West Virginia Department of Environmental Protection
Division of Air Quality

Fact Sheet

For Final Renewal Permitting Action Under 45CSR30 and Title V of the Clean Air Act

Permit Number: **R30-06900107-2024**
Application Received: **March 15, 2023**
Plant Identification Number: **03-54-069-00107**
Permittee: **Appalachia Midstream Services, L.L.C.**
Facility Name: **Battle Run Compressor Station**
Mailing Address: **100 Teletech Drive, Suite 2; Moundsville, WV 26041-2352**

Physical Location:	Valley Grove, Ohio County, West Virginia
UTM Coordinates:	536.535 km Easting • 4436.03 km Northing • Zone 17
Directions:	Heading east on I-70 from Wheeling, take exit 11. Turn left onto Dallas Pike and go 0.1 miles. Turn right onto Alexander Rd and go 0.2 miles. Turn left onto Windmill Truckers road and go 0.3 miles. The facility is straight ahead.

Facility Description

This facility is a natural gas compressor station operating under SIC Code 1389. This facility currently uses twelve (12) 1,380 hp compressor engines, one (1) 5,000 hp Caterpillar compressor engine, one (1) 605 hp generator, one (1) 49 hp emergency generator, three (3) 55 mmscfd dehydrators, three (3) 1.0 MMBTU/hr reboilers, two (2) heat treater burners, and eight (8) storage tanks. Control devices include oxidation catalysts, Non-Selective Catalytic Reduction (NSCR), condensers, vapor recovery units, and carbon canisters.

Emissions Summary

Plantwide Emissions Summary [Tons per Year]

Regulated Pollutants	Potential Emissions	2022 Actual Emissions
Carbon Monoxide (CO)	115.87	16.53
Nitrogen Oxides (NO_X)	109.72	66.57
Particulate Matter ($PM_{2.5}$)	8.10	5.50
Particulate Matter (PM_{10})	8.10	5.50
Total Particulate Matter (TSP)	8.10	5.50
Sulfur Dioxide (SO_2)	0.47	0.33
Volatile Organic Compounds (VOC)	223.34	124.47

PM_{10} is a component of TSP.

Hazardous Air Pollutants	Potential Emissions	2022 Actual Emissions
Acetaldehyde	1.33	0.92
Acrolein	0.84	0.57
Benzene	0.99	0.13
Butadiene, 1,3	0.05	0.03
Ethylbenzene	0.34	0.04
Formaldehyde	8.16	4.57
n-Hexane	5.04	2.88
Methanol	1.64	0.85
Polycyclic Organic Matter (POM)	0.06	0.04
Toluene	1.80	0.17
2,2,4-Trimethylpentane (TMP)	0.37	0.11
Xylene	3.20	0.13
Other HAPs	0.22	--
Total HAPs	24.04	10.44

Some of the above HAPs may be counted as PM or VOCs.

Title V Program Applicability Basis

This facility has the potential to emit 115.87 TPY of CO, 109.72 TPY of NO_x, and 223.34 TPY of VOCs. Due to this facility's potential to emit over 100 tons per year of criteria pollutant, Appalachia Midstream Services, L.L.C.'s Battle Run Compressor Station is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 45CSR30.

Legal and Factual Basis for Permit Conditions

The State and Federally-enforceable conditions of the Title V Operating Permits are based upon the requirements of the State of West Virginia Operating Permit Rule 45CSR30 for the purposes of Title V of the Federal Clean Air Act and the underlying applicable requirements in other state and federal rules.

This facility has been found to be subject to the following applicable rules:

Federal and State:	
45CSR2	To Prevent And Control Particulate Air Pollution From Combustion Of Fuel In Indirect Heat Exchangers
45CSR6	Control Of Air Pollution From Combustion Of Refuse.
45CSR11	Standby Plans For Emergency Episodes.
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
45CSR16	Standards Of Performance For New Stationary Sources
WV Code § 22-5-4 (a) (14)	The Secretary can request any pertinent information such as annual emission inventory reporting.
45CSR30	Operating permit requirement.
45CSR34	Emission Standards for Hazardous Air Pollutants
40 C.F.R. Part 60, Subpart JJJJ	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines
40 C.F.R. Part 60, Subpart OOOO	Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution for which Construction, Modification or Reconstruction Commenced after August 23, 2011, and on or before September 18, 2015
40 C.F.R. Part 60, Subpart OOOOa	Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced After September 18, 2015
40 C.F.R. Part 61	Asbestos inspection and removal
40 C.F.R. Part 63, Subpart HH	National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities
40 C.F.R. Part 63, Subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines
40 C.F.R. Part 64	Compliance Assurance Monitoring
40 C.F.R. Part 82, Subpart F	Ozone depleting substances
State Only:	
45CSR4	No objectionable odors.
45CSR17	To Prevent And Control Particulate Matter Air Pollution From Materials Handling, Preparation, Storage And Other Sources Of Fugitive Particulate Matter.

Each State and Federally-enforceable condition of the Title V Operating Permit references the specific relevant requirements of 45CSR30 or the applicable requirement upon which it is based. Any condition of the Title V permit that is enforceable by the State but is not Federally-enforceable is identified in the Title V permit as such.

The Secretary's authority to require standards under 40 C.F.R. Part 60 (NSPS), 40 C.F.R. Part 61 (NESHAPs), and 40 C.F.R. Part 63 (NESHAPs MACT) is provided in West Virginia Code §§ 22-5-1 *et seq.*, 45CSR16, 45CSR34 and 45CSR30.

Active Permits/Consent Orders

Permit or Consent Order Number	Date of Issuance	Permit Determinations or Amendments That Affect the Permit *(if any)*
R13-2916D	June 26, 2023	

Conditions from this facility's Rule 13 permit(s) governing construction-related specifications and timing requirements will not be included in the Title V Operating Permit but will remain independently enforceable under the applicable Rule 13 permit(s). All other conditions from this facility's Rule 13 permit(s) governing the source's operation and compliance have been incorporated into this Title V permit in accordance with the "General Requirement Comparison Table," which may be downloaded from DAQ's website.

Determinations and Justifications

This is a renewal of the Title V permit which was issued on September 18, 2018 and modified on February 26, 2019. Unless otherwise noted, the terminology “current permit” or “CP” means Title V Operating Permit R30-06900107-2018 (SM01).

This permit renewal includes the changes associated with R30-06900107-2018 (MM01) application received on April 28, 2023 which incorporates the revisions in the R13-2916D Modification Permit to update glycol dehydration unit requirements, update compressor rod packing emissions, add emissions from upstream methanol injection, increase MDHI of heater treaters from 0.50 mmBtu/hr to 1.00 mmBtu/hr, remove two stabilized condensate storage tanks and decrease the maximum throughput for each of the remaining stabilized condensate storage tanks (TK-01 through TK-06), and decrease the maximum throughput at the Stabilized Condensate Truck Load-Out (TLO).

The change in potential emissions associated with MM01 are as follows:

Pollutant	Change in Potential Emissions TPY
Carbon Monoxide (CO)	+0.36
Nitrogen Oxides (NO_x)	+0.42
Particulate Matter (PM, PM10, $PM_{2.5}$)	+0.03
Volatile Organic Compounds (VOC)	-22.09
Total HAPs	+0.81

Substantial changes to the most recent version of the current Title V Permit consist of the following:

Note: COA in the following discussions means citation of authority.

1) Title V Boilerplate changes.

- **Condition 2.1.3. –** Revised resulting from Rule 30 (45CSR30) revisions.
- **Condition 2.11.4. –** The COA has been corrected.
- **Condition 2.17. –** Deleted and marked as reserved resulting from Rule 30 revisions.
- **Condition 2.22.1. –** The COA has been updated to remove 45CSR38 which has been repealed.
- **Condition 3.5.3. –** This condition was revised to update the US EPA mailing address.
- **Condition 3.5.4. –** Revised as revised in Rule 30.

- **Condition 3.5.7. –** Deleted and marked as reserved resulting from Rule 30 revisions.
- **Condition 3.5.8.a.1. –** Deleted and marked as reserved resulting from Rule 30 revisions.
- **Condition 3.5.8.a.2. –** Revised as revised in Rule 30.

2) Section 1.1. - Emission Units Table

- The Emission Point ID for EUGEN-1 (Kohler Emergency Generator) has been corrected from "EP-GEN1" to "EPGEN-1."
- Updated the design capacities of EUHT-1 and 2 (Heater Treaters Burners) in conjunction with MM01.
- Updated the Emission Unit ID and Emission Point ID for the Stabilized Condensate Storage Tanks to reflect the removal of two tanks in conjunction with MM01. Also updated the IDs in the Control Equipment table.
- Updated the Emission Unit ID and Emission Point ID for the Produced Water Storage Tanks to reflect the revised ID listed in R13-2916D in conjunction with MM01. Also updated the IDs in the Control Equipment table.
- "Control Devices" table – Replaced the "EP" with "EU" in the "Emission Unit" column for the emission unit identifiers ID.

3) Section 1.2. - Active R13, R14, and R19 Permits Table

- Updated R13-2916C to R13-2916D

4) Section 3.0

- Condition 3.1.12. – Added "State-Enforceable only" to the COA.
- Condition 3.7.2. – Removed 40 CFR 60 Subpart OOOOa.

5) Section 4.0

- Corrected "EP-GEN1" to "EPGEN-1" as mentioned above under the Emission Units Table.
- Condition 4.1.5. - Revised the emissions in conjunction with MM01.
- Condition 4.3.1. – Deleted the references to Section 6.2. and 6.3. since these are not testing requirements. Also, the requirements of 6.2. and 6.3. have been moved (see the third bullet under Item 7 below).

6) Section 5.0

- Corrected "EP-GEN1" to "EPGEN-1" as mentioned above under the Emission Units Table.
- Condition 5.1.7. - Revised the requirements of this condition in accordance with the revised requirements of the current version of 40 CFR §60.4243(d).
- Condition 5.4.1.a.3. – Revised the requirements of this condition in accordance with the revised requirements of the current version of 40 CFR §60.4245(a).
- Condition 5.4.2. – Deleted the portion of 40 CFR§60.4245(b) that was not applicable to EPGEN-1 (i.e., stationary SI emergency ICE greater than or equal to 130 HP).

7) Section 6.0

- Condition 6.1.1.d. - Revised the language to reflect the language of 40 CFR §60.5385a(d).

- Condition 6.1.2. – Added the requirements from 40 CFR §60.5370(b) and §60.5370a(b) which were previously omitted.

- Conditions 6.2.1. and 6.2.2. – In the current permit, the requirements of these conditions are under subsections 6.2 and 6.3 which are labeled "Initial Compliance Demonstration" and "Continuous Compliance Demonstration" respectively. In keeping with the Title V permit boilerplate format, subsections 6.2 and 6.3 have been relabeled as "Monitoring Requirements" and "Testing Requirements" respectively, in the renewal permit. Furthermore, the requirements of condition 6.3.1 of the current permit have been relocated to 6.2.2. in the renewal permit. Since there are no applicable requirements under subsection 6.3 in the renewal permit, condition 6.3.1. has been marked as "reserved."

- Condition 6.5.3. – Revised the language to match that of 40 CFR §60.5420a(b) of 40 CFR 60 Subpart OOOOa in the latest version of the rule. Added 6.5.3.3. which contains the requirements of 40 CFR §60.5420a(b)(11) and revised the COA to reflect the addition.

8) Section 7.0

- Replaced the Emission Unit IDs with the Emission Point IDs in the Section 7 title.

- Conditions 7.1.3.,7.1.4. and 7.2.2. – The requirements in these conditions were revised as revised in R13-2916D in conjunction with MM01. Also, CAM requirements were added in condition 7.2.2.

- Conditions 7.2.3. through 7.2.10., 7.4.6. and 7.5.2. – These permit conditions were added to include the Compliance Assurance Monitoring (CAM) requirements. (see discussion below)

9) Section 8.0

- Replaced the Emission Unit IDs with the Emission Point IDs in the Section 8 title.

- Condition 8.1.1. – Revised the maximum design heat input in the table for each heater treater EUHT-1 and 2 as revised in R13-2916D in conjunction with MM01.

10) Section 9.0

- Updated the emission points in the Section 9 title to reflect the removal of two of the "Stabilized Condensate Storage Tanks" and revised the emission point IDs of the "Produced Water Storage Tanks" as revised in R13-2916D in conjunction with MM01. Also made these same revisions throughout Section 9 where appropriate.

- Condition 9.1.2. – Revised the maximum annual throughput in the table for each stabilized condensate tank EUTK-1 - EUTK-6 as revised in R13-2916D in conjunction with MM01.

11) Section 10.0

- Condition 10.1.1. – Revised the maximum quantity of stabilized condensate to be loaded as revised in R13-2916D in conjunction with MM01.

12) Section 12.0

On June 30, 2021, a joint resolution of Congress adopted under the Congressional Review Act ("CRA") was signed into law. It disapproved the final rule titled "Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources Review," 85 FR 57018 (September 14, 2020). Due to this resolution, sources in the production and processing segments of the natural gas industry that are subject to Subpart OOOOa must meet the VOC standards of 85 FR 57438 (September 15, 2020) and the methane standards of 81 FR 35898 (June 03, 2016) as amended by 83 FR 10638 (March 12, 2018). The applicable VOC standards and methane standards of Subpart OOOOa have both been included in this operating permit.

The requirements of Subpart OOOO that are applicable to sources in the production and processing segments of the natural gas industry were not affected by the resolution.

For further information see "*Congressional Review Act Resolution to Disapprove EPA's 2020 Oil and Gas Policy Rule: Questions and Answers"* at:
www.epa.gov/system/files/documents/2021-07/qa_cra_for_2020_oil_and_gas_policy_rule.6.30.2021.pdf

- The following Note has been added under the section 12.0 title: "*The methane requirements and associated rule citations are taken from the 2016 NSPS (40 CFR part 60, Subpart OOOOa) promulgated June 3, 2016 and as amended March 12, 2018. The VOC requirements and associated rule citations are taken from the 2020 NSPS (40 CFR part 60, Subpart OOOOa) promulgated September 15, 2020. See the fact sheet for further explanation."*

- Where the 40 CFR 60 Subpart OOOOa requirements for Methane and VOC emissions are not the same in the 2018 and the 2020 versions of this Subpart, the requirements have been designated as "for methane" and "for VOC" through out this section. This is to distinguish from which version of the Subpart OOOOa the rule citations and requirements were taken.

13) 40 CFR Part 64 – *Compliance Assurance Monitoring (CAM)*

This rule applies to the dehydrators (EUDHY-1, EUDHY-2, and EUDHY-03) still vents for VOC emissions pursuant to 40CFR§64.2(a) because they are: Pollutant-specific emission units (PSEUs) at a major source that is required to obtain a Title V operating permit; Subject to an emissions limitation or standard (i.e., emission limit for VOC (R13-2916D, 9.1.4.); Use a control device (i.e., BTEX Busters (BTEX-01, BTEX-02 and BTEX-03)) to achieve compliance with the VOC limit; and has a potential pre-control device emissions of VOC greater than 100 TPY. The post control emissions are below Major Source Threshold Levels which qualify the units as "other" PSEUs, and therefore a CAM plan has been submitted as part of the Title V permit renewal application as specified in 40CFR§64.5(b). Pursuant to 40CFR§64.2(b)(1)(i) since the dehydrators are subject to 40 CFR 63, Subpart HH they are exempt from CAM for HAP emissions. The remainder of the equipment is not subject to CAM. The engines are subject to 40CFR60, Subpart JJJJ and are, therefore, exempt per 40CFR§64.2(b)(1)(i). The remaining potential PSEUs do not have pre-control emissions that are classified as a major source, do not use a control device to achieve compliance, or are not subject to an emission limit or standard.

Condition 9.1.3. of R13-2916D (7.1.3. of the Title V permit) in part requires that the BTEX Busters be fully functional and that they shall be operated according to manufacturer's specifications and that they shall be properly maintained in a manner which prevents the units from freezing. The non-condensable gas from each BTEX Accumulator shall be routed to a reboiler and combusted through a closed vent system. This condition also requires that for each reboiler burner, the pilot light shall be lit at all times when the dehydration unit is in operation. Therefore, continuous monitoring of the condenser outlet temperature and the presence of the reboiler pilot flame will provide reasonable assurance of ongoing compliance with the VOC limit. Conditions 7.2.2. through 7.2.10., 7.4.6., and 7.5.2. contain the CAM requirements.

		EUDHY-1, EUDHY-2, and EUDHY-3	
		Indicator No. 1	**Indicator No. 2**
I.	**Indicator**	Reboiler Burner Pilot Flame operation	BTEX Condenser Exit Temperature
	Monitoring Approach	Continuous monitoring of the pilot flame using a thermocouple and burner management system (BMS) to ensure the pilot flame is present at all times the dehydration units are in operation	Continuous monitoring of the condenser exit temperature using a thermocouple.
II	**Indicator Range**	Indicator provides data regarding presence or absence of pilot flame.	Temperature shall not be above 150 °F

		EUDHY-1, EUDHY-2, and EUDHY-3	
		Indicator No. 1	**Indicator No. 2**
	A. QIP threshold	The permittee has chosen not to propose a threshold at this time since it is not required for this permitting action by 40 C.F.R. §64.8(a). Although the threshold is not required, the language for a QIP as it relates to other applicable requirements is set forth as permit condition 7.2.9.	The permittee has chosen not to propose a threshold at this time since it is not required for this permitting action by 40 C.F.R. §64.8(a). Although the threshold is not required, the language for a QIP as it relates to other applicable requirements is set forth as permit condition 7.2.9.
III	**Performance Criteria** **A. Data Representa-tiveness**	The thermocouple is installed, in accordance with manufacturer's specifications and monitored by the BMS.	The thermocouple is installed, in accordance with manufacturer's specifications downstream of the condenser.
	B. Verification of Operational Status	All manufacturer's recommendations regarding periodic testing/checks for the proper installation and operations of the flame detecting device will be followed.	The BTEX Condensers are regularly inspected and properly maintained in conformance with the manufacturer's recommendations
	C. QA/QC Practices and Criteria	The thermocouples are checked annually and maintained including but not limited to, maintaining necessary parts for routine repairs.	The thermocouples are checked annually and maintained including but not limited to, maintaining necessary parts for routine repairs.
	D. Monitoring frequency	Continuous	Daily
	E. Data Collection Procedure	The pilot flame will be monitored daily during operational round and manual log entries will be performed and recorded via mobile forms.	The condenser exit temperature will be monitored daily during operational round and manual log entries will be performed and recorded via mobile forms
	F. Averaging Period	There is no averaging period since the pilot flame is either present or absent.	Daily

Non-Applicability Determinations

The following requirements have been determined not to be applicable to the subject facility due to the following:

a. 40CFR60, Subparts D, Da, Db, and Dc—Steam Generating Units. These rules do not apply because there are no steam generating units (including line heaters) at this facility with a maximum design heat input capacity greater than 1.0 MMBtu/hr, which is well below the applicability thresholds in these rules specified in 40CFR§§60.40(a), 60.40Da(a), 60.40b(a), and 60.40c(a).

b. 40CFR60, Subparts K, Ka, and Kb—Storage Vessels. These rules do not apply because all tanks were constructed after July 23, 1989 and there are no tanks with capacity of 75 m^3 (471.7 bbl or 19,813 gal) or greater, as specified in 40 CFR §60.110b(a), that are used to store volatile organic liquids (VOL) at this subject facility.

c. 40CFR60, Subpart GG—Stationary Gas Turbines. This rule does not apply because there are no stationary gas turbines at this facility with a heat input at peak load equal to or greater than 10.7 gigajoules (10 million Btu) per hour, based on the lower heating value of the fuel fired. (40 CFR §60.330).

d. 40CFR60, Subpart KKK—Leaks from Natural Gas Processing Plants. This rule does not apply because this facility is not a natural gas processing plant as defined in 40 CFR §60.331.

e. 40CFR60, Subpart LLL—SO_2 Emissions from Onshore Natural Gas Processing Plants. This rule does not apply because there are no gas sweetening operations at this facility, as required in 40 CFR §60.640(a).

f. 40CFR60, Subpart IIII—Stationary Compression Ignition Internal Combustion Engines. This rule does not apply because there are no stationary compression ignition engines at this facility.

g. 40CFR60, Subpart KKKK—Stationary Combustion Turbines. This rule does not apply because there are no stationary gas turbines at this facility with a heat input at peak load equal to or greater than 10.7 gigajoules (10 million Btu) per hour, based on the higher heating value of the fuel fired, as specified in 40 CFR §60.4305(a).

h. 40CFR63, Subpart HHH—Natural Gas Transmission and Storage Facilities. This rule does not apply because this facility is not a natural gas transmission or storage facility transporting or storing natural gas prior to local distribution and is not a major source of HAP emissions, as specified in 40 CFR §63.1270(a).

i. 40CFR63, Subpart YYYY—Stationary Combustion Turbines. This rule does not apply because this facility is not a major source of HAP emissions and does not have a stationary combustion turbine, as specified in 40 CFR §63.6085.

j. 40CFR63, Subpart DDDDD—Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters. This rule does not apply because this facility is not a major source of HAP emissions, as specified in 40 CFR §63.7485.

k. 40CFR63, Subpart JJJJJJ—Industrial, Commercial, and Institutional Boilers and Process Heaters Area Sources. This rule does not apply because all reboilers (EPRBL-1, EPRBL-2, and EPRBL-3) and heater treater burners (EPHT-1 and EPHT-2) at this facility are gas-fired, as exempted in 40 CFR §63.11195(e).

Request for Variances or Alternatives
None.

Insignificant Activities
Insignificant emission unit(s) and activities are identified in the Title V application.

Comment Period
Beginning Date: December 6, 2023
Ending Date: January 5, 2024

Point of Contact
All written comments should be addressed to the following individual and office:

Frederick Tipane
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Division of Air Quality
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Procedure for Requesting Public Hearing

During the public comment period, any interested person may submit written comments on the draft permit and may request a public hearing, if no public hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. The Secretary shall grant such a request for a hearing if he/she concludes that a public hearing is appropriate. Any public hearing shall be held in the general area in which the facility is located.

Response to Comments (Statement of Basis)

Not applicable.