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

Harold D. Ward, Cabinet Secretary
dep.wv.gov

ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.:	R13-3610		
Plant ID No.:	103-00166		
Applicant:	Antero Midstream (Antero)		
Facility Name:	Grays Peak Compressor Station		
Location:	Reader, Wetzel County		
NAICS Code:	486210		
Application Type:	Construction		
Received Date:	May 11, 2023		
Engineer Assigned:	Roy F. Kees, P.E.		
Fee Amount:	$4,500.00		
Date Received:	May 16, 2023		
Complete Date:	May 31, 2023		
Due Date:	August 31, 2023		
Applicant Ad Date:	May 17, 2023		
Newspaper:	*Wetzel Chronicle*		
UTM's:	Easting: 525.693 km	Northing: 4,381.222 km	Zone: 17
Latitude:	39.580327		
Longitude:	-80.700827		
Description:	New Compressor Station		

DESCRIPTION OF PROCESS

The following process description was taken from Permit Application R13-3610:

Gas from surrounding pipelines enters the facility through receivers and associated slug catcher. From there, the gas is metered and routed through a scrubber and filter separator. Any produced liquids from the scrubber or separator are sent to the 500 barrel settling tank (T04). Gas from the filter separator is sent to one (1) of twelve (12) compressor engines (C-100 through C-1200). The twelve (12) compressor engines will have a maximum 2,749 horsepower (hp) Caterpillar G3608 engines controlled with oxidation

catalysts (1C through 12C). Fuel gas for the compressor engines will be treated prior to the engines by a fuel conditioning skid with one (1) 0.75 MMBtu/hr heater (FUEL1) to allow more complete combustion. Produced fluids are routed to the settling tank and gas goes to the TEG dehydrators' contact tower.

Gas enters the single contact tower and then to the one (1) dehydrator unit. The TEG dehydrator unit contains two regenerators (DEHY1 and DEHY2), two flash tanks (DFLSH1 and DFLSH2) and 1.5 MMBtu/hr reboiler (DREB1 and DREB2). Each regenerator and flash tank has the capacity to process 315 MMscf/day of dry gas. Primarily, vent gas from the flash gas tank will be routed to the unit's reboiler (DREB1 and DREB2) and used as fuel. In the case where the flash tank gas cannot be used by the reboiler due to excess gas or the reboiler being offline, the gas will be routed to the dedicated thermal oxidizer (TO-1 and TO-2). The vent gas off the regenerator will be routed to the dedicated thermal oxidizer (TO1 and TO-2). The thermal oxidizers each have a control efficiency of 98%. Emissions from the reboilers will be routed to the atmosphere.

Produced fluids from each dehydration system are routed to the settling tank (T04). The dry gas from the dehydration process is either routed to a fuel gas scrubber, metered, and routed to the compressors as fuel gas or metered and sent to plant discharge.

All produced fluids enter one (1) 500 barrel settling tank (T04) where the fluids settle out as either oil or produced water. The produced water goes to three (3) 400 barrel produced water tanks (T05 through T07) and the oil goes to three (3) 400 barrel oil tanks (T01 through T03). Flashing mostly occurs at the settling tank as the pressurized fluids drop in pressure at the settling tank to approximately 1 psig; however, some flashing also occurs at the oil tanks. All seven (7) tanks are connected to two (2) vapor recovery units (VRU-100 and VRU-200) where tank vapors are collected and recycled back into the gas system right before the initial filter scrubber. One of the VRUs is a primary and the other is a backup VRU in case of maintenance or downtime. The produced fluids are trucked out via tanker trucks as needed (LDOUT1). Truck loading vapors are vented to the atmosphere.

One (1) 800 kWe microturbine generator (GEN1) will be used at the facility for power generation support. The Capstone C800 unit is comprised of four (4) 200 kWe units that can be operated individually. Likely, all generator engines will not be operating 8,760 hours per year; however, emissions were calculated as such for maximum flexibility.

Fugitive emissions from component leaks and emissions from pigging venting, blowdown, startup and shutdown, and vessel cleaning and maintenance events (VENT1) also occur.

There will also be small storage tanks located at the facility listed in the table below.

Tank Number	Description	Gallons
TK-100	Compressor Skid Oily Water Tank	3,000
TK-101	Used Oil Tank	3,000
TK-102	TEG Make-Up Tank	1,000
TK-103	Compressor Coolant Tank	3,000
TK-104	Engine Lube Oil Tank	3,000
TK-105	Compressor Lube Oil Tank	3,000

SITE INSPECTION

A site inspection was conducted on May 17, 2023 by James Robertson of the DAQ Enforcement Section. According to Mr. Robertson, At the time of his visit, initial phases of site development were ongoing. The site itself is accessed off McKimmie Ridge in Wetzel and located in a relatively remote location near the top of a hill. There are no houses or other structures in the immediate vicinity of the location. In his opinion this location is suitable for a Rule 13 permit.

Latitude: 39.580262
Longitude: -80.676794

Directions to the facility are as follows:

From Reader, West Virginia, head east on WV-20S. In 0.3 miles, turn left onto McKimmie Ridge Road. Travel 1.9 miles and the entrance will be on the right.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Emissions associated with this construction application consist of the combustion emissions from twelve (12) natural gas fired compressor engines (C-100 – C-1200), one (1) microturbine generators (GEN1), two (2) TEG dehydrator still vents (DEHY1, DEHY2), two (2) TEG dehydrator reboilers (DREB1, DREB2), one (1) Fuel Conditioning Heater (FUEL1), two (2) dehydrator flash tanks (DFLSH1, DFLSH2), six (6) 400 bbl (16,800 gal) and one (1) 500 bbl (21,000 gal) tanks (settling, condensate, produced water) (T01-T07), six (6) miscellaneous storage tanks (oily water, used oil, TEG, compressor coolant, two (2) lube oil), one (1) product loadout rack (LDOUT1), two (2) vapor recovery units (VRU-100, VRU-200) and fugitive emissions. Fugitive emissions for the facility are based on calculation methodologies presented in EPA Protocol for Equipment Leak Emission Estimates. The following table indicates which methodology was used in the emissions determination:

Emission Unit ID#	**Process Equipment**	**Calculation Methodology**
C-100 – C-1200	2,749 hp Caterpillar G3608 Compressor Engine w/ OxCat	Manufacturer's Data, EPA AP-42 Emission Factors
GEN1	800 kW Capstone C800 NG Microturbine Generator	Manufacturer's Data, EPA AP-42 Emission Factors
FUEL1	0.75 MMBTU/hr Fuel Conditioning Heater	EPA AP-42 Emission Factors
DEHY1, DEHY2	315 mmscfd TEG Dehydrator Still Vent w/ Condenser/Recycle and Themal Oxidizer	GRI-GlyCalc 4.0
DREB1, DREB2	1.5 MMBtu/hr TEG Dehydrator Reboiler	EPA AP-42 Emission Factors
T04	500 bbl (21,000 gal) Produced Water/Condensate Settling Tank	ProMax
T01-T03	400 bbl (16,800 gal) Condensate Storage Tanks	ProMax
T05-T07	400 bbl (16,800 gal) Produced Water Storage Tanks	ProMax
TK-300	1,000 gal Compressor Skid Oily Water Storage Tank	Negligible
TK-301	1,000 gal Used Oil Storage Tank	Negligible

TK-104	1,000 gal TEG Make-Up Storage Tank	Negligible
TL-106	2,000 gal Compressor Coolant Storage Tank	Negligible
TK-107	2,000 gal Engine Lube Oil Storage Tank	Negligible
TK-108	2,000 gal Compressor Lube Oil Storage Tank	Negligible
LDOUT1	390 bbl (16,380 gal) / day Product Loadout Rack	EPA AP-42 Emission Factors
VRU-100	Vapor Recovery Unit #1	Electric Driven
VRU-200	Vapor Recovery Unit #2	Electric Driven
TO-1, TO-2	6.0 MMBTU/hr Thermal Oxidizer	EPA AP-42 Emission Factors

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

Emission Unit	**Pollutant**	**Control Device**	**Control Efficiency**
Caterpillar G3608 Lean Burn 4 Stroke Compressor Engine	Carbon Monoxide	Oxidation Catalyst	94 %
	Volatile Organic Compounds		38 %
	Formaldehyde		81 %
Dehydrator Still Vent #1; Dehydrator Flash Tank #1; Dehydrator Still Vent #2; Dehydrator Flash Tank #2	Volatile Organic Compounds	Thermal Oxidizer	98 %
	Hazardous Air Pollutants		98 %
Condensate Tanks (T01 – T03); Settling Tank (T04); Produced Water Tank (T05-T07)	Volatile Organic Compounds	Vapor Recovery Unit w/ Backup VRU	98 %
	Hazardous Air Pollutants		98 %

The total facility PTE for the Grays Peak Compressor Station is shown in the following table:

Pollutant	**Facility Wide PTE (tons/year)**
Nitrogen Oxides	165.90
Carbon Monoxide	72.51
Volatile Organic Compounds	196.50
Particulate Matter-10/2.5	10.43
Sulfur Dioxide	0.71
Formaldehyde	9.58
Total HAPs	24.89
Carbon Dioxide Equivalent	166,564

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

Emission	Source	NO_x		CO		VOC		PM-10/2.5		SO_2		Formaldehyde		Total HAPs		CO2e
Point ID#		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	ton/year
1E	Compressor Engine #1	3.03	13.27	0.97	4.25	2.3	10.09	0.19	0.81	0.01	0.05	0.18	0.8	0.41	1.79	12,581
2E	Compressor Engine #2	3.03	13.27	0.97	4.25	2.3	10.09	0.19	0.81	0.01	0.05	0.18	0.8	0.41	1.79	12,581
3E	Compressor Engine #3	3.03	13.27	0.97	4.25	2.3	10.09	0.19	0.81	0.01	0.05	0.18	0.8	0.41	1.79	12,581
4E	Compressor Engine #4	3.03	13.27	0.97	4.25	2.3	10.09	0.19	0.81	0.01	0.05	0.18	0.8	0.41	1.79	12,581
5E	Compressor Engine #5	3.03	13.27	0.97	4.25	2.3	10.09	0.19	0.81	0.01	0.05	0.18	0.8	0.41	1.79	12,581
6E	Compressor Engine #6	3.03	13.27	0.97	4.25	2.3	10.09	0.19	0.81	0.01	0.05	0.18	0.8	0.41	1.79	12,581
7E	Compressor Engine #7	3.03	13.27	0.97	4.25	2.3	10.09	0.19	0.81	0.01	0.05	0.18	0.8	0.41	1.79	12,581
8E	Compressor Engine #8	3.03	13.27	0.97	4.25	2.3	10.09	0.19	0.81	0.01	0.05	0.18	0.8	0.41	1.79	12,581
9E	Compressor Engine #9	3.03	13.27	0.97	4.25	2.3	10.09	0.19	0.81	0.01	0.05	0.18	0.8	0.41	1.79	12,581
10E	Compressor Engine #10	3.03	13.27	0.97	4.25	2.3	10.09	0.19	0.81	0.01	0.05	0.18	0.8	0.41	1.79	12,581
11E	Compressor Engine #11	3.03	13.27	0.97	4.25	2.3	10.09	0.19	0.81	0.01	0.05	0.18	0.8	0.41	1.79	12,581
12E	Compressor Engine #12	3.03	13.27	0.97	4.25	2.3	10.09	0.19	0.81	0.01	0.05	0.18	0.8	0.41	1.79	12,581
27E	Fuel Conditioning Heater	0.07	0.32	0.88	3.85	0.08	0.35	0.05	0.24	0	0	0	0	0	0	386
13E	Microturbine Generator	0.32	1.4	0.88	3.85	0.08	0.35	0.05	0.24	0.02	0.12	0.01	0.02	0.01	0.04	4,237
14E	Dehydrator Still Vent #1	-	-	-	-	3.92	17.15	-	-	-	-	-	-	0.18	0.78	448.2
16E	Dehydrator Reboiler #1	0.15	0.64	0.12	0.54	0.01	0.04	0.01	0.05	0	0	0	0	0	0.01	771.2
17E	Dehydrator Still Vent #2	-	-	-	-	3.92	17.15	-	-	-	-	-	-	0.18	0.78	448.2
19E	Dehydrator Reboiler #2	0.15	0.64	0.12	0.54	0.01	0.04	0.01	0.05	0	0	0	0	0	0.01	771.2
28E	Thermal Oxidizer #1	0.41	1.81	1.87	8.17	0	0	0	0	0	0	0	0	0	0	3,117
29E	Thermal Oxidizer #2	0.41	1.81	1.87	8.17	0	0	0	0	0	0	0	0	0	0	3,117
30E	Truck Loadout	-	-	-	-	23.47	4.91	-	-	-	-	-	-	7.6	1.59	42
20E-26E	Storage Tank Battery	-	-	-	-	1.01	4.44	-	-	-	-	-	-	0.02	0.1	34
31E	Compressor Blowdowns	-	-	-	-	-	11.07	-	-	-	-	-	-	-	0.01	837
31E	Compressor Startups & Shutdowns	-	-	-	-	-	6.43	-	-	-	-	-	-	-	0.01	486
31E	Pigging Emissions	-	-	-	-	-	3.62	-	-	-	-	-	-	-	0	274
31E	Vessel Cleaning / Maintenance	-	-	-	-	-	0.46	-	-	-	-	-	-	-	0	35
Fugitive	Haulroad Emissions	-	-	-	-	-	-	0.11	0.29	-	-	-	-	-	-	-
Fugitive	Component Leaks	-	-	-	-	2.23	9.77	-	-	-	-	-	-	0.01	0.04	590.9
Total	**Total Facility PTE**	**37.88**	**165.90**	**16.56**	**72.51**	**62.30**	**196.50**	**2.43**	**10.43**	**0.16**	**0.71**	**2.19**	**9.58**	**12.92**	**24.89**	**166564**

REGULATORY APPLICABILITY

The following rules apply to this permitting action:

The following rules apply to the facility:

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 heat input of the proposed reboilers (DREB1, DREB2) and fuel conditioning heater (FUEL1) are below 10 MMBTU/hr. Therefore, these units are exempt from the aforementioned sections of 45CSR2.

Antero would also 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)

The purpose of this rule is to prevent and control air pollution from combustion of refuse.

Antero has proposed to have two (2) thermal oxidizers at the facility. The thermal oxidizers are subject to section 4, emission standards for incinerators. The thermal oxidizers have negligible hourly particulate matter emissions. Therefore, the facility's thermal oxidizers should demonstrate compliance with this section. The facility will demonstrate compliance by maintaining records of the amount of natural gas consumed by the thermal oxidizers and the hours of operation. The facility will also monitor the flame of the thermal oxidizers 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)

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 heat input of the proposed reboilers (DREB1, DREB2) and fuel conditioning heater (FUEL1) 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 Antero exceeds the regulatory emission threshold for criteria pollutants of 6 lb/hr and 10 ton/year, and they are also subject to a substantive requirement of an emission control rule promulgated by the Secretary (45CSR6, 40CFR60 Subparts JJJJ and OOOO).

Antero paid the appropriate application fee and published the required legal advertisement for a construction permit application.

45CSR16 (Standards of Performance for New Stationary Sources Pursuant to 40 CFR Part 60)

45CSR16 applies to this source by reference of 40CFR60, Subparts JJJJ and OOOO. These requirements are discussed under that rule below.

45CSR30 (Requirements for Operating Permits)

The Grays Peak Compressor Station has the potential to emit more than major regulatory threshold for NO_x and VOC. Due to this facility's potential to emit over 100 tons per year of criteria pollutant, Antero is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 45CSR30. Antero has the duty to update the facility's Title V (45CSR30) permit application to reflect the changes.

Antero is required to pay the appropriate annual fees and submit an annual Certified Emissions Statement.

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 the twelve (12) compressor engines, C-100 through C-1200, because they will be manufactured on or after July 1, 2007. Engines C-100 through C-1200 will have to meet the following emission standards: NOx 1.0 g/hp-hr, CO 2.0 g/hp-hr, and VOC 0.7 g/hp-hr. These emissions standard will have to be met over the entire life of each engine. The non-certified engines (C-100 through C-1200) will have to undergo initial performance testing and be tested every 8,760 hours or 3 years, whichever comes first, thereafter to demonstrate compliance with the emission standards of 40CFR60 Subpart JJJJ.

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_2) 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 gas well affected facility, which is a single natural gas well.

There are no gas wells at this facility. Therefore, all requirements regarding gas well affected facilities under 40 CFR 60 Subpart OOOO would not apply.

a. 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 Grays Peak Compressor Station. Therefore, all requirements regarding centrifugal compressors under 40 CFR 60 Subpart OOOO would not apply.

b. 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 are reciprocating internal combustion engines located at the Grays Peak Compressor Station that were constructed after August 23, 2011. Therefore, the requirements regarding reciprocating compressors under 40 CFR 60 Subpart OOOO will apply. Antero will be required to perform the following:

- Replace the reciprocating compressor rod packing at least every 26,000 hours of operation or 36 months.
- Demonstrate initial compliance by continuously monitoring the number of hours of operation or track the number of months since the last rod packing replacement.
- Submit the appropriate start up notifications.
- Submit the initial annual report for the reciprocating compressors.
- Maintain records of hours of operation since last rod packing replacement, records of the date and time of each rod packing replacement, and records of deviations in cases where the reciprocating compressor was not operated in compliance.

c. 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.

All pneumatic controllers at the facility will be air driven. Therefore, there are no applicable pneumatic controllers which commenced construction after August 23, 2011. Therefore, all requirements regarding pneumatic controllers under 40 CFR 60 Subpart OOOO would not apply.

d. 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 non-earthen 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 Grays Peak Compressor Station will be controlled by a VRU which will reduce the potential to emit to less than 6 tpy of VOC. Therefore, Antero is not required by this section to further reduce VOC emissions by 95%. Antero is

claiming a control efficiency of 98% for the VRU. Antero is required to perform three (3) of the following:

- *Additional sensing equipment.*
- *Properly designed bypass system.*
- *Appropriate gas blanket.*
- *A compressor that is suitable and has the ability to vary the drive speed.*

e. 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 Grays Peak Compressor Station is not a natural gas processing plant. Therefore, Leak Detection and Repair (LDAR) requirements for onshore natural gas processing plants would not apply.

f. 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_2S) 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 Grays Peak Compressor Station. Therefore, all requirements regarding sweetening units under 40 CFR 60 Subpart OOOO would not apply.

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. The glycol dehydration units at the Grays Peak Compressor Station are subject to the area source requirements for glycol dehydration units. However, because the facility is an area source of HAP emissions and the actual average benzene emissions from the glycol dehydration unit is below 0.90 megagram per year (1.0 tons/year) it is exempt from all requirements of Subpart HH except to maintain records of actual average flowrate of natural gas to demonstrate a continuous exemption status.

40CFR63 Subpart ZZZZ (National Emission Standards for Hazardous Air Pollutants For Stationary Reciprocating Internal Combustion Engines (RICE))

Subpart ZZZZ applies to stationary RICE at a major or area source of HAP emissions. Subpart ZZZZ applies to the facility as the compressor engines will be new RICE. The engines will comply with Subpart ZZZZ by complying with 40 CFR Part 60, Subpart JJJJ in accordance with 40 CFR 63.6590(c).

The following rules do not apply to the facility:

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 Grays Peak Compressor Station is located in Wetzel County, which is an unclassified county for all criteria pollutants, therefore the Grays Peak Compressor Station is not applicable to 45CSR19.

As shown in the following table, Antero is not a major source 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)**	**Grays Peak PTE (tpy)**	**45CSR14 or 45CSR19 Review Required?**
Carbon Monoxide	250	NA	72.51	No
Nitrogen Oxides	250	NA	165.90	No
Sulfur Dioxide	250	NA	0.71	No
Particulate Matter 2.5	250	NA	10.14	No
Ozone (VOC)	250	NA	186.73	No

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 largest tanks that Antero has proposed to install are 63.60 cubic meters each. Therefore, Antero 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 Grays Peakompressor Station is not a natural gas processing facility, therefore, Antero is not subject to this rule.

40CFR60 Subpart KKKK (Standards of Performance for Stationary Combustion Turbines)

40CFR60 Subpart KKKK does not apply because there are no stationary combustion turbines at the facility with a heat input at peak load equal to or greater than 10 MMBTU/hr, based on the higher heating value of the fuel (§60.4305).

AIR QUALITY IMPACT ANALYSIS

Modeling was not required of this source because the facility is not subject to 45CSR14 (Permits for Construction and Major Modification of Major Stationary Sources of Air Pollutants) as shown 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.

The Source Determination Rule for the oil and gas industry was published in the Federal Register on June 3, 2016 and became effective on August 2, 2016. EPA defined the term "adjacent" and stated that equipment and activities in the oil and gas sector that are under common control will be considered part of the same source if they are located on the same site or on sites that share equipment and are within ¼ mile of each other.

Because there are no facilities that are under common control, located on contiguous or adjacent properties and operating under the same standard industrial classification code, the emissions from the facility should not be aggregated with other facilities in determining major source or PSD status.

RECOMMENDATION TO DIRECTOR

The information provided in the permit application indicates that Antero meets all the requirements of applicable regulations. Therefore, impact on the surrounding area should be minimized and it is recommended that the Grays Peak Compressor Station should be granted a 45CSR13 Construction Permit for their facility.

Roy F. Kees

Digitally signed by: Roy F. Kees
DN: CN = Roy F. Kees email = Roy.F.Kees@wv.gov C = US O = DEP OU = DAQ
Date: 2023.05.31 11:40:33 -04'00'

Roy F. Kees, P.E.
Engineer, NSR Permitting