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west virginia department of environmental protection

Jim Justice, Governor
Austin Caperton, Cabinet Secretary
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G35-D GENERAL PERMIT ENGINEERING EVALUATION

PREVENTION AND CONTROL OF AIR POLLUTION IN REGARD TO THE CONSTRUCTION, MODIFICATION, RELOCATION, ADMINISTRATIVE UPDATE AND OPERATION OF NATURAL GAS COMPRESSOR AND/OR DEHYDRATION FACILITIES

APPLICATION NO.: G35-D**127**	FACILITY ID: **069-00143**

☒ CONSTRUCTION
☐ MODIFICATION
☐ RELOCATION
☐ CLASS I ADMINISTRATIVE UPDATE
☐ CLASS II ADMINISTRATIVE UPDATE

BACKGROUND INFORMATION

Name of Applicant (as registered with the WV Secretary of State's Office): Appalachia Midstream Services, LLC

Federal Employer ID No. (FEIN): 26-3678972

Applicant's Mailing Address: Park Place Corporate Center 2, 2000 Commerce Drive

City: Pittsburgh	State: PA	ZIP Code: 15275

Facility Name: Pioneer Compression Facility

Operating Site Physical Address: 300 Elysian Lane
If none available, list road, city or town and zip of facility.

City: Wheeling	Zip Code: 26003	County: Ohio

Latitude & Longitude Coordinates (NAD83, Decimal Degrees to 5 digits):
Latitude: 40.14333
Longitude: -80.59156

SIC Code: 1389 NAICS Code: 213112	Date Application Received: August 2, 2017
Fee Amount: $4,000.00	Date Fee Received: August 8, 2017
Applicant Ad Date: August 10 and 11, 2017	Newspaper: Intelligencer
Date Application Complete: August 31, 2017	Due Date of Final Action: October 10, 2017

Engineer Assigned: Jonathan Carney

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Description of Permitting Action: The applicant proposes the construction and operation of four (4) 5,000 bhp CAT G3616LE compressor engines, two (2) 125 MMscfd TEG dehydrator flash tanks, two (2) 125 MMscfd TEG dehydrator still vents, one (1) thermal oxidizer, two (2) 2.0 MMBtu/hr reboilers, one (1) process flare, six (6) 400-bbl each stabilized condensate storage tanks, two (2) 400-bbl each produced water storage tanks, and stabilized condensate/produced water load-out.

PROCESS DESCRIPTION

The following process description was taken from Registration Application G35-D127:
Appalachia Midstream Services, LLC owns and operates the Pioneer Compression Facility located approximately 1.9 Miles South-Southeast of West Liberty in Ohio County. The facility receives natural gas from local production wells then compresses and dehydrates the gas for delivery to a gathering pipeline. Additionally, raw field condensate is received at the site, stabilized and then sent offsite via tanker trucks. Four (4) natural gas-fueled reciprocating engines are utilized at the facility. These engines drive a natural gas compressor to increase the pressure of the natural gas. Emissions result from the combustion of natural gas fuel. The reciprocating compressor operations result in emissions from the wear of mechanical seals around the piston rods over time. As part of facility operation, the compressor engines will undergo periods of startup and shutdown. When an engine is shutdown, the natural gas contained within the compressor and associated piping must be evacuated and the blowdown gas is routed to a flare for destruction. Additionally, there will be other infrequent emissions from various maintenance activities at the facility that are not associated with compressor blowdowns such as pigging activities. Two (2) triethylene glycol (TEG) dehydrators are utilized at the facility. Each dehydrator is comprised of a contactor/absorber tower (no vented emissions), a flash tank, and a regenerator/still vent. The TEG dehydrators are used to remove water vapor from the inlet wet gas stream to meet pipeline specifications. In the dehydration process, the wet inlet gas stream flows through a contactor tower where the gas is contacted with lean glycol. The lean glycol absorbs the water in the gas stream and becomes rich glycol laden with water and trace amounts of hydrocarbons. The rich glycol is then routed to a flash tank where the glycol pressure is reduced to liberate the lighter end hydrocarbons (especially methane). The lighter end hydrocarbons are routed from the flash tank to the reboiler for use as fuel with the excess hydrocarbons vented to a thermal oxidizer. After regeneration, the glycol is returned to a lean state and used again in the process. Triethylene glycol reboilers are utilized to supply heat for the triethylene glycol (TEG) regenerator/stills. One thermal oxidizer with 98% VOC/HAPs destruction efficiency is used to control the dehydrator's flash gas and still vent vapor streams, stabilized condensate tank emissions and stabilized condensate truck loading losses. One process flare with 98% VOC/HAPs destruction efficiency is used to control emissions from startup/shutdown/maintenance activities (including blowdowns, pigging events and station ESD events). An electrically heated 3-phase separator will separate gas vapor, water, and condensate. Water will go to the produced water tanks. Raw condensate from the 3-phase separator will be sent to a stabilizer tower skid to stabilize the condensate to a RVP 12 product. An electric immersion heater will be used to provide the heat necessary to stabilize the condensate. Gas vapor and stabilizer overheads will be gathered by an electric motor driven vapor recovery unit (VRU). The VRU will discharge into the compressor facility suction line. There are tanks at the facility used to store various materials, including produced water, lube oil, fresh and spent TEG, etc. All of these tanks, except for the stabilized condensate and produced water storage tanks, generate de-minimis (insignificant) emissions. Six 400 bbl storage tanks will be used to hold the stabilized condensate product. Each of these tanks will be connected to the thermal oxidizer for emissions control. Two 400 bbl storage tanks will be used to hold produced water from the dehydrators and inlet separator. Produced water will be loaded into tanker trucks and produce small quantities of VOC emissions. Additionally, stabilized condensate will be loaded into tanker trucks and emissions will be controlled by the thermal oxidizer. Piping and process equipment generate from leaks from different component types (connectors, valves, pumps, etc.) in gas-vapor service and light-liquid (condensate) service. Internal combustion results in a small but continual amount of blow-by, which occurs when some of the gases from combustion leak past the piston rings (that is, blow by them) to end up inside the crankcase, causing pressure to build up in the crank case. These blow-by gases are vented to the atmosphere.

SITE INSPECTION

Site Inspection Date: September 15, 2017

Site Inspection Conducted By: Greigory Paetzold

Results of Site Inspection: According to the inspector, Greigory Paetzold, none of the proximity restrictions, regarding dwellings, institutional buildings, or public parks exist at this location now. It's a good location.

Did Applicant meet Siting Requirements? Yes

If applicable, was siting criteria waiver submitted?

Directions to Facility: From Van Meter Way in West Liberty head east toward Apple Pie Ridge 0.2 miles. Turn right on Harvey Rd and go 2.0. Take a sharp right onto Weidman Run Rd and go 0.3 miles. Turn left on Harvey's Rd and go 0.3 miles. The entrance to the site is on the left.

Overhead Google Earth Image of Facility:

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

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

Emission Unit ID#	Process Equipment	Calculation Methodology (e.g. ProMax, GlyCalc, mfg. data, AP-42, etc.)
CE-01	Caterpillar G3616 A4 Compressor Engine	Mfg. Data, AP-42, 40CFR98
CE-02	Caterpillar G3616 A4 Compressor Engine	Mfg. Data, AP-42, 40CFR98
CE-03	Caterpillar G3616 A4 Compressor Engine	Mfg. Data, AP-42, 40CFR98
CE-04	Caterpillar G3616 A4 Compressor Engine	Mfg. Data, AP-42, 40CFR98
CRP	Compressor Rod Packing	Mfg. Data, Gas Analysis
SSM	Startup/Shutdown/Maintenance (Blowdown)	Estimated, Gas Analysis
DFT-01	TEG Dehydrator – Flash Tank	GRI-Glycalc
DSV-01	TEG Dehydrator – Still Vent	GRI-Glycalc
DFT-02	TEG Dehydrator – Flash Tank	GRI-Glycalc
DSV-02	TEG Dehydrator – Still Vent	GRI-Glycalc
TO-01	Thermal Oxidizer	AP-42, 40CFR98
RBV-01	TEG Dehydrator – Reboiler Vent	AP-42, 40CFR98
RBV-02	TEG Dehydrator – Reboiler Vent	AP-42, 40CFR98
FLR-01	SSM Flare	AP-42, Engr Judgement
T-01	Storage Tank – Stabilized Condensate	EPA Tanks
T-02	Storage Tank – Stabilized Condensate	EPA Tanks
T-03	Storage Tank – Stabilized Condensate	EPA Tanks
T-04	Storage Tank – Stabilized Condensate	EPA Tanks
T-05	Storage Tank – Stabilized Condensate	EPA Tanks
T-06	Storage Tank – Stabilized Condensate	EPA Tanks
T-07	Storage Tank – Stabilized Condensate	EPA Tanks
T-08	Storage Tank – Stabilized Condensate	EPA Tanks
TLO	Truck Loadout – Stabilized Condensate	AP-42
TLO	Truck Loadout – Produced Water	AP-42

The total facility PTE for the facility (including fugitive emissions) is shown in the following table:

Pollutant	Facility Wide PTE (tons/year)
Nitrogen Oxides	85.50
Carbon Monoxide	67.36
Volatile Organic Compounds	93.37
Particulate Matter	7.07
Particulate Matter-10/2.5	7.07
Sulfur Dioxide	1.61
Formaldehyde	4.87
Total HAPs	12.71
Carbon Dioxide Equivalent	67.36

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

APPLICANT: Appalachia Midstream Services, LLC **FACILITY NAME:** Pioneer Compression Facility **G35-D127**

Emission Point ID#	NO_x		CO		VOC		SO_2		PM_{10}		$PM_{2.5}$		GHG (CO_2e)	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
CE-01	4.41	19.31	2.58	11.32	1.97	8.63	0.02	0.09	0.37	1.61	0.37	1.61	5,401	23,656
CE-02	4.41	19.31	2.58	11.32	1.97	8.63	0.02	0.09	0.37	1.61	0.37	1.61	5,401	23,656
CE-03	4.41	19.31	2.58	11.32	1.97	8.63	0.02	0.09	0.37	1.61	0.37	1.61	5,401	23,656
CE-04	4.41	19.31	2.58	11.32	1.97	8.63	0.02	0.09	0.37	1.61	0.37	1.61	5,401	23,656
CRP	---	---	---	---	6.30	27.60	---	---	---	---	---	---	351	1,538
SSM	---	---	---	---	---	4.27	---	---	---	---	---	---	2,716	11,987
DFT-01	---	---	---	---	0.93	4.09	---	---	---	---	---	---	17	73
DSV-01	---	---	---	---	1.23	5.37	---	---	---	---	---	---	1	4
DFT-02	---	---	---	---	0.93	4.09	---	---	---	---	---	---	17	73
DSV-02	---	---	---	---	1.23	5.37	---	---	---	---	---	---	1	4
TO-01	0.91	3.98	2.87	12.58	---	---	0.01	0.02	0.07	0.30	0.07	0.30	1,096	4,799
RBV-01	0.20	0.86	0.16	0.72	0.01	0.05	0.0012	0.01	0.01	0.07	0.01	0.07	237	1,037
RBV-02	0.20	0.86	0.16	0.72	0.01	0.05	0.0012	0.01	0.01	0.07	0.01	0.07	237	1,037
FLR-01	0.58	2.55	1.84	8.07	---	---	0.0035	0.02	0.04	0.19	0.04	0.19	703	3,079
T-01	---	---	---	---	0.01	0.06	---	---	---	---	---	---	---	---
T-02	---	---	---	---	0.01	0.06	---	---	---	---	---	---	---	---
T-03	---	---	---	---	0.01	0.06	---	---	---	---	---	---	---	---
T-04	---	---	---	---	0.01	0.06	---	---	---	---	---	---	---	---
T-05	---	---	---	---	0.01	0.06	---	---	---	---	---	---	---	---
T-06	---	---	---	---	0.01	0.06	---	---	---	---	---	---	---	---
T-07	---	---	---	---	0.01	0.06	---	---	---	---	---	---	---	---
T-08	---	---	---	---	0.01	0.06	---	---	---	---	---	---	---	---
TLO	---	---	---	---	14.91	7.46	---	---	---	---	---	---	---	---
Total	19.53	85.49	15.35	67.37	18.52	85.41	0.0959	0.42	1.61	7.07	1.61	7.07	26980	118255

APPLICANT: Appalachia Midstream Services, LLC **FACILITY NAME:** Pioneer Compression Facility **G35-D127**

Emission Point ID#	Formaldehyde		Benzene		Toluene		Ethylbenzene		Xylenes		Hexane		Total HAPs	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
CE-01	0.28	1.22	0.0026	0.01	0.0024	0.01	0.00023	0.001	0.0011	0.00	0.01	0.03	0.39	1.72
CE-02	0.28	1.22	0.0026	0.01	0.0024	0.01	0.00023	0.001	0.0011	0.00	0.01	0.03	0.39	1.72
CE-03	0.28	1.22	0.0026	0.01	0.0024	0.01	0.00023	0.001	0.0011	0.00	0.01	0.03	0.39	1.72
CE-04	0.28	1.22	0.0026	0.01	0.0024	0.01	0.00023	0.001	0.0011	0.00	0.01	0.03	0.39	1.72
CRP	---	---	0.01	0.04	0.01	0.04	0.01	0.04	0.01	0.04	0.12	0.51	0.16	0.72
SSM	---	---	---	0.01	---	0.01	---	0.01	---	0.01	---	0.08	---	0.11
DFT-01	---	---	0.00021	0.00092	0.00058	0.0025	0.00023	0.0010	0.00026	0.0012	0.01	0.05	0.01	0.06
DSV-01	---	---	0.02	0.08	0.08	0.36	0.06	0.26	0.10	0.44	0.03	0.14	0.29	1.29
DFT-02	---	---	0.00021	0.00092	0.00058	0.0025	0.00023	0.001	0.00026	0.0012	0.01	0.05	0.01	0.06
DSV-02	---	---	0.02	0.08	0.08	0.36	0.06	0.26	0.10	0.44	0.03	0.14	0.29	1.29
TO-01	0.00068	0.003	---	---	---	---	---	---	---	---	---	---	0.0007	0.0031
RBV-01	0.00015	0.00064	0.0000041	0.000018	0.0000067	0.000029	---	---	---	---	0.0035	0.02	0.0037	0.02
RBV-02	0.00015	0.00064	0.0000041	0.000018	0.0000067	0.000029	---	---	---	---	0.0035	0.02	0.0037	0.02
FLR-01	0.00044	0.0019	---	---	---	---	---	---	---	---	---	---	0.00045	0.002
T-01	---	---	0.00014	0.00061	0.00014	0.00061	0.00014	0.00061	0.00035	0.0015	0.00069	0.003	0.0015	0.0064
T-02	---	---	0.00014	0.00061	0.00014	0.00061	0.00014	0.00061	0.00035	0.0015	0.00069	0.003	0.0015	0.01
T-03	---	---	0.00014	0.00061	0.00014	0.00061	0.00014	0.00061	0.00035	0.0015	0.00069	0.003	0.0015	0.01
T-04	---	---	0.00014	0.00061	0.00014	0.00061	0.00014	0.00061	0.00035	0.0015	0.00069	0.003	0.0015	0.01
T-05	---	---	0.00014	0.00061	0.00014	0.00061	0.00014	0.00061	0.00035	0.0015	0.00069	0.003	0.0015	0.01
T-06	---	---	0.00014	0.00061	0.00014	0.00061	0.00014	0.00061	0.00035	0.0015	0.00069	0.003	0.0015	0.01
T-07	---	---	0.00014	0.00061	0.00014	0.00061	0.00014	0.00061	0.00035	0.0015	0.00069	0.003	0.0015	0.0063
T-08	---	---	0.00014	0.00061	0.00014	0.00061	0.00014	0.00061	0.00035	0.0015	0.00069	0.003	0.0015	0.0063
TLO	---	---	0.75	0.37	0.75	0.37	0.75	0.37	0.75	0.37	0.75	0.37	4.47	2.24
TOTAL	1.12142	4.88618	0.811948	0.626756	0.931893	1.189938	0.8825	0.95088	0.96772	1.3144	1.00252	1.524	6.81055	12.7641

REGULATORY APPLICABILITY

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) MMBTU/hr 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. If the individual heat input of all of the proposed fuel burning units are below 10 MMBTU/hr, these units are exempt from the aforementioned sections of 45CSR2. However, the registrant would be subject to the opacity requirements in 45CSR2, which is 10% opacity based on a six minute block average. Fuel burning units greater than 10 MMBTU/hr are ineligible for registration under General Permit G35-D

Emission Unit ID#	Emission Unit Description	Maximum Design Heat Input (MDHI) (MMBTU/hr)
RBV-01	TEG Dehydrator – Reboiler Vent	2.0
RBV-02	TEG Dehydrator – Reboiler Vent	2.0

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.

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.

Emission Unit ID#	Maximum Design Heat Input (MDHI) (MMBTU/hr)	Subject to Weight Emission Standard?	Control Efficiency Claimed by Registrant	Provide Justification how 45CSR6 is met.
TO-1	9.26	☒ Yes ☐ No	98	The thermal oxidizer has minimal particulate matter emissions. Therefore, the thermal oxidizer should demonstrate compliance with this section. The facility will also monitor the flame of the combustor and record any malfunctions that may cause no flame to be present during operation.
FLR-01	9.531	☒ Yes ☐ No	98	The flare has minimal particulate matter emissions. Therefore, the flare should demonstrate compliance with this section. The facility will also monitor the flame of the flare and record any malfunctions that may cause no flame to be present during operation.

45CSR10 (To Prevent and Control Air Pollution from the Emission of Sulfur Oxides)
45CSR10 establishes emission limitations for SO_2 emissions which are discharged from stacks of fuel burning units. A "fuel burning unit" means and includes any furnace, boiler apparatus, device, mechanism, stack or structure used in the process of burning fuel or other combustible material for the primary purpose of producing heat or power by indirect heat transfer. Sources that meet the definition of "Fuel Burning Units" per 45CSR10-2.8 include GPUs, in-line heaters, heater treaters, and glycol dehydration unit reboilers.

Fuel burning units less than 10 MMBtu/hr are exempt. The sulfur dioxide emission standard set forth in 45CSR10 is generally less stringent than the potential emissions from a fuel burning unit for natural gas. The SO_2 emissions from a fuel burning unit will be listed in the G35-D permit registration at the discretion of the permit engineer on a case-by-case basis. Issues such as non-attainment designation, fuel use, and amount of sulfur dioxide emissions will be factors used in this determination. Fuel burning units greater than 10 MMBTU/hr are ineligible for registration under General Permit G35-D

Fuel burning units burning natural gas are exempt from Section 8 (Monitoring, Recording and Reporting) as well as interpretive rule 10A. The G35-D eligibility requirements exclude from eligibility any fuel burning unit that does not use natural gas as the fuel; therefore, there are no permit conditions for 45CSR10.

Emission Unit ID#	Emission Unit Description	Maximum Design Heat Input (MDHI) (MMBTU/hr)
RBV-01	TEG Dehydrator – Reboiler Vent	2.0
RBV-02	TEG Dehydrator – Reboiler Vent	2.0

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 the applicant is defined as a "stationary source" under 45CSR13 Section 2.24.b. *Stationary source* means, for the purpose of this rule, any building, structure, facility, installation, or emission unit or combination thereof, excluding any emission unit which meets or falls below the criteria delineated in Table 45-13B which: (a) is subject to any substantive requirement of an emission control rule promulgated by the Secretary; (b) 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; (c) discharges or has the potential to discharge more than two (2) pounds per hour or five (5) tons per year of hazardous air pollutants considered on an aggregated basis; (d) discharges or has the potential to discharge any air pollutant(s) listed in Table 45-13A in the amounts shown in Table 45-13A or greater; or, (e) an

owner or operator voluntarily chooses to be subject to a construction or modification permit pursuant to this rule, even though not otherwise required to do so. 45CSR13 has an original effective date of June 1, 1974.

The applicant meets the definition of a stationary source because (check all that apply):

- ☒ Subject to a substantive requirement of an emission control rule promulgated by the Secretary.
- ☒ 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.
- ☐ Discharges or has the potential to discharge more than two (2) pounds per hour or five (5) tons per year of hazardous air pollutants considered on an aggregated basis.
- ☐ Discharges or has the potential to discharge any air pollutant(s) listed in Table 45-13A in the amounts shown in Table 45-13A or greater.
- ☐ Voluntarily chooses to be subject to a construction or modification permit pursuant to this rule, even though not otherwise required to do so.

General Permit G35-D Registration satisfies the construction, modification, relocation and operating permit requirements of 45CSR13. General Permit G35-D sets forth reasonable conditions that enable eligible registrants to establish enforceable permit limits.

Section 5 of 45CSR13 provides the permit application and reporting requirements for construction of and modifications to stationary sources. No person shall cause, suffer, allow or permit the construction, modification, relocation and operation of any stationary source to be commenced without notifying the Secretary of such intent and obtaining a permit to construct, modify, relocate and operate the stationary source as required in the rule or any other applicable rule promulgated by the Secretary.

If applicable, the applicant meets the following (check all that apply):

- ☐ Relocation
- ☐ Modification
- ☐ Class I Administrative Update (45CSR13 Section 4.2.a)
- ☐ Class II Administrative Update (45CSR13 Section 4.2.b)

45CSR16 (Standards of Performance for New Stationary Sources Pursuant to 40 CFR Part 60)
45CSR16 applies to all registrants that are subject to any of the NSPS requirements described in more detail in the Federal Regulations section. Applicable requirements of NSPS, Subparts IIII, JJJJ, OOOO and OOOOa are included in General Permit G35-D.

The applicant is subject to:

- ☐ 40CFR60 Subpart IIII
- ☒ 40CFR60 Subpart JJJJ
- ☐ 40CFR60 Subpart OOOO
- ☒ 40CFR60 Subpart OOOOa

45CSR22 (Air Quality Management Fee Program)
45CSR22 is the program to collect fees for certificates to operate and for permits to construct or modify sources of air pollution. 45CSR22 applies to all registrants. The general permit fee of $500 is defined in 45CSR13. In addition to the application fee, all applicants subject to NSPS requirements or NESHAP requirements shall pay additional fees of $1,000 and $2,500, respectively.

Registrants are also required to obtain and have in effect a valid certificate to operate in accordance with 45CSR22 §4.1. The fee group for General Permit G35-D is Group 8D (natural gas compressor stations greater than 1,000 HP) with an annual operating fee of $500 or 9M (all other sources) with an annual operating fee of $200.

The applicant is in the following fee group:

- ☒ 8D (Natural Gas Compressor Stations Greater than 1,000 HP)
- ☐ 9M (All Other Sources)

40CFR60 Subpart IIII (Standards of Performance for Stationary Compression Ignition Internal Combustion Engines)
Subpart IIII sets forth non-methane hydrocarbon (NMHC), hydrocarbon (HC), nitrogen oxides (NOx), carbon monoxide (CO), and particulate matter (PM) emission limits, fuel requirements, installation requirements, and monitoring requirements based on the year of installation of the subject internal combustion engine. The provisions for stationary compression ignition (CI) internal combustion engines for owners or operators of this Subpart have been included in General Permit G35-D, Section 12. The following CI engines are subject to this section:

The facility does not contain an affected source (compression ignition engine) and is therefore not subject to this subpart.

40CFR60 Subpart JJJJ (Standards of Performance for Stationary Spark Ignition Internal Combustion Engines)
Subpart JJJJ sets forth nitrogen oxides (NOx), carbon monoxide (CO), and volatile organic compound (VOC) emission limits, fuel requirements, installation requirements, and monitoring requirements based on the year of installation of the subject internal combustion engine. The provisions for stationary spark ignition (SI) internal combustion engines for owners or operators of this Subpart have been included in General Permit G35-D, Section 12.

Emission Unit ID#	Engine Description (Make, Model)	Engine Size (HP)	Date of Manufacture	Provide Justification how 40CFR60 Subpart JJJJ is met.
CE-01	Caterpillar G3616 A4 Compressor Engine	5,000	After 2012	☒ Met Emission Standard ☐ Certified Engine
CE-02	Caterpillar G3616 A4 Compressor Engine	5,000	After 2012	☒ Met Emission Standard ☐ Certified Engine
CE-03	Caterpillar G3616 A4 Compressor Engine	5,000	After 2012	☒ Met Emission Standard ☐ Certified Engine
CE-04	Caterpillar G3616 A4 Compressor Engine	5,000	After 2012	☒ Met Emission Standard ☐ Certified Engine

40CFR60, Subpart OOOO (Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution)
EPA published its New Source Performance Standards (NSPS) and air toxics rules for the oil and gas sector on August 16, 2012. EPA published final amendments to the Subpart on September 23, 2013.

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 affected sources which commence construction, modification or reconstruction after August 23, 2011 are subject to the applicable provisions of this Subpart as described below:

Centrifugal compressor affected facilities are included in General Permit G35-D, Section 10.0.
Are there any applicable centrifugal compressor affected facilities not located at the well site?
☐ Yes ☒ No

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. 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.

Reciprocating compressor affected facilities are included in General Permit G35-D, Section 11.0.
Are there any applicable reciprocating compressor affected facilities not located at the well site?
☐ Yes ☒ No

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. 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.

Pneumatic controllers affected facilities are included in General Permit G35-D, Section 9.0.
Are there any applicable pneumatic controller affected facilities? ☐ Yes ☒ No

For the natural gas production segment (between the wellhead and the point of custody transfer to the natural gas transmission and storage segment and not including natural gas processing plants), 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.

Requirements for storage vessel affected facilities are included in General Permit G35-D, Section 6.0. Determination of storage vessel affected facility status is included in Section 5.0 of General Permit G35-D.
Are there any applicable storage vessel affected facilities? ☐ Yes ☒ No
If No, list any emission reduction devices and control efficiencies used to avoid 40CFR60 Subpart OOOO.
No affected facilities of this subpart are located at this facility.

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, and has the potential for VOC emissions equal to or greater than 6 tpy as determined according to this section by October 15, 2013 for Group 1 storage vessels and by April 15, 2014, or 30 days after startup (whichever is later) for Group 2 storage vessels. A storage vessel affected facility that subsequently has its potential for VOC emissions decrease to less than 6 tpy shall remain an affected facility under this subpart.

40CFR60, Subpart OOOOa (Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution for which Construction, Modification or Reconstruction Commenced after September 18, 2015)
EPA published its New Source Performance Standards (NSPS) and air toxics rules for the oil and gas sector on August 16, 2012. EPA published amendments to the Subpart on September 23, 2013 and June 3, 2016.

40CFR60 Subpart OOOOa establishes emission standards and compliance schedules for the control of the pollutant greenhouse gases (GHG). The greenhouse gas standard in this subpart is in the form of a limitation on emissions of methane from affected facilities in the crude oil and natural gas source category that commence construction, modification or reconstruction after September 18, 2015. This subpart also 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 September 18, 2015. The effective date of this rule is August 2, 2016.

For each compressor station, the registrant must reduce GHG (in the form of a limitation on emissions of methane) and VOC emissions by complying with fugitive emissions monitoring as required in §60.5397a and the alternative means of emission limitations in §60.5398a.

Centrifugal compressor affected facilities are included in General Permit G35-D, Section 10.0.
Are there any applicable centrifugal compressor affected facilities not located at the well site?
☐ Yes ☒ No

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. 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.

Reciprocating compressor affected facilities are included in General Permit G35-D, Section 11.0.
Are there any applicable reciprocating compressor affected facilities not located at the well site?
☒ Yes ☐ No
If Yes, list.

Engine Description (Make, Model)
CAT G3616 Natural Gas Compressor 01
CAT G3616 Natural Gas Compressor 02
CAT G3616 Natural Gas Compressor 03
CAT G3616 Natural Gas Compressor 04
Stabilized Condensate Tanks VRU Compressor

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. 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.

Pneumatic controllers affected facilities are included in General Permit G70-D, Section 10.0.
Are there any applicable pneumatic controller affected facilities? ☐ Yes ☒ No

Each pneumatic controller affected facility not located at a natural gas processing plant, which is a single continuous bleed natural gas-driven pneumatic controller operating at a natural gas bleed rate greater than 6 scfh.

Requirements for storage vessel affected facilities are included in General Permit G70-D, Section 7.0.
Are there any applicable storage vessel affected facilities? ☐ Yes ☒ No
If No, list any emission reduction devices and control efficiencies used to avoid 40CFR60 Subpart OOOO.

The storage vessels at this facility are not affected facilities because they do not have a potential to emit greater than six (6) tons per year of VOC.

Each storage vessel affected facility, which is a single storage vessel with the potential for VOC emissions equal to or greater than 6 tpy as determined according to this section.

Fugitive Emissions GHG and VOC Standards affected facilities are included in General Permit G70-D in Section 12.0.
Did the registrant commence construction, modification, or reconstruction of the compressor station after September 18, 2015 and is subject to §60.5397a? ☒ Yes ☐ No

For the purposes of §60.5397a, a "modification" to a compressor station occurs when one or more compressors is replaced by one or more compressors of greater total horsepower than the compressor(s) being replaced. The registrant must reduce GHG (in the form of a limitation on emissions of methane) and VOC emissions by complying with the requirements of paragraphs (a) through (j) of §60.5397a. These requirements are independent of the closed vent system and cover requirements in §60.5411a. These leak surveys must be conducted four (4) times per year.

40CFR63 Subpart HH (National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities)
This Subpart applies to owners and operators of each triethylene glycol (TEG) dehydration unit that are located at oil and natural gas production facilities. Only areas source requirements are included in General Permit G35-D, as defined in §63.761.

For area source applicability, the affected source includes each trietheylene glycol (TEG) dehydration unit located at a facility that meets the criteria specified in §63.760(a).

Glycol dehydration unit(s) are included in General Permit G35-D, Section 14.0.

Are there any TEG dehydration unit(s) at this facility? ☒ Yes ☐ No

Are the TEG dehydration unit(s) located within an Urbanized Area (UA) or Urban Cluster (UC)?
☐ Yes ☒ No

Are the glycol dehydration unit(s) exempt from 40CFR63 Section 764(d)? ☒ Yes ☐ No

If Yes, answer the following questions:

The actual annual average flowrate of natural gas to the glycol dehydration unit(s) is less than 85 thousand standard cubic meters per day, as determined by the procedures specified in §63.772(b)(1) of this Subpart. ☐ Yes ☒ No

The actual average emissions of benzene from the glycol dehydration unit process vent(s) to the atmosphere are less than 0.90 megagram per year (1 ton per year), as determined by the procedures specified in §63.772(b)(2) of this Subpart. ☒ Yes ☐ No

40CFR63 Subpart ZZZZ (National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines)
Subpart ZZZZ establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emitted from stationary reciprocating internal combustion engines (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. This section reflects EPA's final amendments to 40 CFR part 63, Subpart ZZZZ that were issued on January 15, 2013 and published in the Federal Register on January 30, 2013.

WVDEP DAQ has delegation of the area source air toxics provisions of this Subpart requiring Generally Achievable Control Technology (GACT). The provisions of this Subpart have been included in this general permit under Section 12.0.

Emission Unit ID#	Engine Description (Make, Model)	Engine Size (HP)	Date of Manufacture	New or Existing under 40CFR63 Subpart ZZZZ?	Provide Justification how 40CFR63 Subpart ZZZZ is met.
CE-01	Caterpillar G3616 A4 Compressor Engine	5,000	After 2012	New	Commenced construction after June 12, 2006. Shall comply with 40 CFR 60 Subpart JJJJ.
CE-02	Caterpillar G3616 A4 Compressor Engine	5,000	After 2012	New	Commenced construction after June 12, 2006. Shall comply with 40 CFR 60 Subpart JJJJ.
CE-03	Caterpillar G3616 A4 Compressor Engine	5,000	After 2012	New	Commenced construction after June 12, 2006. Shall comply with 40 CFR 60 Subpart JJJJ.
CE-04	Caterpillar G3616 A4 Compressor Engine	5,000	After 2012	New	Commenced construction after June 12, 2006. Shall comply with 40 CFR 60 Subpart JJJJ.

Are there any engines that fall in the window of being new under 40CFR60 Subpart ZZZZ but manufactured before the applicability date in 40CFR60 Subpart JJJJ? ☐ Yes ☒ No

SOURCE AGGREGATION DETERMINATION

"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.

Is there equipment and/or activities used for onshore oil and natural gas production that are located on the same site, or on sites that share equipment and are within ¼ mile of each other?
☐ Yes ☒ No
Is this equipment and/or activities under "common control"?
☐ Yes ☒ No
Do these facilities share the same two (2) digit SIC code?
☐ Yes ☒ No

Final Source Aggregation Decision.
☒ Source not aggregated with any other source.
☐ Source aggregated with another source. List Company/Facility Name:

RECOMMENDATION TO DIRECTOR

The information provided in the permit application, including all supplemental information received, indicates the applicant meets all the requirements of applicable regulations and the applicant has shown they meet the eligibility requirements of General Permit G35-D. Therefore, impact on the surrounding area should be minimized and it is recommended that the facility should be granted registration under General Permit G35-D.

Permit Engineer Signature: Jonathan Carney
Name and Title: Jonathan Carney, Engineer
Date: September 22, 2017