABILITY

The regulations were reviewed only for the changes requested in the permit application.

Applicable State Regulations:

45CSR13 (PERMITS FOR CONSTRUCTION, MODIFICATION, RELOCATION AND OPERATION OF STATIONARY SOURCES OF AIR POLLUTANTS, NOTIFICATION REQUIREMENTS, ADMINISTRATIVE UPDATES, TEMPORARY PERMITS, GENERAL PERMITS, PERMISSION TO COMMENCE CONSTRUCTION, AND PROCEDURES FOR EVALUATION)

The application meets the definition of a Class II Administrative update because they are below the modification thresholds of 6 lb/hr AND 10 tpy of any criteria pollutant or 2 lb/hr or 5 tpy of aggregate hazardous air pollutants. The applicant has demonstrated compliance by submitting a complete permit application, submitted the Class II administrative update fee, and has published a Class I legal advertisement in *The Exponent Telegram*.

45CSR22 (AIR QUALITY MANAGEMENT FEE PROGRAM)

The applicant has paid the \$2,500 NESHAP fee as required by section 3.4.b of this rule because they are subject to 40 CFR 63 requirements as described in this regulatory review section. The applicant is required to keep current their Certificate to Operate.

45CSR34 (EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS)

The facility is subject to 45CSR34 because they are subject to 40 CFR 63, Subpart HH area source requirements. At the time that the construction permit was issued, DAQ had not taken delegation. It was therefore evaluated during this administrative update of the emissions increase through the dehydration unit.

Applicable Federal Regulations:

40CFR63, Subpart A (GENERAL PROVISIONS)

The general provisions apply as required by Subpart HH.

40 CFR63, SUBPART HH (NATIONAL EMISSIONS STANDARDS FOR HAZARDOUS AIR POLLUTANTS FROM OIL AND NATURAL GAS PRODUCTION FACILITIES)

Subpart HH establishes national emission limitations and operating limitations of HAPs emitted from oil and natural gas production facilities located at major and area sources of HAP emissions. For area source applicability, the affected source includes each triethylene glycol (TEG) dehydration unit located at a facility that meets the criteria

specified in §63.760(a).

The TEG dehydration unit (DH-01) is located at an area source of HAPs and thus are subject to this subpart. Because the potential benzene emissions are less than 1 tpy, the units are only subject to the recordkeeping requirements that demonstrate exemption from the control requirements of this rule.

Based on the PTE emissions, the applicant will be in compliance with the benzene exception from § 63.764(d) and further compliance will be demonstrated by demonstrating compliance with the recordkeeping requirements provided in the permit.

Non-applicability determinations:

It has been determined that the applicant is not subject to the following rules.

45CSR14 (PERMITS FOR CONSTRUCTION AND MAJOR MODIFICATION OF MAJOR STATIONARY SOURCES FOR THE PREVENTION OF SIGNIFICANT DETERIORATION OF AIR QUALITY)

The Zinnia Compressor Station is not a major source as defined in § 2.3b because it does not emit or have the potential to emit 250 tpy or more of any regulated NSR pollutant. The facility also does not meet the definition of a major modification as defined in § 2.40 because it is not a major source.

45CSR30 (REQUIREMENTS FOR OPERATING PERMITS)

The Zinnia Compressor Station does not meet the definition of a major source defined in 45CSR30 § 2.26.a because the facility PTE does not include any individual HAP that emits 10 tpy or more nor a combination of HAPs that emit 25 tpy or more.

The Zinnia Compressor Station does not meet the definition of a major source defined in 45CSR30 § 2.26.b because there is not any air pollutant subject to regulation that has a PTE of 100 tpy or more. The fugitive emissions of a stationary source shall not be considered in determining whether it is a major stationary source unless it belongs to one of the source categories of listed in 2.26.b.

Although the facility is subject to NESHAP, Subpart HH, they are exempt from the obligation to obtain a permit because they are not otherwise required to do so.

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

There are no new hazardous air pollutants associated with this administrative update.

AIR QUALITY IMPACT ANALYSIS

The proposed changes in this permit application do not meet the definition of a major modification according to the definitions in 45CSR14 and 45CSR19; therefore, modeling is not required for this permit application.

MONITORING OF OPERATIONS

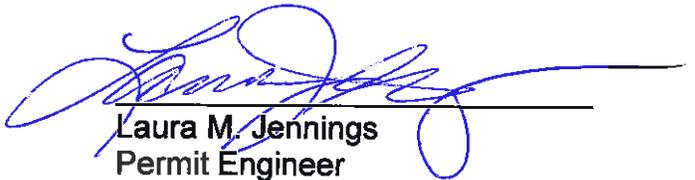
The applicant is subject to the area source recordkeeping requirements of 40 CFR 63, Subpart HH that demonstrate exemption from the control requirements of this rule because the benzene emissions are less than 1 tpy.

CHANGES TO PERMIT R13-2968A

- General permit updates to reflect the change in permit revision, etc.
- Updated the title of Section 6
- Revise the emission limits in requirement 6.1.2 as discussed in the emissions section of this evaluation and make the pollutants consistent with the Midpoint Compressor Station Permit (R13-2929C)
- Inserted 6.1.3 for emission calculation language and renumbered rest of section accordingly
- 6.3.3 - added reference to 6.1.2
- Add 40 CFR 63, Subpart HH language to Section 12

RECOMMENDATION TO DIRECTOR

It is recommended that Class II Administrative Update Permit R13-2968B be granted to Mountaineer Midstream Company, LLC for the Zinnia Compressor Station located in Salem, Harrison County, WV. Based on the information provided in the permit application including all supplemental information received, the company should be in compliance with applicable state and federal regulations.



Laura M. Jennings
Permit Engineer

4/28/15

Date

Fact Sheet R13-2968B
Mountaineer Midstream
Zinnia Compressor Station