Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Pre-Draft Permit; Mountain Valley Pipeline, LLC; Application No. R30-10300109-2025

Barron, Sarah K <sarah.k.barron@wv.gov> Wed, Feb 26, 2025 at 3:55 PM
To: "Knibloe, James" <james.knibloe@eqt.com>

Jim,

The pre-draft Title V permit for the Bradshaw Compressor Station has been updated with the changes from R13-3278B. Hopefully, the public notice will be published in the next week or two, after which the EPA and public comment periods for the draft/proposed permit will begin. You should receive an email with the beginning and ending dates of the comment periods. Please, let me know if you have any questions.

Thanks,
- Sarah

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Pre-Draft Permit; Mountain Valley Pipeline, LLC; Application No. R30-10300109-2025

Knibloe, James <james.knibloe@eqt.com> Fri, Jan 3, 2025 at 2:24 PM
To: "Barron, Sarah K" <sarah.k.barron@wv.gov>

Sarah,

We received the permit modification to update the compliance requirement for 4.1.6. Please see attached.

Thanks

Jim

From: Knibloe, James
Sent: Thursday, December 12, 2024 11:15 AM
To: Barron, Sarah K sarah.k.barron@wv.gov

[Quoted text hidden]

[Quoted text hidden]
[Quoted text hidden]

---------- Forwarded message ----------
From: "Mink, Stephanie R" <stephanie.r.mink@wv.gov>
To: "Lauderbaugh, Mike" <Mike.Lauderbaugh@eqt.com>, "Knibloe, James" <james.knibloe@eqt.com>
Cc: Joseph R Kessler <joseph.r.kessler@wv.gov>, Roy F Kees <roy.f.kees@wv.gov>
Bcc:
Date: Fri, 3 Jan 2025 16:17:53 +0000
Subject: [EXTERNAL] West Virginia Air Quality Permit Issued
Permit Issued
Mountain Valley Pipeline, LLC; Bradshaw Compressor Station
Permit Application No. R13-3278B
Plant ID No. 103-00109

Mr. Lauderbaugh:

Your application for a permit as required by Section 5 of 45CSR13 - "Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permit Registrations, and Procedures for Evaluation" **has been approved**.

The attached R13-3278B is hereby issued pursuant to Subsection 5.7 of 45CSR13. Please be aware of the notification requirements in the permit which pertain to commencement of construction, modification, or relocation activities; startup of operations; and suspension of operations.

As specified in Section 2 of the permit, approval of this permit does not relieve the permittee of the responsibility to apply for and obtain all other permits, licenses and/or approvals from other agencies; i.e., local, state and federal, which may have jurisdiction over

the construction and/or operation of the source(s) and/or facility herein permitted.

A copy of the signed permit can be sent via USPS upon request, by contacting Stephanie Mink at (304) 926-0499 ext. 41281.

Any person whose interest may be affected, including, but not necessarily limited to, the applicant and any person who participated in the public comment process, by a permit issued, modified or denied by the Secretary may appeal such action of the Secretary to the Air Quality Board pursuant to article one [§§22B-1-1 et seq.], Chapter 22B of the Code of West Virginia. West Virginia Code §§22-5-14.

Should you have any questions, please contact Roy Kees at 304-926-0499 ext. 41269.
--

Stephanie Mink

Environmental Resources Associate

West Virginia Department of Environmental Protection

Division of Air Quality, Title V & NSR Permitting

601 57th Street SE

Charleston, WV 25304

Phone: 304-926-0499 x41281

2 attachments

103-00109_PERM_13-3278B.pdf
415K

[EXTERNAL] West Virginia Air Quality Permit Issued.eml
593K

West Virginia Department of Environmental Protection
Harold D. Ward
Cabinet Secretary

Class I Administrative Update

R13- 3278B

This permit is issued in accordance with the West Virginia Air Pollution Control Act (West Virginia Code §§22-5-1 et seq.) and 45 C.S.R. 13 – Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits and Procedures for Evaluation. The permittee identified at the above-referenced facility is authorized to construct the stationary sources of air pollutants identified herein in accordance with all terms and conditions of this permit.

Issued to:

Mountain Valley Pipeline, LLC
Bradshaw Compressor Station
103-00109

Laura M. Crowder

Laura M. Crowder
Director, Division of Air Quality

Laura M. Crowder

Digitally signed by: Laura M. Crowder
DN: CN = Laura M. Crowder email = Laura.M.Crowder@wv.gov C = US O = WV DEP OU = DAQ
Date: 2025.01.03 10:14:49 -05'00'

Issued: January 3, 2025

This permit supersedes and replaces R13-3278A issued on March 22, 2021.

Facility Location:	Mannington, Wetzel County, West Virginia
Mailing Address:	2200 Energy Drive, Canonsburg, PA 15317
Facility Description:	Natural gas transmission station
NAICS Codes:	486210
UTM Coordinates:	540.05 km Easting • 4,376.00 km Northing • Zone 17
Permit Type:	Class I Administrative Update
Description of Change:	MVP requests the blowdown limits be changed from the maximum number of blowdown events per year to the maximum vented gas volume per year.

Any person whose interest may be affected, including, but not necessarily limited to, the applicant and any person who participated in the public comment process, by a permit issued, modified or denied by the Secretary may appeal such action of the Secretary to the Air Quality Board pursuant to article one [§§22B-1-1 et seq.], Chapter 22B of the Code of West Virginia. West Virginia Code §§22-5-14.

The source is subject to 45CSR30. The permittee has the duty to update the facility's Title V (45CSR30) permit application to reflect the changes permitted herein.

Table of Contents

1.0. Emission Units

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
S001	E001	Solar Turbine #1	2020	23.536 HP (site specific conditions)	None
S002	E002	Solar Turbine #2	2020	19,483 HP (site specific conditions)	None
S003	E003	Solar Turbine #3	2020	19,483 HP (site specific conditions)	None
S004	E004	Solar Turbine #4	2020	19,483 HP (site specific conditions)	None
S005	E005	Microturbine Generator #1	2020	200 kW	None
S006	E006	Microturbine Generator #2	2020	200 kW	None
S007	E007	Microturbine Generator #3	2020	200 kW	None
S008	E008	Microturbine Generator #4	2020	200 kW	None
S009	E009	Microturbine Generator #5	2020	200 kW	None
S010	E010	Microturbine Generator #6	2020	200 kW	None
S011	E011	Microturbine Generator #7	2020	200 kW	None
S012	E012	Microturbine Generator #8	2020	200 kW	None
S013	E013	Microturbine Generator #9	2020	200 kW	None
S014	E014	Microturbine Generator #10	2020	200 kW	None
S015	E015	Microturbine Generator #10	2020	200 kW	None
S016	E016	Microturbine Generator #10	2020	200 kW	None
S017	E017	Microturbine Generator #10	2020	200 kW	None
S018	E018	Microturbine Generator #10	2020	200 kW	None
S019	E019	Fuel Gas Heater	2020	2.31 MMBTU/hr	None
S020	E020	Fuel Gas Heater	2020	2.31 MMBTU/hr	None
S021	E021	Produced Fluids Tank	2020	10,080 gal	None
S022	E022	Used Oil Tank	2020	4,200 gal	None
S023	E023	Office Building Heater	2020	0.12 MMBTU/hr	None
S024	E024	Fugitive Components	2020	NA	NA
S025	E026	Liquid Loading	2020	126,000 gal/yr	None
S020	E026	Blowdowns	2020	NA	NA

2.0. General Conditions

2.1. Definitions

2.1.1. All references to the "West Virginia Air Pollution Control Act" or the "Air Pollution Control Act" mean those provisions contained in W.Va. Code §§ 22-5-1 to 22-5-18.

2.1.2. The "Clean Air Act" means those provisions contained in 42 U.S.C. §§ 7401 to 7671q, and regulations promulgated thereunder.

2.1.3. "Secretary" means the Secretary of the Department of Environmental Protection or such other person to whom the Secretary has delegated authority or duties pursuant to W.Va. Code §§ 22-1-6 or 22-1-8 (45CSR§30-2.12.). The Director of the Division of Air Quality is the Secretary's designated representative for the purposes of this permit.

2.2. Acronyms

CAAA	Clean Air Act Amendments	**NO_X**	Nitrogen Oxides
CBI	Confidential Business Information	**NSPS**	New Source Performance Standards
CEM	Continuous Emission Monitor	**PM**	Particulate Matter
CES	Certified Emission Statement	**$PM_{2.5}$**	Particulate Matter less than 2.5 μm in diameter
C.F.R. *or* CFR	Code of Federal Regulations	**PM_{10}**	Particulate Matter less than 10μm in diameter
CO	Carbon Monoxide	**Ppb**	Pounds per Batch
C.S.R. *or* CSR	Codes of State Rules	**Pph**	Pounds per Hour
DAQ	Division of Air Quality	**Ppm**	Parts per Million
DEP	Department of Environmental Protection	**Ppm_V or ppmv**	Parts per Million by Volume
dscm	Dry Standard Cubic Meter	**PSD**	Prevention of Significant Deterioration
FOIA	Freedom of Information Act	**Psi**	Pounds per Square Inch
HAP	Hazardous Air Pollutant	**SIC**	Standard Industrial Classification
HON	Hazardous Organic NESHAP	**SIP**	State Implementation Plan
HP	Horsepower	**SO_2**	Sulfur Dioxide
lbs/hr	Pounds per Hour	**TAP**	Toxic Air Pollutant
LDAR	Leak Detection and Repair	**TPY**	Tons per Year
M	Thousand	**TRS**	Total Reduced Sulfur
MACT	Maximum Achievable Control Technology	**TSP**	Total Suspended Particulate
MDHI	Maximum Design Heat Input	**USEPA**	United States Environmental Protection Agency
MM	Million	**UTM**	Universal Transverse Mercator
MMBtu/hr *or* mmbtu/hr	Million British Thermal Units per Hour	**VEE**	Visual Emissions Evaluation
MMCF/hr *or* mmcf/hr	Million Cubic Feet per Hour	**VOC**	Volatile Organic Compounds
NA	Not Applicable	**VOL**	Volatile Organic Liquids
NAAQS	National Ambient Air Quality Standards		
NESHAPS	National Emissions Standards for Hazardous Air Pollutants		

2.3. Authority

This permit is issued in accordance with West Virginia air pollution control law W.Va. Code §§ 22-5-1. et seq. and the following Legislative Rules promulgated thereunder:

2.3.1. 45CSR13 – *Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits and Procedures for Evaluation*;

2.4. Term and Renewal

2.4.1. This permit supersedes and replaces R13-3278A issued on March 22, 2021. This Permit shall remain valid, continuous and in effect unless it is revised, suspended, revoked or otherwise changed under an applicable provision of 45CSR13 or any other applicable legislative rule;

2.5. Duty to Comply

2.5.1. The permitted facility shall be constructed and operated in accordance with the plans and specifications filed in Permit Applications R13-3278 – R13-3278B and any modifications, administrative updates, or amendments thereto. The Secretary may suspend or revoke a permit if the plans and specifications upon which the approval was based are not adhered to;
[45CSR§§13-5.10 and -10.3.]

2.5.2. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the West Virginia Code and the Clean Air Act and is grounds for enforcement action by the Secretary or USEPA;

2.5.3. Violations of any of the conditions contained in this permit, or incorporated herein by reference, may subject the permittee to civil and/or criminal penalties for each violation and further action or remedies as provided by West Virginia Code 22-5-6 and 22-5-7;

2.5.4. Approval of this permit does not relieve the permittee herein of the responsibility to apply for and obtain all other permits, licenses, and/or approvals from other agencies; i.e., local, state, and federal, which may have jurisdiction over the construction and/or operation of the source(s) and/or facility herein permitted.

2.6. Duty to Provide Information

The permittee shall furnish to the Secretary within a reasonable time any information the Secretary may request in writing to determine whether cause exists for administratively updating, modifying, revoking, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Secretary copies of records to be kept by the permittee. For information claimed to be confidential, the permittee shall furnish such records to the Secretary along with a claim of confidentiality in accordance with 45CSR31. If confidential information is to be sent to USEPA, the permittee shall directly provide such information to USEPA along with a claim of confidentiality in accordance with 40 C.F.R. Part 2.

2.7. Duty to Supplement and Correct Information

Upon becoming aware of a failure to submit any relevant facts or a submittal of incorrect information in any permit application, the permittee shall promptly submit to the Secretary such supplemental facts or corrected information.

2.8. Administrative Update

The permittee may request an administrative update to this permit as defined in and according to the procedures specified in 45CSR13.
[45CSR§13-4.]

2.9. Permit Modification

The permittee may request a minor modification to this permit as defined in and according to the procedures specified in 45CSR13.
[45CSR§13-5.4.]

2.10 Major Permit Modification

The permittee may request a major modification as defined in and according to the procedures specified in 45CSR14 or 45CSR19, as appropriate.
[45CSR§13-5.1]

2.11. Inspection and Entry

The permittee shall allow any authorized representative of the Secretary, upon the presentation of credentials and other documents as may be required by law, to perform the following:

a. At all reasonable times (including all times in which the facility is in operation) enter upon the permittee's premises where a source is located or emissions related activity is conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect at reasonable times (including all times in which the facility is in operation) any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit;

d. Sample or monitor at reasonable times substances or parameters to determine compliance with the permit or applicable requirements or ascertain the amounts and types of air pollutants discharged.

2.12. [Reserved]

2.13. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a permittee in an enforcement action that it should have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. However, nothing in this paragraph shall be construed as precluding consideration of a need to halt or reduce activity as a mitigating factor in determining penalties for noncompliance if the health, safety, or environmental impacts of halting or reducing operations would be more serious than the impacts of continued operations.

2.14. Suspension of Activities

In the event the permittee should deem it necessary to suspend, for a period in excess of sixty (60) consecutive calendar days, the operations authorized by this permit, the permittee shall notify the Secretary, in writing, within two (2) calendar weeks of the passing of the sixtieth (60) day of the suspension period.

2.15. Property Rights

This permit does not convey any property rights of any sort or any exclusive privilege.

2.16. Severability

The provisions of this permit are severable and should any provision(s) be declared by a court of competent jurisdiction to be invalid or unenforceable, all other provisions shall remain in full force and effect.

2.17. Transferability

This permit is transferable in accordance with the requirements outlined in Section 10.1 of 45CSR13. **[45CSR§13-10.1.]**

2.18. Notification Requirements

The permittee shall notify the Secretary, in writing, no later than thirty (30) calendar days after the actual startup of the operations authorized under this permit.

2.19. Credible Evidence

Nothing in this permit shall alter or affect the ability of any person to establish compliance with, or a violation of, any applicable requirement through the use of credible evidence to the extent authorized by law. Nothing in this permit shall be construed to waive any defense otherwise available to the permittee including, but not limited to, any challenge to the credible evidence rule in the context of any future proceeding.

3.0. Facility-Wide Requirements

3.1. Limitations and Standards

3.1.1. **Open burning.** The open burning of refuse by any person, firm, corporation, association or public agency is prohibited except as noted in 45CSR§6-3.1.
[45CSR§6-3.1.]

3.1.2. **Open burning exemptions.** The exemptions listed in 45CSR§6-3.1 are subject to the following stipulation: Upon notification by the Secretary, no person shall cause, suffer, allow or permit any form of open burning during existing or predicted periods of atmospheric stagnation. Notification shall be made by such means as the Secretary may deem necessary and feasible.
[45CSR§6-3.2.]

3.1.3. **Asbestos.** The permittee is responsible for thoroughly inspecting the facility, or part of the facility, prior to commencement of demolition or renovation for the presence of asbestos and complying with 40 C.F.R. § 61.145, 40 C.F.R. § 61.148, and 40 C.F.R. § 61.150. The permittee, owner, or operator must notify the Secretary at least ten (10) working days prior to the commencement of any asbestos removal on the forms prescribed by the Secretary if the permittee is subject to the notification requirements of 40 C.F.R. § 61.145(b)(3)(i). The USEPA, the Division of Waste Management, and the Bureau for Public Health - Environmental Health require a copy of this notice to be sent to them.
[40CFR§61.145(b) and 45CSR§34]

3.1.4. **Odor.** No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor at any location occupied by the public.
[45CSR§4-3.1] ***[State Enforceable Only]***

3.1.5. **Permanent shutdown.** A source which has not operated at least 500 hours in one 12-month period within the previous five (5) year time period may be considered permanently shutdown, unless such source can provide to the Secretary, with reasonable specificity, information to the contrary. All permits may be modified or revoked and/or reapplication or application for new permits may be required for any source determined to be permanently shutdown.
[45CSR§13-10.5.]

3.1.6. **Standby plan for reducing emissions.** When requested by the Secretary, the permittee shall prepare standby plans for reducing the emissions of air pollutants in accordance with the objectives set forth in Tables I, II, and III of 45CSR11.
[45CSR§11-5.2.]

3.2. Monitoring Requirements

[Reserved]

3.3. Testing Requirements

3.3.1. **Stack testing.** As per provisions set forth in this permit or as otherwise required by the Secretary, in accordance with the West Virginia Code, underlying regulations, permits and orders, the permittee shall conduct test(s) to determine compliance with the emission limitations set forth in this permit and/or established or set forth in underlying documents. The Secretary, or his duly authorized representative, may at his option witness or conduct such test(s). Should the Secretary exercise his option to conduct such test(s), the operator shall provide all necessary sampling

connections and sampling ports to be located in such manner as the Secretary may require, power for test equipment and the required safety equipment, such as scaffolding, railings and ladders, to comply with generally accepted good safety practices. Such tests shall be conducted in accordance with the methods and procedures set forth in this permit or as otherwise approved or specified by the Secretary in accordance with the following:

a. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with 40 C.F.R. Parts 60, 61, and 63 in accordance with the Secretary's delegated authority and any established equivalency determination methods which are applicable. If a testing method is specified or approved which effectively replaces a test method specified in the permit, the permit may be revised in accordance with 45CSR§13-4. or 45CSR§13-5.4 as applicable.

b. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with applicable requirements which do not involve federal delegation. In specifying or approving such alternative testing to the test methods, the Secretary, to the extent possible, shall utilize the same equivalency criteria as would be used in approving such changes under Section 3.3.1.a. of this permit. If a testing method is specified or approved which effectively replaces a test method specified in the permit, the permit may be revised in accordance with 45CSR§13-4. or 45CSR§13-5.4 as applicable.

c. All periodic tests to determine mass emission limits from or air pollutant concentrations in discharge stacks and such other tests as specified in this permit shall be conducted in accordance with an approved test protocol. Unless previously approved, such protocols shall be submitted to the Secretary in writing at least thirty (30) days prior to any testing and shall contain the information set forth by the Secretary. In addition, the permittee shall notify the Secretary at least fifteen (15) days prior to any testing so the Secretary may have the opportunity to observe such tests. This notification shall include the actual date and time during which the test will be conducted and, if appropriate, verification that the tests will fully conform to a referenced protocol previously approved by the Secretary.

d. The permittee shall submit a report of the results of the stack test within sixty (60) days of completion of the test. The test report shall provide the information necessary to document the objectives of the test and to determine whether proper procedures were used to accomplish these objectives. The report shall include the following: the certification described in paragraph 3.5.1.; a statement of compliance status, also signed by a responsible official; and, a summary of conditions which form the basis for the compliance status evaluation. The summary of conditions shall include the following:

    1. The permit or rule evaluated, with the citation number and language;
    2. The result of the test for each permit or rule condition; and,
    3. A statement of compliance or noncompliance with each permit or rule condition.

[WV Code § 22-5-4(a)(14-15) and 45CSR13]

3.4. Recordkeeping Requirements

3.4.1. **Retention of records.** The permittee shall maintain records of all information (including monitoring data, support information, reports, and notifications) required by this permit recorded in a form suitable and readily available for expeditious inspection and review. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation. The files shall be maintained for at least five (5) years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. At a minimum, the most recent two (2) years of data shall be maintained on site. The remaining three (3) years of data may be maintained off site, but must remain accessible within a reasonable time. Where appropriate, the permittee may maintain records electronically (on a computer, on computer floppy disks, CDs, DVDs, or magnetic tape disks), on microfilm, or on microfiche.

3.4.2. **Odors.** For the purposes of 45CSR4, the permittee shall maintain a record of all odor complaints received, any investigation performed in response to such a complaint, and any responsive action(s) taken.
[45CSR§4. *State Enforceable Only.*]

3.5. Reporting Requirements

3.5.1. **Responsible official.** Any application form, report, or compliance certification required by this permit to be submitted to the DAQ and/or USEPA shall contain a certification by the responsible official that states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

3.5.2. **Confidential information.** A permittee may request confidential treatment for the submission of reporting required by this permit pursuant to the limitations and procedures of W.Va. Code § 22-5-10 and 45CSR31.

3.5.3. **Correspondence.** All notices, requests, demands, submissions and other communications required or permitted to be made to the Secretary of DEP and/or USEPA shall be made in writing and shall be deemed to have been duly given when delivered by hand, or mailed first class or by private carrier with postage prepaid to the address(es), or submitted in electronic format by email as set forth below or to such other person or address as the Secretary of the Department of Environmental Protection may designate:

DAQ:
Director
WVDEP
Division of Air Quality
601 57th Street
Charleston, WV 25304-2345

US EPA:
Section Chief, USEPA, Region III
Enforcement and Compliance Assurance Division
Air Section (3ED21)
Four Penn Center
1600 John F Kennedy Blvd
Philadelphia, PA 19103-2852

DAQ Compliance and Enforcement[1]:
DEPAirQualityReports@wv.gov

[1]For all self-monitoring reports (MACT, GACT, NSPS, etc.), stack tests and protocols, Notice of Compliance Status Reports, Initial Notifications, etc.

3.5.4. **Operating Fee**

3.5.4.1. In accordance with 45CSR30 – Operating Permit Program, the permittee shall submit a certified emissions statement and pay fees on an annual basis in accordance with the submittal requirements of the Division of Air Quality. A receipt for the appropriate fee shall be maintained on the premises for which the receipt has been issued, and shall be made immediately available for inspection by the Secretary or his/her duly authorized representative.

3.5.5. **Emission inventory.** At such time(s) as the Secretary may designate, the permittee herein shall prepare and submit an emission inventory for the previous year, addressing the emissions from the facility and/or process(es) authorized herein, in accordance with the emission inventory submittal requirements of the Division of Air Quality. After the initial submittal, the Secretary may, based upon the type and quantity of the pollutants emitted, establish a frequency other than on an annual basis.

4.0. Source-Specific Requirements

4.1. Limitations and Standards

4.1.1. The following conditions and requirements are specific to Combustion Turbines (S001-S004):

a. Emissions from each combustion turbine shall not exceed the following:

i. Emissions of nitrogen oxides (NO_x) shall be controlled with combustion controls. Each turbine shall not discharge nitrogen oxides (NO_x) emissions in excess of 25 ppm at 15 percent O_2 when operating at load conditions at or above 75 percent of peak load and/or when operating temperatures are at or above 0^0F. For when the operating loads of the turbine are less than 75% of peak load and/or operating temperatures are less than 0^0F, NO_x emissions rate from the turbine shall not exceed 150 ppm at 15 percent O_2. Annual NO_x emissions from each turbine shall not exceed 42.95 tpy on a 12-month rolling total. This limit applies at all times, including periods of startup, shutdown, or malfunction. **[40CFR§§60.4320(a), Table 1 to Subpart KKKK of Part 60 – Nitrogen Oxides Emission Limits for New Stationary Combustion Turbines]**

ii. Emissions of CO shall not exceed 45.67 tons per year, on a rolling 12 month total basis.

iii. Emissions of SO_2 shall not exceed 0.060 lb of SO_2/MMBtu heat input. For purpose of demonstrating compliance with this limit, the permittee shall maintain the Federal Energy Regulatory Commission (FERC) tariff limit on total sulfur content of 20 grains of sulfur per 100 standard cubic feet of natural gas combusted in the turbines. **[40 CFR §§60.4330(a)(2) & 60.4365(a)]**

iv. Emissions of VOC shall not exceed 5.02 tons per year, on a rolling 12 month total basis.

b. Each turbine shall only be fired with pipeline-quality natural gas.

c. The permittee must operate and maintain each turbine, air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction. **[40 CFR §60.4333(a)]**

4.1.2. The following conditions and requirements are specific to Microturbine Generators (S005-S018):

a. Emissions from each microturbine generator shall not exceed the following:

i. Emissions of NOx shall not exceed 0.35 tons per year, on a rolling 12 month total basis.

ii. Emissions of CO shall not exceed 0.96 tons per year, on a rolling 12 month total basis.

iii. Emissions of VOC shall not exceed 0.09 tons per year, on a rolling 12 month total basis.

b. Each turbine shall only be fired with pipeline-quality natural gas.

c. The permittee must operate and maintain each turbine, air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction. **[40 CFR §60.4333(a)]**

4.1.3. The following conditions and requirements are specific to Fuel Gas Heaters (S019-S020):

a. NO_x emissions emitted to the atmosphere from each heater shall not exceed 0.93 tons per year on a rolling yearly total basis.

b. CO emissions emitted to the atmosphere from each heater shall not exceed 0.78 tons per year on a rolling yearly total basis.

c. The heaters shall not be designed or constructed with a maximum design heat input in excess of 2.31 MMBtu/hr. The condition satisfies compliance with the limitation of 45 CSR §2-3.1 **[45 CSR 2A-3.1.a.]**

d. The heaters shall only be fired with pipeline quality natural gas.

4.1.4. The maximum annual throughput of produced fluid to the 10,080 gallon storage tank (S015) shall not exceed 126,000 gallons per year.

4.1.5. The permittee shall install, maintain, and operate all above-ground piping, valves, connectors, flanges, open ended lines, etc. that service lines in the transport of potential sources of regulated air pollutants to prevent any substantive fugitive escape of regulated air pollutants. Any above-ground piping, valves, connectors, flanges, open ended lines, etc. that shows signs of excess wear and that have a reasonable potential for substantive fugitive emissions of regulated air pollutants shall be replaced.

4.1.6. The maximum quantity of vented gas per year (scf/year) shall not exceed the following:

Blowdown Event	Events per Year	Vented Gas Volume per Year (scf/year)
Station ESD Event	4	6,400,000
Unit Shutdown	32	10,880,000
Main Gas Filter Changes	36	4,368,000
Pig Receiver 42”	4	80,057
Pig Receiver 48”	4	112,215
Pig Launcher 42”	4	37,100
Pig Launcher 48”	4	110,175

Compliance can be demonstrated using either the volume of gas vented on a 12-month rolling total or through the sum of blowdown events on a 12-month rolling total (not to exceed the number of events in the above table).

4.1.7. **Minor Source of Hazardous Air Pollutants (HAP).** HAP emissions from the facility shall be less than 10 tons/year of any single HAP or 25 tons/year of any combination of HAPs. Compliance with this Section shall ensure that the facility is a minor HAP source.

4.1.8. Only those emission units/sources as identified in Table 1.0, with the exception of any *de minimis* sources as identified under Table 45-13B of 45CSR13, are authorized at the permitted facility.

4.2. Monitoring Requirements

4.2.1. For the purpose of determining compliance with the annual limits for each combustion turbine (S001-S004), the permittee shall monitor and record the following for each calendar month:

a. Hours the turbine operated at normal conditions, which is when the turbine is at or above 50% load, and the ambient temperature is above 0^0F.

b. Hours the turbine operated at low-load conditions, which is when the turbine load is less than 50% load.

c. Hours the turbine operated at low temperature conditions, which is when the ambient temperature is less than 0^0F but at or above -20^0F.

d. Hours the turbine operated at very-low temperature conditions, which is when the ambient temperature is less than -20^0F.

e. The number of startup and shutdown cycles that occurred during the month.

Such records shall be maintained in accordance with Condition 3.4.1. of this permit.

4.2.2. The permittee shall keep records of the amount of fuel consumed by each fuel gas heater (S019-S020) on a monthly basis. Such records shall be maintained in accordance with Condition 3.4.1. and must be in a manner to demonstrate compliance with the emission limits of Condition 4.1.3.

4.2.3. The permittee shall collect production data of produced fluid collected from the pipeline segment that the permitted facility support for the first 30 days that produced fluid tank S015 was placed into service. The permittee must calculate the potential VOC emissions from S015, which includes flash emissions, breathing losses, and working loses from the vessel, using a generally accepted model or calculation methodology, based on the maximum average daily throughput determined for a 30-day period of production. If the potential VOC emissions from S021 are at or greater than 6 tpy, S021 is an affect source subject to Subpart OOOO of 40 CFR 60 and the permittee shall comply with the following:

a. Determine the potential VOC emission rate as specified in 40 CFR §60.5365(e).

b. Reduce the VOC emissions in accordance with 40 CFR §60.5395(d).

c. Submit the information required for S021 as specified in 40 CFR §60.5420(b) to the Director within 60 days from placing S021 within service.

d. Maintain records in accordance with Condition 3.4.1.
[40 CFR §60.5410(h)]

4.3. Testing Requirements

4.3.1. For the purposes of demonstrating compliance with the NO_x emission standards in Condition 4.1.1.(a)(i) and 40 CFR§60.4320(a), the permittee shall conduct an initial performance test within 60 days after achieving maximum output of each turbine, but no later than 180 days after initial startup. After the initial test, subsequent performance testing shall be conducted annually (no more than 14 months following the previous test) unless the previous results demonstrate that the affected units achieved compliance of less than or equal to 75 percent of the NO_x emission limit, then the permittee may reduce the frequency of subsequent tests to once every two years (no more than 26 calendar months following the previous test) as allowed under 40 CFR §60.4340(a). If the

results of any subsequent performance test exceed 75 percent of the NOx emission limit, then the permittee must resume annual performance tests. Such testing shall be conducted in accordance with Condition 3.3.1. and 40 CFR §60.4400. Records of such testing shall be maintained in accordance with Condition 3.4.1.
[40 CFR §60.8(a), §60.4340(a), §60.4375(b), and §60.4400]

4.4. Recordkeeping Requirements

4.4.1. **Record of Monitoring.** The permittee shall keep records of monitoring information that include the following:

a. The date, place as defined in this permit, and time of sampling or measurements;
b. The date(s) analyses were performed;
c. The company or entity that performed the analyses;
d. The analytical techniques or methods used;
e. The results of the analyses; and
f. The operating conditions existing at the time of sampling or measurement.

4.4.2. Compliance with the annual emission limits in 4.1.1 for NOx, CO and VOC for the turbines (S001-S002) shall be based on a rolling 12 month total. The emissions from each turbine shall be determined monthly using the following equation:

$ME_{Px} = DLN_{Px}$* DLN hours + LL_{Px}*LL hours + LT_{Px}*LT hours + VLT_{Px}*VLT hours + SS_{Px}*SS cycles

Where:

ME_{Px} = Monthly emissions of Pollutant X

DLN_{Px} = Hourly emission rate of Pollutant X during normal operation

DLN = Number of hours of normal operation in said month

LL_{Px} = Hourly emission rate of Pollutant X during low load (<50%) operation

LL = Number of hours of low load operation in said month

LT_{Px} = Hourly emission rate of Pollutant X during low temperatures (<0ºF)

LT = Number of hours of low temperature operation in said month

VLT_{px} = Hourly emission rate of Pollutant X during very low temperatures (<-20ºF)

VLT = Number of hours of very low temperature operation in said month

$SS_{P\,x}$ = Unit emission rate (lb/cycle) for Pollutant X during startup/shutdown cycles

SS = Number of startup/shutdown cycles for said month

Hourly emission rates used in the above calculation shall be based on best available data which is data collected during source specific testing or the data for specific model turbine provide or published by the manufacturer. When source test data is used, it can be adjusted for the average operating conditions for each specific month using a generally accepted model or methodology. This determination shall be performed within 30 days after the end of the calendar month and the

monthly emissions shall be summed with the preceding 11 months to determine compliance with the annual limits in Condition 4.1.1.(a). Records of the monthly total and 12 month totals shall be maintained in accordance with Condition 3.4.1.

4.4.3. The permittee shall maintain current and valid documentation that the natural gas consumed by the combustion turbines specifying that the maximum total sulfur content is 20 grains of sulfur or less per 100 cubic feet of natural gas. Said documentation can be purchase contracts, tariff sheets, or transportation contracts. Such records shall be maintained in accordance with Condition 3.4.1., except that these records can be maintained off-site but must be made available for inspection within 15 days of the request. By satisfying this requirement the permittee is exempted from the total sulfur monitoring requirement of §60.4370. These records satisfy Conditions 4.1.1.b., 4.1.2.c., and 4.1.3.f.
[40 CFR §60.4365(a)]

4.4.4. To demonstrate compliance with permit condition 4.1.5, the permittee shall maintain a record of the fugitive component counts (valves, connectors, flanges, open ended lines, etc). Additionally, the permittee shall maintain a record of any fugitive component leaks or replacements.

4.4.5. To demonstrate compliance with permit condition 4.1.6, the permittee shall maintain a record of the blowdown and pigging events and estimated volume per event (scf) on a monthly and rolling twelve month total.

4.5. Reporting Requirements

4.5.1. The permittee shall submit a notification to the Director of the initial start-up of turbines. Such notice must be submitted within 15 days after the actual date of start-up for the affected source. This notification supersedes the notification requirements of Condition 2.18.
[40CFR§60.7(a)(3)]

4.5.2. Any exceedance of permit condition 4.1.6 must be reported in writing to the Director of the DAQ as soon as practicable, but within ten (10) calendar days, of the occurrence and shall include, at a minimum, the following information: the date of the exceedance, the estimate of VOC emissions released to the atmosphere as a result of the exceedance and any corrective measures taken or planned.

CERTIFICATION OF DATA ACCURACY

I, the undersigned, hereby certify that, based on information and belief formed after reasonable inquiry, all information contained in the attached _____, representing the period beginning _____ and ending _____, and any supporting documents appended hereto, is true, accurate, and complete.

Signature[1] _____ _____
(please use blue ink) Responsible Official or Authorized Representative Date

Name & Title _____ _____
(please print or type) Name Title

Telephone No. _____ Fax No. _____

[1] This form shall be signed by a "Responsible Official." "Responsible Official" means one of the following:

a. For a corporation: The president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either:

(i) the facilities employ more than 250 persons or have a gross annual sales or expenditures exceeding $25 million (in second quarter 1980 dollars), or

(ii) the delegation of authority to such representative is approved in advance by the Director;

b. For a partnership or sole proprietorship: a general partner or the proprietor, respectively;

c. For a municipality, State, Federal, or other public entity: either a principal executive officer or ranking elected official. For the purposes of this part, a principal executive officer of a Federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a Regional Administrator of U.S. EPA); or

d. The designated representative delegated with such authority and approved in advance by the Director.

UC Defaulted Accounts Search Results

Sorry, no records matching your criteria were found.

FEIN:
Business name: MOUNTAIN VALLEY PIPELINE, LLC
Doing business as/Trading as:

Please use your browsers back button to try again.

WorkforceWV	Unemployment Compensation	Offices of the Insurance Commissioner

West Virginia Secretary of State — Online Data Services

Business and Licensing

Online Data Services Help

Business Organization Detail

NOTICE: The West Virginia Secretary of State's Office makes every reasonable effort to ensure the accuracy of information. However, we make no representation or warranty as to the correctness or completeness of the information. If information is missing from this page, it is not in the The West Virginia Secretary of State's database.

MOUNTAIN VALLEY PIPELINE, LLC

Organization Information

Org Type	Effective Date	Established Date	Filing Date	Charter	Class	Sec Type	Termination Date	Termination Reason
LLC | Limited Liability Company	9/18/2014		9/18/2014	Foreign	Profit			

Organization Information

Business Purpose	4862 - Transportation and Warehousing - Pipeline Transportation - Pipeline Transportation of Natural Gas	**Capital Stock**	
Charter County		**Control Number**	9A79E
Charter State	DE	**Excess Acres**	
At Will Term	A	**Member Managed**	MGR
At Will Term Years		**Par Value**	
Authorized Shares		**Young Entrepreneur**	Not Specified

Addresses

Type	Address
Mailing Address	2200 ENERGY DRIVE CANONSBURG, PA, 15317
Notice of Process Address	C T CORPORATION SYSTEM 5098 WASHINGTON ST W STE 407 CHARLESTON, WV, 25313
Principal Office Address	2200 ENERGY DRIVE CANONSBURG, PA, 15317 USA
Type	**Address**

Officers

Type	Name/Address
Manager	EQM GATHERING OPCO, LLC 2200 ENERGY DRIVE CANONSBURG, PA, 15317
Type	**Name/Address**

Date	Amendment
1/2/2015	AMENDMENT FILED - AMENDMENT TO PURPOSE.
Date	**Amendment**

Annual Reports

Filed For
2024
2023
2022
2021
2020
2019
2018
2017
2016
2015

Date filed

File Your Current Year Annual Report Online Here

For more information, please contact the Secretary of State's Office at 304-558-8000.

Wednesday, February 26, 2025 — 4:19 PM

Barron, Sarah K <sarah.k.barron@wv.gov>

Mountain Valley Pipeline (EQT Corporation); Bradshaw Compressor Station

Knibloe, James <james.knibloe@eqt.com> Fri, Dec 20, 2024 at 1:19 PM
To: "DEPAirQualityPermitting@wv.gov" <DEPAirQualityPermitting@wv.gov>
Cc: Tom Muscenti <tmuscenti@trinityconsultants.com>, "Barron, Sarah K" <sarah.k.barron@wv.gov>

Please find attached completed NSR application for the Bradshaw Compressor Station.

Thank you,

Jim Knibloe

Sr. Environmental Engineer

EQT Corporation

412-525-0609

To learn about EQT's environmental, social and governance efforts visit: https://esg.eqt.com

Bradshaw NSR Application 2024-1219 signed.pdf
1128K

Division of Air Quality Permit Application Submittal

Please find attached a permit application for : Mountain Valley Pipeline, LLC; Bradshaw Compressor Station
[Company Name; Facility Location]

- DAQ Facility ID (for existing facilities only): 103-00109
- Current 45CSR13 and 45CSR30 (Title V) permits associated with this process (for existing facilities only): R13-3278A and R30-10300109-2025 (pending)

- Type of NSR Application (check all that apply):
  - ☐ Construction
  - ☐ Modification
  - ☑ Class I Administrative Update
  - ☐ Class II Administrative Update
  - ☐ Relocation
  - ☐ Temporary
  - ☐ Permit Determination

- Type of 45CSR30 (TITLE V) Revision (if any)**:
  - ☐ Title V Initial
  - ☐ Title V Renewal
  - ☐ Administrative Update
  - ☑ Minor Modification
  - ☐ Significant Modification
  - ☐ Off Permit Change

If any box above is checked, include the Title V revision information as ATTACHMENT S to this application.

- Payment Type:
  - ☐ Credit Card (Instructions to pay by credit card will be sent in the Application Status email.)
  - ☐ Check (Make checks payable to: WVDEP – Division of Air Quality)
    Mail checks to:
    WVDEP – DAQ – Permitting
    Attn: NSR Permitting Secretary
    601 57th Street, SE
    Charleston, WV 25304

Please wait until DAQ emails you the Facility ID Number and Permit Application Number. Please add these identifiers to your check or cover letter with your check.

- If the permit writer has any questions, please contact (all that apply):
  - ☐ Responsible Official/Authorized Representative
    - Name:
    - Email:
    - Phone Number:
  - ☑ Company Contact
    - Name: James Knibloe
    - Email: james.knibloe@eqt.com
    - Phone Number: (412) 525-0609
  - ☑ Consultant
    - Name: Tom Muscenti
    - Email: tmuscenti@trinityconsultants.com
    - Phone Number: 440 487-7917

December 20, 2024

Laura M. Crowder
Director, Division of Air Quality
West Virginia Department of Environmental Protection
601 57th Street SE
Charleston, WV 25304

Subject: **Class I Administrative Update**
Mountain Valley Pipeline, LLC
Bradshaw Compressor Station (Permit No. R13-3278A)

Dear Laura Crowder:

Mountain Valley Pipeline, LLC (MVP) is submitting this Class I administrative update application to the West Virginia Department of Environmental Protection (WVDEP) to amend the 45CSR13 Permit for the construction and continued operation of an existing facility (Bradshaw Compressor Station) in Smithfield, Wetzel County, WV. The facility currently operates under Permit No. R13-3278A.

MVP is proposing to update the wording of Condition 4.1.6 in Permit No. R13-3278A. Blowdown emissions from the facility are based on the vented volume of gas and not necessarily the number of events. As such, MVP requests the form of the limit be changed from the maximum number of blowdown events per year to the maximum vented gas volume per year. No change to the volumes (and therefore, emissions) is being requested, nor does MVP propose any changes to the facility or operations as part of the project. Compliance can be demonstrated using either through the volume of gas vented on a 12-month rolling total or through the sum of blowdown events on a 12-month rolling total (not to exceed the number of events in the table).

MVP requests the updated Condition 4.1.6 be incorporated into the pending Title V Operating Permit R30-10300109-2025. Included in the enclosed application are the required forms for a Class I administrative update and a Title V Minor Modification. This application contains the following attachments:

- Attachment A: R-13 Application Form
- Attachment B: Title V Permit Revision Information Form

MVP appreciates your review of this application. Should you have any questions pertaining to this matter, please feel free to contact me directly by phone at (412) 525-0609 or by email at james.knibloe@eqt.com.

Sincerely,

James A Knibloe

James Knibloe

ATTACHMENT A: R-13 APPLICATION FORM

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF AIR QUALITY
601 57th Street, SE
Charleston, WV 25304
(304) 926-0475
www.dep.wv.gov/daq

APPLICATION FOR NSR PERMIT AND TITLE V PERMIT REVISION (OPTIONAL)

PLEASE CHECK ALL THAT APPLY TO **NSR (45CSR13)** (IF KNOWN):

☐ **CONSTRUCTION** ☐ **MODIFICATION** ☐ **RELOCATION**
☒ **CLASS I ADMINISTRATIVE UPDATE** ☐ **TEMPORARY**
☐ **CLASS II ADMINISTRATIVE UPDATE** ☐ **AFTER-THE-FACT**

PLEASE CHECK TYPE OF **45CSR30 (TITLE V)** REVISION (IF ANY):

☐ **ADMINISTRATIVE AMENDMENT** ☒ **MINOR MODIFICATION**
☐ **SIGNIFICANT MODIFICATION**

IF ANY BOX ABOVE IS CHECKED, INCLUDE TITLE V REVISION INFORMATION AS **ATTACHMENT S** TO THIS APPLICATION

FOR TITLE V FACILITIES ONLY: Please refer to "Title V Revision Guidance" in order to determine your Title V Revision options (Appendix A, "Title V Permit Revision Flowchart") and ability to operate with the changes requested in this Permit Application.

Section I. General

1. Name of applicant *(as registered with the WV Secretary of State's Office):*
Mountain Valley Pipeline, LLC

2. Federal Employer ID No. ***(FEIN):***
61-1744744

3. Name of facility *(if different from above):*
Bradshaw Compressor Station

4. The applicant is the:
☐ **OWNER** ☐ **OPERATOR** ☒ **BOTH**

5A. Applicant's mailing address:
400 Woodcliff Drive
Canonsburg, PA 15317

5B. Facility's present physical address:
2165 Bear Run Rd
Smithfield, WV 26437

6. **West Virginia Business Registration.** Is the applicant a resident of the State of West Virginia? ☐ **YES** ☒ **NO**

– If **YES,** provide a copy of the **Certificate of Incorporation/Organization/Limited Partnership** (one page) including any name change amendments or other Business Registration Certificate as **Attachment A.**

– If **NO,** provide a copy of the **Certificate of Authority/Authority of L.L.C./Registration** (one page) including any name change amendments or other Business Certificate as **Attachment A.**

7. If applicant is a subsidiary corporation, please provide the name of parent corporation: EQT Corporation

8. Does the applicant own, lease, have an option to buy or otherwise have control of the *proposed site?* ☒ **YES** ☐ **NO**

– If **YES,** please explain: Applicant owns site

– If **NO,** you are not eligible for a permit for this source.

9. Type of plant or facility (stationary source) to be **constructed, modified, relocated, administratively updated** or **temporarily permitted** (e.g., coal preparation plant, primary crusher, etc.):
Natural Gas Compressor Station

10. North American Industry Classification System **(NAICS)** code for the facility:
486210

11A. DAQ Plant ID No. (for existing facilities only):
103-00109

11B. List all current 45CSR13 and 45CSR30 (Title V) permit numbers associated with this process (for existing facilities only):
R13-3278A
R30-10300109-2025 (TV Pre-Draft Permit)

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

12A.

- For **Modifications, Administrative Updates** or **Temporary permits** at an existing facility, please provide directions to the *present location* of the facility from the nearest state road;
- For **Construction** or **Relocation permits,** please provide directions to the *proposed new site location* from the nearest state road. Include a **MAP** as **Attachment B**.

From Charleston, WV take I-79 N for approximately 121 miles. Take exit 119 for US-50 toward Clarksburg/Bridgeport. Continue on US-50 W for 7 miles. Then, turn right onto Bean Run/Gregory Run and continue for 5.8 miles. Next, turn left onto WV-20 N/State Hwy 20 and continue for 16 miles. Then, turn right onto Mannington Rd and drive 1.2 miles. Finally, turn left onto Bear Run Rd and continue 2.2 miles to the site.

12.B. New site address (if applicable):	12C. Nearest city or town:	12D. County:
2165 Bear Run Rd	Smithfield	Wetzel
12.E. UTM Northing (KM): 4,376.018	12F. UTM Easting (KM): 540.135	12G. UTM Zone: 17

13. Briefly describe the proposed change(s) at the facility:
Mountain Valley Pipeline (MVP) is requesting a revision to Condition 4.1.6 of R13-3278A.

14A. Provide the date of anticipated installation or change: Not Applicable – If this is an **After-The-Fact** permit application, provide the date upon which the proposed change did happen: Not Applicable	14B. Date of anticipated Start-Up if a permit is granted: Not Applicable

14C. Provide a **Schedule** of the planned **Installation** of/**Change** to and **Start-Up** of each of the units proposed in this permit application as **Attachment C** (if more than one unit is involved). Not Applicable

15. Provide maximum projected **Operating Schedule** of activity/activities outlined in this application: Not Applicable

Hours Per Day	Days Per Week	Weeks Per Year

16. Is demolition or physical renovation at an existing facility involved? ☐ **YES** ☒ **NO**

17. **Risk Management Plans.** If this facility is subject to 112(r) of the 1990 CAAA, or will become subject due to proposed changes (for applicability help see www.epa.gov/ceppo), submit your **Risk Management Plan (RMP)** to U. S. EPA Region III.

18. **Regulatory Discussion.** List all Federal and State air pollution control regulations that you believe are applicable to the proposed process *(if known).* A list of possible applicable requirements is also included in Attachment S of this application (Title V Permit Revision Information). Discuss applicability and proposed demonstration(s) of compliance *(if known).* Provide this information as **Attachment D.**

Section II. Additional attachments and supporting documents.

19. Include a check payable to WVDEP – Division of Air Quality with the appropriate **application fee** (per 45CSR22 and 45CSR13).

20. Include a **Table of Contents** as the first page of your application package.

21. Provide a **Plot Plan,** e.g. scaled map(s) and/or sketch(es) showing the location of the property on which the stationary source(s) is or is to be located as **Attachment E** (Refer to ***Plot Plan Guidance***) **.**
– Indicate the location of the nearest occupied structure (e.g. church, school, business, residence).

22. Provide a **Detailed Process Flow Diagram(s)** showing each proposed or modified emissions unit, emission point and control device as **Attachment F.**

23. Provide a **Process Description** as **Attachment G.**
– Also describe and quantify to the extent possible all changes made to the facility since the last permit review (if applicable).

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

24. Provide **Material Safety Data Sheets (MSDS)** for all materials processed, used or produced as **Attachment H.**
– For chemical processes, provide a MSDS for each compound emitted to the air.

25. Fill out the **Emission Units Table** and provide it as **Attachment I.**

26. Fill out the **Emission Points Data Summary Sheet (Table 1 and Table 2)** and provide it as **Attachment J.**

27. Fill out the **Fugitive Emissions Data Summary Sheet** and provide it as **Attachment K.**

28. Check all applicable **Emissions Unit Data Sheets** listed below:

☐ Bulk Liquid Transfer Operations
☐ Chemical Processes
☐ Concrete Batch Plant
☐ Grey Iron and Steel Foundry
☐ General Emission Unit, specify
☐ Haul Road Emissions
☐ Hot Mix Asphalt Plant
☐ Incinerator
☐ Indirect Heat Exchanger
☐ Quarry
☐ Solid Materials Sizing, Handling and Storage Facilities
☐ Storage Tanks

Fill out and provide the **Emissions Unit Data Sheet(s)** as **Attachment L.**

29. Check all applicable **Air Pollution Control Device Sheets** listed below:

☐ Absorption Systems
☐ Adsorption Systems
☐ Afterburner
☐ Baghouse
☐ Condenser
☐ Electrostatic Precipitator
☐ Flare
☐ Mechanical Collector
☐ Wet Collecting System
☐ Other Collectors, specify

Fill out and provide the **Air Pollution Control Device Sheet(s)** as **Attachment M.**

30. Provide all **Supporting Emissions Calculations** as **Attachment N,** or attach the calculations directly to the forms listed in Items 28 through 31.

31. **Monitoring, Recordkeeping, Reporting and Testing Plans.** Attach proposed monitoring, recordkeeping, reporting and testing plans in order to demonstrate compliance with the proposed emissions limits and operating parameters in this permit application. Provide this information as **Attachment O.**

- Please be aware that all permits must be practically enforceable whether or not the applicant chooses to propose such measures. Additionally, the DAQ may not be able to accept all measures proposed by the applicant. If none of these plans are proposed by the applicant, DAQ will develop such plans and include them in the permit.

32. **Public Notice.** At the time that the application is submitted, place a **Class I Legal Advertisement** in a newspaper of general circulation in the area where the source is or will be located (See 45CSR§13-8.3 through 45CSR§13-8.5 and ***Example Legal Advertisement*** for details). Please submit the **Affidavit of Publication** as **Attachment P** immediately upon receipt.

33. **Business Confidentiality Claims.** Does this application include confidential information (per 45CSR31)?

☐ **YES** ☒ **NO**

- If **YES,** identify each segment of information on each page that is submitted as confidential and provide justification for each segment claimed confidential, including the criteria under 45CSR§31-4.1, and in accordance with the DAQ's ***"Precautionary Notice – Claims of Confidentiality"*** guidance found in the ***General Instructions*** as **Attachment Q.**

Section III. Certification of Information

34. **Authority/Delegation of Authority.** Only required when someone other than the responsible official signs the application. Check applicable **Authority Form** below:

☐ Authority of Corporation or Other Business Entity
☐ Authority of Governmental Agency
☐ Authority of Partnership
☐ Authority of Limited Partnership

Submit completed and signed **Authority Form** as **Attachment R.**

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

35A. **Certification of Information.** To certify this permit application, a Responsible Official (per 45CSR§13-2.22 and 45CSR§30-2.28) or Authorized Representative shall check the appropriate box and sign below.

Certification of Truth, Accuracy, and Completeness

I, the undersigned ☒ **Responsible Official** / ☐ **Authorized Representative,** hereby certify that all information contained in this application and any supporting documents appended hereto, is true, accurate, and complete based on information and belief after reasonable inquiry I further agree to assume responsibility for the construction, modification and/or relocation and operation of the stationary source described herein in accordance with this application and any amendments thereto, as well as the Department of Environmental Protection, Division of Air Quality permit issued in accordance with this application, along with all applicable rules and regulations of the West Virginia Division of Air Quality and W.Va. Code § 22-5-1 et seq. (State Air Pollution Control Act). If the business or agency changes its Responsible Official or Authorized Representative, the Director of the Division of Air Quality will be notified in writing within 30 days of the official change.

Compliance Certification

Except for requirements identified in the Title V Application for which compliance is not achieved, I, the undersigned hereby certify that, based on information and belief formed after reasonable inquiry, all air contaminant sources identified in this application are in compliance with all applicable requirements.

SIGNATURE Michael Lauderbaugh (DocuSigned by: A8716FCE3A784B8...) *(Please use blue ink)* DATE: 12/20/2024 | 12:15 PM EST *(Please use blue ink)*

35B. Printed name of signee: Michael Lauderbaugh		35C. Title: Vice President, EHS
35D. E-mail: mike.lauderbaugh@eqt.com	36E. Phone: 412-510-7224	36F. FAX:
36A. Printed name of contact person (if different from above): James Knibloe		36B. Title: Environmental Engineer
36C. E-mail: james.knibloe@eqt.com	36D. Phone: (412) 525-0609	36E. FAX:

PLEASE CHECK ALL APPLICABLE ATTACHMENTS INCLUDED WITH THIS PERMIT APPLICATION:

- ☐ **Attachment A: Business Certificate NA**
- ☐ **Attachment B: Map(s) NA**
- ☐ **Attachment C: Installation and Start Up Schedule NA**
- ☐ **Attachment D: Regulatory Discussion NA**
- ☐ **Attachment E: Plot Plan NA**
- ☐ **Attachment F: Detailed Process Flow Diagram(s) NA**
- ☐ **Attachment G: Process Description NA**
- ☐ **Attachment H: Material Safety Data Sheets (MSDS) NA**
- ☐ **Attachment I: Emission Units Table NA**
- ☐ **Attachment J: Emission Points Data Summary Sheet NA**
- ☐ **Attachment K: Fugitive Emissions Data Summary Sheet NA**
- ☐ **Attachment L: Emissions Unit Data Sheet(s) NA**
- ☐ **Attachment M: Air Pollution Control Device Sheet(s) NA**
- ☐ **Attachment N: Supporting Emissions Calculations NA**
- ☐ **Attachment O: Monitoring/Recordkeeping/Reporting/Testing Plans**
- ☐ **Attachment P: Public Notice NA**
- ☐ **Attachment Q: Business Confidential Claims NA**
- ☐ **Attachment R: Authority Forms NA**
- ☒ **Attachment S: Title V Permit Revision Information**
- ☐ **Application Fee NA**

Please mail an original and three (3) copies of the complete permit application with the signature(s) to the DAQ, Permitting Section, at the address listed on the first page of this application. Please DO NOT fax permit applications.

FOR AGENCY USE ONLY – IF THIS IS A TITLE V SOURCE:

- ☐ ***Forward 1 copy of the application to the Title V Permitting Group and:***
- ☐ ***For Title V Administrative Amendments:***
  - ☐ ***NSR permit writer should notify Title V permit writer of draft permit,***
- ☐ ***For Title V Minor Modifications:***
  - ☐ ***Title V permit writer should send appropriate notification to EPA and affected states within 5 days of receipt,***
  - ☐ ***NSR permit writer should notify Title V permit writer of draft permit.***
- ☐ ***For Title V Significant Modifications processed in parallel with NSR Permit revision:***
  - ☐ ***NSR permit writer should notify a Title V permit writer of draft permit,***
  - ☐ ***Public notice should reference both 45CSR13 and Title V permits,***
  - ☐ ***EPA has 45 day review period of a draft permit.***

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

ATTACHMENT B: TITLE V PERMIT REVISION INFORMATION FORM

Attachment S

Title V Permit Revision Information

1. New Applicable Requirements Summary	
Mark all applicable requirements associated with the changes involved with this permit revision:	
☐ SIP	☐ FIP
☒ Minor source NSR (45CSR13)	☐ PSD (45CSR14)
☐ NESHAP (45CSR15)	☐ Nonattainment NSR (45CSR19)
☐ Section 111 NSPS (Subpart(s)_____)	☐ Section 112(d) MACT standards (Subpart(s)_____)
☐ Section 112(g) Case-by-case MACT	☐ 112(r) RMP
☐ Section 112(i) Early reduction of HAP	☐ Consumer/commercial prod. reqts., section 183(e)
☐ Section 129 Standards/Reqts.	☐ Stratospheric ozone (Title VI)
☐ Tank vessel reqt., section 183(f)	☐ Emissions cap 45CSR§30-2.6.1
☐ NAAQS, increments or visibility (temp. sources)	☐ 45CSR27 State enforceable only rule
☐ 45CSR4 State enforceable only rule	☐ Acid Rain (Title IV, 45CSR33)
☐ Emissions Trading and Banking (45CSR28)	☐ Compliance Assurance Monitoring (40CFR64) (1)
☐ NO_x Budget Trading Program Non-EGUs (45CSR1)	☐ NO_x Budget Trading Program EGUs (45CSR26)
(1) If this box is checked, please include **Compliance Assurance Monitoring (CAM) Form(s)** for each Pollutants Specific Emission Unit (PSEU) (See Attachment H to Title V Application). If this box is not checked, please explain why **Compliance Assurance Monitoring** is not applicable: N/A	

2. Non Applicability Determinations
List all requirements, which the source has determined not applicable to this permit revision and for which a permit shield is requested. The listing shall also include the rule citation and a rationale for the determination.

☐ **Permit Shield Requested** *(not applicable to Minor Modifications)*

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

3. Suggested Title V Draft Permit Language

Are there any changes involved with this Title V Permit revision outside of the scope of the NSR Permit revision? ☐ Yes ☒ No If Yes, describe the changes below.

Also, please provide **Suggested Title V Draft Permit language** for the proposed Title V Permit revision (including all applicable requirements associated with the permit revision and any associated monitoring /recordkeeping/ reporting requirements), OR attach a marked up pages of current Title V Permit. Please include appropriate citations (Permit or Consent Order number, condition number and/or rule citation (e.g. 45CSR§7-4.1)) for those requirements being added / revised.

Condition 4.1.6 of *R13-3278A* (red language proposed revision):

The volume of vented gas per year shall not exceed the following:

R13-3278A Table 4.1.6

Compliance shall be determined using a twelve month rolling total. A twelve month rolling total shall mean the sum of the volume of vented gas at any given time during the previous twelve consecutive calendar months. Alternatively, the sum of the blowdown events can be used to comply with the maximum number of events.

4. Active NSR Permits/Permit Determinations/Consent Orders Associated With This Permit Revision

Permit or Consent Order Number	Date of Issuance	Permit/Consent Order Condition Number
R13-3278A	03/22/2021	4.1.6
	/ /	
	/ /	

5. Inactive NSR Permits/Obsolete Permit or Consent Orders Conditions Associated With This Revision

Permit or Consent Order Number	Date of Issuance	Permit/Consent Order Condition Number
	/ /	

6. Change in Potential Emissions

Pollutant	Change in Potential Emissions (+ or -), TPY
N/A	

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

7. Certification For Use Of Minor Modification Procedures *(Required Only for Minor Modification Requests)*

Note:	*This certification must be signed by a responsible official. Applications without a signed certification will be returned as incomplete. The criteria for allowing the use of Minor Modification Procedures are as follows:*

i. Proposed changes do not violate any applicable requirement;
ii. Proposed changes do not involve significant changes to existing monitoring, reporting, or recordkeeping requirements in the permit;
iii. Proposed changes do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient air quality impacts, or a visibility increment analysis;
iv. Proposed changes do not seek to establish or change a permit term or condition for which there is no underlying applicable requirement and which permit or condition has been used to avoid an applicable requirement to which the source would otherwise be subject (synthetic minor). Such terms and conditions include, but are not limited to a federally enforceable emissions cap used to avoid classification as a modification under any provision of Title I or any alternative emissions limit approved pursuant to regulations promulgated under § 112(j)(5) of the Clean Air Act;
v. Proposed changes do not involve preconstruction review under Title I of the Clean Air Act or 45CSR14 and 45CSR19;
vi. Proposed changes are not required under any rule of the Director to be processed as a significant modification;

Notwithstanding subparagraph 45CSR§30-6.5.a.1.A. (items i through vi above), minor permit modification procedures may be used for permit modifications involving the use of economic incentives, marketable permits, emissions trading, and other similar approaches, to the extent that such minor permit modification procedures are explicitly provided for in rules of the Director which are approved by the U.S. EPA as a part of the State Implementation Plan under the Clean Air Act, or which may be otherwise provided for in the Title V operating permit issued under 45CSR30.

Pursuant to 45CSR§30-6.5.a.2.C., the proposed modification contained herein meets the criteria for use of Minor permit modification procedures as set forth in Section 45CSR§30-6.5.a.1.A. The use of Minor permit modification procedures are hereby requested for processing of this application.

(Signed):	DocuSigned by: Michael Lauderbaugh A8716FCE3A784B8... *(Please use blue ink)*	Date:	12/20/2024 | 12:15 PM EST / / *(Please use blue ink)*
Named (typed):	*Michael Lauderbaugh*	Title:	*Vice President, EHS*

Note: Please check if the following included (if applicable):

☐	Compliance Assurance Monitoring Form(s)
☒	Suggested Title V Draft Permit Language

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

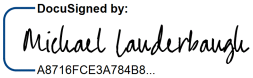
Certificate Of Completion

Envelope Id: 27E0B22C-6F32-4A69-9031-8AE215464C5F
Status: Completed
Subject: Complete with Docusign: Bradshaw NSR Application 2024-1219 unsigned.pdf
Source Envelope:
Document Pages: 11
Signatures: 2
Certificate Pages: 1
Initials: 0
AutoNav: Enabled
EnvelopeId Stamping: Enabled
Time Zone: (UTC-05:00) Eastern Time (US & Canada)

Envelope Originator:
James Knibloe
625 Liberty Ave Ste 1700
Pittsburgh, PA 15222
james.knibloe@eqt.com
IP Address: 208.127.71.223

Record Tracking

Status: Original
12/20/2024 10:59:14 AM
Holder: James Knibloe
james.knibloe@eqt.com
Location: DocuSign

Signer Events	Signature	Timestamp
Michael Lauderbaugh Mike.Lauderbaugh@eqt.com Vice President of EHS EQT Corporation Security Level: Email, Account Authentication (None)	DocuSigned by:  A8716FCE3A784B8...	Sent: 12/20/2024 11:01:28 AM Viewed: 12/20/2024 12:15:23 PM Signed: 12/20/2024 12:15:29 PM
	Signature Adoption: Pre-selected Style Using IP Address: 73.52.232.59	

Electronic Record and Signature Disclosure:
Not Offered via DocuSign

In Person Signer Events	Signature	Timestamp

Editor Delivery Events	Status	Timestamp

Agent Delivery Events	Status	Timestamp

Intermediary Delivery Events	Status	Timestamp

Certified Delivery Events	Status	Timestamp

Carbon Copy Events	Status	Timestamp

Witness Events	Signature	Timestamp

Notary Events	Signature	Timestamp

Envelope Summary Events	Status	Timestamps
Envelope Sent	Hashed/Encrypted	12/20/2024 11:01:28 AM
Certified Delivered	Security Checked	12/20/2024 12:15:23 PM
Signing Complete	Security Checked	12/20/2024 12:15:29 PM
Completed	Security Checked	12/20/2024 12:15:29 PM

Payment Events	Status	Timestamps

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Pre-Draft Permit; Mountain Valley Pipeline, LLC; Application No. R30-10300109-2025

Knibloe, James <james.knibloe@eqt.com> Thu, Dec 12, 2024 at 11:15 AM
To: "Barron, Sarah K" <sarah.k.barron@wv.gov>

Sarah,

Regarding 3, would it be possible to handle this by clarifying the language? Could something like this be added to the permit section below?

Compliance is achieved through tracking the number of blowdowns and the actual volume vented on a rolling twelve month basis. If the total volume is below the volume in the table, compliance with the limit is met.

4.1.6. The maximum number of blowdown events per year shall not exceed the following:

Blowdown Event	Events per Year	Vented Gas Volume per Year (scf/year)
Station ESD Event	4	6,400,000
Unit Shutdown	32	10,880,000
Main Gas Filter Changes	36	4,368,000
Pig Receiver 42”	4	80,057
Pig Receiver 48”	4	112,215
Pig Launcher 42”	4	37,100
Pig Launcher 48”	4	110,175

Compliance shall be determined using a twelve month rolling total. A twelve month rolling total shall mean the sum of the blowdown events at any given time during the previous twelve consecutive calendar months.

Thanks

Jim

From: Barron, Sarah K <sarah.k.barron@wv.gov>
Sent: Monday, December 9, 2024 10:45 AM
To: Knibloe, James <james.knibloe@eqt.com>

[Quoted text hidden]

[Quoted text hidden]

[Quoted text hidden]

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Pre-Draft Permit; Mountain Valley Pipeline, LLC; Application No. R30-10300109-2025

Barron, Sarah K <sarah.k.barron@wv.gov> Mon, Dec 9, 2024 at 10:45 AM
To: "Knibloe, James" <james.knibloe@eqt.com>

Jim,

1) For Title V permits, the requirements must be written into the permit rather than included by reference.

2) As the Subpart OOOOa initial compliance demonstration requirements have been met, Conditions 5.1.2.f. and 5.2.1. have been removed from the permit, and the fact sheet has been updated.

3) The annual limits for the number of blowdown events and the volume of gas vented were established in the facility's NSR permit (R13-3278A). Under the NSR permit, compliance with these limits is demonstrated by maintaining records of both the number of events and the estimated volume of gas vented in each event. If you want to change these requirements, then a NSR permit revision application must first be submitted and the revised NSR permit must be approved. For more information on NSR permit revisions and combined NSR and Title V permit revisions, please go to the following website: https://dep.wv.gov/daq/permitting/Pages/nsr-forms.aspx.

Please let me know whether or not you plan to submit a revision application for the NSR permit as soon as possible.

Thanks,
- Sarah

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Pre-Draft Permit; Mountain Valley Pipeline, LLC; Application No. R30-10300109-2025

Knibloe, James <james.knibloe@eqt.com> Wed, Dec 4, 2024 at 4:23 PM
To: "Barron, Sarah K" <sarah.k.barron@wv.gov>

Sarah,

We would like to make the following 3 requests.

1. The permit copies in OOOOa LDAR requirements. We would like to request each section be references (e.g., fugitives, monitoring, recordkeeping, reporting) in lieu of writing out each sentence.

2. The initial LDAR monitoring has already passed, so it's no longer applicable and not needed in the Title V permit.

3. For the blowdowns, compliance is based on the number. There is also a volume limit. We would like to request compliance is met by meeting either limit.

Thank you,

Jim Knibloe

Sr. Environmental Engineer

EQT Corporation

412-525-0609

[Quoted text hidden]

To learn about EQT's environmental, social and governance efforts visit: https://esg.eqt.com

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Pre-Draft Permit; Mountain Valley Pipeline, LLC; Application No. R30-10300109-2025

Barron, Sarah K <sarah.k.barron@wv.gov> Wed, Nov 20, 2024 at 1:21 PM
To: james.knibloe@eqt.com

Jim,

Attached are the Bradshaw Compressor Station's pre-draft permit and fact sheet for you to review.

Thanks for the information about the produced fluid storage tank. The recordkeeping requirement has been revised to maintain a record of the volume of produced fluid removed from the storage tank during the calendar year (Condition 7.4.1. of the pre-draft permit).

Please let me know if you have any questions or comments as soon as practicable, but preferably no later than December 6, 2024.

Thanks,
- Sarah

--
Sarah Barron
Engineer Trainee
West Virginia Department of Environmental Protection
Division of Air Quality
(304) 414-1915
sarah.k.barron@wv.gov

2 attachments

DPFactSheet R30-10300109-2025.pdf
334K

DPPermit R30-10300109-2025.pdf
561K

West Virginia Department of Environmental Protection
Division of Air Quality

Fact Sheet

For Draft/Proposed Permitting Action Under 45CSR30 and Title V of the Clean Air Act

Permit Number: **R30-10300109-2025**
Application Received: **July 17, 2024**
Plant Identification Number: **03-54-103-00109**
Permittee: **Mountain Valley Pipeline, LLC**
Facility Name: **Bradshaw Compressor Station**
Mailing Address: **2200 Energy Drive, Canonsburg, PA 15317**

Physical Location:	Smithfield, Wetzel County, West Virginia
UTM Coordinates:	540.05 km Easting • 4,376.00 km Northing • Zone 17
Directions:	From Charleston, WV, take I-79 N for approximately 121 miles. Take Exit 119 for US-50 toward Clarksburg/Bridgeport. Continue on US-50 W for 7 miles. Turn right onto Bear Run/Gregory Run and continue for 5.8 miles. Next, turn left onto WV-20 N/State Highway 20, and continue for 16 miles. Turn right onto Mannington Road and drive for 1.2 miles. Finally, turn left onto Bear Run Road, and continue 2.2 miles to the site.

Facility Description
The Bradshaw Compressor Station is a natural gas compressor station which receives natural gas and liquids (primarily produced water) from nearby wells. The natural gas undergoes compression before it is transported to a gas gathering line for additional processing. The facility operates four compressor turbines, fourteen microturbines, two fuel heaters, one building heater, one produced fluid storage tank, and one used oil storage tank. Fluids collected in the storage tanks are removed from the facility via trucks.
NAICS: 486210, SIC: 4922

Emissions Summary

Plantwide Emissions Summary [Tons per Year]

Regulated Pollutants	Potential Emissions	2023 Actual Emissions
Carbon Monoxide (CO)	197.78	2.10
Nitrogen Oxides (NO_X)	178.62	0.96
Particulate Matter ($PM_{2.5}$)	47.36	0.01
Particulate Matter (PM_{10})	47.46	0.01
Total Particulate Matter (TSP)	47.46	0.01
Sulfur Dioxide (SO_2)	10.98	0.02
Volatile Organic Compounds (VOC)	47.14	0.91

PM_{10} is a component of TSP.

Hazardous Air Pollutants	Potential Emissions	2023 Actual Emissions
Formaldehyde	8.99	< 0.01
Other HAPs	2.94	< 0.01
Total HAPs	11.93	< 0.01

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

Title V Program Applicability Basis

This facility has the potential to emit 197.78 tpy of Carbon Monoxide and 178.62 tpy of Nitrogen Oxides. Due to this facility's potential to emit over 100 tons per year of criteria pollutant, Mountain Valley Pipeline, LLC 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	Control of Particulate Matter Air Pollution from the 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, Permission to Commence Construction, and Procedures for Evaluation.
	45CSR16	Standards of Performance for New Stationary Sources.

	WV Code § 22-5-4 (a) (15)	The Secretary can request any pertinent information such as annual emission inventory reporting.
	45CSR30	Requirements for Operating Permits.
	40 C.F.R. Part 60 Subpart KKKK	Standards of Performance for Stationary Combustion Turbines.
	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 and on or before December 6, 2022.
	40 C.F.R. Part 61	Asbestos inspection and removal.
	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
R13-3278A	March 22, 2021

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

Mountain Valley Pipeline, LLC's Bradshaw Compressor Station is an existing facility that was initially permitted under the NSR Permit R13-3278 (issued: March 14, 2016) which was revised with the Class II Administrative Update R13-3278A (issued: March 22, 2021). On November 16, 2023, the DAQ received a notification of the startup date for several emission units at the facility, with the earliest date being October 27, 2023. The permittee was required to obtain a Title V operating permit due to the potential to emit 197.78 tpy of Carbon Monoxide and 178.62 tpy of Nitrogen Oxides.

The physical address of the facility has been revised in the operating permit to the 911 address: 2165 Gilbert Ridge Road, Smithfield, WV 26437.

The Emission Units Table of Section 1.1. includes one used oil tank (S022) and one office building heater (S023). Potential emissions from these emission units are minimal, and neither unit is subject to any applicable requirements under this operating permit.

This section outlines the applicable requirements that have been included in this initial Title V operating permit.

Section 1.0. – Emission Units and Active R13, R14, and R19 Permits

The Emission Units Table of this operating permit has been revised from R13-3278A as follows:

1. In R13-3278, the turbines S002 through S004 were initially permitted at the facility with a site-specific rating of 23,536 HP. With the issuance of R13-3278A, the rating of these turbines was changed to 19,483 HP in the Emission Units Table. This change was likely inadvertent, given that in the application for R13-3278A the permittee only requested revisions to the potential-to-emit of the fugitive and blowdown emissions and that these changes to the rating of the turbines were not discussed in the evaluation for R13-3278A. Therefore, in accordance with the application for R13-3278 and the application for this operating permit, the site-specific rating of each turbine was corrected to 23,536 HP in the Emission Units Table of this operating permit.

2. In R13-3278A, the emission unit description of multiple microturbine generators was "Microturbine Generator #10". In the operating permit, the emission unit description of S015 through S018 was corrected to "Microturbine Generator #11" through "Microturbine Generator #14", respectively.

3. The Emission Point ID of the liquid loading emission unit (Emission Unit: S025) has been corrected from E026 to E025.

4. The Emission Unit ID of the blowdowns emission unit (Emission Point: E026) has been corrected from S020 to S026.

Section 3.0. – Facility-Wide Requirements

The following conditions were added to Section 3.0.:

Title V Permit Condition	Summary of Permit Condition	Regulatory Citation	R13-3278A Condition
3.1.9.	Facility-wide HAP emissions are limited to ensure the facility remains a minor source of HAPs.	45CSR13	4.1.7.
3.1.10.	Only the permitted emission units and *de minimis* sources are authorized at the facility.	45CSR13	4.1.8.
3.1.11.	Fugitive particulate matter may not be discharged beyond the boundary lines of the facility.	45CSR§17-3.1.	N/A
3.4.1.	Record of Monitoring Information.	45CSR13	4.4.1.
3.4.2.	Retention of Records.	45CSR13	3.4.1.

Section 4.0. – Turbines and Microturbine Generators [Emission Point IDs: E001 through E018]

Four Solar Titan 130 turbines (S001 to S004) are operated at the Bradshaw Compressor Station to drive the centrifugal compressors. Each of the turbines is fueled by pipeline-quality natural gas, has a site-specific rating of 23,536 HP, and has a design heat input of 169.08 mmBTU/hr.

The turbines are equipped with SoLoNO$_X$, a dry low NO$_X$ emission combustion system which minimizes emissions of nitrogen oxides, carbon monoxide, and unburned hydrocarbons. The turbines are operated in "SoLoNO$_X$ mode" when operated at normal conditions (above 50% of peak power output with ambient temperatures above 0°F); at all other times, including start-up and shutdown events, the turbines are operated in "non-SoLoNO$_X$ mode". The potential-to-emit of the turbines was based on the continuous operation of the units. Emissions from the turbines are vented directly to the atmosphere.

The turbines are subject to the following regulations:

1. **45CSR13** – *Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permits, Permission to Commence Construction, and Procedures for Evaluation*

2. **45CSR16** – *Standards of Performance for New Stationary Sources*

3. **40 C.F.R. Part 60 Subpart KKKK** – *Standards of Performance for Stationary Combustion Turbines*

   Subpart KKKK establishes emission standards for the control of nitrogen oxides (NO$_X$) and sulfur dioxide (SO$_2$) from stationary combustion turbines. Construction of the turbines began after February 18, 2005, and each turbine has a heat input at peak load equal to or greater than 10.7 gigajoules (10 mmBTU) per hour, based on the higher heating value of the fuel. Therefore, per §60.4305(a), S001 through S004 are subject to Subpart KKKK.

   Under §60.4320(a), the turbines are subject to the NO$_X$ emission standards of Table 1 to Subpart KKKK of Part 60. As the turbines S001 through S004 are new natural gas-fired turbines with a heat input at peak load greater than 50 mmBTU/hr and less than 850 mmBTU/hr, the turbines are subject to the NO$_X$ emission standard of 25 ppm at 15% O$_2$, as well as the alternative NO$_X$ emission standard of 150 ppm at 15% O$_2$ for turbines with less than or equal to 30 MW output that operates at less than 75% of peak load or that operates at temperatures below 0°F. Compliance with the NO$_X$ emission standards is demonstrated through annual performance testing as specified in §§60.4340(a) and 60.4400. A written report of the results of the testing must be submitted per §60.4375(b).

   The turbines are also subject to the sulfur dioxide emission standards of §60.4330(a). In accordance with §60.4330(a)(2), compliance with this requirement will be demonstrated through the use of fuel which does not contain total potential sulfur emissions in excess of 0.060 lbs SO$_2$/mmBTU heat input. Under §60.4365(a), monitoring of the total sulfur content of the fuel in the turbine is not required if the permittee maintains current and valid documentation that specifies the natural gas consumed by the turbines has a maximum total sulfur content less than or equal to 20 grains of sulfur/standard ft^3.

Fourteen Capstone C200 microturbine generators (S005 to S018) provide electricity to the Bradshaw Compressor Station. The microturbines are natural gas-fired and have an electrical power output of 200 kW.

In accordance with 40 C.F.R. §60.4305(a), Subpart KKKK is applicable to stationary combustion turbines with a heat input at peak load equal to or greater than 10 mmBTU/hr, based on the higher heating value of the fuel. The microturbines have a design heat input of 2.28 mmBTU/hr and, therefore, are not subject to the requirements of Subpart KKKK.

The microturbine generators are subject to the following regulation:

1. **45CSR13** – *Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permits, Permission to Commence Construction, and Procedures for Evaluation*

The table below describes each condition added to Section 4.0. of the Title V operating permit.

Title V Permit Condition	Summary of Permit Condition	Regulatory Citation	R13-3278A Condition
4.1.1.	Paragraph a. contains the limitations for NO_X, CO, SO_2, and VOC emissions from the turbines S001 to S004 as established in R13-3278A and/or Subpart KKKK. Paragraph b. requires the use of pipeline-quality natural gas to fuel the turbines. Paragraph c. requires the permittee to operate and maintain the turbine, any air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions.	45CSR13 45CSR16 40 C.F.R. §§60.4320(a), 60.4330(a)(2), 60.4333(a), and 60.4365(a) Table 1 to Subpart KKKK of Part 60	4.1.1.
4.1.2.	Paragraph a. contains annual emission limitations for NO_X, CO, and VOCs from each of the microturbines S005 to S018. The emission limits are based on the manufacturer's specifications for the microturbines and on the continuous operation of each unit. Therefore, compliance with the limits will be demonstrated by operating the microturbines as specified in paragraphs b. and c. of this condition. Paragraph b. requires the use of pipeline-quality natural gas to fuel the microturbines. Paragraph c. requires the permittee to operate and maintain the microturbines, any air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions.	45CSR13	4.1.2.
4.2.1.	Compliance with the emission limits for the turbines in Condition 4.1.1. is demonstrated by monitoring and recording the number of hours that the turbines are operated at various conditions and the number of startup and shutdown cycles that occurred during the month.	45CSR13	4.2.1.
4.3.1.	The permittee must conduct annual performance tests on each of the turbines, except as specified in §60.4340(a). Each performance test must be conducted in accordance with §60.4400. NOTE: Condition 4.3.1. of R13-3278A also requires the permittee to conduct an initial performance test to demonstrate compliance with the NO_X emission standards within 60 days of achieving maximum output of each turbine but no later than 180 days after initial startup. The initial performance test of each turbine was conducted February 7-8, 2024. Therefore, the requirements to conduct an initial performance test have not been included in the operating permit.	45CSR13 45CSR16 40 C.F.R. §§60.4340(a) and 60.4400	4.3.1.

Title V Permit Condition	Summary of Permit Condition	Regulatory Citation	R13-3278A Condition
4.4.1.	Compliance with the annual emission limits in Condition 4.1.1. must be based on a rolling 12-month total and must be demonstrated by determining and maintaining records of the monthly emissions from each turbine (S001 to S004). NOTE: In R13-3278A, this requirement was revised to only refer to the turbines S001 and S002. However, because this requirement demonstrates compliance with the emission limits of Condition 4.1.1. which also apply to the turbines S003 and S004, the reference in the operating permit has been updated to the turbines S001 to S004.	45CSR13	4.4.2.
4.4.2.	If it is demonstrated that the natural gas used to fuel the turbines does not exceed potential sulfur emissions of 0.060 lbs of SO_2/mmBTU, then the permittee is exempt from the requirements for the monitoring of the total sulfur content of the fuel in 40 C.F.R. §§60.4360 and 60.4365. For this demonstration, the permittee shall maintain documentation that the natural gas consumed by the turbine has a total sulfur content of 20 grains of sulfur or less per 100 cubic feet of natural gas. NOTE: Condition 4.4.3. of R13-3278A states that these records satisfy Conditions 4.1.1.b., 4.1.2.c., and 4.1.3.f. Conditions 4.1.1., 4.1.2., and 4.1.3. contain requirements for the turbines, microturbines, and fuel gas heaters, respectively. The references to 4.1.2.c. (which contains a general requirement to operate the microturbines in a manner consistent with good air pollution control practices) and 4.1.3.f. (which is not a requirement under R13-3278A) are likely mistakes. Considering pipeline-quality natural gas contains a sulfur content below 20 grains of sulfur per 100 cubic feet and the other referenced condition (4.1.1.b.) contains the requirement to use pipeline-quality natural gas to fuel the turbines, the references in this requirement have been revised to specify that these records will satisfy the requirements to fuel the emission units with pipeline quality natural gas in Conditions 4.1.1.b., 4.1.2.b., and 6.1.1.d. of the operating permit.	45CSR13 45CSR16 40 C.F.R. §60.4365(a)	4.4.3.
4.5.1.	A report of the results of each performance test conducted must be submitted within 60 days.	45CSR13 45CSR16 40 C.F.R. §60.4375(b)	4.3.1.

NOTE: Condition 4.5.1. of R13-3278A has not been included in this operating permit. This condition required the permittee to submit a notification of the initial startup of the turbines per 40 C.F.R. §60.7(a)(3). The notification of the initial startup of the turbines was received by the WV DAQ on November 16, 2023. Therefore, this requirement has not been included in the operating permit.

Section 5.0. – 40 C.F.R. Part 60 Subpart OOOOa Requirements for Fugitive Emissions Components

40 C.F.R. Part 60 Subpart OOOOa contains emission standards for the control of volatile organic compounds (VOCs), sulfur dioxide (SO_2), and greenhouse gases (GHG) from affected facilities in the crude oil and natural gas source category that commenced construction after September 18, 2015 and on or before December 6, 2022. Per 40 C.F.R. §60.5365a(j), the collection of fugitive emissions components at a compressor station is an affected facility under Subpart OOOOa. As the equipment at the Bradshaw Compressor Station was constructed within the applicability

dates of Subpart OOOOa, the requirements for the collection of fugitive emissions components at a compressor station are applicable to the facility. No other emission units at the compressor station are currently subject to Subpart OOOOa (see paragraph 8. of the Non-Applicability Determinations).

Under 40 C.F.R. §60.5430a, a fugitive emissions component is defined as "any component that has the potential to emit fugitive emissions of methane or VOC at a compressor station, including valves, connectors, pressure relief devices, open-ended lines, flanges, covers and closed vent systems not subject to §60.5411 or §60.5411a, thief hatches or other openings on a controlled storage vessel not subject to §60.5395 or §60.5395a, compressors, instruments, and meters. Devices that vent as part of normal operations such as natural gas-driven pneumatic controllers or natural gas-driven pumps, are not fugitive emissions components, insofar as the natural gas discharged from the device's vent is not considered a fugitive emission. Emissions originating from other than the device's vent, such as the thief hatch on a controlled storage vessel, would be considered fugitive emissions."

The table below describes each condition added to Section 5.0. of the Title V operating permit:

Title V Permit Condition	Summary of Permit Condition	Regulatory Citation	R13-3278A Condition
5.1.1.	Affected facilities under Subpart OOOOa must be operated in a manner consistent with good air pollution control practice for minimizing emissions.	45CSR16 40 C.F.R. §60.5370a(b)	N/A
5.1.2.	VOC and GHG standards for fugitive emissions components affected facilities.	45CSR16 40 C.F.R. §§60.5397a(a) through (e), (f)(2), (g), (g)(2) through (4), and (h) through (j)	N/A
5.2.1.	Initial compliance demonstration requirements for the collection of fugitive emissions components.	45CSR16 40 C.F.R. §§60.5410a and 60.5410a(j)	N/A
5.2.2.	Continuous compliance demonstration requirements for the collection of fugitive emissions components.	45CSR16 40 C.F.R. §60.5415a(h)	N/A
5.4.1.	Recordkeeping requirements for the collection of fugitive emissions components.	45CSR16 40 C.F.R. §§60.5420a(c), (c)(15), and (c)(15)(i), (vi) through (ix)	N/A
5.5.1.	Reporting requirements for the collection of fugitive emissions components.	45CSR16 40 C.F.R. §§60.5420a(b), (b)(1), (b)(7), (b)(7)(i)(A), (b)(7)(i)(B), (b)(7)(ii) through (iv), and (b)(11)	N/A

Section 6.0. – Fuel Gas Heaters [Emission Point IDs: E019 and E020]

Two 2.31 mmBTU/hr fuel gas heaters (S019 and S020) are operated at the Bradshaw Compressor Station. The heaters are natural gas-fired. The potential emissions of criteria pollutants and HAPs were based on continuous operation of the heaters.

The fuel gas heaters are subject to the following regulations:

1. **45CSR2** – *Control of Particulate Matter Air Pollution from the Combustion of Fuel in Indirect Heat Exchangers*

   45CSR2 establishes particulate matter emission standards and requirements for fuel burning units. Per 45CSR§2-2.10., a fuel burning unit 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. Therefore, the heaters are subject to the particulate matter emission standards of this rule.

   The heaters are subject to the visible emissions standards in 45CSR§2-3. The 10% opacity limit of 45CSR§2-3.1. has been included in the operating permit as Condition 6.1.2. Condition 6.3.1. has also been added with the requirements to demonstrate compliance with this limit through visible emission checks conducted in accordance with Method 9 of 40 C.F.R. Part 60, Appendix A, as designated by the Secretary.

   As the heaters each have a design heat input less than 10 mmBTU/hr, the permittee is exempt from the weight emission standards of Section 4; the control of fugitive particulate matter standards of Section 5; the registration standards of Section 6; the testing, monitoring, recordkeeping, and reporting requirements of Section 8; and the start-up, shutdown, and malfunction requirements of Section 9 of this rule per 45CSR§2-11.1.

2. **45CSR10** – *Control Air Pollution from the Emission of Sulfur Oxides*

   45CSR10 establishes sulfur oxides emission standards and requirements for fuel burning units. Per 45CSR§10-2.8., a fuel burning unit includes any furnace used in the process of burning fuel or other combustible material for the primary purpose of producing heat or power by indirect heat transfer. Therefore, the heaters are subject to the emission standards of this rule.

   However, per 45CSR§10-10.1., fuel burning units with a design heat input of less than 10 mmBTU/hr are exempt from the weight emission standards of Section 3; the permit requirements of Section 7; and the testing, monitoring, recordkeeping, and reporting requirements of Section 8. Furthermore, Section 4 is inapplicable because the heaters are not part of a manufacturing process, and Section 5 is inapplicable because the units do not combust a refinery or other process gas stream. Therefore, although the heaters are subject to 45CSR10, the emission units currently have no applicable requirements under this rule.

3. **45CSR13** – *Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permits, Permission to Commence Construction, and Procedures for Evaluation*

The table below describes each condition added to Section 6.0. of the Title V operating permit.

Title V Permit Condition	Summary of Permit Condition	Regulatory Citation	R13-3278A Condition
6.1.1.	The fuel gas heaters are subject to NO_X and CO emission limits, a maximum design heat input limit, and a requirement to only use pipeline-quality natural gas as fuel.	45CSR13	4.1.3.
6.1.2.	45CSR2 visible emission limit.	45CSR§2-3.1.	N/A
6.3.1.	Testing methods for visible emissions observations.	45CSR§2-3.2.	N/A
6.4.1.	To demonstrate compliance with the NO_X and CO emission limits of Condition 6.1.1., records of the amount of fuel consumed by each fuel gas heater must be maintained.	45CSR13	4.2.2.

Title V Permit Condition	Summary of Permit Condition	Regulatory Citation	R13-3278A Condition
6.4.2.	Compliance with the requirement to use pipeline-quality natural gas as fuel in the heaters is demonstrated by maintaining documentation of the natural gas consumed by the combustion turbines specifying that the maximum total sulfur content is 20 grains of sulfur or less per 100 cubic feet of natural gas, in accordance with Condition 4.4.2. of the operating permit.	45CSR13	4.4.3.

Section 7.0. – Produced Fluid Storage Tank and Liquid Loading [Emission Point IDs: E021 and E025]

The Bradshaw Compressor Station operates a 10,080-gallon storage tank (S021) to store produced fluids. The produced fluids collected are removed from the facility via tanker trucks. The potential emissions of VOCs and HAPs from the storage tank are minimal.

1. **45CSR13** – *Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permits, Permission to Commence Construction, and Procedures for Evaluation*

The table below describes each condition added to Section 7.0. of the Title V operating permit.

Title V Permit Condition	Summary of Permit Condition	Regulatory Citation	R13-3278A Condition
7.1.1.	The maximum annual throughput of produced fluid to the storage tank is limited to 126,000 gallons per year. NOTE: The Emission Unit ID of the storage tank has been corrected from S015 to S021.	45CSR13	4.1.4.
7.1.2.	All above-ground piping, valves, pumps, etc. shall be installed, maintained, and operated to prevent any substantive fugitive emissions.	45CSR13	4.1.5.
7.4.1.	To demonstrate compliance with Condition 7.1.1., a requirement to maintain a record of the volume of produced fluid removed from the storage tank S021 during the calendar year has been added to the operating permit.	45CSR§30-5.1.c.	N/A
7.4.2.	Maintain records of the fugitive component counts and any fugitive component leaks or replacements.	45CSR13	4.4.4.

NOTE: Condition 4.2.3. of R13-3278A has not been included in the operating permit. This condition contained the requirements of 40 C.F.R. §60.5410a(h) and required the permittee to determine if the produced fluids storage tank (S021) is an affected source under Subpart OOOOa. In the application for R13-3278, the potential VOC emissions from S021 were calculated to be 0.01 tpy based on a throughput of 0.1 bbl/day and continuous operation of the tank. On December 5, 2023, the WV DAQ received notification that, during the first 30 days of production, no produced fluids were received by S021, resulting in no VOC emissions from the tank. As the potential VOC emissions from S021 do not exceed 6 tpy, the produced fluids storage tank is not an affected facility under Subpart OOOOa. Therefore, the requirements of Condition 4.2.3. and 40 C.F.R. §60.5410a(h) have been met and were not included in the operating permit.

Section 8.0. – Compressor Blowdown Events [Emission Point IDs: E026]

Compressor Blowdown events (Emission Unit ID: S026, Emission Point ID: E026) result in emissions of VOCs and HAPs which are vented to the atmosphere.

The blowdown events are subject to the following regulations:

1. **45CSR13** – *Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permits, Permission to Commence Construction, and Procedures for Evaluation*

The table below describes each condition added to Section 8.0. of the Title V operating permit.

Title V Permit Condition	Summary of Permit Condition	Regulatory Citation	R13-3278A Condition
8.1.1.	Maximum annual limits for the number of compressor blowdown events and the volume of vented gas.	45CSR13	4.1.6.
8.4.1.	The permittee must maintain a record of the number and estimated volume of blowdown and pigging events.	45CSR13	4.4.5.
8.5.1.	The permittee must report any exceedance of the annual limits in Condition 8.1.1. within ten days of the occurrence.	45CSR13	4.5.2.

Non-Applicability Determinations

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

1. **45CSR21** – *Regulation to Prevent and Control Air Pollution from the Emission of Volatile Organic Compounds* – This rule applies to sources located in Putnam County, Kanawha County, Cabell County, Wayne County, and Wood County. The Bradshaw Compressor Station is located in Wetzel County. Therefore, 45CSR21 is inapplicable to the facility.

2. **40 C.F.R. Part 60 Subparts D, Da, Db, and Dc** – *Standards of Performance for Steam Generators* – As there are no steam generating units with a maximum design heat input equal to or greater than 10 mmBTU/hr operated at the facility, Subparts D, Da, Db, and Dc do not apply to the Bradshaw Compressor Station per 40 C.F.R. §§60.40(a), 60.40Da(a), 60.40b(a), and 60.40c(a), respectively.

3. **40 C.F.R. Part 60 Subparts K, Ka, Kb, and Kc** – *Standards of Performance for Storage Vessels for Petroleum Liquids/Volatile Organic Liquids* – Subparts K and Ka do not apply to the Bradshaw Compressor Station because construction of the storage vessels used at the facility began after the applicability dates of each subpart (Subpart K – after June 11, 1973 and prior to May 19, 1978; Subpart Ka – after May 18, 1978 and prior to July 23, 1984). Per 40 C.F.R. §60.110b(a), Subpart Kb does not apply to the facility because each storage vessel has a capacity less than 75 m^3 (19,812.9 gallons). Subpart Kc does not apply to the Bradshaw Compressor Station because construction of the storage vessels used at the facility began before the applicability date of the subpart (Subpart Kc – after October 4, 2023).

4. **40 C.F.R. Part 60 Subpart GG** – *Standards of Performance for Stationary Gas Turbines* – The turbines, S001 to S004, are subject to the requirements of 40 C.F.R. Part 60 Subpart KKKK in accordance with §60.4305(a). Therefore, per §60.4305(b), the turbines are exempt from the requirements of Subpart GG.

5. **40 C.F.R. Part 60 Subpart IIII** – *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines* – This subpart does not apply because no compression ignition internal combustion engines are operated at the Bradshaw Compressor Station.

6. **40 C.F.R. Part 60 Subpart JJJJ** – *Standards of Performance for Stationary Spark Ignition Internal Combustion Engines* – This subpart does not apply because no spark ignition internal combustion engines are operated at the Bradshaw Compressor Station.

7. **40 C.F.R. Part 60 Subpart OOOO** – *Standards of Performance for Crude Oil and Natural Gas Facilities for Which Construction, Modification, or Reconstruction Commenced After August 23, 2011, and On or Before September 18, 2015* – The Bradshaw Compressor Station does not operate any affected facilities which commenced construction, reconstruction, or modification within the applicability dates.

8. **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, and On or Before December 6, 2022* – Equipment at the Bradshaw Compressor Station that are potentially subject to Subpart OOOOa include the centrifugal compressors, the pneumatic controllers, and the storage vessels.

    a. Per §60.5365a(b), a centrifugal compressor affected facility is a single centrifugal compressor using wet seals. The centrifugal compressors operated at the Bradshaw Compressor Station use dry seals and, therefore, are not subject to Subpart OOOOa.

    b. Per §60.5365a(d)(1), a pneumatic controller affected facility not located at a natural gas processing plant is a single continuous bleed natural gas-driven pneumatic controller operating at a natural gas bleed rate greater than 6 scfh. The pneumatic controllers operated at the Bradshaw Compressor Station are air-driven and, therefore, are not subject to Subpart OOOOa.

    c. Per §60.5365a(e), a storage vessel affected facility is a single storage vessel that has the potential for VOC emissions equal to or greater than 6 tpy. The produced fluids tank (S021) and the used oil tank (S022) both have the potential-to-emit less than 6 tpy and, therefore, are not subject to Subpart OOOOa.

9. **40 C.F.R. Part 60 Subpart OOOOb** – *Standards of Performance for Crude Oil and Natural Gas Facilities for Which Construction, Modification, or Reconstruction Commenced After December 6, 2022* – The Bradshaw Compressor Station does not operate any affected facilities which commenced construction, reconstruction, or modification after the applicability date.

10. **40 C.F.R. Part 63 Subpart HH** – *National Emission Standards for Hazardous Air Pollutants from Oil and Natural Gas Production Facilities* – The Bradshaw Compressor Station is not a natural gas production facility. Therefore, the facility is not subject to Subpart HH.

11. **40 C.F.R. Part 63 Subpart HHH** – *National Emission Standards for Hazardous Air Pollutants from Natural Gas Transmission and Storage Facilities* – Per §63.1270(a), Subpart HHH is applicable to natural gas transmission and storage facilities that are a major source of HAP emissions. As the Bradshaw Compressor Station is an area source of HAPs, the facility is not subject to Subpart HHH.

12. **40 C.F.R. Part 63 Subpart YYYY** – *National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines* – In accordance with §63.6080, Subpart YYYY is applicable to turbines located at major sources of HAP emissions. As the Bradshaw Compressor Station is an area source of HAPs, the facility is not subject to Subpart YYYY.

13. **40 C.F.R. Part 63 Subpart DDDDD** – *National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters* – Per §63.7480, Subpart DDDDD is applicable to industrial, commercial, and institutional boilers and process heaters located at major sources of HAPs. As the Bradshaw Compressor Station is an area source of HAPs, the facility is not subject to Subpart DDDDD.

14. **40 C.F.R. Part 63 Subpart JJJJJJ** – *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources* – In accordance with §63.11193, Subpart JJJJJJ is applicable

to industrial, commercial, or institutional boilers as defined in §63.11237 that are located at an area source of HAP emissions. Per §63.11237, process heaters are excluded from the definition of boiler. Therefore, the fuel gas heaters S019 and S020 are not subject to Subpart JJJJJJ.

15. **40 C.F.R. Part 64** – *Compliance Assurance Monitoring (CAM)* – The emission units at the Bradshaw Compressor Station are not operated with a control device and do not have uncontrolled emissions greater than the Title V major source thresholds. Therefore, per §§64.2(a)(2) and (a)(3), CAM is inapplicable to the emission units listed in Section 1.1. of this operating permit.

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:
Ending Date:

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

Sarah Barron
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304
304/414-1915
sarah.k.barron@wv.gov

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.

West Virginia Department of Environmental Protection

Harold D. Ward
Cabinet Secretary

Permit to Operate

Pursuant to

Title V

of the Clean Air Act

Issued to:

Mountain Valley Pipeline, LLC
Bradshaw Compressor Station
R30-10300109-2025

Laura M. Crowder
Director, Division of Air Quality

Issued: [Date of issuance] • *Effective: [Equals issue date plus two weeks]*
Expiration: [5 years after issuance date] • *Renewal Application Due: [6 months prior to expiration]*

Permit Number: **R30-10300109-2025**
Permittee: **Mountain Valley Pipeline, LLC**
Facility Name: **Bradshaw Compressor Station**
Permittee Mailing Address: **2200 Energy Drive, Canonsburg, PA 15317**

This permit is issued in accordance with the West Virginia Air Pollution Control Act (West Virginia Code §§ 22-5-1 et seq.) and 45CSR30 C Requirements for Operating Permits. The permittee identified at the above-referenced facility is authorized to operate the stationary sources of air pollutants identified herein in accordance with all terms and conditions of this permit.

Facility Location:	Smithfield, Wetzel County, West Virginia
Facility Mailing Address:	2165 Gilbert Ridge Road, Smithfield, WV 26437
Telephone Number:	844-378-5263
Type of Business Entity:	LLC
Facility Description:	The Bradshaw Compressor Station is a natural gas compressor station which receives natural gas and liquids (primarily produced water) from nearby wells. The natural gas undergoes compression before it is transported to a gas gathering line for additional processing.
SIC Codes:	4922
UTM Coordinates:	540.05 km Easting • 4,376.00 km Northing • Zone 17

Permit Writer: Sarah Barron

Any person whose interest may be affected, including, but not necessarily limited to, the applicant and any person who participated in the public comment process, by a permit issued, modified or denied by the Secretary may appeal such action of the Secretary to the Air Quality Board pursuant to article one [§§ 22B-1-1 et seq.], Chapter 22B of the Code of West Virginia. West Virginia Code §22-5-14.

Issuance of this Title V Operating Permit does not supersede or invalidate any existing permits under 45CSR13, 14 or 19, although all applicable requirements from such permits governing the facility's operation and compliance have been incorporated into the Title V Operating Permit.

Table of Contents

1.0 Emission Units and Active R13, R14, and R19 Permits

1.1. Emission Units

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
S001	E001	Solar Turbine #1	2020	23,536 HP (site-specific conditions)	None
S002	E002	Solar Turbine #2	2020	23,536 HP (site-specific conditions)	None
S003	E003	Solar Turbine #3	2020	23,536 HP (site-specific conditions)	None
S004	E004	Solar Turbine #4	2020	23,536 HP (site-specific conditions)	None
S005	E005	Microturbine Generator #1	2020	200 kW	None
S006	E006	Microturbine Generator #2	2020	200 kW	None
S007	E007	Microturbine Generator #3	2020	200 kW	None
S008	E008	Microturbine Generator #4	2020	200 kW	None
S009	E009	Microturbine Generator #5	2020	200 kW	None
S010	E010	Microturbine Generator #6	2020	200 kW	None
S011	E011	Microturbine Generator #7	2020	200 kW	None
S012	E012	Microturbine Generator #8	2020	200 kW	None
S013	E013	Microturbine Generator #9	2020	200 kW	None
S014	E014	Microturbine Generator #10	2020	200 kW	None
S015	E015	Microturbine Generator #11	2020	200 kW	None
S016	E016	Microturbine Generator #12	2020	200 kW	None
S017	E017	Microturbine Generator #13	2020	200 kW	None
S018	E018	Microturbine Generator #14	2020	200 kW	None
S019	E019	Fuel Gas Heater	2020	2.31 mmBTU/hr	None
S020	E020	Fuel Gas Heater	2020	2.31 mmBTU/hr	None
S021	E021	Produced Fluids Tank	2020	10,080 gallons	None
S022	E022	Used Oil Tank	2020	4,200 gallons	None
S023	E023	Office Building Heater	2020	0.12 mmBTU/hr	None

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
S024	E024	Fugitive Components	2020	N/A	N/A
S025	E025	Liquid Loading	2020	126,000 gallons/yr	None
S026	E026	Blowdowns	2020	N/A	N/A

1.2. Active R13, R14, and R19 Permits

The underlying authority for any conditions from R13, R14, and/or R19 permits contained in this operating permit is cited using the original permit number (e.g. R13-1234). The current applicable version of such permit(s) is listed below.

Permit Number	Date of Issuance
R13-3278A	March 22, 2021

2.0 General Conditions

2.1. Definitions

2.1.1. All references to the "West Virginia Air Pollution Control Act" or the "Air Pollution Control Act" mean those provisions contained in W.Va. Code §§ 22-5-1 to 22-5-18.

2.1.2. The "Clean Air Act" means those provisions contained in 42 U.S.C. §§ 7401 to 7671q, and regulations promulgated thereunder.

2.1.3. "Secretary" means the Secretary of the Department of Environmental Protection or other person to whom the Secretary has delegated authority or duties pursuant to W.Va. Code §§ 22-1-6 or 22-1-8 (45CSR§30-2.39.). The Director of the Division of Air Quality is the Secretary's designated representative for the purposes of this permit.

2.1.4. Unless otherwise specified in a permit condition or underlying rule or regulation, all references to a "rolling yearly total" shall mean the sum of the monthly data, values or parameters being measured, monitored, or recorded, at any given time for the previous twelve (12) consecutive calendar months.

2.2. Acronyms

CAAA	Clean Air Act Amendments	**NSPS**	New Source Performance Standards
CBI	Confidential Business Information	**PM**	Particulate Matter
CEM	Continuous Emission Monitor	**PM_{10}**	Particulate Matter less than 10μm in diameter
CES	Certified Emission Statement	**pph**	Pounds per Hour
C.F.R. *or* CFR	Code of Federal Regulations	**ppm**	Parts per Million
CO	Carbon Monoxide	**PSD**	Prevention of Significant Deterioration
C.S.R. *or* CSR	Codes of State Rules	**psi**	Pounds per Square Inch
DAQ	Division of Air Quality	**SIC**	Standard Industrial Classification
DEP	Department of Environmental Protection	**SIP**	State Implementation Plan
FOIA	Freedom of Information Act	**SO_2**	Sulfur Dioxide
HAP	Hazardous Air Pollutant	**TAP**	Toxic Air Pollutant
HON	Hazardous Organic NESHAP	**TPY**	Tons per Year
HP	Horsepower	**TRS**	Total Reduced Sulfur
lbs/hr *or* lb/hr	Pounds per Hour	**TSP**	Total Suspended Particulate
LDAR	Leak Detection and Repair	**USEPA**	United States Environmental Protection Agency
m	Thousand	**UTM**	Universal Transverse Mercator
MACT	Maximum Achievable Control Technology	**VEE**	Visual Emissions Evaluation
mm	Million	**VOC**	Volatile Organic Compounds
mmBtu/hr	Million British Thermal Units per Hour		
$mmft^3$/hr *or* mmcf/hr	Million Cubic Feet Burned per Hour		
NA *or* N/A	Not Applicable		
NAAQS	National Ambient Air Quality Standards		
NESHAPS	National Emissions Standards for Hazardous Air Pollutants		
NO_x	Nitrogen Oxides		

2.3. Permit Expiration and Renewal

2.3.1. Permit duration. This permit is issued for a fixed term of five (5) years and shall expire on the date specified on the cover of this permit, except as provided in 45CSR§30-6.3.b. and 45CSR§30-6.3.c.
[45CSR§30-5.1.b.]

2.3.2. A permit renewal application is timely if it is submitted at least six (6) months prior to the date of permit expiration.
[45CSR§30-4.1.a.3.]

2.3.3. Permit expiration terminates the source's right to operate unless a timely and complete renewal application has been submitted consistent with 45CSR§30-6.2. and 45CSR§30-4.1.a.3.
[45CSR§30-6.3.b.]

2.3.4. If the Secretary fails to take final action to deny or approve a timely and complete permit application before the end of the term of the previous permit, the permit shall not expire until the renewal permit has been issued or denied, and any permit shield granted for the permit shall continue in effect during that time.
[45CSR§30-6.3.c.]

2.4. Permit Actions

2.4.1. This permit may be modified, revoked, reopened and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.
[45CSR§30-5.1.f.3.]

2.5. Reopening for Cause

2.5.1. This permit shall be reopened and revised under any of the following circumstances:

a. Additional applicable requirements under the Clean Air Act or the Secretary's legislative rules become applicable to a major source with a remaining permit term of three (3) or more years. Such a reopening shall be completed not later than eighteen (18) months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions has been extended pursuant to 45CSR§§30-6.6.a.1.A. or B.

b. Additional requirements (including excess emissions requirements) become applicable to an affected source under Title IV of the Clean Air Act (Acid Deposition Control) or other legislative rules of the Secretary. Upon approval by U.S. EPA, excess emissions offset plans shall be incorporated into the permit.

c. The Secretary or U.S. EPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit.

d. The Secretary or U.S. EPA determines that the permit must be revised or revoked and reissued to assure compliance with the applicable requirements.

[45CSR§30-6.6.a.]

2.6. Administrative Permit Amendments

2.6.1. The permittee may request an administrative permit amendment as defined in and according to the procedures specified in 45CSR§30-6.4.
[45CSR§30-6.4.]

2.7. Minor Permit Modifications

2.7.1. The permittee may request a minor permit modification as defined in and according to the procedures specified in 45CSR§30-6.5.a.
[45CSR§30-6.5.a.]

2.8. Significant Permit Modification

2.8.1. The permittee may request a significant permit modification, in accordance with 45CSR§30-6.5.b., for permit modifications that do not qualify for minor permit modifications or as administrative amendments.
[45CSR§30-6.5.b.]

2.9. Emissions Trading

2.9.1. No permit revision shall be required, under any approved economic incentives, marketable permits, emissions trading, and other similar programs or processes for changes that are provided for in the permit and that are in accordance with all applicable requirements.
[45CSR§30-5.1.h.]

2.10. Off-Permit Changes

2.10.1. Except as provided below, a facility may make any change in its operations or emissions that is not addressed nor prohibited in its permit and which is not considered to be construction nor modification under any rule promulgated by the Secretary without obtaining an amendment or modification of its permit. Such changes shall be subject to the following requirements and restrictions:

a. The change must meet all applicable requirements and may not violate any existing permit term or condition.

b. The permittee must provide a written notice of the change to the Secretary and to U.S. EPA within two (2) business days following the date of the change. Such written notice shall describe each such change, including the date, any change in emissions, pollutants emitted, and any applicable requirement that would apply as a result of the change.

c. The change shall not qualify for the permit shield.

d. The permittee shall keep records describing all changes made at the source that result in emissions of regulated air pollutants, but not otherwise regulated under the permit, and the emissions resulting from those changes.

e. No permittee may make any change subject to any requirement under Title IV of the Clean Air Act (Acid Deposition Control) pursuant to the provisions of 45CSR§30-5.9.

f. No permittee may make any changes which would require preconstruction review under any provision of Title I of the Clean Air Act (including 45CSR14 and 45CSR19) pursuant to the provisions of 45CSR§30-5.9.

[45CSR§30-5.9.]

2.11. Operational Flexibility

2.11.1. The permittee may make changes within the facility as provided by § 502(b)(10) of the Clean Air Act. Such operational flexibility shall be provided in the permit in conformance with the permit application and applicable requirements. No such changes shall be a modification under any rule or any provision of Title I of the Clean Air Act (including 45CSR14 and 45CSR19) promulgated by the Secretary in accordance with Title I of the Clean Air Act and the change shall not result in a level of emissions exceeding the emissions allowable under the permit.
[45CSR§30-5.8]

2.11.2. Before making a change under 45CSR§30-5.8., the permittee shall provide advance written notice to the Secretary and to U.S. EPA, describing the change to be made, the date on which the change will occur, any changes in emissions, and any permit terms and conditions that are affected. The permittee shall thereafter maintain a copy of the notice with the permit, and the Secretary shall place a copy with the permit in the public file. The written notice shall be provided to the Secretary and U.S. EPA at least seven (7) days prior to the date that the change is to be made, except that this period may be shortened or eliminated as necessary for a change that must be implemented more quickly to address unanticipated conditions posing a significant health, safety, or environmental hazard. If less than seven (7) days notice is provided because of a need to respond more quickly to such unanticipated conditions, the permittee shall provide notice to the Secretary and U.S. EPA as soon as possible after learning of the need to make the change.
[45CSR§30-5.8.a.]

2.11.3. The permit shield shall not apply to changes made under 45CSR§30-5.8., except those provided for in 45CSR§30-5.8.d. However, the protection of the permit shield will continue to apply to operations and emissions that are not affected by the change, provided that the permittee complies with the terms and conditions of the permit applicable to such operations and emissions. The permit shield may be reinstated for emissions and operations affected by the change:

a. If subsequent changes cause the facility's operations and emissions to revert to those authorized in the permit and the permittee resumes compliance with the terms and conditions of the permit, or

b. If the permittee obtains final approval of a significant modification to the permit to incorporate the change in the permit.

[45CSR§30-5.8.c.]

2.11.4. "Section 502(b)(10) changes" are changes that contravene an express permit term. Such changes do not include changes that would violate applicable requirements or contravene enforceable permit terms and conditions that are monitoring (including test methods), recordkeeping, reporting, or compliance certification requirements.
[45CSR§30-2.40]

2.12. Reasonably Anticipated Operating Scenarios

2.12.1. The following are terms and conditions for reasonably anticipated operating scenarios identified in this permit.

a. Contemporaneously with making a change from one operating scenario to another, the permittee shall record in a log at the permitted facility a record of the scenario under which it is operating and to document the change in reports submitted pursuant to the terms of this permit and 45CSR30.

b. The permit shield shall extend to all terms and conditions under each such operating scenario; and

c. The terms and conditions of each such alternative scenario shall meet all applicable requirements and the requirements of 45CSR30.

[45CSR§30-5.1.i.]

2.13. Duty to Comply

2.13.1. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the West Virginia Code and the Clean Air Act and is grounds for enforcement action by the Secretary or USEPA; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.
[45CSR§30-5.1.f.1.]

2.14. Inspection and Entry

2.14.1. The permittee shall allow any authorized representative of the Secretary, upon the presentation of credentials and other documents as may be required by law, to perform the following:

a. At all reasonable times (including all times in which the facility is in operation) enter upon the permittee's premises where a source is located or emissions related activity is conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect at reasonable times (including all times in which the facility is in operation) any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit;

d. Sample or monitor at reasonable times substances or parameters to determine compliance with the permit or applicable requirements or ascertain the amounts and types of air pollutants discharged.

[45CSR§30-5.3.b.]

2.15. Schedule of Compliance

2.15.1. For sources subject to a compliance schedule, certified progress reports shall be submitted consistent with the applicable schedule of compliance set forth in this permit and 45CSR§30-4.3.h., but at least every six (6) months, and no greater than once a month, and shall include the following:

a. Dates for achieving the activities, milestones, or compliance required in the schedule of compliance, and dates when such activities, milestones or compliance were achieved; and

b. An explanation of why any dates in the schedule of compliance were not or will not be met, and any preventative or corrective measure adopted.

[45CSR§30-5.3.d.]

2.16. Need to Halt or Reduce Activity not a Defense

2.16.1. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. However, nothing in this paragraph shall be construed as precluding consideration of a need to halt or reduce activity as a mitigating factor in determining penalties for noncompliance if the health, safety, or environmental impacts of halting or reducing operations would be more serious than the impacts of continued operations.
[45CSR§30-5.1.f.2.]

2.17. Reserved.

2.18. Federally-Enforceable Requirements

2.18.1. All terms and conditions in this permit, including any provisions designed to limit a source's potential to emit and excepting those provisions that are specifically designated in the permit as "State-enforceable only", are enforceable by the Secretary, USEPA, and citizens under the Clean Air Act.
[45CSR§30-5.2.a.]

2.18.2. Those provisions specifically designated in the permit as “State-enforceable only” shall become “Federally-enforceable” requirements upon SIP approval by the USEPA.

2.19. Duty to Provide Information

2.19.1. The permittee shall furnish to the Secretary within a reasonable time any information the Secretary may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Secretary copies of records required to be kept by the permittee. For information claimed to be confidential, the permittee shall furnish such records to the Secretary along with a claim of confidentiality in accordance with 45CSR31. If confidential information is to be sent to USEPA, the permittee shall directly provide such information to USEPA along with a claim of confidentiality in accordance with 40 C.F.R. Part 2.
[45CSR§30-5.1.f.5.]

2.20. Duty to Supplement and Correct Information

2.20.1. Upon becoming aware of a failure to submit any relevant facts or a submittal of incorrect information in any permit application, the permittee shall promptly submit to the Secretary such supplemental facts or corrected information.
[45CSR§30-4.2.]

2.21. Permit Shield

2.21.1. Compliance with the conditions of this permit shall be deemed compliance with any applicable requirements as of the date of permit issuance provided that such applicable requirements are included and are specifically identified in this permit or the Secretary has determined that other requirements specifically identified are not applicable to the source and this permit includes such a determination or a concise summary thereof.
[45CSR§30-5.6.a.]

2.21.2. Nothing in this permit shall alter or affect the following:

a. The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance; or

b. The applicable requirements of the Code of West Virginia and Title IV of the Clean Air Act (Acid Deposition Control), consistent with § 408 (a) of the Clean Air Act.

c. The authority of the Administrator of U.S. EPA to require information under § 114 of the Clean Air Act or to issue emergency orders under § 303 of the Clean Air Act.

[45CSR§30-5.6.c.]

2.22. Credible Evidence

2.22.1. Nothing in this permit shall alter or affect the ability of any person to establish compliance with, or a violation of, any applicable requirement through the use of credible evidence to the extent authorized by law. Nothing in this permit shall be construed to waive any defenses otherwise available to the permittee including but not limited to any challenge to the credible evidence rule in the context of any future proceeding.
[45CSR§30-5.3.e.3.B.]

2.23. Severability

2.23.1. The provisions of this permit are severable. If any provision of this permit, or the application of any provision of this permit to any circumstance is held invalid by a court of competent jurisdiction, the remaining permit terms and conditions or their application to other circumstances shall remain in full force and effect.
[45CSR§30-5.1.e.]

2.24. Property Rights

2.24.1. This permit does not convey any property rights of any sort or any exclusive privilege.
[45CSR§30-5.1.f.4]

2.25. Acid Deposition Control

2.25.1. Emissions shall not exceed any allowances that the source lawfully holds under Title IV of the Clean Air Act (Acid Deposition Control) or rules of the Secretary promulgated thereunder.

a. No permit revision shall be required for increases in emissions that are authorized by allowances acquired pursuant to the acid deposition control program, provided that such increases do not require a permit revision under any other applicable requirement.

b. No limit shall be placed on the number of allowances held by the source. The source may not, however, use allowances as a defense to noncompliance with any other applicable requirement.

c. Any such allowance shall be accounted for according to the procedures established in rules promulgated under Title IV of the Clean Air Act.

[45CSR§30-5.1.d.]

2.25.2. Where applicable requirements of the Clean Air Act are more stringent than any applicable requirement of regulations promulgated under Title IV of the Clean Air Act (Acid Deposition Control), both provisions shall be incorporated into the permit and shall be enforceable by the Secretary and U. S. EPA.
[45CSR§30-5.1.a.2.]

3.0 Facility-Wide Requirements

3.1. Limitations and Standards

3.1.1. **Open burning.** The open burning of refuse by any person is prohibited except as noted in 45CSR§6-3.1. **[45CSR§6-3.1.]**

3.1.2. **Open burning exemptions.** The exemptions listed in 45CSR§6-3.1 are subject to the following stipulation: Upon notification by the Secretary, no person shall cause or allow any form of open burning during existing or predicted periods of atmospheric stagnation. Notification shall be made by such means as the Secretary may deem necessary and feasible. **[45CSR§6-3.2.]**

3.1.3. **Asbestos.** The permittee is responsible for thoroughly inspecting the facility, or part of the facility, prior to commencement of demolition or renovation for the presence of asbestos and complying with 40 C.F.R. § 61.145, 40 C.F.R. § 61.148, and 40 C.F.R. § 61.150. The permittee, owner, or operator must notify the Secretary at least ten (10) working days prior to the commencement of any asbestos removal on the forms prescribed by the Secretary if the permittee is subject to the notification requirements of 40 C.F.R. § 61.145(b)(3)(i). The USEPA, the Division of Waste Management and the Bureau for Public Health - Environmental Health require a copy of this notice to be sent to them. **[40 C.F.R. §61.145(b) and 45CSR34]**

3.1.4. **Odor.** No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor at any location occupied by the public. **[45CSR§4-3.1 State-Enforceable only.]**

3.1.5. **Standby plan for reducing emissions.** When requested by the Secretary, the permittee shall prepare standby plans for reducing the emissions of air pollutants in accordance with the objectives set forth in Tables I, II, and III of 45CSR11. **[45CSR§11-5.2]**

3.1.6. **Emission inventory.** The permittee is responsible for submitting, on an annual basis, an emission inventory in accordance with the submittal requirements of the Division of Air Quality. **[W.Va. Code § 22-5-4(a)(15)]**

3.1.7. **Ozone-depleting substances.** For those facilities performing maintenance, service, repair or disposal of appliances, the permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 C.F.R. Part 82, Subpart F, except as provided for Motor Vehicle Air Conditioners (MVACs) in Subpart B:

a. Persons opening appliances for maintenance, service, repair, or disposal must comply with the prohibitions and required practices pursuant to 40 C.F.R. §§ 82.154 and 82.156.

b. Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 C.F.R. § 82.158.

c. Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 C.F.R. § 82.161.

[40 C.F.R. 82, Subpart F]

3.1.8. **Risk Management Plan.** Should this stationary source, as defined in 40 C.F.R. § 68.3, become subject to Part 68, then the owner or operator shall submit a risk management plan (RMP) by the date specified in 40 C.F.R. § 68.10 and shall certify compliance with the requirements of Part 68 as part of the annual compliance certification as required by 40 C.F.R. Part 70 or 71.
[40 C.F.R. 68]

3.1.9. **Minor Source of Hazardous Air Pollutants (HAP).** HAP emissions from the facility shall be less than 10 tpy of any single HAP or 25 tpy of any combination of HAPs. Compliance with this condition shall ensure that the facility is a minor HAP source.
[45CSR13, R13-3278, 4.1.7.]

3.1.10. Only those emission units/sources as identified in the Emission Units Table of Section 1.1., with the exception of any *de minimis* sources as identified under Table 45-13B of 45CSR13, are authorized at the permitted facility.
[45CSR13, R13-3278, 4.1.8.]

3.1.11. No person shall cause, suffer, allow or permit fugitive particulate matter to be discharged beyond the boundary lines of the property on which the discharge originates or at any public or residential location, which causes or contributes to statutory air pollution.
[45CSR§17-3.1.]

3.2. Monitoring Requirements

3.2.1. None.

3.3. Testing Requirements

3.3.1. **Stack testing.** As per provisions set forth in this permit or as otherwise required by the Secretary, in accordance with the West Virginia Code, underlying regulations, permits and orders, the permittee shall conduct test(s) to determine compliance with the emission limitations set forth in this permit and/or established or set forth in underlying documents. The Secretary, or his duly authorized representative, may at his option witness or conduct such test(s). Should the Secretary exercise his option to conduct such test(s), the operator shall provide all necessary sampling connections and sampling ports to be located in such manner as the Secretary may require, power for test equipment and the required safety equipment, such as scaffolding, railings and ladders, to comply with generally accepted good safety practices. Such tests shall be conducted in accordance with the methods and procedures set forth in this permit or as otherwise approved or specified by the Secretary in accordance with the following:

a. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with 40 C.F.R. Parts 60, 61, and 63, if applicable, in accordance with the Secretary's delegated authority and any established equivalency determination methods which are applicable.

b. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with applicable requirements which do not involve federal delegation. In specifying or approving such alternative testing to the test methods, the Secretary, to the extent possible, shall utilize the same equivalency criteria as would be used in approving such changes under Section 3.3.1.a. of this permit. If a testing method is specified or approved which effectively replaces a test method specified in the permit, the permit shall be revised in accordance with 45CSR§30-6.4. or 45CSR§30-6.5., as applicable.

c. All periodic tests to determine mass emission limits from or air pollutant concentrations in discharge stacks and such other tests as specified in this permit shall be conducted in accordance with an approved test protocol. Unless previously approved, such protocols shall be submitted to the Secretary in writing at least thirty (30) days prior to any testing and shall contain the information set forth by the Secretary. In addition, the permittee shall notify the Secretary at least fifteen (15) days prior to any testing so the Secretary may have the opportunity to observe such tests. This notification shall include the actual date and time during which the test will be conducted and, if appropriate, verification that the tests will fully conform to a referenced protocol previously approved by the Secretary.

d. The permittee shall submit a report of the results of the stack test within 60 days of completion of the test. The test report shall provide the information necessary to document the objectives of the test and to determine whether proper procedures were used to accomplish these objectives. The report shall include the following: the certification described in paragraph 3.5.1; a statement of compliance status, also signed by a responsible official; and, a summary of conditions which form the basis for the compliance status evaluation. The summary of conditions shall include the following:

1. The permit or rule evaluated, with the citation number and language.

2. The result of the test for each permit or rule condition.

3. A statement of compliance or non-compliance with each permit or rule condition.

[WV Code §§ 22-5-4(a)(15-16) and 45CSR13]

3.4. Recordkeeping Requirements

3.4.1. **Monitoring information.** The permittee shall keep records of monitoring information that include the following:

a. The date, place as defined in this permit and time of sampling or measurements;

b. The date(s) analyses were performed;

c. The company or entity that performed the analyses;

d. The analytical techniques or methods used;

e. The results of the analyses; and

f. The operating conditions existing at the time of sampling or measurement.

[45CSR13, R13-3278, 4.4.1.; 45CSR§30-5.1.c.2.A.]

3.4.2. **Retention of records.** The permittee shall retain records of all required monitoring data and support information for a period of at least five (5) years from the date of monitoring sample, measurement, report, application, or record creation date. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Where appropriate, records may be maintained in computerized form in lieu of the above records.
[45CSR13, R13-3278, 3.4.1.; 45CSR§30-5.1.c.2.B.]

3.4.3. **Odors.** For the purposes of 45CSR4, the permittee shall maintain a record of all odor complaints received, any investigation performed in response to such a complaint, and any responsive action(s) taken.
[45CSR§30-5.1.c. State-Enforceable only.]

3.5. Reporting Requirements

3.5.1. **Responsible official.** Any application form, report, or compliance certification required by this permit to be submitted to the DAQ and/or USEPA shall contain a certification by the responsible official that states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete.
[45CSR§§30-4.4. *and* 5.1.c.3.D.]

3.5.2. A permittee may request confidential treatment for the submission of reporting required under 45CSR§30-5.1.c.3. pursuant to the limitations and procedures of W.Va. Code § 22-5-10 and 45CSR31.
[45CSR§30-5.1.c.3.E.]

3.5.3. Except for the electronic submittal of the annual compliance certification and semi-annual monitoring reports to the DAQ and USEPA as required in 3.5.5 and 3.5.6 below, all notices, requests, demands, submissions and other communications required or permitted to be made to the Secretary of DEP and/or USEPA shall be made in writing and shall be deemed to have been duly given when delivered by hand, or mailed first class or by private carrier with postage prepaid to the address(es), or submitted in electronic format by e-mail as set forth below or to such other person or address as the Secretary of the Department of Environmental Protection may designate:

DAQ:

Director
WVDEP
Division of Air Quality
601 57th Street SE
Charleston, WV 25304

US EPA:

Section Chief
U. S. Environmental Protection Agency, Region III
Enforcement and Compliance Assurance Division
Air, RCRA, and Toxics Branch (3ED21)
Four Penn Center
1600 John F. Kennedy Boulevard
Philadelphia, PA 19103-2852

DAQ Compliance and Enforcement[1]:
DEPAirQualityReports@wv.gov

[1]For all self-monitoring reports (MACT, GACT, NSPS, etc.), stack tests and protocols, Notice of Compliance Status reports, Initial Notifications, etc.

3.5.4. **Fees.** The permittee shall pay fees on an annual basis in accordance with 45CSR§30-8. **[45CSR§30-8.]**

3.5.5. **Compliance certification.** The permittee shall certify compliance with the conditions of this permit on the forms provided by the DAQ. In addition to the annual compliance certification, the permittee may be required to submit certifications more frequently under an applicable requirement of this permit. The annual certification shall be submitted to the DAQ and USEPA on or before March 15 of each year, and shall certify compliance for the period ending December 31. The permittee shall maintain a copy of the certification on site for five (5) years from submittal of the certification. The annual certification shall be submitted in electronic format by e-mail to the following addresses:

DAQ:
DEPAirQualityReports@wv.gov

US EPA:
R3_APD_Permits@epa.gov

[45CSR§30-5.3.e.]

3.5.6. **Semi-annual monitoring reports.** The permittee shall submit reports of any required monitoring on or before September 15 for the reporting period January 1 to June 30 and on or before March 15 for the reporting period July 1 to December 31. All instances of deviation from permit requirements must be clearly identified in such reports. All required reports must be certified by a responsible official consistent with 45CSR§30-4.4. The semi-annual monitoring reports shall be submitted in electronic format by e-mail to the following address:

DAQ:
DEPAirQualityReports@wv.gov

[45CSR§30-5.1.c.3.A.]

3.5.7. **Reserved.**

3.5.8. **Deviations.**

a. In addition to monitoring reports required by this permit, the permittee shall promptly submit supplemental reports and notices in accordance with the following:

1. Reserved.

2. Any deviation that poses an imminent and substantial danger to public health, safety, or the environment shall be reported to the Secretary immediately by telephone or email. A written report of such deviation, which shall include the probable cause of such deviation, and any corrective actions or preventative measures taken, shall be submitted by the responsible official within ten (10) days of the deviation.

3. Deviations for which more frequent reporting is required under this permit shall be reported on the more frequent basis.

4. All reports of deviations shall identify the probable cause of the deviation and any corrective actions or preventative measures taken.

[45CSR§30-5.1.c.3.C.]

b. The permittee shall, in the reporting of deviations from permit requirements, including those attributable to upset conditions as defined in this permit, report the probable cause of such deviations and any corrective actions or preventive measures taken in accordance with any rules of the Secretary. **[45CSR§30-5.1.c.3.B.]**

3.5.9. **New applicable requirements.** If any applicable requirement is promulgated during the term of this permit, the permittee will meet such requirements on a timely basis, or in accordance with a more detailed schedule if required by the applicable requirement. **[45CSR§30-4.3.h.1.B.]**

3.6. Compliance Plan

3.6.1. None.

3.7. Permit Shield

3.7.1. The permittee is hereby granted a permit shield in accordance with 45CSR§30-5.6. The permit shield applies provided the permittee operates in accordance with the information contained within this permit.

3.7.2. The following requirements specifically identified are not applicable to the source based on the determinations set forth below. The permit shield shall apply to the following requirements provided the conditions of the determinations are met.

a. None.

4.0 Turbines and Microturbine Generators [Emission Point IDs: E001 through E018]

4.1. Limitations and Standards

4.1.1. The following conditions and requirements are specific to the Combustion Turbines (S001 to S004):

a. Emissions from each combustion turbine shall not exceed the following:

1. Emissions of nitrogen oxides (NO_X) shall be controlled with combustion controls. Each turbine shall not discharge NO_X emissions in excess of 25 ppm at 15 percent O_2 when operating at load conditions at or above 75 percent of peak load and/or when operating temperatures are at or above 0°F. For when the operating loads of the turbine are less than 75% of peak load and/or operating temperatures are less than 0°F, NO_X emissions rate from the turbine shall not exceed 150 ppm at 15 percent O_2. Annual NO_X emissions from each turbine shall not exceed 42.95 tpy on a 12-month rolling total. This limit applies at all times, including periods of startup, shutdown, or malfunction. **[45CSR16; 40 C.F.R. §60.4320(a); Table 1 to Subpart KKKK of Part 60]**

2. Emissions of CO shall not exceed 45.67 tpy, on a rolling 12-month total basis.

3. Emissions of SO_2 shall not exceed 0.060 lbs of SO_2/mmBTU heat input. For the purpose of demonstrating compliance with this limit, the permittee shall maintain the Federal Energy Regulatory Commission (FERC) tariff limit on total sulfur content of 20 grains of sulfur per 100 standard cubic feet of natural gas combusted in the turbines.
[45CSR16; 40 C.F.R. §§60.4330(a)(2) and 60.4365(a)]

4. Emissions of VOC shall not exceed 5.02 tpy, on a rolling 12-month total basis.

b. Each turbine shall only be fired with pipeline-quality natural gas.

c. The permittee must operate and maintain each turbine, air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction.
[45CSR16; 40 C.F.R. §60.4333(a)]

[45CSR13, R13-3278, 4.1.1.]

4.1.2. The following conditions and requirements are specific to the Microturbine Generators (S005 to S018):

a. Emissions from each microturbine generator shall not exceed the following:

1. Emissions of NO_X shall not exceed 0.35 tpy, on a rolling 12-month total basis.

2. Emissions of CO shall not exceed 0.96 tpy, on a rolling 12-month total basis.

3. Emissions of VOC shall not exceed 0.09 tpy, on a rolling 12-month total basis.

b. Each turbine shall only be fired with pipeline-quality natural gas.

c. The permittee must operate and maintain each turbine, air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction.

[45CSR13, R13-3278, 4.1.2.]

4.2. Monitoring Requirements

4.2.1. For the purpose of determining compliance with the annual limits for each combustion turbine (S001 to S004), the permittee shall monitor and record the following for each calendar month:

a. Hours the turbine operated at normal conditions, which is when the turbine is at or above 50% load, and the ambient temperature is above 0°F.

b. Hours the turbine operated at low-load conditions, which is when the turbine load is less than 50% load.

c. Hours the turbine operated at low temperature conditions, which is when the ambient temperature is less than 0°F but at or above -20°F.

d. Hours the turbine operated at very-low temperature conditions, which is when the ambient temperature is less than -20°F.

e. The number of startup and shutdown cycles that occurred during the month.

Such records shall be maintained in accordance with Condition 3.4.2. of this operating permit.

[45CSR13, R13-3278, 4.2.1.]

4.3. Testing Requirements

4.3.1. For the purposes of demonstrating compliance with the NO_X emission standards in Condition 4.1.1.a.1. and 40 C.F.R. §60.4320(a), the permittee shall conduct performance tests on an annual basis (no more than 14 calendar months following the previous test). If the NO_X emission result from the performance test is less than or equal to 75 percent of the NO_X emission limit for the turbine, the permittee may reduce the frequency of subsequent performance tests to once every 2 years (no more than 26 calendar months following the previous performance test). If the results of any subsequent performance test exceed 75 percent of the NO_X emission limit for the turbine, the permittee must resume annual performance tests. Such testing shall be conducted in accordance with Condition 3.3.1. and 40 C.F.R. §60.4400 (paragraphs a. and b. of this condition). Records of such testing shall be maintained in accordance with Condition 3.4.2.

a. 1. There are two general methodologies that the permittee may use to conduct the performance tests. For each test run:

i. Measure the NO_X concentration (in parts per million (ppm)), using EPA Method 7E or EPA Method 20 in Appendix A of 40 C.F.R. Part 60. For units complying with the output based standard, concurrently measure the stack gas flow rate, using EPA Methods 1 and 2 in Appendix A of 40 C.F.R. Part 60, and measure and record the electrical and thermal output from the unit. Then, use the following equation to calculate the NO_X emission rate:

$$E = \frac{1.194 \times 10^{-7} \times (NO_X)_c \times Q_{std}}{P}$$

Where:

E = NO_X emission rate, in lbs/MWh

1.194 × 10^{-7} = conversion constant, in lbs/dscf-ppm

$(NO_X)_c$ = average NO_X concentration for the run, in ppm

Q_{std} = stack gas volumetric flow rate, in dscf/hr

P = gross electrical and mechanical energy output of the combustion turbine, in MW (for simple-cycle operation), for combined-cycle operation, the sum of all electrical and mechanical output from the combustion and steam turbines, or, for combined heat and power operation, the sum of all electrical and mechanical output from the combustion and steam turbines plus all useful recovered thermal output not used for additional electric or mechanical generation, in MW, calculated according to §60.4350(f)(2); or

ii. Measure the NO_X and diluent gas concentrations, using either EPA Methods 7E and 3A, or EPA Method 20 in Appendix A of 40 C.F.R. Part 60. Concurrently measure the heat input to the unit, using a fuel flowmeter (or flowmeters), and measure the electrical and thermal output of the unit. Use EPA Method 19 in Appendix A of 40 C.F.R. Part 60 to calculate the NO_X emission rate in lbs/mmBTU. Then, use Equations 1 and, if necessary, 2 and 3 in §60.4350(f) to calculate the NO_X emission rate in lbs/MWh.

2. Sampling traverse points for NO_X and (if applicable) diluent gas are to be selected following EPA Method 20 or EPA Method 1 (non-particulate procedures), and sampled for equal time intervals. The sampling must be performed with a traversing single-hole probe, or, if feasible, with a stationary multi-hole probe that samples each of the points sequentially. Alternatively, a multi-hole probe designed and documented to sample equal volumes from each hole may be used to sample simultaneously at the required points.

3. Notwithstanding paragraph a.2. of this condition, the permittee may test at fewer points than are specified in EPA Method 1 or EPA Method 20 in Appendix A of 40 C.F.R. Part 60 if the following conditions are met:

   i. The permittee may perform a stratification test for NO_X and diluent pursuant to the procedures specified in section 6.5.6.1(a) through (e) of Appendix A of 40 C.F.R. Part 75.

   ii. Once the stratification sampling is completed, the permittee may use the following alternative sample point selection criteria for the performance test:

      a. If each of the individual traverse point NO_X concentrations is within ±10 percent of the mean concentration for all traverse points, or the individual traverse point diluent concentrations differs by no more than ±5 ppm or ±0.5 percent CO_2 (or O_2) from the mean for all traverse points, then the permittee may use three points (located either 16.7, 50.0 and 83.3 percent of the way across the stack or duct, or, for circular stacks or ducts greater than 2.4 meters (7.8 feet) in diameter, at 0.4, 1.2, and 2.0 meters from the wall). The three

points must be located along the measurement line that exhibited the highest average NO_X concentration during the stratification test; or

b. For turbines with a NO_X standard greater than 15 ppm at 15% O_2, the permittee may sample at a single point, located at least 1 meter from the stack wall or at the stack centroid if each of the individual traverse point NO_X concentrations is within ±5 percent of the mean concentration for all traverse points, or the individual traverse point diluent concentrations differs by no more than ±3 ppm or ±0.3 percent CO_2 (or O_2) from the mean for all traverse points; or

c. For turbines with a NO_X standard less than or equal to 15 ppm at 15% O_2, the permittee may sample at a single point, located at least 1 meter from the stack wall or at the stack centroid if each of the individual traverse point NO_X concentrations is within ±2.5 percent of the mean concentration for all traverse points, or the individual traverse point diluent concentrations differs by no more than ±1 ppm or ±0.15 percent CO_2 (or O_2) from the mean for all traverse points.

b. The performance test must be done at any load condition within plus or minus 25 percent of 100 percent of peak load. The permittee may perform testing at the highest achievable load point, if at least 75 percent of peak load cannot be achieved in practice. The permittee must conduct three separate test runs for each performance test. The minimum time per run is 20 minutes.

1. If the stationary combustion turbine combusts both oil and gas as primary or backup fuels, separate performance testing is required for each fuel.

2. For a combined cycle and CHP turbine systems with supplemental heat (duct burner), the permittee must measure the total NO_X emissions after the duct burner rather than directly after the turbine. The duct burner must be in operation during the performance test.

3. If water or steam injection is used to control NO_X with no additional post-combustion NO_X control and the permittee chooses to monitor the steam or water to fuel ratio in accordance with §60.4335, then that monitoring system must be operated concurrently with each EPA Method 20 or EPA Method 7E run and must be used to determine the fuel consumption and the steam or water to fuel ratio necessary to comply with the applicable §60.4320 NO_X emission limit.

4. Compliance with the applicable emission limit in §60.4320 must be demonstrated at each tested load level. Compliance is achieved if the three-run arithmetic average NO_X emission rate at each tested level meets the applicable emission limit in §60.4320.

5. If the permittee elects to install a CEMS, the performance evaluation of the CEMS may either be conducted separately or (as described in §60.4405) as part of the initial performance test of the affected unit.

6. The ambient temperature must be greater than 0°F during the performance test.

[45CSR13, R13-3278, 4.3.1.; 45CSR16; 40 C.F.R. §§60.4340(a) and 60.4400]

4.4. Recordkeeping Requirements

4.4.1. Compliance with the annual emission limits in Condition 4.1.1. for NO_X, CO, and VOC for the turbines (S001 to S004) shall be based on a rolling 12-month total. The emissions from each turbine shall be determined monthly using the following equation:

$$ME_{P_x} = DLN_{P_x} \times DLN\ hrs + LL_{P_x} \times LL\ hrs + LT_{P_x} \times LT\ hrs + VLT_{P_x} \times VLT\ hrs + SS_{P_x} \times SS\ cycles$$

Where:

ME_{Px} = Monthly emissions of Pollutant X

DLN_{Px} = Hourly emission rate of Pollutant X during normal operation

DLN = Number of hours of normal operation in said month

LL_{Px} = Hourly emission rate of Pollutant X during low load (< 50%) operation

LL = Number of hours of low load operation in said month

LT_{Px} = Hourly emission rate of Pollutant X during low temperatures (< 0°F)

LT = Number of hours of low temperature operation in said month

VLT_{Px} = Hourly emission rate of Pollutant X during very low temperatures (< -20°F)

VLT = Number of hours of very low temperature operation in said month

SS_{Px}= Unit emission rate (lbs/cycle) for Pollutant X during startup/shutdown cycles

SS = Number of startup/shutdown cycles for said month

Hourly emission rates used in the above calculation shall be based on best available data which is the data collected during source specific testing or the data for the specific model turbine provided or published by the manufacturer. When source test data is used, it can be adjusted for the average operating conditions for each specific month using a generally accepted model or methodology. This determination shall be performed within 30 days after the end of the calendar month and the monthly emissions shall be summed with the preceding 11 months to determine compliance with the annual limits in Condition 4.1.1.a. Records of the monthly total and 12-month totals shall be maintained in accordance with Condition 3.4.2.

[45CSR13, R13-3278, 4.4.2.]

4.4.2. The permittee shall maintain current and valid documentation that the natural gas consumed by the combustion turbines specifying that the maximum total sulfur content is 20 grains of sulfur or less per 100 cubic feet of natural gas. Said documentation can be purchase contracts, tariff sheets, or transportation contracts. Such records shall be maintained in accordance with Condition 3.4.2., except that these records can be maintained off-site but must be made available for inspection within 15 days of the request. By satisfying this requirement, the permittee is exempted from the total sulfur monitoring requirement of 40 C.F.R. §60.4370. *These records satisfy Conditions 4.1.1.b., 4.1.2.b., and 6.1.1.d.*
[45CSR13, R13-3278, 4.4.3.; 45CSR16; 40 C.F.R. §§60.4360 and 60.4365(a)]

4.5. Reporting Requirements

4.5.1. For each affected unit that performs annual performance tests in accordance with Condition 4.3.1. (40 C.F.R. §60.4340(a)), the permittee must submit a written report of the results of each performance test before the close of business on the 60th day following the completion of the performance test.
[45CSR13, R13-3278, 4.3.1.; 45CSR16; 40 C.F.R. §60.4375(b)]

4.6. Compliance Plan

4.6.1. None.

5.0 40 C.F.R. Part 60 Subpart OOOOa Requirements for Fugitive Emissions Components

5.1. Limitations and Standards

5.1.1. At all times, including periods of startup, shutdown, and malfunction, owners and operators shall maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source. The provisions for exemption from compliance during periods of startup, shutdown, and malfunctions provided for in 40 C.F.R. §60.8(c) do not apply to 40 C.F.R. Part 60 Subpart OOOOa.
[45CSR16; 40 C.F.R. §60.5370a(b)]

5.1.2. For each affected facility under 40 C.F.R. §60.5365a(j), the permittee 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 this condition. The requirements in this condition are independent of the closed vent system and cover requirements in 40 C.F.R. §60.5411a. Alternatively, the permittee may comply with the requirements of 40 C.F.R. §60.5398b, including the notification, recordkeeping, and reporting requirements outlined in 40 C.F.R. §60.5424b. For the purpose of 40 C.F.R. Part 60 Subpart OOOOa, compliance with the requirements in 40 C.F.R. §60.5398b will be deemed compliance with this condition. When complying with 40 C.F.R. §60.5398b, the definitions in 40 C.F.R. §60.5430b shall apply for those activities conducted under 40 C.F.R. §60.5398b.

a. The permittee must monitor all fugitive emission components, as defined in 40 C.F.R. §60.5430a, in accordance with paragraphs b. through g. of this condition. The permittee must repair all sources of fugitive emissions in accordance with paragraph h. The permittee must keep records in accordance with paragraph i. of this condition and report in accordance with paragraph j. of this condition. For the purposes of this condition, fugitive emissions are defined as any visible emission from a fugitive emissions component observed using optical gas imaging or an instrument reading of 500 parts per million (ppm) or greater using Method 21 of appendix A-7 to 40 C.F.R. Part 60.

b. The permittee must develop an emissions monitoring plan that covers the collection of fugitive emissions components at compressor stations within each company-defined area in accordance with paragraphs c. and d. of this condition.

c. Fugitive emissions monitoring plans must include the elements specified in paragraphs c.1. through 8. of this condition, at a minimum.

1. Frequency for conducting surveys. Surveys must be conducted at least as frequently as required by paragraphs f. and g. of this condition.

2. Technique for determining fugitive emissions (i.e., Method 21 of appendix A-7 to 40 C.F.R. Part 60 or optical gas imaging meeting the requirements in paragraphs c.7.i. through vii. of this condition).

3. Manufacturer and model number of fugitive emissions detection equipment to be used.

4. Procedures and timeframes for identifying and repairing fugitive emissions components from which fugitive emissions are detected, including timeframes for fugitive emission components that are

unsafe to repair. The repair schedule must meet the requirements of paragraph h. of this condition at a minimum.

5. Procedures and timeframes for verifying fugitive emission component repairs.

6. Records that will be kept and the length of time records will be kept.

7. If using optical gas imaging, the plan must also include the elements specified in paragraphs c.7.i. through vii. of this condition.

   i. Verification that the optical gas imaging equipment meets the specifications of paragraphs c.7.i.a. and b. of this condition. This verification is an initial verification and may either be performed by the facility, by the manufacturer, or by a third party. For the purposes of complying with the fugitive emissions monitoring program with optical gas imaging, a fugitive emission is defined as any visible emissions observed using optical gas imaging.

      a. The optical gas imaging equipment must be capable of imaging gases in the spectral range for the compound of highest concentration in the potential fugitive emissions.

      b. The optical gas imaging equipment must be capable of imaging a gas that is half methane, half propane at a concentration of 10,000 ppm at a flow rate of ≤ 60 g/hr from a quarter inch diameter orifice.

   ii. Procedure for a daily verification check.

   iii. Procedure for determining the operator's maximum viewing distance from the equipment and how the operator will ensure that this distance is maintained.

   iv. Procedure for determining maximum wind speed during which monitoring can be performed and how the operator will ensure monitoring occurs only at wind speeds below this threshold.

   v. Procedures for conducting surveys, including the items specified in paragraphs c.7.v.a. through c. of this condition.

      a. How the operator will ensure an adequate thermal background is present in order to view potential fugitive emissions.

      b. How the operator will deal with adverse monitoring conditions, such as wind.

      c. How the operator will deal with interferences (e.g., steam).

   vi. Training and experience needed prior to performing surveys.

   vii. Procedures for calibration and maintenance. At a minimum, procedures must comply with those recommended by the manufacturer.

8. If using Method 21 of Appendix A-7 of 40 C.F.R. Part 60, the plan must also include the elements specified in paragraphs c.8.i. through iii. of this condition. For the purposes of complying with the

fugitive emissions monitoring program using Method 21, a fugitive emission is defined as an instrument reading of 500 ppm or greater.

i. *Verification that monitoring equipment meets the requirements specified in Section 6.0 of Method 21 at 40 C.F.R. Part 60, Appendix A-7.* For purposes of instrument capability, the fugitive emissions definition shall be 500 ppm or greater methane using a FID-based instrument. If the permittee wishes to use an analyzer other than a FID-based instrument, the permittee must develop a site-specific fugitive emission definition that would be equivalent to 500 ppm methane using a FID-based instrument (e.g., 10.6 eV PID with a specified isobutylene concentration as the fugitive emission definition would provide equivalent response to the compound of interest).

ii. *Procedures for conducting surveys.* At a minimum, the procedures shall ensure that the surveys comply with the relevant sections of Method 21 at 40 C.F.R. Part 60, Appendix A-7, including Section 8.3.1.

iii. *Procedures for calibration.* The instrument must be calibrated before use each day of its use by the procedures specified in Method 21 of Appendix A-7 of 40 C.F.R. Part 60. At a minimum, the permittee must also conduct precision tests at the interval specified in Method 21 of Appendix A-7 of 40 C.F.R. Part 60, Section 8.1.2, and a calibration drift assessment at the end of each monitoring day. The calibration drift assessment must be conducted as specified in paragraph c.8.iii.a. of this condition. Corrective action for drift assessments is specified in paragraphs c.8.iii.b. and c. of this condition.

a. Check the instrument using the same calibration gas that was used to calibrate the instrument before use. Follow the procedures specified in Method 21 of Appendix A-7 of 40 C.F.R. Part 60, Section 10.1, except do not adjust the meter readout to correspond to the calibration gas value. If multiple scales are used, record the instrument reading for each scale used. Divide the arithmetic difference of the initial and post-test calibration response by the corresponding calibration gas value for each scale and multiply by 100 to express the calibration drift as a percentage.

b. If a calibration drift assessment shows a negative drift of more than 10 percent, then all equipment with instrument readings between the fugitive emission definition multiplied by (100 minus the percent of negative drift/divided by 100) and the fugitive emission definition that was monitored since the last calibration must be re-monitored.

c. If any calibration drift assessment shows a positive drift of more than 10 percent from the initial calibration value, then, at the owner/operator's discretion, all equipment with instrument readings above the fugitive emission definition and below the fugitive emission definition multiplied by (100 plus the percent of positive drift/divided by 100) monitored since the last calibration may be re-monitored.

d. Each fugitive emissions monitoring plan must include the elements specified in paragraphs d.1. through 3. of this condition, at a minimum, as applicable.

1. If using optical gas imaging, the plan must include procedures to ensure that all fugitive emissions components are monitored during each survey. Example procedures include, but are not limited to,

a sitemap with an observation path, a written narrative of where the fugitive emissions components are located and how they will be monitored, or an inventory of fugitive emissions components.

2. If using Method 21 of Appendix A-7 of 40 C.F.R. Part 60, the plan must include a list of fugitive emissions components to be monitored and method for determining the location of fugitive emissions components to be monitored in the field (e.g., tagging, identification on a process and instrumentation diagram, etc.).

3. The fugitive emissions monitoring plan must include the written plan developed for all of the fugitive emissions components designated as difficult-to-monitor in accordance with paragraph g.2. of this condition, and the written plan for fugitive emissions components designated as unsafe-to-monitor in accordance with g.3. of this condition.

e. Each monitoring survey shall observe each fugitive emissions component, as defined in 40 C.F.R. §60.5430a, for fugitive emissions.

f. The permittee must conduct an initial monitoring survey within 90 days of the startup of a new compressor station for each collection of fugitive emissions components at the new compressor station. For a modified collection of fugitive emissions components at a compressor station, the initial monitoring survey must be conducted within 90 days of the modification.

g. A monitoring survey of each collection of fugitive emissions components at a compressor station must be performed at the frequencies specified in paragraph g.1. of this condition, with the exceptions noted in paragraphs g.2. and 3. of this condition.

1. A monitoring survey of the collection of fugitive emissions components at a compressor station must be conducted at least quarterly after the initial survey. Consecutive quarterly monitoring surveys must be conducted at least 60 days apart.

2. Fugitive emissions components that cannot be monitored without elevating the monitoring personnel more than 2 meters above the surface may be designated as difficult-to-monitor. Fugitive emissions components that are designated difficult-to-monitor must meet the specifications of paragraphs g.2.i. through iv. of this condition.

i. A written plan must be developed for all of the fugitive emissions components designated difficult-to-monitor. This written plan must be incorporated into the fugitive emissions monitoring plan required by paragraphs b., c., and d. of this condition.

ii. The plan must include the identification and location of each fugitive emissions component designated as difficult-to-monitor.

iii. The plan must include an explanation of why each fugitive emissions component designated as difficult-to-monitor is difficult-to-monitor.

iv. The plan must include a schedule for monitoring the difficult-to-monitor fugitive emissions components at least once per calendar year.

3. Fugitive emissions components that cannot be monitored because monitoring personnel would be exposed to immediate danger while conducting a monitoring survey may be designated as unsafe-

to-monitor. Fugitive emissions components that are designated unsafe-to-monitor must meet the specifications of paragraphs g.3.i. through iv. of this condition.

i. A written plan must be developed for all of the fugitive emissions components designated unsafe-to-monitor. This written plan must be incorporated into the fugitive emissions monitoring plan required by paragraphs b., c., and d. of this condition.

ii. The plan must include the identification and location of each fugitive emissions component designated as unsafe-to-monitor.

iii. The plan must include an explanation of why each fugitive emissions component designated as unsafe-to-monitor is unsafe-to-monitor.

iv. The plan must include a schedule for monitoring the fugitive emissions components designated as unsafe-to-monitor.

h. Each identified source of fugitive emissions shall be repaired, as defined in 40 C.F.R. §60.5430a, in accordance with paragraphs h.1. and 2. of this condition.

1. A first attempt at repair shall be made no later than 30 calendar days after detection of the fugitive emissions.

2. Repair shall be completed as soon as practicable, but no later than 30 calendar days after the first attempt at repair as required in paragraph h.1. of this condition.

3. Delay of repair will be allowed if the conditions in paragraphs h.3.i. or ii. of this section are met.

i. If the repair is technically infeasible, would require a vent blowdown, a compressor station shutdown, or would be unsafe to repair during operation of the unit, the repair must be completed during the next scheduled compressor station shutdown for maintenance, after a scheduled vent blowdown, or within 2 years of detecting the fugitive emissions, whichever is earliest. For the purposes of this paragraph h.3., a vent blowdown is the opening of one or more blowdown valves to depressurize major production and processing equipment, other than a storage vessel.

ii. If the repair requires replacement of a fugitive emissions component or a part thereof, but the replacement cannot be acquired and installed within the repair timelines specified in paragraphs h.1. and 2. of this section due to either of the conditions specified in paragraphs h.3.ii.a. or b. of this section, the repair must be completed in accordance with paragraph h.3.ii.c. of this section and documented in accordance with Condition 5.4.1.c.9.

a. Valve assembly supplies had been sufficiently stocked but are depleted at the time of the required repair.

b. A replacement fugitive emissions component or a part thereof requires custom fabrication.

c. The required replacement must be ordered no later than 10 calendar days after the first attempt at repair. The repair must be completed as soon as practicable, but no later than 30 calendar days after receipt of the replacement component, unless the repair requires a

compressor station shutdown. If the repair requires a compressor station shutdown, the repair must be completed in accordance with the timeframe specified in paragraph h.3.i. of this condition.

4. Each identified source of fugitive emissions must be resurveyed to complete repair according to the requirements in paragraphs h.4.i. through iv. of this condition to ensure that there are no fugitive emissions.

i. The operator may resurvey the fugitive emissions components to verify the repair using either Method 21 of Appendix A-7 to 40 C.F.R. Part 60 or optical gas imaging.

ii. For each repair that cannot be made during the monitoring survey when the fugitive emissions are initially found, a digital photograph must be taken of that component or the component must be tagged during the monitoring survey when the fugitives were initially found for identification purposes and subsequent repair. The digital photograph must include the date that the photograph was taken and must clearly identify the component by location within the site (e.g., the latitude and longitude of the component or by other descriptive landmarks visible in the picture).

iii. Operators that use Method 21 of Appendix A-7 of 40 C.F.R. Part 60 to resurvey the repaired fugitive emissions components are subject to the resurvey provisions specified in paragraphs h.4.iii.a. and b. of this condition.

a. A fugitive emissions component is repaired when the Method 21 instrument indicates a concentration of less than 500 ppm above background or when no soap bubbles are observed when the alternative screening procedures specified in Section 8.3.3 of Method 21 of Appendix A-7 of 40 C.F.R. Part 60 are used.

b. Operators must use the Method 21 monitoring requirements specified in paragraph c.8.ii. of this condition or the alternative screening procedures specified in Section 8.3.3 of Method 21 of Appendix A-7 of 40 C.F.R. Part 60.

iv. Operators that use optical gas imaging to resurvey the repaired fugitive emissions components, are subject to the resurvey provisions specified in paragraphs h.4.iv.a. and b. of this condition.

a. A fugitive emissions component is repaired when the optical gas imaging instrument shows no indication of visible emissions.

b. Operators must use the optical gas imaging monitoring requirements specified in paragraph c.7. of this condition.

i. Records for each monitoring survey shall be maintained as specified in Condition 5.4.1.

j. Annual reports shall be submitted for each collection of fugitive emissions components at a compressor station that include the information specified in Condition 5.5.1.b. Multiple collection of fugitive emissions components at a compressor station may be included in a single annual report.

[45CSR16; 40 C.F.R. §§60.5397a(a) through (e), (f)(2), (g), (g)(2) through (4), and (h) through (j)]

5.2. Monitoring Requirements

5.2.1. The permittee must determine initial compliance with the standards for each collection of fugitive emissions components at a compressor station using the requirements in paragraphs a. through e. of this condition. The initial compliance period begins upon initial startup and ends no later than 1 year after the initial startup date for the affected facility. The initial compliance period may be less than 1 full year.

a. The permittee must develop a fugitive emissions monitoring plan as required in Condition 5.1.2.b. to d.

b. The permittee must conduct an initial monitoring survey as required in Condition 5.1.2.f.

c. The permittee must maintain the records specified in Condition 5.4.1.

d. The permittee must repair each identified source of fugitive emissions for each affected facility as required in Condition 5.1.2.h.

e. The permittee must submit the initial annual report for each collection of fugitive emissions components at a compressor station as required in Condition 5.5.1.a. and b.

[45CSR16; 40 C.F.R. §§60.5410a and 60.5410a(j)]

5.2.2. For each collection of fugitive emissions components at a compressor station, the permittee must demonstrate continuous compliance with the fugitive emission standards specified in Condition 5.1.2. according to paragraphs a. through d. of this condition.

a. The permittee must conduct periodic monitoring surveys as required in Condition 5.1.2.g.

b. The permittee must repair each identified source of fugitive emissions as required in Condition 5.1.2.h.

c. The permittee must maintain records as specified in Condition 5.4.1.

d. The permittee must submit annual reports for the collection of fugitive emissions components at a compressor station as required in Condition 5.5.1.a. and b.

[45CSR16; 40 C.F.R. §60.5415a(h)]

5.3. Testing Requirements

5.3.1. None.

5.4. Recordkeeping Requirements

5.4.1. The permittee must maintain the records identified as specified in 40 C.F.R. §60.7(f) and in this condition for each collection of fugitive emissions components at a compressor station. All records required by 40 C.F.R. Part 60 Subpart OOOOa must be maintained either on-site or at the nearest local field office for at least 5 years. Any records required to be maintained by Subpart OOOOa that are submitted electronically via the EPA's CDX may be maintained in electronic format.

a. The date of startup or the date of modification for each collection of fugitive emissions components at a compressor station.

b. The fugitive emissions monitoring plan as required in paragraphs b. through d. of Condition 5.1.2.

c. The records of each monitoring survey as follows:

1. Date of the survey.

2. Beginning and end time of the survey.

3. Name of the operator(s), training, and experience of the operator(s) performing the survey.

4. Monitoring instrument used.

5. Fugitive emissions component identification when Method 21 of 40 C.F.R. Part 60, Appendix A-7 is used to perform the monitoring survey.

6. Ambient temperature, sky conditions, and maximum wind speed at the time of the survey. For compressor stations, operating mode of each compressor (i.e., operating, standby pressurized, and not operating-depressurized modes) at the station at the time of the survey.

7. Any deviations from the monitoring plan or a statement that there were no deviations from the monitoring plan.

8. Records of calibrations for the instrument used during the monitoring survey.

9. Documentation of each fugitive emission detected during the monitoring survey, including the information specified in paragraphs c.9.i. through ix. of this condition.

i. Location of each fugitive emission identified.

ii. Type of fugitive emissions component, including designation as difficult-to-monitor or unsafe-to-monitor, if applicable.

iii. If Method 21 of Appendix A-7 of 40 C.F.R. Part 60 is used for detection, record the component ID and instrument reading.

iv. For each repair that cannot be made during the monitoring survey when the fugitive emissions are initially found, a digital photograph or video must be taken of that component or the component must be tagged for identification purposes. The digital photograph must include the date that the photograph was taken and must clearly identify the component by location within the site (e.g., the latitude and longitude of the component or by other descriptive landmarks visible in the picture). The digital photograph or identification (e.g., tag) may be removed after the repair is completed, including verification of repair with the resurvey.

v. The date of first attempt at repair of the fugitive emissions component(s).

vi. The date of successful repair of the fugitive emissions component, including the resurvey to verify repair and instrument used for the resurvey.

vii. Identification of each fugitive emission component placed on delay of repair and explanation for each delay of repair.

viii. For each fugitive emission component placed on delay of repair for reason of replacement component unavailability, the operator must document: the date the component was added to the delay of repair list, the date the replacement fugitive component or part thereof was ordered, the anticipated component delivery date (including any estimated shipment or delivery date provided by the vendor), and the actual arrival date of the component.

ix. Date of planned shutdowns that occur while there are any components that have been placed on delay of repair.

d. For each collection of fugitive emissions components at a compressor station complying with an alternative means of emissions limitation under 40 C.F.R. §60.5399a, the permittee must maintain the records specified by the specific alternative fugitive emissions standard for a period of at least 5 years.

e. If complying with the alternative GHG and VOC standard under 40 C.F.R. §60.5398b, in lieu of the information specified in paragraphs b. through c. of this condition, the permittee must maintain the records specified in 40 C.F.R. §60.5424b.

[45CSR16; 40 C.F.R. §§60.5420a(c), (c)(15), and (c)(15)(i), (vi) through (ix)]

5.5. Reporting Requirements

5.5.1. The permittee must submit annual reports containing the information specified in paragraphs a. and b. of this condition. The permittee must submit annual reports following the procedure specified in paragraph c. of this condition. The initial annual report is due no later than 90 days after the end of the initial compliance period as determined according to Condition 5.2.1. Subsequent annual reports are due no later than the same date each year as the initial annual report. The permittee may submit one report for multiple affected facilities provided the report contains all of the information specified in paragraphs a. and b. of this condition. Annual reports may coincide with Title V reports as long as all the required elements of the annual report are included. The permittee may arrange with the Administrator a common schedule on which reports required by 40 C.F.R. Part 60 may be submitted as long as the schedule does not extend the reporting period.

a. The general information specified below is required for all reports:

1. The company name, facility site name associated with the affected facility, and address of the affected facility;

2. An identification of each affected facility being included in the annual report;

3. Beginning and ending dates of the reporting period; and

4. A certification by a certifying official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

b. For the collection of fugitive emissions components at each compressor station, report the information specified in paragraphs b.1. through 3. of this condition, as applicable.

1. i. Designation of the type of site (i.e., well site or compressor station) at which the collection of fugitive emissions components is located.

ii. For each collection of fugitive emissions components at a compressor station that became an affected facility during the reporting period, the permittee must include the date of startup or the date of modification.

2. For each fugitive emissions monitoring survey performed during the annual reporting period, the information specified in paragraphs b.2.i. through vii. of this condition.

i. Date of the survey.

ii. Monitoring instrument used.

iii. Any deviations from the monitoring plan elements under paragraphs c.1., c.2., c.7., and c.8.i. of Condition 5.1.2. or a statement that there were no deviations from these elements of the monitoring plan.

iv. Number and type of components for which fugitive emissions were detected.

v. Number and type of fugitive emissions components that were not repaired as required in Condition 5.1.2.h.

vi. Number and type of fugitive emission components (including designation as difficult-to-monitor or unsafe-to-monitor, if applicable) on delay of repair and explanation for each delay of repair.

vii. Date of planned shutdown(s) that occurred during the reporting period if there are any components that have been placed on delay of repair.

3. For each collection of fugitive emissions components at a compressor station complying with an alternative fugitive emissions standard under 40 C.F.R. §60.5399a, in lieu of the information specified in paragraphs b.1. and 2. of this condition, the permittee must provide the information specified in paragraphs b.3.i. through iii. of this condition.

i. The alternative standard with which you are complying.

ii. The site-specific reports specified by the specific alternative fugitive emissions standard, submitted in the format in which they were submitted to the state, local, or tribal authority. If the report is in hard copy, the permittee must scan the document and submit it as an electronic attachment to the annual report required in this condition.

iii. If the report specified by the specific alternative fugitive emissions standard is not site-specific, the permittee must submit the information specified in paragraphs b.1. and 2. of this condition for each individual site complying with the alternative standard.

4. If complying with the alternative GHG and VOC standard under 40 C.F.R. §60.5398b, in lieu of the information specified in paragraph b.2. of this condition, the permittee must provide the information specified in 40 C.F.R. §60.5424b.

c. The permittee must submit reports to the EPA via CEDRI, except as outlined in 40 C.F.R. §60.5420a(b)(11). CEDRI can be accessed through the EPA's CDX (*https://cdx.epa.gov/*). The

permittee must use the appropriate electronic report template on the CEDRI website for 40 C.F.R. Part 60 Subpart OOOOa (*https://www.epa.gov/electronic-reporting-air-emissions/cedri/*). If the reporting form specific to Subpart OOOOa is not available on the CEDRI website at the time that the report is due, the permittee must submit the report to the Administrator at the appropriate address listed in §60.4. Once the form has been available in CEDRI for at least 90 calendar days, the permittee must begin submitting all subsequent reports via CEDRI. The date reporting forms become available will be listed on the CEDRI website. Unless the Administrator or delegated state agency or other authority has approved a different schedule for submission of reports, the reports must be submitted by the deadlines specified in Subpart OOOOa, regardless of the method in which the reports are submitted. The EPA will make all the information submitted through CEDRI available to the public without further notice. Do not use CEDRI to submit information claimed as CBI.

[45CSR16; 40 C.F.R. §§60.5420a(b), (b)(1), (b)(7), (b)(7)(i)(A), (b)(7)(i)(B), (b)(7)(ii) through (iv), and (b)(11)]

5.6. Compliance Plan

5.6.1. None.

6.0 Fuel Gas Heaters [Emission Point IDs: E019 and E020]

6.1. Limitations and Standards

6.1.1. The following conditions and requirements are specific to Fuel Gas Heaters (S019 and S020):

a. NO_X emissions emitted to the atmosphere from each heater shall not exceed 0.93 tpy on a rolling yearly total basis.

b. CO emissions emitted to the atmosphere from each heater shall not exceed 0.78 tpy on a rolling yearly total basis.

c. The heaters shall not be designed or constructed with a maximum design heat input in excess of 2.31 mmBTU/hr.

d. The heaters shall only be fired with pipeline quality natural gas.

[45CSR13, R13-3278, 4.1.3.]

6.1.2. No person shall cause, suffer, allow or permit emission of smoke and/or particulate matter into the open air from any fuel burning unit which is greater than 10 percent opacity based on a six-minute block average.
[45CSR§2-3.1.]

6.2. Monitoring Requirements

6.2.1. None.

6.3. Testing Requirements

6.3.1. Compliance with the visible emission requirements of Condition 6.1.2. shall be determined in accordance with 40 C.F.R. Part 60, Appendix A, Method 9 and 45CSR16 or by using measurements from continuous opacity monitoring systems approved by the Secretary. The Secretary may require the installation, calibration, maintenance and operation of continuous opacity monitoring systems and may establish policies for the evaluation of continuous opacity monitoring results and the determination of compliance with the visible emission requirements of Condition 6.1.2. Continuous opacity monitors shall not be required on fuel burning units which employ wet scrubbing systems for emission control.
[45CSR§2-3.2.]

6.4. Recordkeeping Requirements

6.4.1. The permittee shall keep records of the amount of fuel consumed by each fuel gas heater (S019 and S020) on a monthly basis. Such records shall be maintained in accordance with Condition 3.4.2. and must be in a manner to demonstrate compliance with the emission limits of Condition 6.1.1.
[45CSR13, R13-3278, 4.2.2.]

6.4.2. Compliance with Condition 6.1.1.d. will be demonstrated by the recordkeeping requirement of Condition 4.4.2. of this operating permit.
[45CSR13, R13-3278, 4.4.3.]

6.5. Reporting Requirements

6.5.1. None.

6.6. Compliance Plan

6.6.1. None.

7.0 Produced Fluid Storage Tank and Liquid Loading [Emission Point IDs: E021 and E025]

7.1. Limitations and Standards

7.1.1. The maximum annual throughput of produced fluid to the 10,080-gallon storage tank (S021) shall not exceed 126,000 gallons per year.
[45CSR13, R13-3278, 4.1.4.]

7.1.2. The permittee shall install, maintain, and operate all above-ground piping, valves, connectors, flanges, open ended lines, etc. that service lines in the transport of potential sources of regulated air pollutants to prevent any substantive fugitive escape of regulated air pollutants. Any above-ground piping, valves, connectors, flanges, open ended lines, etc. that shows signs of excess wear and that have a reasonable potential for substantive fugitive emissions of regulated air pollutants shall be replaced.
[45CSR13, R13-3278, 4.1.5.]

7.2. Monitoring Requirements

7.2.1. None.

7.3. Testing Requirements

7.3.1. None.

7.4. Recordkeeping Requirements

7.4.1. To demonstrate compliance with Condition 7.1.1., the permittee shall maintain a record of the volume of produced fluid removed from the storage tank S021 during the calendar year. Such records must be maintained in accordance with Condition 3.4.2. of this operating permit.
[45CSR§30-5.1.c.]

7.4.2. To demonstrate compliance with Condition 7.1.2., the permittee shall maintain a record of the fugitive component counts (valves, connectors, flanges, open ended lines, etc.). Additionally, the permittee shall maintain a record of any fugitive component leaks or replacements.
[45CSR13, R13-3278, 4.4.4.]

7.5. Reporting Requirements

7.5.1. None.

7.6. Compliance Plan

7.6.1. None.

8.0 Compressor Blowdown Events [Emission Point IDs: E026]

8.1. Limitations and Standards

8.1.1. The maximum number of blowdown events per year shall not exceed the following:

Blowdown Event	Events per Year	Vented Gas Volume per Year (scf/year)
Station ESD Event	4	6,400,000
Unit Shutdown	32	10,880,000
Main Gas Filter Changes	36	4,368,000
Pig Receiver 42”	4	80,057
Pig Receiver 48”	4	112,215
Pig Launcher 42”	4	37,100
Pig Launcher 48”	4	110,175

Compliance shall be determined using a twelve-month rolling total. A twelve-month rolling total shall mean the sum of the blowdown events at any given time during the previous twelve consecutive calendar months.

[45CSR13, R13-3278, 4.1.6.]

8.2. Monitoring Requirements

8.2.1. None.

8.3. Testing Requirements

8.3.1. None.

8.4. Recordkeeping Requirements

8.4.1. To demonstrate compliance with Condition 8.1.1., the permittee shall maintain a record of the blowdown and pigging events and estimated volume per event (scf) on a monthly and rolling twelve-month total.
[45CSR13, R13-3278, 4.4.5.]

8.5. Reporting Requirements

8.5.1. Any exceedance of Condition 8.1.1. must be reported in writing to the Director of the DAQ as soon as practicable, but within ten (10) calendar days, of the occurrence and shall include, at a minimum, the following information: the date of the exceedance, the estimate of VOC emissions released to the atmosphere as a result of the exceedance and any corrective measures taken or planned.
[45CSR13, R13-3278, 4.5.2.]

8.6. Compliance Plan

8.6.1. None.

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit Application No. R30-10300109-2024

Knibloe, James <james.knibloe@eqt.com> Thu, Nov 14, 2024 at 8:21 AM
To: "Barron, Sarah K" <sarah.k.barron@wv.gov>

Sarah,

The 911 address is:

2165 Gilbert Ridge Rd., Smithfield, WV 26437

Regarding the compliance demonstration of produced fluids throughput, we don't have a reliable method of tracking liquids into the tank. We track our fluids throughput with records of what is removed from the tank. Being a dry gas transmission facility, there is very little produced fluid being collected in this tank. It may be years before the fluids in the tank are hauled out. Could the permit language somehow reflect the tracking method, and possibly be on an annual basis?

Thank you,

Jim Knibloe

Sr. Environmental Engineer

EQT Corporation

412-525-0609

[Quoted text hidden]

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit Application No. R30-10300109-2024

Barron, Sarah K <sarah.k.barron@wv.gov> Wed, Nov 13, 2024 at 3:00 PM
To: "Knibloe, James" <james.knibloe@eqt.com>

Jim,

I had a few questions for you regarding the application for an initial Title V operating permit for the Bradshaw Compressor Station.

Could you verify the physical location (city and ZIP code) of the facility? The location reported in the Title V application is different from what is listed in the current NSR permit.

Condition 4.1.4. of R13-3278A limits the throughput of produced fluid to the storage tank S021, but no compliance demonstration requirements were included in the permit. Is there any issue with including a requirement in the operating permit to maintain a record of the tank's throughput of produced fluid on a monthly and rolling twelve-month total?

Please let me know if you have any questions.

Thanks,
- Sarah

--
Sarah Barron
Engineer Trainee
West Virginia Department of Environmental Protection
Division of Air Quality
(304) 414-1915
sarah.k.barron@wv.gov

Barron, Sarah K <sarah.k.barron@wv.gov>

Fwd: Mountain Valley Pipeline, LLC; Bradshaw Compressor Station

Barron, Sarah K <sarah.k.barron@wv.gov> Thu, Oct 17, 2024 at 3:26 PM
To: "Knibloe, James" <james.knibloe@eqt.com>

Hi, Jim.

I don't have a solid timeline for when I will be finished writing the pre-draft permit/fact sheet, but ideally I'll be able to send you a copy to review before the end of November. After you have had a chance to comment on the pre-draft, a notice of the public and EPA comment periods will be published. The 30-day public comment period and the 45-day EPA comment period usually occur concurrently, with each beginning on the date the notice is printed. Please let me know if you have any further questions or concerns.

Thanks,
- Sarah

[Quoted text hidden]

Barron, Sarah K <sarah.k.barron@wv.gov>

Fwd: Mountain Valley Pipeline, LLC; Bradshaw Compressor Station

Knibloe, James <james.knibloe@eqt.com> Thu, Oct 17, 2024 at 2:22 PM
To: Sarah K Barron <sarah.k.barron@wv.gov>

Hi Sarah. I just wanted to follow up to see if you could provide an update of where we are in the process and when we might expect the public comment period to occur.

Thanks

[Quoted text hidden]

Barron, Sarah K <sarah.k.barron@wv.gov>

Fwd: Mountain Valley Pipeline, LLC; Bradshaw Compressor Station

McCumbers, Carrie <carrie.mccumbers@wv.gov> Tue, Oct 8, 2024 at 10:24 AM
To: james.knibloe@eqt.com
Cc: Sarah K Barron <sarah.k.barron@wv.gov>, Sandra K Adkins <sandra.k.adkins@wv.gov>, "Ernest, Nicole D" <nicole.d.ernest@wv.gov>, Stephanie R Mink <stephanie.r.mink@wv.gov>

Mr. Knibloe,

Your Title V permit application has been assigned to Sarah Barron. I have copied Sarah on this email so you can contact her directly regarding your application. Sarah is out of the office this week, so I will give you a general update on your application.

The application was received on July 17, 2024 and was deemed administratively complete as submitted. DAQ's statutory deadline for issuing the permit is July 17, 2025. Once the pre-draft Title V permit and fact sheet is prepared, Sarah will send it to you for review. This will give you the opportunity to review and provide comments prior to the notice being published which starts the 30 day public comment period. I'm not sure how far Sarah is in the review process. You can follow up with her next week.

Thanks,
Carrie McCumbers
Title V Program Manager
WV DEP Division of Air Quality
(304) 926-0499 ext. 41278
Carrie.McCumbers@wv.gov
[Quoted text hidden]

Barron, Sarah K <sarah.k.barron@wv.gov>

Fwd: Mountain Valley Pipeline, LLC; Bradshaw Compressor Station

Ernest, Nicole D <nicole.d.ernest@wv.gov> Tue, Oct 8, 2024 at 10:05 AM
To: Carrie McCumbers <carrie.mccumbers@wv.gov>, Sarah K Barron <sarah.k.barron@wv.gov>
Cc: Sandra K Adkins <sandra.k.adkins@wv.gov>

Carrie,

Please see the forwarded message. Let me know if you want me to respond (and if so... the general TV timeline).

Thanks!!!

Nicole

---------- Forwarded message ---------
From: **Knibloe, James** <james.knibloe@eqt.com>
Date: Tue, Oct 8, 2024 at 10:01 AM
Subject: RE: Mountain Valley Pipeline, LLC; Bradshaw Compressor Station
To: Sandra.K.Adkins@wv.gov <Sandra.K.Adkins@wv.gov>, Nicole.D.Ernest@wv.gov <Nicole.D.Ernest@wv.gov>

Hello Nicole and Sandra. I got an autoreply that Stephanie is out of the office until 10/15/24. I'm forwarding this email to you in hope that you can provide an update.

Thank you,

Jim

From: Knibloe, James
Sent: Tuesday, October 8, 2024 9:57 AM
To: DEPAirQualityPermitting@wv.gov; Mink, Stephanie R <stephanie.r.mink@wv.gov>
Subject: RE: Mountain Valley Pipeline, LLC; Bradshaw Compressor Station

I'm following up on this application submittal. Is there an anticipated timeline for the public comment period?

Thank you,

Jim Knibloe, P.E.

Environmental Engineer

EQT Corporation

(412) 525-0609 Cell

From: Knibloe, James A.
Sent: Wednesday, July 17, 2024 7:55 AM
To: DEPAirQualityPermitting@wv.gov
Subject: Mountain Valley Pipeline, LLC; Bradshaw Compressor Station

Please find attached Title V permit application for the Bradshaw Compressor Station. Please confirm receipt.

Thank you,

Jim Knibloe, P.E.

Environmental Engineer

Equitrans Midstream Corporation

(412) 525-0609 Cell

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit - Bradshaw Compressor Station; Application No. R30-10300109-2024

Barron, Sarah K <sarah.k.barron@wv.gov> Thu, Aug 8, 2024 at 1:51 PM
To: "Knibloe, James" <james.knibloe@eqt.com>

Hi James,

Thanks for the clarification. I've forwarded the information about the changes along. I'll let you know if I'm told that anything further is needed or someone else may contact you.

- Sarah

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit - Bradshaw Compressor Station; Application No. R30-10300109-2024

Knibloe, James <james.knibloe@eqt.com> Wed, Aug 7, 2024 at 3:21 PM
To: "Barron, Sarah K" <sarah.k.barron@wv.gov>

Hi Sarah,

The operating company, Mountain Valley Pipeline, LLC still exists and is still the operator of the facility. The only thing that has changed is the parent company of Mountain Valley Pipeline, LLC, which is now EQT Corporation. As such, we don't believe a change of ownership is necessary. The parent company of Mountain Valley Pipeline, LLC is not part of the General Information section of the application.

One thing we would like to update is the named Responsible Official. We would like it to be the following:

Michael Lauderbaugh

mike.lauderbaugh@eqt.com

1-412-510-7224

Thank you,

Jim Knibloe, P.E.

Environmental Engineer

EQT Corporation

(412) 525-0609 Cell

[Quoted text hidden]

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit - Bradshaw Compressor Station; Application No. R30-10300109-2024

Barron, Sarah K <sarah.k.barron@wv.gov> Wed, Aug 7, 2024 at 11:38 AM
To: james.knibloe@eqt.com

James,

I wanted to follow up about this change. You may already be aware of this, but I recommend that you view the WV DAQ's website at https://dep.wv.gov/daq/permitting/Pages/Change-of-Ownership.aspx for information about changes of ownership.

Please also let me know if any further revisions will be needed in the general information section of the Title V permit application because of this change.

Thanks,
- Sarah

Barron, Sarah K <sarah.k.barron@wv.gov>

Completeness Determination, Bradshaw Compressor Station, Application No. R30-10300109-2024

Barron, Sarah K <sarah.k.barron@wv.gov> Mon, Jul 22, 2024 at 2:46 PM
To: leslie.crider@eqt.com, james.knibloe@eqt.com

Your Title V application for a permit to operate the above referenced facility was received by this Division on July 17, 2024. After review of said application, it has been determined that the application is administratively complete as submitted. Therefore, the above referenced facility qualifies for an Application Shield.

The applicant has the duty to supplement or correct the application. Any applicant who fails to submit any relevant facts or who has submitted incorrect information in a permit application shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information. In addition, an applicant shall provide additional information as necessary to address any requirements that become applicable to the source after the date it filed a complete application but prior to release of a draft permit.

The submittal of a complete application shall not affect the requirement that any source have all **preconstruction permits** required under the rules of the Division.

If during the processing of this application it is determined that additional information is necessary to evaluate or take final action on this application, a request for such information will be made in writing with a reasonable deadline for a response. Until which time as your renewal permit is issued or denied, please continue to operate this facility in accordance with 45CSR30, section 6.3.c. which states: *If the Secretary fails to take final action to deny or approve a timely and complete permit application before the end of the term of the previous permit, the permit shall not expire until the renewal permit has been issued or denied, and any permit shield granted for the permit shall continue in effect during that time.* This protection shall cease to apply if, subsequent to the completeness determination made pursuant to paragraph 6.1.d. of 45CSR30 and as required by paragraph 4.1.b., the applicant fails to submit by the deadline specified in writing any additional information identified as being needed to process the application.

Please remember, **failure of the applicant to timely submit information required or requested to process the application may cause the Application Shield to be revoked.** Should you have any questions regarding this determination, please contact me.

Sincerely,

Sarah Barron

--
Sarah Barron
Engineer Trainee
West Virginia Department of Environmental Protection
Division of Air Quality
(304) 414-1915
sarah.k.barron@wv.gov

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit - Bradshaw Compressor Station; Application No. R30-10300109-2024

Knibloe, James A. <JKnibloe@equitransmidstream.com> Mon, Jul 22, 2024 at 11:18 AM
To: "Barron, Sarah K" <sarah.k.barron@wv.gov>, "tmuscenti@trinityconsultants.com" <tmuscenti@trinityconsultants.com>
Cc: "leslie.crider@eqt.com" <leslie.crider@eqt.com>, "james.knibloe@eqt.com" <james.knibloe@eqt.com>

Hello Sarah,

As of today, Equitrans Midstream/Mountain Valley Pipeline has been acquired by EQT. Leslie and I are now EQT employees. Please update my email address to james.knibloe@eqt.com. Leslie's contact information is

leslie.crider@eqt.com

412-897-8951

The general phone number is 844-378-5263.

Thank you

James Knibloe

From: Barron, Sarah K <sarah.k.barron@wv.gov>
Sent: Monday, July 22, 2024 9:15 AM
To: Knibloe, James A. <JKnibloe@equitransmidstream.com>; tmuscenti@trinityconsultants.com
Subject: [EXTERNAL] Title V Permit - Bradshaw Compressor Station; Application No. R30-10300109-2024

[Quoted text hidden]

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit - Bradshaw Compressor Station; Application No. R30-10300109-2024

Barron, Sarah K <sarah.k.barron@wv.gov> Mon, Jul 22, 2024 at 9:15 AM
To: JKnibloe@equitransmidstream.com, tmuscenti@trinityconsultants.com

James Knibloe and Tom Muscenti,

The contact information for the Responsible Official of the Bradshaw Compressor Station was not included in Section 13 of the Title V permit application. Could you please send me Leslie Crider's email address and phone number?

Additionally, please let me know the general phone number which was not included with the mailing address in Section 11 of the application.

Thank you,
- Sarah Barron

--
Sarah Barron
Engineer Trainee
West Virginia Department of Environmental Protection
Division of Air Quality
(304) 414-1915
sarah.k.barron@wv.gov

Received
July 17, 2024
WV DEP/Div of Air Quality

Division of Air Quality Permit Application Submittal

Please find attached a permit application for : Mountain Valley Pipeline, LLC: Bradshaw Compressor Station
[Company Name; Facility Location]

- DAQ Facility ID (for existing facilities only): 103-00109
- Current 45CSR13 and 45CSR30 (Title V) permits associated with this process (for existing facilities only): R13-3278A

- Type of NSR Application (check all that apply):
  - ☐ Construction
  - ☐ Modification
  - ☐ Class I Administrative Update
  - ☐ Class II Administrative Update
  - ☐ Relocation
  - ☐ Temporary
  - ☐ Permit Determination

- Type of 45CSR30 (TITLE V) Application:
  - ☑ Title V Initial
  - ☐ Title V Renewal
  - ☐ Administrative Amendment**
  - ☐ Minor Modification**
  - ☐ Significant Modification**
  - ☐ Off Permit Change

****If the box above is checked, include the Title V revision information as ATTACHMENT S to the combined NSR/Title V application.**

- Payment Type:
  - ☑ Credit Card (Instructions to pay by credit card will be sent in the Application Status email.)
  - ☐ Check (Make checks payable to: WVDEP – Division of Air Quality)
    Mail checks to:
    WVDEP – DAQ – Permitting
    Attn: NSR Permitting Secretary
    601 57th Street, SE
    Charleston, WV 25304

Please wait until DAQ emails you the Facility ID Number and Permit Application Number. Please add these identifiers to your check or cover letter with your check.

- If the permit writer has any questions, please contact (all that apply):
  - ☐ Responsible Official/Authorized Representative
    - Name:
    - Email:
    - Phone Number:
  - ☑ Company Contact
    - Name: James Knibloe
    - Email: JKnibloe@equitransmidstream.com
    - Phone Number: 412-525-0609
  - ☑ Consultant
    - Name: Tom Muscenti
    - Email: tmuscenti@trinityconsultants.com
    - Phone Number: 724-442-6809

TITLE V PERMIT APPLICATION

Mountain Valley Pipeline, LLC

Bradshaw Compressor Station

Prepared By:

TRINITY CONSULTANTS
4500 Brooktree Road
Suite 310
Wexford, PA 15090
(724)-935-2611

July 2024

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1. INTRODUCTION

Mountain Valley Pipeline, LLC (MVP) is submitting this initial Title V Operating Permit (TVOP) application to the West Virginia Department of Environmental Protection (WVDEP) for an existing compressor station located in Wetzel County, West Virginia (Bradshaw Compressor Station). The Station currently operates under R13 Permit No. R13-3278A.

1.1. Facility Description

The Bradshaw Compressor Station is a natural gas transmission facility which currently includes the following permitted equipment:

- Four (4) Solar Titan 130 natural gas-fired turbines each rated at 23,536 horsepower (hp) at site-specific conditions (ISO rating at 22,400 hp each);
- Fourteen (14) Capstone C200 natural gas-fired microturbines each rated at 200 kW;
- Two (2) fuel gas heaters each rated at 2.31 MMBtu/hr;
- One (1) 240 bbl produced water tank and associated loading operations;
- One (1) 100 bbl used oil storage tank;
- One (1) office building heater rated at 0.12 MMBtu/hr; and
- Miscellaneous gas venting including fugitives, blowdowns, and pigging.

A process flow diagram is included as Attachment C.

1.2. Source Status

WVDEP must make stationary source determinations on a case-by-case basis using the guidance under the Clean Air Act (CAA) and EPA's and WVDEP's implementing regulations. The definition of stationary source in 40 CFR 51.166(b) includes the following:

"(6) Building, structure, facility, or installation means all of the pollutant emitting activities which belong to the same industrial grouping, are located on or more contiguous or adjacent properties, and are under control of the same person (or persons under common control)."

Other additional pollutant emitting facilities should be aggregated with the Bradshaw Compressor Station for air permitting purposes if and only if all three elements of the "stationary source" definition above are fulfilled. The Bradshaw Compressor Station has been determined to be a separate stationary source with respect to permitting programs, including Title V and Prevention of Significant Deterioration, and has not been aggregated with other MVP properties.

1.3. Title V Permit Application Organization

This West Virginia Initial Title V permit application is organized as follows:

- Section 2: Regulatory Discussion;
- Section 3: Title V Application Form;
- Attachment A: Area Map;
- Attachment B: Plot Plan;
- Attachment C: Process Flow Diagram;
- Attachment D: Equipment Table;
- Attachment E: Emission Unit Forms;
- Attachment F: Schedule of Compliance Forms (Not applicable);
- Attachment G: Air Pollution Control Device Forms;
- Attachment H: Compliance Assurance Monitoring Forms (Not applicable); and
- Attachment I: Emission Calculations.

2. REGULATORY DISCUSSION

This section documents the applicability determinations made for Federal and State air quality regulations. In this section, applicability or non-applicability of the following regulatory programs is addressed:

- Prevention of Significant Deterioration (PSD) permitting;
- Non-attainment New Source Review (NNSR) permitting;
- Title V of the 1990 Clean Air Act Amendments;
- Compliance Assurance Monitoring (CAM);
- New Source Performance Standards (NSPS);
- National Emission Standards for Hazardous Air Pollutants (NESHAP); and
- West Virginia State Implementation Plan (SIP) regulations.

This review is presented to supplement and/or add clarification to the information provided in the Title V operating permit application forms, which fulfill the requirement to include citations and descriptions of applicable statutory and administrative code requirements.

2.1. PSD and NNSR Source Classification

Federal construction permitting programs regulate new and modified sources of attainment pollutants under Prevention of Significant Deterioration and new and modified sources of non-attainment pollutants under Non-Attainment New Source Review. PSD regulations apply when a new source is constructed in which emissions exceed major source thresholds, an existing minor source undergoes a modification in which emission increases exceed PSD major source thresholds, or an existing major source undergoes a modification in which emission increases exceed PSD significant emission rates. The Bradshaw Compressor Station is considered an existing minor source with respect to PSD as shown in Attachment I. As such , PSD permitting is not triggered

NNSR regulations only apply in areas designated as non-attainment. The Bradshaw Compressor Station is in Wetzel County, which is designated as attainment/unclassifiable for all criteria pollutants.[1] Therefore, NNSR regulations do not apply to the Bradshaw Compressor Station.

2.2. Title V Operating Permit Program

Title 40 of the Code of Federal Regulations Part 70 (40 CFR 70) establishes the federal Title V operating permit program. West Virginia has incorporated the provisions of this federal program in its Title V operating permit program in West Virginia Code of State Regulations (CSR) 45-30. The major source thresholds with respect to the West Virginia Title V operating permit program regulations are 10 tons per year (tpy) of a single HAP, 25 tpy of any combination of HAP, and 100 tpy of all other regulated pollutants. The potential emissions of NO_X and CO are above the corresponding thresholds. Therefore, the Bradshaw Compressor Station is a major source with respect to the Title V Program. MVP is submitting this Title V operating permit application in accordance with 40 CFR 70.5(a)(1) and 45 CSR 30-4.1.a.2 (i.e., within 12 months of start-up of the authorized equipment under the R13 permit, which was October 27, 2023).

[1] U.S. EPA Greenbook, https://www3.epa.gov/airquality/greenbook/anayo_wv.html, as of June 30, 2024.

2.3. Compliance Assurance Monitoring

The Compliance Assurance Monitoring (CAM) rule at 40 CFR 64 is used as a means for providing reasonable assurance that an emissions unit is in continuous compliance with applicable requirements for affected units located at major stationary sources subject to Title V permitting. CAM requirements apply to units that are subject to an emission limitation or standard, use a control device to meet these limits, and have potential pre-control emissions equal to or greater than 100% of the amount required for a source to be classified as major.

40 CFR 64.5(a) defines a large pollutant-specific unit as any pollutant-specific emission unit with the potential to emit (PTE) the applicable regulated air pollutant equal to or greater than 100 percent of the major source threshold (in tons per year). Under 40 CFR 64.5(a)(1)(1)(i) and 40 CFR 64.5(a)(1)(1)(ii), the regulatory requirement for assessing CAM applicability for a large pollutant-specific emission unit is that the owner or operator must submit CAM information as part of an initial part 70 or 71 permit if, by that date, the application either has not been filed or has yet to be determined to be complete by the permitting authority.

40 CFR 64.5(b) defines other pollutant-specific emission units as any unit that is not classified as a large pollutant-specific emission unit. Under 40 CFR 64.5(b), the owner or operator must submit information about assessing CAM applicability when a renewal for a part 70 or 71 permit is submitted.

Since the Bradshaw Compressor Station contains no large pollutant-specific emissions units, it falls under 40 CFR 64.5 (b) and MVP will address CAM applicability for the Bradshaw Compressor Station accordingly during the time of the first Title V Operating Permit Renewal.

2.4. New Source Performance Standards

The potential applicability of NSPS standards to the operations at the Bradshaw Compressor Station are:

- 40 CFR Part 60 Subpart D/Da/Db/Dc – Steam Generating Units;
- 40 CFR Part 60 Subpart GG – Stationary Gas Turbines
- 40 CFR Part 60 Subpart IIII – Stationary Compression Ignition Internal Combustion Engines
- 40 CFR Part 60 Subpart K/Ka/Kb – Storage Vessels for Petroleum Liquids/Volatile Organic Liquids;
- 40 CFR Part 60 Subpart JJJJ – Stationary Spark Ignition Internal Combustion Engine;
- 40 CFR Part 60 Subpart KKKK – Stationary Spark Combustion Turbines;
- 40 CFR Part 60 Subpart OOOOa – Crude Oil and Natural Gas Facilities

NSPS Subpart D, Da, Db, and Dc – Steam Generating Units

These subparts apply to steam generating units of various sizes, all greater than 10 MMBtu/hr. The station does not include any steam generating units with a heat input greater than 10 MMBtu/hr, therefore the requirements of these subparts do not apply.

NSPS Subpart GG – Stationary Gas Turbines

This subpart applies to stationary gas turbines with a heat input at peak load equal to or greater than 10 MMBtu/hr, based on the lower heating value of the fuel, commencing construction after October 3, 1977. The four Solar Turbines meet this heat input threshold; however, they are subject to NSPS Subpart KKKK. Per §60.4305(b), if stationary combustion turbines are subject to Subpart KKKK, they are exempt from the requirements outlined in Subpart GG. Therefore, this rule does not apply to these units.

NSPS Subpart IIII – Stationary Compression Ignition Internal Combustion Engines

This subpart applies to manufacturers, owners, and operators of stationary compression ignition internal combustion engines (CI ICE) that have been constructed, reconstructed, or modified after various dates, the earliest of which is July 11, 2005. The station does not include any compression ignition internal combustion units, therefore the requirements of these subparts do not apply.

NSPS Subpart K, Ka, and Kb – Storage Vessels for Petroleum Liquids/Volatile Organic Liquids

These subparts apply to storage tanks of certain sizes constructed, reconstructed, or modified during various time periods. Subpart K applies to storage tanks constructed, reconstructed, or modified prior to 1978, and Subpart Ka applies to those constructed, reconstructed, or modified prior to 1984. Subpart Kb applies to volatile organic liquid (VOL) storage tanks constructed, reconstructed, or modified after July 23, 1984, with a capacity equal to or greater than 75 m^3 (~19,813 gallons). As such, Subparts K, Ka, and Kb do not apply to the Bradshaw Compressor Station.

NSPS Subpart JJJJ – Stationary Spark Ignition Internal Combustion Engines

New Source Performance Standards 40 CFR Part 60 Subpart JJJJ affects owners and operators of stationary spark ignition internal combustion engines (SI ICE) that commence construction, reconstruction or modification after June 12, 2006. Applicability dates are based on the date the engine was ordered by the operator. The station does not include any spark ignition internal combustion units, therefore the requirements of these subparts do not apply.

NSPS Subpart KKKK – Stationary Combustion Turbines

New Source Performance Standards 40 CFR Part 60 Subpart KKKK affects owners and operators of stationary turbines with a heat input at peak load equal to or greater than 10 MMBtu/hr, based on the higher heating value of the fuel, that commence construction, reconstruction or modification after February 18, 2005. Applicability dates are based on the date the turbine was ordered by the operator. The existing Solar turbines do meet these requirements and are therefore subject to this rule.

MVP will continue to demonstrate compliance with this subpart for all four turbines at the Bradshaw Compressor Station in accordance with 40 CFR 60.4333 which requires MVP to keep a maintenance plan and records of conducted maintenance and to maintain and operate the engines, to the extent practicable, in a manner consistent with good air pollution control practices for minimizing emissions. Additionally, MVP is required to conduct compliance testing annually, to demonstrate continued compliance. Testing will be conducted in accordance with 40 CFR §60.4400.

Records of all notifications submitted to comply with this subpart, maintenance conducted on the turbines, and performance testing will be maintained in accordance with 40 CFR §60.4340(a). Performance testing results will be reported as required in 40 CFR §60.4375.

NSPS Subpart OOOOa — Crude Oil and Natural Gas Facilities

Subpart OOOOa – Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution, establishes emission standards and compliance schedules for the control of volatile organic compounds (VOC), greenhouse gas (as methane), and sulfur dioxide (SO2) emissions from affected facilities

in the crude oil and natural gas production source category that commence construction, modification, or reconstruction after September 18, 2015, and on or before December 6, 2022.[2] This rule applies to:

- Gas wellheads
- Centrifugal compressors using wet seals
- Reciprocating compressors
- Continuous bleed natural gas-driven pneumatic controllers with a bleed rate of > 6 scfh not located at a natural gas processing plant
- Continuous bleed natural gas-driven pneumatic controllers located at natural gas processing plants
- Storage vessels
- The group of fugitive emissions components
- Pneumatic pumps located at well sites and processing plants
- Sweetening units located onshore that process natural gas produced from either onshore or offshore wells

The Bradshaw Compressor Station is not a gas wellhead, nor is it a natural gas processing plant. Therefore, the only potentially applicable requirements for the equipment at the station are those for new compressors, storage vessels, and pneumatic controllers, where construction commenced after September 15, 2015.

The storage vessels at the facility constructed within the applicability dates have VOC emissions below the 6 tpy each. Therefore, the storage vessels are not subject to Subpart OOOOa.

The pneumatic devices at the facility constructed within the applicability dates are run on instrument air and therefore do not have emissions associated with them. Therefore, the pneumatic devices are not subject to Subpart OOOOa.

The centrifugal compressors utilize dry seals. Therefore, the units are not applicable to Subpart OOOOa.

The Bradshaw station is subject to the fugitive monitoring requirements, which include quarterly monitoring surveys as part of the leak detection and repair program.

The facility does not operate any affected facilities construction, reconstructed, or modified within the time ranges of Subpart OOOO or OOOOb. Therefore, these rules are not applicable.

Non-Applicability of All Other NSPS

NSPS are developed for particular industrial source categories. Other than NSPS developed for natural gas processing plants (Subparts OOOO and OOOOa) and associated equipment (Subpart K-Kb), the applicability of a particular NSPS to the Bradshaw Compressor Station can be readily ascertained based on the industrial source category covered. All other NSPS are categorically not applicable to the proposed project.

2.5. National Emission Standards for Hazardous Air Pollutants

Regulatory requirements for facilities subject to NESHAP standards, otherwise known as Maximum Available Control Technology (MACT) Standards for source categories, are contained in 40 CFR Part 63. A major source of HAP is defined as having potential emissions in excess of 25 tpy for total HAP and/or potential

[2] NSPS Subpart OOOOa was recently revised to include the transmsision source catergory (March 8, 2024).

emissions in excess of 10 tpy for any individual HAP. Based on potential emissions for all equipment at the station, potential HAP emissions are below the major source thresholds and therefore the facility is an area (minor) source of HAP. The potential applicability of specific MACT standards to the Bradshaw Compressor Station is discussed below.

NESHAP Subpart HH – Oil and Natural Gas Production Facilities

This standard applies to sources at natural gas production facilities that are major or area sources of HAP emissions. The Bradshaw Compressor Station is a transmission facility; therefore, this facility is not subject to Subpart HH.

NESHAP Subpart HHH – Natural Gas Transmission and Storage Facilities

This standard applies to sources at natural gas transmission and storage facilities that are major sources of HAP emissions located downstream of the point of custody transfer (after processing and/or treatment in the production sector), but upstream of the distribution sector. The Bradshaw Compressor Station is a transmission facility but is an area source of HAP emissions. Therefore, this facility is not subject to Subpart HHH.

NESHAP Subpart JJJJJJ – Industrial, Commercial, and Institutional Boilers

This standard applies to industrial, commercial, and institutional boilers of various sizes and fuel types at area sources of HAP. The units at the Bradshaw Compressor Station are gas fired boilers as defined by the rule and therefore are not subject, per 63.11195(e).

2.6. West Virginia SIP Regulations

The Bradshaw Compressor Station is potentially subject to regulations contained in the West Virginia Code of State Regulations, Chapter 45 (Code of State Regulations). The Code of State Regulations fall under two main categories: those regulations that are generally applicable (e.g., permitting requirements), and those that have specific applicability (e.g., PM standards for manufacturing equipment).

45 CSR 2: To Prevent and Control Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers

45 CSR 2 applies to fuel burning units, defined as equipment burning fuel "for the primary purpose of producing heat or power by indirect heat transfer". The fuel gas heaters and office building heater are fuel burning units and therefore must comply with this regulation. Per 45 CSR 2-3, opacity of emissions from units shall not exceed 10 percent, based on a six-minute block average. Per 45 CSR 2-4, PM emissions from the units will not exceed a level measured in lb/hr of 0.09 multiplied by the heat design inputs in MMBtu/hr.

45 CSR 4: To precent and Control the Discharge of Air Pollutants into the Air Which Cause or Contributes to Objectionable Odor.

According to 45 CSR 4-3:

No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor at any location occupied by the public.

The Bradshaw Compressor Station is generally subject to this requirement. However, due to the nature of the process at the station, production of objectionable odor from the compressor station during normal operation is unlikely.

45 CSR 10: To Prevent and Control Air Pollution from the Emission of Sulfur Oxides

This rule potentially applies to fuel burning units, including the fuel gas heaters and office building heater. Per 45 CSR 10-10.1, units rated less than 10 MMBtu/hr are exempt from the SO_2 emission limitations and testing, monitoring, recordkeeping, and reporting requirements of this rule. The fuel gas heaters and office building heater at the station are each rated less than 10 MMBtu/hr and as such are exempt from this rule.

45 CSR 16: Standards of Performance for New Stationary Sources

45 CSR 16-1 incorporates the federal Clean Air Act (CAA) standards of performance for new stationary sources set forth in 40 CSR Part 60 by reference. As noted above, the facility will comply with all applicable NSPS subparts.

45 CSR 17: To Prevent and Control Particulate Matter Air Pollution form Materials Handling, Preparation, Storage, and Other Sources of Fugitive Particulate Matter

According to 45 CSR 17-3.1:

No person shall cause, suffer, allow or permit fugitive particulate matter to be discharged beyond the boundary lines of the property lines of the property on which the discharge originates or at any public or residential location, which causes or contributes to statutory air pollution.

Due to the nature of the activities at the Bradshaw Compressor Station, it is unlikely that fugitive particulate matter emissions will be emitted under normal operating conditions. However, MVP will take measures to ensure any fugitive particulate matter emissions will not cross the property boundary should any such emissions occur.

45 CSR 21-28: Petroleum Liquid Storage in Fixed Roof Tanks

45 CSR 21-28 applies to any fixed roof petroleum liquid storage tank with a capacity greater than 40,000 gallons located in Putnam County, Kanawha County, Cabell County, Wayne County, and Wood County. The Bradshaw Compressor Station facility is not located in a listed county. Therefore, 45 CSR 21-28 does not apply to the storage tanks at this station.

45 CSR 34: Emissions Standards for Hazardous Air Pollutants

45 CSR 34-1 incorporates the federal Clean Air Act (CAA) national emissions standards for hazardous air pollutants (NESHAPs) as set forth in 40 CPR Parts 61 and 63 by reference. As noted above, the facility will comply with all applicable
NSPS subparts.

Non-Applicability of Other SIP Rules

A thorough examination of the West Virginia SIP rules with respect to applicability at the Bradshaw Compressor Station reveals many SIP regulations that do not apply or impose additional requirements on operations. Such SIP rules include those specific to a particular type of industrial operation that is categorically not applicable to the Bradshaw Compressor Station.

3. TITLE V APPLICATION FORM

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF AIR QUALITY
601 57th Street SE
Charleston, WV 25304
Phone: (304) 926-0475
www.dep.wv.gov/daq

INITIAL/RENEWAL TITLE V PERMIT APPLICATION - GENERAL FORMS

Section 1: General Information

1. **Name of Applicant (As registered with the WV Secretary of State's Office):** Mountain Valley Pipeline, LLC	**2. Facility Name or Location:** Bradshaw Compressor Station
3. DAQ Plant ID No.: 103-00109	**4. Federal Employer ID No. (FEIN):** 61-1744744

5. **Permit Application Type:**

☒ Initial Permit **(Initial Title V)** When did operations commence?
☐ Permit Renewal What is the expiration date of the existing permit?
☐ Update to Initial/Renewal Permit Application

6. Type of Business Entity: ☐ Corporation ☐ Governmental Agency ☒ LLC ☐ Partnership ☐ Limited Partnership	**7. Is the Applicant the:** ☐ Owner ☐ Operator ☒ Both If the Applicant is not both the owner and operator, please provide the name and address of the other party. _____ _____ _____
8. Number of onsite employees: 0	

9. Governmental Code:

☒ Privately owned and operated; 0
☐ Federally owned and operated; 1
☐ State government owned and operated; 2
☐ County government owned and operated; 3
☐ Municipality government owned and operated; 4
☐ District government owned and operated; 5

10. Business Confidentiality Claims

Does this application include confidential information (per 45CSR31)? ☐ Yes ☒ No

If yes, identify each segment of information on each page that is submitted as confidential, and provide justification for each segment claimed confidential, including the criteria under 45CSR§31-4.1, and in accordance with the DAQ's *"PRECAUTIONARY NOTICE-CLAIMS OF CONFIDENTIALITY"* guidance.

11. Mailing Address		
Street or P.O. Box: 2200 Energy Drive		
City: Canonsburg	**State:** PA	**Zip:** 15317
Telephone Number:	**Fax Number:** ( ) -	

12. Facility Location		
Street: 2165 Bear Run Rd	**City:** Smithfield	**County:** Wetzel
UTM Easting: 540.135 km	**UTM Northing:** 4,376.018 km	**Zone:** ☒ 17 or ☐ 18
Directions: From Charleston, WV take I-79 N for approximately 121 miles. Take exit 119 for US-50 toward Clarksburg/Bridgeport. Continue on US-50 W for 7 miles. Then, turn right onto Bean Run/Gregory Run and continue for 5.8 miles. Next, turn left onto WV-20 N/State Hwy 20 and continue for 16 miles. Then, turn right onto Mannington Rd and drive 1.2 miles. Finally, turn left onto Bear Run Rd and continue 2.2 miles to the site.		
Portable Source? ☐ Yes ☒ No		
Is facility located within a nonattainment area? ☐ Yes ☒ No		**If yes, for what air pollutants?**
Is facility located within 50 miles of another state? ☒ Yes ☐ No		**If yes, name the affected state(s).** Ohio Pennsylvania
Is facility located within 100 km of a Class I Area[1]? ☐ Yes ☒ No **If no, do emissions impact a Class I Area[1]?** ☐ Yes ☒ No		**If yes, name the area(s).**
[1] *Class I areas include Dolly Sods and Otter Creek Wilderness Areas in West Virginia, and Shenandoah National Park and James River Face Wilderness Area in Virginia.*		

13. Contact Information		
Responsible Official: Leslie Crider		**Title:** Vice President of Operations
Street or P.O. Box:		
City:	**State:**	**Zip:**
Telephone Number: ( ) -	**Fax Number:** ( ) -	
E-mail address:		
Environmental Contact: James Knibloe		**Title:** Environmental Engineer
Street or P.O. Box: 2200 Energy Drive		
City: Canonsburg	**State:** PA	**Zip:** 15317
Telephone Number: 412-525-0609	**Fax Number:** ( ) -	
E-mail address: JKnibloe@equitransmidstream.com		
Application Preparer: Tom Muscenti		**Title:** Regional Manager
Company: Trinity Consultants		
Street or P.O. Box: 4500 Brooktree Road, Suite 310		
City: Wexford	**State:** PA	**Zip:** 15090
Telephone Number: (724) 442-6809	**Fax Number:** ( ) -	
E-mail address: tmuscenti@trinityconsultants.com		

14. Facility Description

List all processes, products, NAICS and SIC codes for normal operation, in order of priority. Also list any process, products, NAICS and SIC codes associated with any alternative operating scenarios if different from those listed for normal operation.

Process	Products	NAICS	SIC
Natural Gas Compressor Station	Natural Gas	486210	

Provide a general description of operations.

The Bradshaw Compressor Station is an existing natural gas compressor facility. Natural gas and liquids (mostly produced water) from nearby wells undergo compression before it is transported to a gas gathering line for additional processing.

15. Provide an **Area Map** showing plant location as **ATTACHMENT A**.

16. Provide a **Plot Plan(s)**, e.g. scaled map(s) and/or sketch(es) showing the location of the property on which the stationary source(s) is located as **ATTACHMENT B**. For instructions, refer to "Plot Plan - Guidelines."

17. Provide a detailed **Process Flow Diagram(s)** showing each process or emissions unit as **ATTACHMENT C**. Process Flow Diagrams should show all emission units, control equipment, emission points, and their relationships.

Section 2: Applicable Requirements

18. Applicable Requirements Summary	
Instructions: Mark all applicable requirements.	
☒ SIP	☐ FIP
☒ Minor source NSR (45CSR13)	☐ PSD (45CSR14)
☒ NESHAP (45CSR34)	☐ Nonattainment NSR (45CSR19)
☒ Section 111 NSPS	☐ Section 112(d) MACT standards
☐ Section 112(g) Case-by-case MACT	☐ 112(r) RMP
☐ Section 112(i) Early reduction of HAP	☐ Consumer/commercial prod. reqts., section 183(e)
☐ Section 129 Standards/Reqts.	☐ Stratospheric ozone (Title VI)
☐ Tank vessel reqt., section 183(f)	☐ Emissions cap 45CSR§30-2.6.1
☐ NAAQS, increments or visibility (temp. sources)	☐ 45CSR27 State enforceable only rule
☐ 45CSR4 State enforceable only rule	☐ Acid Rain (Title IV, 45CSR33)
☐ Emissions Trading and Banking (45CSR28)	☐ **C**ompliance **A**ssurance **M**onitoring (40CFR64)
☐ CAIR NO_x Annual Trading Program (45CSR39)	☐ CAIR NO_x Ozone Season Trading Program (45CSR40)
☐ CAIR SO_2 Trading Program (45CSR41)	

19. Non Applicability Determinations
List all requirements which the source has determined not applicable and for which a permit shield is requested. The listing shall also include the rule citation and the reason why the shield applies.
☐ Permit Shield

19. Non Applicability Determinations *(Continued)* - *Attach additional pages as necessary.*
List all requirements which the source has determined not applicable and for which a permit shield is requested. The listing shall also include the rule citation and the reason why the shield applies.
☐ Permit Shield

20. Facility-Wide Applicable Requirements

List all facility-wide applicable requirements. For each applicable requirement, include the underlying rule/regulation citation and/or <u>construction permit</u> with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*).

45CSR§6-3.1 Open Burning, R13 Permit Condition 3.1.1.

45CSR§6-3.2 Open Burning Exemptions R13 Permit Condition 3.1.2.

45CSR§61.145(b) and 45CSR§34 Asbestos, R13 Permit Condition 3.1.3.

45CSR§4-3.1 Odor, R13 Permit Condition 3.1.4.

45CSR§13-10.5 Permanent Shutdown, R13 Permit Condition 3.1.5.

45CSR§11-5.2 Standby Plan for Reducing Emissions, R13 Permit Condition 3.1.6.

45CSR§17-3-1 Particulate Matter Emissions

☒ Permit Shield

For all facility-wide applicable requirements listed above, provide monitoring/testing / recordkeeping / reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number and/or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

WV Code §22-5-4(a)(14-15) and 45CSR13 Stack Testing, R13 Permit Condition 3.3.1

Retention of Records, R13 Permit Condition 3.4.1.

45CSR§4 Odors, R13 Permit Condition 3.4.2.

Reporting Requirements, R13 Permit Condition 3.5.

Are you in compliance with all facility-wide applicable requirements? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

21. Active Permits/Consent Orders		
Permit or Consent Order Number	Date of Issuance MM/DD/YYYY	List any Permit Determinations that Affect the Permit *(if any)*
R13-3278A	3/22/2021	NA
	/ /	
	/ /	
	/ /	
	/ /	
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	/ /	
	/ /	

22. Inactive Permits/Obsolete Permit Conditions		
Permit Number	Date of Issuance	Permit Condition Number
N/A		
	/ /	
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	/ /	
	/ /	
	/ /	

Section 3: Facility-Wide Emissions

23. Facility-Wide Emissions Summary [Tons per Year]	
Criteria Pollutants	Potential Emissions
Carbon Monoxide (CO)	197.78
Nitrogen Oxides (NO_X)	178.62
Lead (Pb)	
Particulate Matter ($PM_{2.5}$)[1]	47.36
Particulate Matter (PM_{10})[1]	47.46
Total Particulate Matter (TSP)	47.46
Sulfur Dioxide (SO_2)	10.98
Volatile Organic Compounds (VOC)	47.14
Hazardous Air Pollutants[2]	Potential Emissions
Formaldehyde (HCHO)	8.99
Total HAPs	11.93
Regulated Pollutants other than Criteria and HAP	Potential Emissions

[1]$PM_{2.5}$ and PM_{10} are components of TSP.
[2]For HAPs that are also considered PM or VOCs, emissions should be included in both the HAPs section and the Criteria Pollutants section.

Section 4: Insignificant Activities

24. Insignificant Activities (Check all that apply)		
☒	1.	Air compressors and pneumatically operated equipment, including hand tools.
☐	2.	Air contaminant detectors or recorders, combustion controllers or shutoffs.
☒	3.	Any consumer product used in the same manner as in normal consumer use, provided the use results in a duration and frequency of exposure which are not greater than those experienced by consumer, and which may include, but not be limited to, personal use items; janitorial cleaning supplies, office supplies and supplies to maintain copying equipment.
☒	4.	Bathroom/toilet vent emissions.
☐	5.	Batteries and battery charging stations, except at battery manufacturing plants.
☐	6.	Bench-scale laboratory equipment used for physical or chemical analysis, but not lab fume hoods or vents. Many lab fume hoods or vents might qualify for treatment as insignificant (depending on the applicable SIP) or be grouped together for purposes of description.
☐	7.	Blacksmith forges.
☐	8.	Boiler water treatment operations, not including cooling towers.
☒	9.	Brazing, soldering or welding equipment used as an auxiliary to the principal equipment at the source.
☐	10.	CO_2 lasers, used only on metals and other materials which do not emit HAP in the process.
☒	11.	Combustion emissions from propulsion of mobile sources, except for vessel emissions from Outer Continental Shelf sources.
☒	12.	Combustion units designed and used exclusively for comfort heating that use liquid petroleum gas or natural gas as fuel.
☒	13.	Comfort air conditioning or ventilation systems not used to remove air contaminants generated by or released from specific units of equipment.
☐	14.	Demineralized water tanks and demineralizer vents.
☐	15.	Drop hammers or hydraulic presses for forging or metalworking.
☐	16.	Electric or steam-heated drying ovens and autoclaves, but not the emissions from the articles or substances being processed in the ovens or autoclaves or the boilers delivering the steam.
☐	17.	Emergency (backup) electrical generators at residential locations.
☐	18.	Emergency road flares.
☐	19.	Emission units which do not have any applicable requirements and which emit criteria pollutants (CO, NO_x, SO_2, VOC and PM) into the atmosphere at a rate of less than 1 pound per hour and less than 10,000 pounds per year aggregate total for each criteria pollutant from all emission units. Please specify all emission units for which this exemption applies along with the quantity of criteria pollutants emitted on an hourly and annual basis: _____ _____ _____ _____ _____ _____ _____ _____ _____

24. Insignificant Activities (Check all that apply)		
☐	20.	Emission units which do not have any applicable requirements and which emit hazardous air pollutants into the atmosphere at a rate of less than 0.1 pounds per hour and less than 1,000 pounds per year aggregate total for all HAPs from all emission sources. This limitation cannot be used for any source which emits dioxin/furans nor for toxic air pollutants as per 45CSR27. Please specify all emission units for which this exemption applies along with the quantity of hazardous air pollutants emitted on an hourly and annual basis: _____ _____ _____ _____ _____
☐	21.	Environmental chambers not using hazardous air pollutant (HAP) gases.
☐	22.	Equipment on the premises of industrial and manufacturing operations used solely for the purpose of preparing food for human consumption.
☐	23.	Equipment used exclusively to slaughter animals, but not including other equipment at slaughterhouses, such as rendering cookers, boilers, heating plants, incinerators, and electrical power generating equipment.
☐	24.	Equipment used for quality control/assurance or inspection purposes, including sampling equipment used to withdraw materials for analysis.
☐	25.	Equipment used for surface coating, painting, dipping or spray operations, except those that will emit VOC or HAP.
☐	26.	Fire suppression systems.
☐	27.	Firefighting equipment and the equipment used to train firefighters.
☐	28.	Flares used solely to indicate danger to the public.
☒	29.	Fugitive emission related to movement of passenger vehicle provided the emissions are not counted for applicability purposes and any required fugitive dust control plan or its equivalent is submitted.
☐	30.	Hand-held applicator equipment for hot melt adhesives with no VOC in the adhesive formulation.
☐	31.	Hand-held equipment for buffing, polishing, cutting, drilling, sawing, grinding, turning or machining wood, metal or plastic.
☐	32.	Humidity chambers.
☐	33.	Hydraulic and hydrostatic testing equipment.
☐	34.	Indoor or outdoor kerosene heaters.
☒	35.	Internal combustion engines used for landscaping purposes.
☐	36.	Laser trimmers using dust collection to prevent fugitive emissions.
☐	37.	Laundry activities, except for dry-cleaning and steam boilers.
☐	38.	Natural gas pressure regulator vents, excluding venting at oil and gas production facilities.
☐	39.	Oxygen scavenging (de-aeration) of water.
☐	40.	Ozone generators.

24. Insignificant Activities (Check all that apply)		
☒	41.	Plant maintenance and upkeep activities (e.g., grounds-keeping, general repairs, cleaning, painting, welding, plumbing, re-tarring roofs, installing insulation, and paving parking lots) provided these activities are not conducted as part of a manufacturing process, are not related to the source's primary business activity, and not otherwise triggering a permit modification. (Cleaning and painting activities qualify if they are not subject to VOC or HAP control requirements. Asphalt batch plant owners/operators must still get a permit if otherwise requested.)
☒	42.	Portable electrical generators that can be moved by hand from one location to another. "Moved by Hand" means that it can be moved without the assistance of any motorized or non-motorized vehicle, conveyance, or device.
☐	43.	Process water filtration systems and demineralizers.
☒	44.	Repair or maintenance shop activities not related to the source's primary business activity, not including emissions from surface coating or de-greasing (solvent metal cleaning) activities, and not otherwise triggering a permit modification.
☒	45.	Repairs or maintenance where no structural repairs are made and where no new air pollutant emitting facilities are installed or modified.
☐	46.	Routing calibration and maintenance of laboratory equipment or other analytical instruments.
☐	47.	Salt baths using nonvolatile salts that do not result in emissions of any regulated air pollutants. Shock chambers.
☐	48.	Shock chambers.
☐	49.	Solar simulators.
☐	50.	Space heaters operating by direct heat transfer.
☐	51.	Steam cleaning operations.
☐	52.	Steam leaks.
☐	53.	Steam sterilizers.
☐	54.	Steam vents and safety relief valves.
☐	55.	Storage tanks, reservoirs, and pumping and handling equipment of any size containing soaps, vegetable oil, grease, animal fat, and nonvolatile aqueous salt solutions, provided appropriate lids and covers are utilized.
☐	56.	Storage tanks, vessels, and containers holding or storing liquid substances that will not emit any VOC or HAP. Exemptions for storage tanks containing petroleum liquids or other volatile organic liquids should be based on size limits such as storage tank capacity and vapor pressure of liquids stored and are not appropriate for this list.
☐	57.	Such other sources or activities as the Director may determine.
☒	58.	Tobacco smoking rooms and areas.
☐	59.	Vents from continuous emissions monitors and other analyzers.

Section 5: Emission Units, Control Devices, and Emission Points

25. Equipment Table
Fill out the **Title V Equipment Table** and provide it as **ATTACHMENT D**.
26. Emission Units
For each emission unit listed in the **Title V Equipment Table**, fill out and provide an **Emission Unit Form** as **ATTACHMENT E**.
For each emission unit not in compliance with an applicable requirement, fill out a **Schedule of Compliance Form** as **ATTACHMENT F**.
27. Control Devices
For each control device listed in the **Title V Equipment Table**, fill out and provide an **Air Pollution Control Device Form** as **ATTACHMENT G**.
For any control device that is required on an emission unit in order to meet a standard or limitation for which the potential pre-control device emissions of an applicable regulated air pollutant is greater than or equal to the Title V Major Source Threshold Level, refer to the **Compliance Assurance Monitoring (CAM) Form(s)** for CAM applicability. Fill out and provide these forms, if applicable, for each Pollutant Specific Emission Unit (PSEU) as **ATTACHMENT H**.

Section 6: Certification of Information

28. Certification of Truth, Accuracy and Completeness and Certification of Compliance

*Note: This Certification must be signed by a responsible official. The **original**, signed in **blue ink**, must be submitted with the application. Applications without an **original** signed certification will be considered as incomplete.*

a. Certification of Truth, Accuracy and Completeness

I certify that I am a responsible official (as defined at 45CSR§30-2.38) and am accordingly authorized to make this submission on behalf of the owners or operators of the source described in this document and its attachments. I certify under penalty of law that I have personally examined and am familiar with the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine and/or imprisonment.

b. Compliance Certification

Except for requirements identified in the Title V Application for which compliance is not achieved, I, the undersigned hereby certify that, based on information and belief formed after reasonable inquiry, all air contaminant sources identified in this application are in compliance with all applicable requirements.

Responsible official (type or print)

Name: Leslie Crider	Title: Vice President of Operations

Responsible official's signature:

Signature: _____ Signature Date: 7/16/2024

(Must be signed and dated in blue ink)

Note: Please check all applicable attachments included with this permit application:

☒	ATTACHMENT A: Area Map
☒	ATTACHMENT B: Plot Plan(s)
☒	ATTACHMENT C: Process Flow Diagram(s)
☒	ATTACHMENT D: Equipment Table
☒	ATTACHMENT E: Emission Unit Form(s)
☐	ATTACHMENT F: Schedule of Compliance Form(s) ***(Not Applicable)***
☐	ATTACHMENT G: Air Pollution Control Device Form(s) ***(Not Applicable)***
☐	ATTACHMENT H: Compliance Assurance Monitoring (CAM) Form(s) ***(Not Applicable)***

All of the required forms and additional information can be found and downloaded from, the DEP website at www.dep.wv.gov/daq, requested by phone (304) 926-0475, and/or obtained through the mail.

ATTACHMENT A – AREA MAP

ATTACHMENT A – AREA MAP

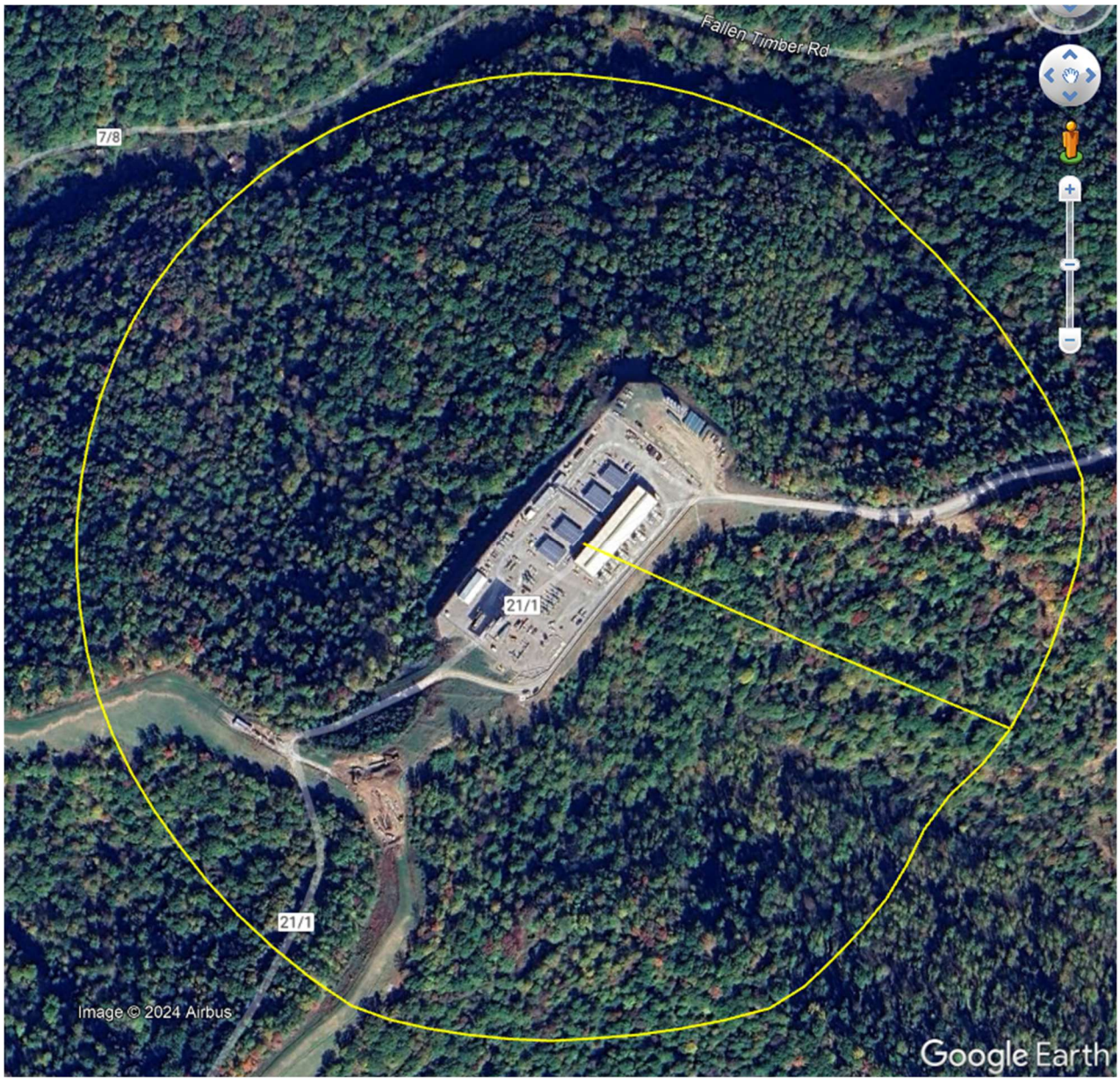
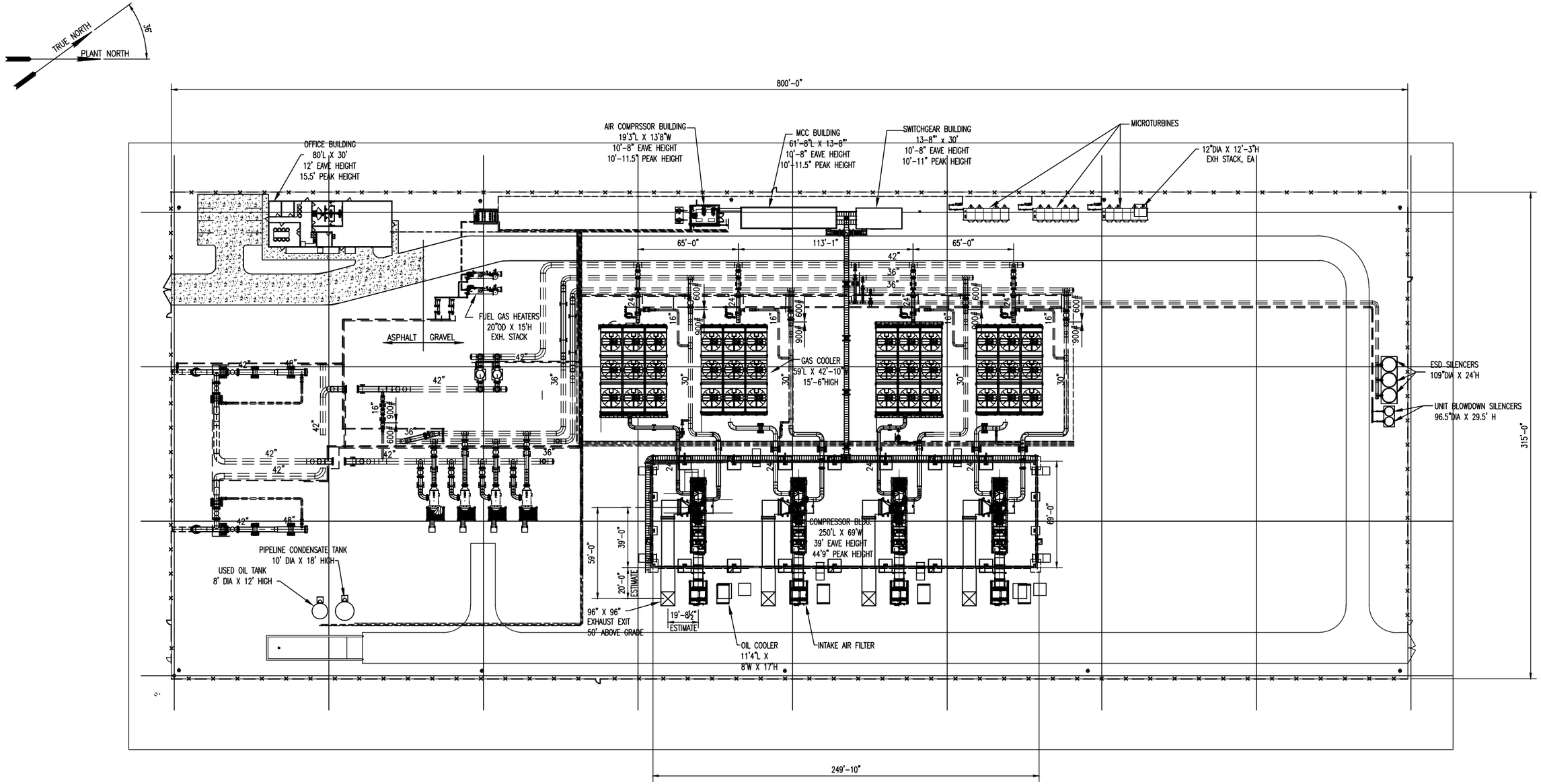


Figure 1 - Map of Bradshaw Station with 0.25 mile radius

UTM Northing (KM):	4,376.018
UTM Easting (KM):	540.135
Elevation:	~1,515 ft

ATTACHMENT B – PLOT PLAN



REFERENCE DRAWINGS		NO.	DATE	REVISION	BY	CHK	APPD
DRAWING NUMBER	DRAWING TITLE	P	06/18/2015	ISSUED FOR BUDGETARY RFI	CET	WJJ	RLM
–		–					
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NO.	DATE	REVISION	BY	CHK	APPD
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TO THE BEST OF MY KNOWLEDGE, ALL COMPONENTS OF THIS DRAWING ARE DESIGNED IN ACCORDANCE WITH APPLICABLE GUIDELINES AND SPECIFICATIONS

BYRON MOORE — MECHANICAL DESIGN ENGINEER — DATE

JOE HAUGHT — ELECTRICAL DESIGN ENGINEER — DATE

NOTE: ANY CHANGES TO THE DESIGN SHOWN ON THIS DRAWING MUST BE APPROVED BY THE DESIGN ENGINEER.

Mountain Valley PIPELINE

PROJECT ID

DRAWING SCALE: 1"=30'

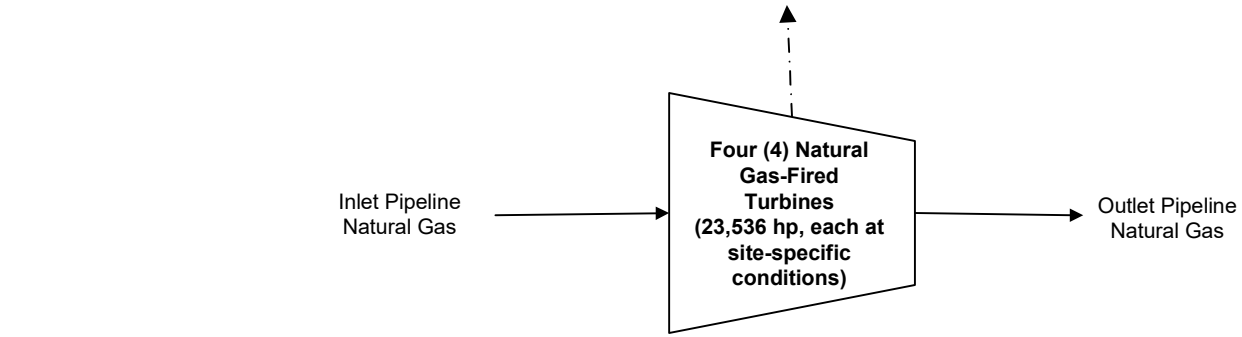
DRAWING TITLE:
MOUNTAIN VALLEY PIPELINE
BRADSHAW COMPRESSOR STATION
PIPING
PLOT PLAN

FACILITY	STATE	IDENTIFICATION	SERIES	SHEET	REVISION
C	W	BRD01	1100	01	P

Plotted by: Thompson, Carl on: July 13, 2015 - 2:00 PM

File Path: C:\Vault Working\3D\MVP\Bradshaw Compressor Station\Drawing Files\Design Files\Mechanical\2Dmodel\C-W-BRD01-1100-01.dwg

ATTACHMENT C – PROCESS FLOW DIAGRAM



Two (2) Natural Gas-Fired Heaters (2.31 MMbtu/hr, heat input)

One (1) Natural Gas-Fired Office Building Heater (0.12 MMbtu/hr, heat input)

Fourteen (14) C200 Microturbines (200kW, each)

One (1) 240 bbl Produced Fluids Tank

One (1) 100 bbl Used Oil Tank

Flow Legend

Gas/Water/Condensate Flow

Stack Emissions

Mountain Valley Pipeline, LLC

Process Flow Diagram
Bradshaw Station

Trinity Consultants

July 2024

ATTACHMENT D – EQUIPMENT TABLE

ATTACHMENT D - Title V Equipment Table

(includes all emission units at the facility except those designated as insignificant activities in Section 4, Item 24 of the General Forms)

Emission Point ID[1]	Control Device[1]	Emission Unit ID[1]	Emission Unit Description	Design Capacity	Year Installed/ Modified
E001	N/A	S001	Solar Turbine #1	23,536 HP (site-specific conditions)	2020
E002	N/A	S002	Solar Turbine #2	23,536 HP (site-specific conditions)	2020
E003	N/A	S003	Solar Turbine #3	23,536 HP (site-specific conditions)	2020
E004	N/A	S004	Solar Turbine #4	23,536 HP (site-specific conditions)	2020
E005	N/A	S005	Microturbine Generator #1	200 kW	2020
E006	N/A	S006	Microturbine Generator #2	200 kW	2020
E007	N/A	S007	Microturbine Generator #3	200 kW	2020
E008	N/A	S008	Microturbine Generator #4	200 kW	2020
E009	N/A	S009	Microturbine Generator #5	200 kW	2020
E010	N/A	S010	Microturbine Generator #6	200 kW	2020
E011	N/A	S011	Microturbine Generator #7	200 kW	2020
E012	N/A	S012	Microturbine Generator #8	200 kW	2020
E013	N/A	S013	Microturbine Generator #9	200 kW	2020
E014	N/A	S014	Microturbine Generator #10	200 kW	2020
E015	N/A	S015	Microturbine Generator #11	200 kW	2020
E016	N/A	S016	Microturbine Generator #12	200 kW	2020
E017	N/A	S017	Microturbine Generator #13	200 kW	2020
E018	N/A	S018	Microturbine Generator #14	200 kW	2020
E019	N/A	S019	Fuel Gas Heater	2.31 MMBtu/hr	2020
E020	N/A	S020	Fuel Gas Heater	2.31 MMBtu/hr	2020
E021	N/A	S021	Produced Fluids Tank	10,080 gallons	2020
E022	N/A	S022	Used Oil Tank	4,200 gallons	2020
E023	N/A	S023	Office Building Heater	0.12 MMBtu/hr	2020
E024	N/A	S024	Fugitives	N/A	2020
E025	N/A	S025	Liquid Loading	126,000 gal/yr	2020
E026	N/A	S026	Blowdowns	N/A	2020

[1]For 45CSR13 permitted sources, the numbering system used for the emission points, control devices, and emission units should be consistent with the numbering system used in the 45CSR13 permit. For grandfathered sources, the numbering system should be consistent with registrations or emissions inventory previously submitted to DAQ. For emission points, control devices, and emissions units which have not been previously labeled, use the following 45CSR13 numbering system: 1S, 2S, 3S,... or other appropriate description for emission units; 1C, 2C, 3C,... or other appropriate designation for control devices; 1E, 2E, 3E, ... or other appropriate designation for emission points.

ATTACHMENT E – EMISSION UNIT FORM

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:** N/A
S001 - S004	Solar Turbines	

Provide a description of the emission unit (type, method of operation, design parameters, etc.):

Four (4) natural gas-fired 23,536 horsepower (hp) turbines that compress the natural gas.

Manufacturer:	**Model number:**	**Serial number:**
Solar	Titan 130	
Construction date:	**Installation date:**	**Modification date(s):**
2020	2020	N/A

Design Capacity (examples: furnaces - tons/hr, tanks - gallons):

23,536 HP (each)

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
		8,760 hours (each)

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? _X_Yes ___ No	**If yes, is it?** ___ Indirect Fired _X_Direct Fired
Maximum design heat input and/or maximum horsepower rating: 23,536 HP (each)	**Type and Btu/hr rating of burners:** N/A

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Natural Gas

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural Gas	Negl.	Negl.	1,083

Emissions Data

Criteria Pollutants	Potential Emissions ***(Each Unit)***	
	PPH	TPY
Carbon Monoxide (CO)	9.90	45.67
Nitrogen Oxides (NO_X)	9.80	42.95

Lead (Pb)	--	--
Particulate Matter ($PM_{2.5}$)	2.64	11.57
Particulate Matter (PM_{10})	2.64	11.57
Total Particulate Matter (TSP)	2.64	11.57
Sulfur Dioxide (SO_2)	0.60	2.62
Volatile Organic Compounds (VOC)[1]	1.14	5.02
Hazardous Air Pollutants	Potential Emissions ***(Each Unit)***	
	PPH	TPY
Formaldehyde (HCHO)	0.51	2.22
Total HAP	0.56	2.47
Regulated Pollutants other than Criteria and HAP	Potential Emissions ***(Each Unit)***	
	PPH	TPY
CO2e	20,904	91,697

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

See Attachment I

[1] VOC is non-methane, non-ethane hydrocarbons plus formaldehyde.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

No change from existing R13 requirements. Section 4.1.1

____ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

No change from existing R13 requirements. Section 4.2.1, 4.3.1, 4.4.1, & 4.5.1

Are you in compliance with all applicable requirements for this emission unit? _X_ Yes ___No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:** N/A
S005 – S018	Microturbines	

Provide a description of the emission unit (type, method of operation, design parameters, etc.):

Fourteen (14) natural gas-fired 200-kilowatt (kW) microturbines to provide electricity.

Manufacturer:	**Model number:**	**Serial number:**
Capstone	C200	
Construction date:	**Installation date:**	**Modification date(s):**
2020	2020	N/A

Design Capacity (examples: furnaces - tons/hr, tanks - gallons):

200-kW (each)

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
		8,760 hours (each)

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? _X_ Yes ___ No	**If yes, is it?** ___ Indirect Fired _X_ Direct Fired
Maximum design heat input and/or maximum horsepower rating: 200-kW (each)	**Type and Btu/hr rating of burners:** N/A

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Natural Gas

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural Gas	Negl.	Negl.	1,083

Emissions Data

Criteria Pollutants	Potential Emissions ***(Each Unit)***	
	PPH	TPY
Carbon Monoxide (CO)	0.22	0.96
Nitrogen Oxides (NO_X)	0.08	0.35

Lead (Pb)	--	--
Particulate Matter ($PM_{2.5}$)	0.02	0.07
Particulate Matter (PM_{10})	0.02	0.07
Total Particulate Matter (TSP)	0.02	0.07
Sulfur Dioxide (SO_2)	0.01	0.03
Volatile Organic Compounds (VOC)[2]	0.02	0.09
Hazardous Air Pollutants	Potential Emissions ***(Each Unit)***	
	PPH	TPY
Formaldehyde (HCHO)	<0.01	0.01
Total HAP	<0.01	0.01
Regulated Pollutants other than Criteria and HAP	Potential Emissions ***(Each Unit)***	
	PPH	TPY
CO2e	266	1,166

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

See Attachment I

[2] VOC is non-methane, non-ethane hydrocarbons plus formaldehyde.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

No change from existing R13 requirements. Section 4.1.2

____ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

No change from existing R13 requirements. Section 4.4.1

Are you in compliance with all applicable requirements for this emission unit? _X_ Yes ___No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:** N/A
S019 & S020	Fuel Gas Heaters	

Provide a description of the emission unit (type, method of operation, design parameters, etc.):

Two (2) fuel gas heaters.

Manufacturer:	**Model number:**	**Serial number:**
Construction date: 2020	**Installation date:** 2020	**Modification date(s):** N/A

Design Capacity (examples: furnaces - tons/hr, tanks - gallons):

2.31 MMBtu/hr (each)

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:** 8,760 hours (each)

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? _X_ Yes ___ No	**If yes, is it?** ___ Indirect Fired _X_ Direct Fired
Maximum design heat input and/or maximum horsepower rating: 2.31 MMBtu/hr (each)	**Type and Btu/hr rating of burners:** N/A

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Natural Gas

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural Gas	Negl.	Negl.	1,083

Emissions Data

Criteria Pollutants	Potential Emissions ***(Each Unit)***	
	PPH	TPY
Carbon Monoxide (CO)	0.18	0.78
Nitrogen Oxides (NO_X)	0.21	0.93

Lead (Pb)	<0.01	<0.01
Particulate Matter ($PM_{2.5}$)	0.02	0.07
Particulate Matter (PM_{10})	0.02	0.07
Total Particulate Matter (TSP)	0.02	0.07
Sulfur Dioxide (SO_2)	<0.01	0.01
Volatile Organic Compounds (VOC)[3]	0.01	0.05
Hazardous Air Pollutants	Potential Emissions ***(Each Unit)***	
	PPH	TPY
Formaldehyde (HCHO)	<0.01	<0.01
Total HAP	<0.01	0.02
Regulated Pollutants other than Criteria and HAP	Potential Emissions ***(Each Unit)***	
	PPH	TPY
CO2e	270	1,184

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

See Attachment I.

[3] VOC is non-methane, non-ethane hydrocarbons plus formaldehyde.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

No change from existing R13 requirements. Section 4.1.3

____ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

No change from existing R13 requirements. Section 4.2.2 & 4.4.1

Are you in compliance with all applicable requirements for this emission unit? _X_ Yes ___No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:** N/A
S021	Produced Fluids Tank	

Provide a description of the emission unit (type, method of operation, design parameters, etc.):

One (1) 240-barrel (bbl) storage tank for produced fluids.

Manufacturer:	**Model number:**	**Serial number:**
Construction date: 2020	**Installation date:** 2020	**Modification date(s):** N/A

Design Capacity (examples: furnaces - tons/hr, tanks - gallons):

Maximum Hourly Throughput:	**Maximum Annual Throughput:** 126,000 gallons/yr	**Maximum Operating Schedule:** 8,760 hours (each)

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? __Yes __X_ No	**If yes, is it?** ___ Indirect Fired ___Direct Fired
Maximum design heat input and/or maximum horsepower rating: N/A	**Type and Btu/hr rating of burners:** N/A

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

N/A

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
N/A			

Emissions Data

Criteria Pollutants	Potential Emissions ***(Each Unit)***	
	PPH	TPY
Carbon Monoxide (CO)	---	---
Nitrogen Oxides (NO_X)	---	---
Lead (Pb)	--	--

Particulate Matter ($PM_{2.5}$)	---	---
Particulate Matter (PM_{10})	---	---
Total Particulate Matter (TSP)	---	---
Sulfur Dioxide (SO_2)	---	---
Volatile Organic Compounds (VOC)[4]	<0.01	0.01
Hazardous Air Pollutants	Potential Emissions ***(Each Unit)***	
	PPH	TPY
Formaldehyde (HCHO)	---	---
Total HAP	<0.01	<0.01
Regulated Pollutants other than Criteria and HAP	Potential Emissions ***(Each Unit)***	
	PPH	TPY
CO2e	2	9

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

See Attachment I.

[4] VOC is non-methane, non-ethane hydrocarbons plus formaldehyde.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

No change from existing R13 requirements. Section 4.1.4

____ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

No change from existing R13 requirements. Section 4.2.3

Are you in compliance with all applicable requirements for this emission unit? _X_ Yes ___No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:** N/A
S022	Used Oil Tank	

Provide a description of the emission unit (type, method of operation, design parameters, etc.):

One (1) 100-barrel (bbl) storage tank for used oil.

Manufacturer:	**Model number:**	**Serial number:**
Construction date: 2020	**Installation date:** 2020	**Modification date(s):** N/A

Design Capacity (examples: furnaces - tons/hr, tanks - gallons):

Maximum Hourly Throughput:	**Maximum Annual Throughput:** 12,6000 gallons/yr	**Maximum Operating Schedule:** 8,760 hours (each)

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? __Yes __X_ No	**If yes, is it?** ___ Indirect Fired ___Direct Fired
Maximum design heat input and/or maximum horsepower rating: N/A	**Type and Btu/hr rating of burners:** N/A

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

N/A

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
N/A			

Emissions Data

Criteria Pollutants	Potential Emissions ***(Each Unit)***	
	PPH	TPY
Carbon Monoxide (CO)	---	---
Nitrogen Oxides (NO_X)	---	---
Lead (Pb)	--	--

Particulate Matter ($PM_{2.5}$)	---	---
Particulate Matter (PM_{10})	---	---
Total Particulate Matter (TSP)	---	---
Sulfur Dioxide (SO_2)	---	---
Volatile Organic Compounds (VOC)[5]	<0.01	<0.01
Hazardous Air Pollutants	Potential Emissions ***(Each Unit)***	
	PPH	TPY
Formaldehyde (HCHO)	---	---
Total HAP	<0.01	<0.01
Regulated Pollutants other than Criteria and HAP	Potential Emissions ***(Each Unit)***	
	PPH	TPY
CO2e	---	---

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

BR&E Promax Software.

[5] VOC is non-methane, non-ethane hydrocarbons plus formaldehyde.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

No change from existing R13 requirements.

____ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

No change from existing R13 requirements.

Are you in compliance with all applicable requirements for this emission unit? _X_ Yes ___No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:** N/A
S023	Office Building Heater	

Provide a description of the emission unit (type, method of operation, design parameters, etc.):

One (1) heater to heat the office building on site.

Manufacturer:	**Model number:**	**Serial number:**
Construction date: 2020	**Installation date:** 2020	**Modification date(s):** N/A

Design Capacity (examples: furnaces - tons/hr, tanks - gallons):

0.12 MMBtu/hr

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:** 8,760 hours (each)

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? _X_ Yes ___ No	**If yes, is it?** ___ Indirect Fired _X_ Direct Fired
Maximum design heat input and/or maximum horsepower rating: 0.12 MMBtu/hr	**Type and Btu/hr rating of burners:** N/A

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Natural Gas

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural Gas	Negl.	Negl.	1,083

Emissions Data

Criteria Pollutants	Potential Emissions ***(Each Unit)***	
	PPH	TPY
Carbon Monoxide (CO)	0.01	0.04
Nitrogen Oxides (NO_X)	0.01	0.05

Lead (Pb)	<0.01	<0.01
Particulate Matter ($PM_{2.5}$)	<0.01	<0.01
Particulate Matter (PM_{10})	<0.01	<0.01
Total Particulate Matter (TSP)	<0.01	<0.01
Sulfur Dioxide (SO_2)	<0.01	<0.01
Volatile Organic Compounds (VOC)[6]	<0.01	<0.01
Hazardous Air Pollutants	Potential Emissions ***(Each Unit)***	
	PPH	TPY
Formaldehyde (HCHO)	<0.01	<0.01
Total HAP	<0.01	<0.01
Regulated Pollutants other than Criteria and HAP	Potential Emissions ***(Each Unit)***	
	PPH	TPY
CO2e	14	62

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

See Attachment I.

[6] VOC is non-methane, non-ethane hydrocarbons plus formaldehyde.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

No change from existing R13 requirements. Section 4.1.3

____ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

No change from existing R13 requirements. Section 4.2.2 & 4.4.1

Are you in compliance with all applicable requirements for this emission unit? _X_ Yes ___No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Applicable Requirements
List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or <u>construction permit</u> with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included. No change from existing R13 requirements. Section 4.1.3
____ Permit Shield
For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.) No change from existing R13 requirements. Section 4.2.2 & 4.4.1
Are you in compliance with all applicable requirements for this emission unit? _X__Yes ___No If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:** N/A
S24 & S26	Fugitives & Blowdowns	

Provide a description of the emission unit (type, method of operation, design parameters, etc.):

Emission source associated with the usage of various process components such as connectors, compressors, flanges, valves, and controllers as well as blowdowns (including pigging)

Manufacturer:	**Model number:**	**Serial number:**
Construction date:	**Installation date:**	**Modification date(s):** N/A

Design Capacity (examples: furnaces - tons/hr, tanks - gallons):

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:** 8,760 hours (each)

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? __Yes __X_ No	**If yes, is it?** ___ Indirect Fired ___Direct Fired
Maximum design heat input and/or maximum horsepower rating: N/A	**Type and Btu/hr rating of burners:** N/A

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data

Criteria Pollutants	Potential Emissions ***(Each Unit)***	
	PPH	TPY
Carbon Monoxide (CO)	---	---
Nitrogen Oxides (NO_X)	---	---

Lead (Pb)	--	--
Particulate Matter ($PM_{2.5}$)	<0.01 (fugitives)	0.01 (fugitives)
Particulate Matter (PM_{10})	0.03 (fugitives)	0.11 (fugitives)
Total Particulate Matter (TSP)	0.10 (fugitives)	0.45 (fugitives)
Sulfur Dioxide (SO_2)	---	---
Volatile Organic Compounds (VOC)[7]	0.31 (fugitives) 5.55 (blowdowns)	1.37 (fugitives) 24.31 (blowdowns)
Hazardous Air Pollutants	Potential Emissions ***(Each Unit)***	
	PPH	TPY
Formaldehyde (HCHO)	---	---
Total HAP	0.02 (fugitives) 0.41 (blowdowns)	0.10 (fugitives) 1.79 (blowdowns)
Regulated Pollutants other than Criteria and HAP	Potential Emissions ***(Each Unit)***	
	PPH	TPY
CO2e	33 (fugitives) 4,234 (blowdowns)	145 (fugitives) 18,547 (blowdowns)

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

See Attachment I.

[7] VOC is non-methane, non-ethane hydrocarbons plus formaldehyde.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

No change from existing R13 requirements.

NSPS Subpart OOOOa 40 CFR 60.5397

____ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

No change from existing R13 requirements.

Are you in compliance with all applicable requirements for this emission unit? _X_ Yes ___No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:** N/A
S025	Liquids Loading	

Provide a description of the emission unit (type, method of operation, design parameters, etc.):

Emissions from truck loading.

Manufacturer:	**Model number:**	**Serial number:**
Construction date: 2020	**Installation date:** 2020	**Modification date(s):** N/A

Design Capacity (examples: furnaces - tons/hr, tanks - gallons):

Maximum Hourly Throughput:	**Maximum Annual Throughput:** 126,000 gallons/yr	**Maximum Operating Schedule:** 8,760 hours (each)

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? __Yes __X_ No	**If yes, is it?** ___ Indirect Fired ___Direct Fired
Maximum design heat input and/or maximum horsepower rating: N/A	**Type and Btu/hr rating of burners:** N/A

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

N/A

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
N/A			

Emissions Data

Criteria Pollutants	Potential Emissions ***(Each Unit)***	
	PPH	TPY
Carbon Monoxide (CO)	---	---
Nitrogen Oxides (NO_X)	---	---
Lead (Pb)	--	--

Particulate Matter ($PM_{2.5}$)	---	---
Particulate Matter (PM_{10})	---	---
Total Particulate Matter (TSP)	---	---
Sulfur Dioxide (SO_2)	---	---
Volatile Organic Compounds (VOC)[8]	0.01	0.05
Hazardous Air Pollutants	Potential Emissions ***(Each Unit)***	
	PPH	TPY
Formaldehyde (HCHO)	---	---
Total HAP	---	---
Regulated Pollutants other than Criteria and HAP	Potential Emissions ***(Each Unit)***	
	PPH	TPY
CO2e	---	---

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

See Attachment I.

[8] VOC is non-methane, non-ethane hydrocarbons plus formaldehyde.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

No change from existing R13 requirements. Section 4.1.4

____ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

No change from existing R13 requirements. Section 4.2.3

Are you in compliance with all applicable requirements for this emission unit? _X_ Yes ___No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT I – EMISSION CALCULATIONS

Company Name: Mountain Valley Pipeline, LLC
Facility Name: Bradshaw Compressor Station
Project Description: Title V Permit Application

TABLE 1. Potential Atmospheric Emissions from Each Source at the Facility

Source	Pollutants																	
	VOC		NO_X		CO		PM_{10}		$PM_{2.5}$		SO_X		HCHO		Total HAPs		GHG (CO_2e)	
	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
Turbine 1 (S001)	1.14	5.02	9.80	42.95	9.90	45.67	2.64	11.57	2.64	11.57	0.60	2.62	0.51	2.22	0.56	2.47	20,904	91,697
Turbine 2 (S002)	1.14	5.02	9.80	42.95	9.90	45.67	2.64	11.57	2.64	11.57	0.60	2.62	0.51	2.22	0.56	2.47	20,904	91,697
Turbine 3 (S003)	1.14	5.02	9.80	42.95	9.90	45.67	2.64	11.57	2.64	11.57	0.60	2.62	0.51	2.22	0.56	2.47	20,904	91,697
Turbine 4 (S004)	1.14	5.02	9.80	42.95	9.90	45.67	2.64	11.57	2.64	11.57	0.60	2.62	0.51	2.22	0.56	2.47	20,904	91,697
Microturbine 1 (S005)	0.02	0.09	0.08	0.35	0.22	0.96	0.02	0.07	0.02	0.07	0.01	0.03	0.00	0.01	0.00	0.01	266	1,166
Microturbine 2 (S006)	0.02	0.09	0.08	0.35	0.22	0.96	0.02	0.07	0.02	0.07	0.01	0.03	0.00	0.01	0.00	0.01	266	1,166
Microturbine 3 (S007)	0.02	0.09	0.08	0.35	0.22	0.96	0.02	0.07	0.02	0.07	0.01	0.03	0.00	0.01	0.00	0.01	266	1,166
Microturbine 4 (S008)	0.02	0.09	0.08	0.35	0.22	0.96	0.02	0.07	0.02	0.07	0.01	0.03	0.00	0.01	0.00	0.01	266	1,166
Microturbine 5 (S009)	0.02	0.09	0.08	0.35	0.22	0.96	0.02	0.07	0.02	0.07	0.01	0.03	0.00	0.01	0.00	0.01	266	1,166
Microturbine 6 (S010)	0.02	0.09	0.08	0.35	0.22	0.96	0.02	0.07	0.02	0.07	0.01	0.03	0.00	0.01	0.00	0.01	266	1,166
Microturbine 7 (S011)	0.02	0.09	0.08	0.35	0.22	0.96	0.02	0.07	0.02	0.07	0.01	0.03	0.00	0.01	0.00	0.01	266	1,166
Microturbine 8 (S012)	0.02	0.09	0.08	0.35	0.22	0.96	0.02	0.07	0.02	0.07	0.01	0.03	0.00	0.01	0.00	0.01	266	1,166
Microturbine 9 (S013)	0.02	0.09	0.08	0.35	0.22	0.96	0.02	0.07	0.02	0.07	0.01	0.03	0.00	0.01	0.00	0.01	266	1,166
Microturbine 10 (S014)	0.02	0.09	0.08	0.35	0.22	0.96	0.02	0.07	0.02	0.07	0.01	0.03	0.00	0.01	0.00	0.01	266	1,166
Microturbine 11 (S015)	0.02	0.09	0.08	0.35	0.22	0.96	0.02	0.07	0.02	0.07	0.01	0.03	0.00	0.01	0.00	0.01	266	1,166
Microturbine 12 (S016)	0.02	0.09	0.08	0.35	0.22	0.96	0.02	0.07	0.02	0.07	0.01	0.03	0.00	0.01	0.00	0.01	266	1,166
Microturbine 13 (S017)	0.02	0.09	0.08	0.35	0.22	0.96	0.02	0.07	0.02	0.07	0.01	0.03	0.00	0.01	0.00	0.01	266	1,166
Microturbine 14 (S018)	0.02	0.09	0.08	0.35	0.22	0.96	0.02	0.07	0.02	0.07	0.01	0.03	0.00	0.01	0.00	0.01	266	1,166
Fuel Gas Heater (S019)	0.01	0.05	0.21	0.93	0.18	0.78	0.02	0.07	0.02	0.07	0.00	0.01	0.00	0.00	0.00	0.02	270	1,184
Fuel Gas Heater (S020)	0.01	0.05	0.21	0.93	0.18	0.78	0.02	0.07	0.02	0.07	0.00	0.01	0.00	0.00	0.00	0.02	270	1,184
Produced Fluids Tank (S021)	0.00	0.01	--	--	--	--	--	--	--	--	--	--	--	--	0.00	0.00	2	9
Used Oil Tank (S022)	0.00	0.00	--	--	--	--	--	--	--	--	--	--	--	--	0.00	0.00	--	--
Office Building Heater (S023)	0.00	0.00	0.01	0.05	0.01	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14	62
Fugitives (S024)	0.31	1.37	--	--	--	--	0.03	0.11	0.00	0.01	--	--	--	--	0.02	0.10	33	145
Liquid Loading (S025)	0.01	0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Blowdowns (S026)	5.55	24.31	--	--	--	--	--	--	--	--	--	--	--	--	0.41	1.79	4,234	18,547
Total	**10.74**	**47.14**	**40.76**	**178.62**	**43.05**	**197.78**	**10.84**	**47.46**	**10.81**	**47.36**	**2.51**	**10.98**	**2.05**	**8.99**	**2.72**	**11.93**	**92,167**	**404,247**

Notes:
1. PM_{10} and $PM_{2.5}$ emissions are filterable + condensable.
2. VOC emissions for the engines are conservatively estimated as: VOC=NMNEHC+HCHO (Formaldehyde)
3. Fugitive emissions include haul road emissions.
4. Global Warming Potential (40 CFR 98 Subpart A Table A-1).

CO_2	1
CH_4	28
N_2O	265

Company Name: Mountain Valley Pipeline, LLC
Facility Name: Bradshaw Compressor Station
Project Description: Title V Permit Application

TABLE 2. Turbine Emissions Calculations

Turbine Information:

Source ID:	S001-S004
Manufacturer:	Solar
Model No.:	Titan 130
Year Installed:	TBD
Fuel Used:	Natural Gas
Fuel Heating Value (Btu/scf):	979
Rated Horsepower (site-specific bhp):	23536
Maximum Fuel Consumption (scf/hr):	172654
Heat Input (MMBtu/hr)	169.08
Control Device:	SoloNOx Technology
Stack Designation:	TBD

Operational Details:

Potential Annual Hours of Operation (hr/yr):	8,760
Potential Fuel Consumption (MMscf/yr):	1,512.45
Potential Startup/Shutdown Events (per year):	12

Manufacturer Specific Pollutant Emission Factors:

Pollutant	Emission Factors	Units	Emission Factor Source
NO_X	9.800	lb/hr	Manufacturer
CO	9.900	lb/hr	Manufacturer
SO_2	3.54E-03	lb/MMBtu	AP-42, Table 3.1-2a
PM_{10}	0.016	lb/MMBtu	Manufacturer, PIL 171
$PM_{2.5}$	0.016	lb/MMBtu	Manufacturer, PIL 171
VOC	1.140	lb/hr	20% of UHC per Manufacturer
Formaldehyde	0.003	lb/MMBtu	Manufacturer, PIL 168
CO_2	122.82	lb/MMBtu	40 CFR 98, Subpart C, Table C-1
CH_4	4.560	lb/hr	80% of UHC per Manufacturer
N_2O	2.3E-04	lb/MMBtu	40 CFR 98, Subpart C, Table C-2

*Emission factors from AP-42 and Subpart C are based on HHV. To calculate a LHV emission factor, emissions are multiplied by (HHV/LHV). For AP-42 HHV is 1020 Btu/scf, for Subpart C HHV is 1028 Btu/scf. PM and HCHO emission factors are provided in HHV in the specifications and were converted to LHV using a HHV value of 1020 Btu/scf.

Company Name: Mountain Valley Pipeline, LLC
Facility Name: Bradshaw Compressor Station
Project Description: Title V Permit Application

TABLE 2. Turbine Emissions Calculations

Pollutant Emission Rates:

Pollutant	Potential Emissions (lb/hr)[1]	(tpy)[2]
NO_X	9.80	42.95
CO	9.90	45.67
SO_2	0.60	2.62
PM_{10}	2.64	11.57
$PM_{2.5}$	2.64	11.57
VOC	1.14	5.02
Formaldehyde	0.51	2.22
CO_2	20,766	90,968
CH_4	4.56	24.42
N_2O	0.04	0.17
GHG (CO_2e)	20,904	91,697

*Annual emissions shown above include startup/shutdown events.

Hazardous Air Pollutant (HAP) Emission Rates:

Pollutant	Emission Factor (lb/MMBtu)[3]	Potential Emissions (lb/hr)[1]	(tpy)[2,4]
HAPs:			
Acetaldehyde	4.17E-05	7.04E-03	3.09E-02
Acrolein	6.67E-06	1.13E-03	4.94E-03
Benzene	1.25E-05	2.11E-03	9.26E-03
1,3-Butadiene	4.48E-07	7.57E-05	3.32E-04
Propylene Oxide	2.90E-05	4.90E-03	2.15E-02
Ethylbenzene	3.33E-05	5.64E-03	2.47E-02
Toluene	1.35E-04	2.29E-02	1.00E-01
Xylene	6.67E-05	1.13E-02	4.94E-02
Naphthalene	1.35E-06	2.29E-04	1.00E-03
PAH	2.29E-06	3.87E-04	1.70E-03
Total HAP (Including HCHO)		**0.56**	**2.47**

1. Emission Rate (lb/hr) = Rated Capacity (MMBtu/hr) × Emission Factor (lb/MMBtu)
2. Emission Rate (tpy) = Emission Rate (lb/hr) × Hours of Operation (hr/yr) / 2000 (tons/lb) + SU/SD emissions, as applicable
3. Emission factors from AP-42 Section 3.1, Table 3.1-3 "Emission Factors for HAPs from Natural Gas Fired Stationary Gas Turbines", April 2000. Factors are based on HHV. Therefore, they were converted to LHV by multiplying by (HHV/LHV).
4. Emission calculations are based on maxomum operating load of 100%, ambient temperature 0°F and site elevation. The turbine rating can vary with ambient conditions. Each Turbine is ISO rated at 22,400 HP

Company Name: Mountain Valley Pipeline, LLC
Facility Name: Bradshaw Compressor Station
Project Description: Title V Permit Application

TABLE 2. Turbine Emissions Calculations

Startup/Shutdown Combustion Emission Factors:

Pollutant	Startup Emissions[a] (lbs/event)	Shutdown Emissions[a] (lbs/event)	Emission Factor Source
NO_X	1.9	2.4	Manufacturer
CO	176.9	207.6	Manufacturer
VOC	2.0	2.38	20% of UHC per Manufacturer
CO_2	1161	1272	Manufacturer

[a] Each startup and shutdown event is estimated to last approximately 10 minutes, per manufacturer.

Pneumatic Start Venting Emissions		
Natural Gas Purged During Startup	4500	scfm
Duration of Normal Purge	4.0	min
Total Gas Purged (Per Startup)	18000	scf
VOC Purged (Per Startup)	27	lbs/startup
CO_2 Purged (Per Startup)	6	lbs/startup
CH_4 Purged (Per Startup)	742	lbs/startup

Density of natural gas: 0.05 lb/ft^3 @ STP (www.engineeringtoolbox.com)

*Current design includes electric motor starts, but pneumatic starts have been included as a conservative measure.

Company Name: Mountain Valley Pipeline, LLC
Facility Name: Bradshaw Compressor Station
Project Description: Title V Permit Application

TABLE 3. Microturbine Emissions Calculations

Microturbine Unit Information:

Engine ID:	S005-S018
Manufacturer:	Capstone
Model No.:	C200
Projected Startup Date:	Upon Approval
Number of Units:	14

Microturbine Fuel Information:

	Per Unit
Fuel Type:	Natural Gas
Rated Electrical Power Output (kW):	200
Rated Electrical Power Output (MW):	0.2
Rated Horsepower (bhp):	268.2
Heat Input (MMBtu/hr)	2.28
Potential Fuel Consumption (MMBtu/yr):	19,973
Max. Annual Hours of Operation (hr/yr):	8,760

Microturbine Emissions Data:

Pollutant	**Emission Factors**	**Units**	**Maximum Potential Emissions Per Unit**		**Estimation Basis / Emission Factor Source**
			lbs/hr	**tpy**	
NO_X	0.40	lb/MWhe	0.08	0.35	Manufacturer's Specifications
VOC	0.10	lb/MWhe	0.02	0.09	Manufacturer's Specifications
CO	1.10	lb/MWhe	0.22	0.96	Manufacturer's Specifications
SO_X	0.0034	lb/MMBtu	0.01	0.03	AP-42, Table 3.1-2a (Apr-2000)
PM_{10}	0.0066	lb/MMBtu	0.02	0.07	AP-42, Table 3.1-2a (Apr-2000)
$PM_{2.5}$	0.0066	lb/MMBtu	0.02	0.07	AP-42, Table 3.1-2a (Apr-2000)
GHG (CO_2e)	See Table Below		266	1,166	Manufacturer's Specifications / 40 CFR 98, Table C-2
Other (Total HAP)	See Table Below		0.00	0.01	AP-42, Table 3.1-3 (Apr-2000)

Notes:
1. PM_{10} and $PM_{2.5}$ are total values (filterable + condensable).
2. GHG (CO_2e) is carbon dioxide equivalent, which is the summation of CO_2 (GWP = 1) + CH_4 (GWP = 28) + N_2O (GWP = 265).
3. Total HAP is the summation of all hazardous air pollutants for which there is a published emission factor for this engine type, including HCHO.

Company Name: Mountain Valley Pipeline, LLC
Facility Name: Bradshaw Compressor Station
Project Description: Title V Permit Application

TABLE 3. Microturbine Emissions Calculations

Greenhouse Gas (GHG) & Hazardous Air Pollutant (HAP) Emissions Calculations:

Pollutant	Emission Factor	Units	Maximum Potential Emissions Per Unit		Estimation Basis / Emission Factor Source
			lbs/hr	tpy	
GHGs:					
CO_2	1330	lb/MWhe	266	1,165	Manufacturer's Specifications
CH_4	0.001	kg/MMBtu	0.01	0.02	40 CFR 98, Tables C-1 & C-2
N_2O	0.0001	kg/MMBtu	0.00	0.00	40 CFR 98, Tables C-1 & C-2
GHG (CO_2e)			**266**	**1,166**	
HAPs:					
1,3-Butadiene	4.3E-07	lb/MMBtu	0.00	0.00	AP-42, Table 3.1-3 (Apr-2000)
Acetaldehyde	4.0E-05	lb/MMBtu	0.00	0.00	AP-42, Table 3.1-3 (Apr-2000)
Acrolein	6.4E-06	lb/MMBtu	0.00	0.00	AP-42, Table 3.1-3 (Apr-2000)
Benzene	1.2E-05	lb/MMBtu	0.00	0.00	AP-42, Table 3.1-3 (Apr-2000)
Ethylbenzene	3.2E-05	lb/MMBtu	0.00	0.00	AP-42, Table 3.1-3 (Apr-2000)
Formaldehyde	7.1E-04	lb/MMBtu	0.00	0.01	AP-42, Table 3.1-3 (Apr-2000)
Naphthalene	1.3E-06	lb/MMBtu	0.00	0.00	AP-42, Table 3.1-3 (Apr-2000)
PAH	2.2E-06	lb/MMBtu	0.00	0.00	AP-42, Table 3.1-3 (Apr-2000)
Propylene oxide	2.9E-05	lb/MMBtu	0.00	0.00	AP-42, Table 3.1-3 (Apr-2000)
Toluene	1.3E-04	lb/MMBtu	0.00	0.00	AP-42, Table 3.1-3 (Apr-2000)
Xylene	6.4E-05	lb/MMBtu	0.00	0.00	AP-42, Table 3.1-3 (Apr-2000)
Total HAP			**0.002**	**0.010**	

Company Name: **Mountain Valley Pipeline, LLC**
Facility Name: **Bradshaw Compressor Station**
Project Description: **Title V Permit Application**

TABLE 4. Fuel Gas Heater Emissions Calculations

Fuel Gas Heater Information:

Source ID:	S019-S020
Projected Startup Date:	Upon Approval
Number of Units:	2

Fuel Gas Heater Information:

Fuel Type:	Natural Gas
Higher Heating Value (HHV) (Btu/scf):	1,083
Heat Input (MMBtu/hr)	2.31
Potential Fuel Consumption (MMBtu/yr):	20,215
Max. Fuel Consumption (MMscf/hr):	0.0021
Max. Fuel Consumption (MMscf/yr):	18.7
Max. Annual Hours of Operation (hr/yr):	8,760

Fuel Gas Heater Information:

Pollutant	Emission Factor	Units	Maximum Potential Emissions Per Unit		Estimation Basis / Emission Factor Source
			lbs/hr	tpy	
NO_X	100	lb/MMScf	0.21	0.93	AP-42, Table 1.4-1 (Jul-1998)
VOC	5.5	lb/MMScf	0.01	0.05	AP-42, Table 1.4-2 (Jul-1998)
CO	84	lb/MMScf	0.18	0.78	AP-42, Table 1.4-1 (Jul-1998)
SO_X	0.6	lb/MMScf	0.00	0.01	AP-42, Table 1.4-2 (Jul-1998)
PM_{10}	7.6	lb/MMScf	0.02	0.07	AP-42, Table 1.4-2 (Jul-1998)
$PM_{2.5}$	7.6	lb/MMScf	0.02	0.07	AP-42, Table 1.4-2 (Jul-1998)
Formaldehyde (HCHO)	0.08	lb/MMScf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
GHG (CO_2e)	See Table Below		270	1,184	40 CFR 98, Tables C-1 & C-2
Other (Total HAP)	See Table Below		0.00	0.02	AP-42, Tables 1.4-3 & 1.4-4 (Jul-1998)

Notes:
1. PM_{10} and $PM_{2.5}$ are total values (filterable + condensable).
2. GHG (CO_2e) is carbon dioxide equivalent, which is the summation of CO_2 (GWP = 1) + CH_4 (GWP = 28) + N_2O (GWP = 265).
3. Total HAP is the summation of all hazardous air pollutants for which there is a published emission factor for this source type.

Company Name: Mountain Valley Pipeline, LLC
Facility Name: Bradshaw Compressor Station
Project Description: Title V Permit Application

TABLE 4. Fuel Gas Heater Emissions Calculations

Greenhouse Gas (GHG) & Hazardous Air Pollutant (HAP) Emissions Calculations:

Pollutant	Emission Factor	Units	Maximum Potential Emissions Per Unit		Estimation Basis / Emission Factor Source
			lbs/hr	tpy	
GHGs:					
CO_2	53.06	kg/MMBtu	269.99	1,183	40 CFR 98, Tables C-1 & C-2
CH_4	0.001	kg/MMBtu	0.01	0.02	40 CFR 98, Tables C-1 & C-2
N_2O	0.0001	kg/MMBtu	0.00	0.00	40 CFR 98, Tables C-1 & C-2
GHG (CO_2e)			**270**	**1,184**	
Organic HAPs:					
2-Methylnaphthalene	2.40E-05	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
3-Methylchloranthrene	1.80E-06	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
7,12-Dimethylbenz(a)anthracene	1.60E-05	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
Acenapthene	1.80E-06	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
Acenapthylene	1.80E-06	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
Anthracene	2.40E-06	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
Benz(a)anthracene	1.80E-06	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
Benzene	2.10E-03	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
Benzo(a)pyrene	1.20E-06	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
Benzo(b)fluoranthene	1.80E-06	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
Benzo(g,h,i)perylene	1.20E-06	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
Benzo(k)fluoranthene	1.80E-06	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
Chrysene	1.80E-06	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
Dibenzo(a,h)anthracene	1.20E-06	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
Dichlorobenzene	1.20E-03	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
Fluoranthene	3.00E-06	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
Fluorene	2.80E-06	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
n-Hexane	1.80E+00	lb/MMscf	0.00	0.02	AP-42, Table 1.4-3 (Jul-1998)
Indeno(1,2,3-c,d)pyrene	1.80E-06	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
Naphthalene	6.10E-04	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
Phenanthrene	1.70E-05	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
Pyrene	5.00E-06	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
Toluene	3.40E-03	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
Metal HAPs:					
Arsenic	2.00E-04	lb/MMscf	0.00	0.00	AP-42, Table 1.4-4 (Jul-1998)
Beryllium	4.40E-03	lb/MMscf	0.00	0.00	AP-42, Table 1.4-4 (Jul-1998)
Cadmium	1.10E-03	lb/MMscf	0.00	0.00	AP-42, Table 1.4-4 (Jul-1998)
Chromium	1.40E-03	lb/MMscf	0.00	0.00	AP-42, Table 1.4-4 (Jul-1998)
Cobalt	8.40E-05	lb/MMscf	0.00	0.00	AP-42, Table 1.4-4 (Jul-1998)
Lead	5.00E-04	lb/MMscf	0.00	0.00	AP-42, Table 1.4-2 (Jul-1998)
Manganese	3.80E-04	lb/MMscf	0.00	0.00	AP-42, Table 1.4-4 (Jul-1998)
Mercury	2.60E-04	lb/MMscf	0.00	0.00	AP-42, Table 1.4-4 (Jul-1998)
Nickel	2.10E-03	lb/MMscf	0.00	0.00	AP-42, Table 1.4-4 (Jul-1998)
Selenium	2.40E-05	lb/MMscf	0.00	0.00	AP-42, Table 1.4-4 (Jul-1998)
Total HAP			**0.004**	**0.02**	

Company Name: Mountain Valley Pipeline, LLC
Facility Name: Bradshaw Compressor Station
Project Description: Title V Permit Application

TABLE 5. Storage Tank Emissions Calculations - Produced Fluids Tank

Storage Tank Information:

Source ID:	S021
Tank Capacity (gallons):	10,080
Tank Contents:	Produced Fluids
Annual Throughput (gallons/year):	126,000
Daily Throughput (bbl/day)	8
Control Type:	None
Control Efficiency:	N/A
Max. Annual Hours of Operation (hr/yr):	8,760

Tank Emissions Data:

Pollutant	Uncontrolled Emissions		Controlled Emissions		Emissions Estimation Method
	lbs/hr	tpy	lbs/hr	tpy	
VOC	0.00	0.01	0.00	0.01	Promax
HAPs	0.00	0.00	0.00	0.00	Promax
GHG (CO2e)	2.11	9.23	2.11	9.23	Promax

Promax Tanks Emissions Data:

Pollutant	Total Emissions (Working + Breathing + Flashing)			Total Emissions		
	lbs/hr	lbs/yr	tpy	lbs/hr	lbs/yr	tpy
VOC	0.00	15.04	0.01	0.00	15.04	0.01
HAPs	0.00	0.15	0.00	0.00	0.15	0.00
Carbon Dioxide	0.01	101.31	0.05	0.01	101.31	0.05
Methane	0.07	655.65	0.33	0.07	655.65	0.33
GHG (CO_2e)	2.11	18,459.39	9.23	2.11	18,459.39	9.23

Notes:
1. Emissions estimated using Promax software.

Company Name: Mountain Valley Pipeline, LLC
Facility Name: Bradshaw Compressor Station
Project Description: Title V Permit Application

TABLE 6. Storage Tank Emissions Calculations - Used Oil Tank

Storage Tank Information:

Source ID:	S022
Tank Capacity (gallons):	4,200
Tank Contents:	Used Oil
Annual Throughput (gallons/year):	12,600
Control Type:	None
Control Efficiency:	N/A
Max. Annual Hours of Operation (hr/yr):	8,760

Tank Emissions Data:

Pollutant	Uncontrolled Emissions		Controlled Emissions		Emissions Estimation Method
	lbs/hr	tpy	lbs/hr	tpy	
VOC	0.00	0.00	0.00	0.00	Promax
HAPs	0.00	0.00	0.00	0.00	Promax
GHG (CO_2e)	N/A	N/A	N/A	N/A	N/A

Notes:
1. GHG (CO_2e) is carbon dioxide equivalent, which is the summation of CO_2 (GWP = 1) + CH_4 (GWP = 21) + N_2O (GWP = 310).

EPA TANKS Emissions Data - Glycol Tank:

Pollutant	Working Losses	Breathing Losses	Flashing Losses	Total Emissions		
	tpy	tpy	tpy	lbs/hr	lbs/yr	tpy
VOC	0.00	0.00	N/A	0.00	0.11	0.00
HAPs	0.00	0.00	N/A	0.00	0.00	0.00

Notes:
1. Emissions estimated using Promax software.
2. This tank does not contain hydrocarbons that would be expected to be flashed off at tank operating conditions.

Company Name: **Mountain Valley Pipeline, LLC**
Facility Name: **Bradshaw Compressor Station**
Project Description: **Title V Permit Application**

TABLE 7. Office Building Heater Emissions Calculations

Fuel Gas Heater Information:

Source ID:	S023
Projected Startup Date:	Upon Approval
Number of Units:	1

Fuel Gas Heater Information:

Fuel Type:	Natural Gas
Higher Heating Value (HHV) (Btu/scf):	1,083
Heat Input (MMBtu/hr)	0.12
Potential Fuel Consumption (MMBtu/yr)	1,051
Max. Fuel Consumption (MMscf/hr):	0.0001
Max. Fuel Consumption (MMscf/yr):	1.0
Max. Annual Hours of Operation (hr/yr):	8,760

Fuel Gas Heater Information:

Pollutant	Emission Factor	Units	Maximum Potential Emissions Per Unit		Estimation Basis / Emission Factor Source
			lbs/hr	tpy	
NO_X	100	lb/MMScf	0.01	0.05	AP-42, Table 1.4-1 (Jul-1998)
VOC	5.5	lb/MMScf	0.00	0.00	AP-42, Table 1.4-2 (Jul-1998)
CO	84	lb/MMScf	0.01	0.04	AP-42, Table 1.4-1 (Jul-1998)
SO_X	0.6	lb/MMScf	0.00	0.00	AP-42, Table 1.4-2 (Jul-1998)
PM_{10}	7.6	lb/MMScf	0.00	0.00	AP-42, Table 1.4-2 (Jul-1998)
$PM_{2.5}$	7.6	lb/MMScf	0.00	0.00	AP-42, Table 1.4-2 (Jul-1998)
Formaldehyde (HCHO)	0.08	lb/MMScf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
GHG (CO_2e)	See Table Below		14	62	40 CFR 98, Tables C-1 & C-2
Other (Total HAP)	See Table Below		0.00	0.00	AP-42, Tables 1.4-3 & 1.4-4 (Jul-1998)

Notes:
1. PM_{10} and $PM_{2.5}$ are total values (filterable + condensable).
2. GHG (CO_2e) is carbon dioxide equivalent, which is the summation of CO_2 (GWP = 1) + CH_4 (GWP = 28) + N_2O (GWP = 265).
3. Total HAP is the summation of all hazardous air pollutants for which there is a published emission factor for this source type.

Company Name: Mountain Valley Pipeline, LLC
Facility Name: Bradshaw Compressor Station
Project Description: Title V Permit Application

TABLE 7. Office Building Heater Emissions Calculations

Greenhouse Gas (GHG) & Hazardous Air Pollutant (HAP) Emissions Calculations:

Pollutant	Emission Factor	Units	Maximum Potential Emissions Per Unit		Estimation Basis / Emission Factor Source
			lbs/hr	tpy	
GHGs:					
CO_2	53.06	kg/MMBtu	14.04	61	40 CFR 98, Tables C-1 & C-2
CH_4	0.001	kg/MMBtu	0.00	0.00	40 CFR 98, Tables C-1 & C-2
N_2O	0.0001	kg/MMBtu	0.00	0.00	40 CFR 98, Tables C-1 & C-2
GHG (CO_2e)			**14**	**62**	
Organic HAPs:					
2-Methylnaphthalene	2.40E-05	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
3-Methylchloranthrene	1.80E-06	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
7,12-Dimethylbenz(a)anthracene	1.60E-05	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
Acenapthene	1.80E-06	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
Acenapthylene	1.80E-06	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
Anthracene	2.40E-06	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
Benz(a)anthracene	1.80E-06	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
Benzene	2.10E-03	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
Benzo(a)pyrene	1.20E-06	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
Benzo(b)fluoranthene	1.80E-06	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
Benzo(g,h,i)perylene	1.20E-06	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
Benzo(k)fluoranthene	1.80E-06	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
Chrysene	1.80E-06	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
Dibenzo(a,h)anthracene	1.20E-06	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
Dichlorobenzene	1.20E-03	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
Fluoranthene	3.00E-06	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
Fluorene	2.80E-06	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
n-Hexane	1.80E+00	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
Indeno(1,2,3-c,d)pyrene	1.80E-06	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
Naphthalene	6.10E-04	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
Phenanthrene	1.70E-05	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
Pyrene	5.00E-06	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
Toluene	3.40E-03	lb/MMscf	0.00	0.00	AP-42, Table 1.4-3 (Jul-1998)
Metal HAPs:					
Arsenic	2.00E-04	lb/MMscf	0.00	0.00	AP-42, Table 1.4-4 (Jul-1998)
Beryllium	4.40E-03	lb/MMscf	0.00	0.00	AP-42, Table 1.4-4 (Jul-1998)
Cadmium	1.10E-03	lb/MMscf	0.00	0.00	AP-42, Table 1.4-4 (Jul-1998)
Chromium	1.40E-03	lb/MMscf	0.00	0.00	AP-42, Table 1.4-4 (Jul-1998)
Cobalt	8.40E-05	lb/MMscf	0.00	0.00	AP-42, Table 1.4-4 (Jul-1998)
Lead	5.00E-04	lb/MMscf	0.00	0.00	AP-42, Table 1.4-2 (Jul-1998)
Manganese	3.80E-04	lb/MMscf	0.00	0.00	AP-42, Table 1.4-4 (Jul-1998)
Mercury	2.60E-04	lb/MMscf	0.00	0.00	AP-42, Table 1.4-4 (Jul-1998)
Nickel	2.10E-03	lb/MMscf	0.00	0.00	AP-42, Table 1.4-4 (Jul-1998)
Selenium	2.40E-05	lb/MMscf	0.00	0.00	AP-42, Table 1.4-4 (Jul-1998)
Total HAP			**0.000**	**0.00**	

Company Name: **Mountain Valley Pipeline, LLC**
Facility Name: **Bradshaw Compressor Station**
Project Description: **Title V Permit Application**

TABLE 8. Liquid Loading Emissions Calculations

Liquid Loading Information:

Parameter	Value	Description
S	1.45	saturation factor for splash loading (AP-42 Table 5.2-1)
Collection Efficiency	0.0%	
Control Efficiency	0%	
P	0.21	true vapor pressure of liquid loaded (psia) - assume octane
M	114.23	molecular weight of vapors (lb/lb-mol) - assume octane
T	516.4	temperature of liquids loaded (deg R) - TANKS Data

Description	Loading Losses	Maximum Throughput[2]	VOC Emissions	
	(lb/10^3 gal)[1]	(gal)	(lb/hr)	(tpy)
Liquids Hauling	0.8	126,000	0.01	0.05

Notes:
1. Uncontrolled Loading Losses: L_L (lb/10^3 gal) = 12.46 (SPM)/T
2. Produced fluids throughput.

Company Name: Mountain Valley Pipeline, LLC
Facility Name: Bradshaw Compressor Station
Project Description: Title V Permit Application

TABLE 9. Fugitive Emissions Calculations

Fugitive Component Information:

Component Type	Estimated Component Count	Gas Leak Emission Factor		Average Gas Leak Rate	Max Gas Leak Rate	Potential VOC Emissions	Potential HAP Emissions
		(lb/hr/component)	Factor Source	(lb/hr)	(tpy)	(tpy)	(tpy)
Connectors	2,225	0.0004	EPA Protocol, Table 2-4	0.98	4.73	0.14	0.01
Flanges	620	0.0009	EPA Protocol, Table 2-4	0.53	2.57	0.08	0.01
Open-Ended Lines	18	0.0044	EPA Protocol, Table 2-4	0.08	0.38	0.01	0.00
Pump Seals	0	0.0053	EPA Protocol, Table 2-4	0.00	0.00	0.00	0.00
Valves	785	0.0099	EPA Protocol, Table 2-4	7.79	37.52	1.14	0.08
Other	0	0.0194	EPA Protocol, Table 2-4	0.00	0.00	0.00	0.00
Total				**9.38**	**45.20**	**1.37**	**0.10**

Notes:
1. "Other" equipment types include compressor seals, relief valves, diaphragms, drains, meters, etc.
2. The component count is based on the current design of the station.
3. Conservatively assumed that maximum leak rate is 10% greater than measured average leak rate for the purposes of establishing PTE.
4. VOC and HAP emissions are based on fractions of these pollutants in the site-specific gas analysis.

GHG Fugitive Emissions from Component Leaks:

Component Type	Estimated Component Count	GHG Emission Factor		CH_4 Emissions	CO_2 Emissions	CO_2e Emissions
		(scf/hr/component)	Factor Source	(tpy)	(tpy)	(tpy)
Connectors	2,225	0.003	40 CFR 98, Table W-1A	1.12	0.009	31.34
Flanges	620	0.003	40 CFR 98, Table W-1A	0.31	0.002	8.73
Open-Ended Lines	18	0.061	40 CFR 98, Table W-1A	0.18	0.001	5.16
Pump Seals	0	13.3	40 CFR 98, Table W-1A	0.00	0.000	0.00
Valves	785	0.027	40 CFR 98, Table W-1A	3.55	0.028	99.52
Other	0	0.04	40 CFR 98, Table W-1A	0.00	0.000	0.00
Total				**5.17**	**0.04**	**144.75**

Notes:
1. The component count is based on the current design of the station.
2. CH_4 and CO_2 emissions are based on fractions of these pollutants in the site-specific gas analysis.
3. Emissions are calculated in accordance with Equations W-32a, W-35 and W-36 in Subpart W of 40 CFR 98.
4. GHG (CO_2e) is carbon dioxide equivalent, which is the summation of CO_2 (GWP = 1) + CH_4 (GWP = 28) + N_2O (GWP = 265).

Fugitive Component Emissions Data:

Pollutant	Atmospheric Emissions		Emissions Estimation Method
	lbs/hr	tpy	
VOC	0.31	1.37	EPA Protocol, Table 2-4 & Site-Specific Gas Analysis
HAPs	0.02	0.10	EPA Protocol, Table 2-4 and Site-Specific Gas Analysis
GHG (CO_2e)	33	145	40 CFR 98, Table W-1A and Site-Specific Gas Analysis

Company Name: Mountain Valley Pipeline, LLC
Facility Name: Bradshaw Compressor Station
Project Description: Title V Permit Application

TABLE 10. Haul Road Emission Calculations

Unpaved Road Information:

Unpaved Roads: $E\ (lb/VMT) = k(s/12)^a(W/3)^b)*[(365-p)/365]$

	PM	PM_{10}	$PM_{2.5}$	
k Factor (lb/VMT)	4.9	1.5	0.15	AP-42 Table 13.2.2-2 (Final, 11/06)
Silt content, s	4.8 %			AP-42 Table 13.2.2-1 (11/06), for Sand and Gravel Processing
Number of Rain Days, p	150			AP-42 Figure 13.2.1-2
a	0.7	0.9	0.9	AP-42 Table 13.2.2-2 (Final, 11/06)
b	0.45	0.45	0.45	AP-42 Table 13.2.2-2 (Final, 11/06)

Description	Weight of Empty Truck (tons)	Weight of Truck w/ Max Load (tons)	Mean Vehicle Weight (tons)	Length of Unpaved Road Traveled (mile/trip)	Trips Per Year	Mileage Per Year	Control (%)	Emissions (tpy) PM	PM_{10}	$PM_{2.5}$
Service Truck	4	4	4	0.75	365	274	0	0.24	0.06	0.01
Liquids Hauling - Vendor Fluid	12	20	16	0.75	4	3	0	0.00	0.00	0.00
Liquids Hauling - Produced Fluid	20	32	26	0.75	24	18	0	0.04	0.01	0.00
Employee Vehicles	2	2	2	0.75	365	274	0	0.17	0.04	0.00
Total Potential Emissions								**0.45**	**0.11**	**0.01**

Company Name: Mountain Valley Pipeline, LLC
Facility Name: Bradshaw Compressor Station
Project Description: Title V Permit Application

TABLE 11. Blowdown Emission Calculations

Miscellaneous Blowdowns

[1]Mole fractions of CH_4, VOC, HAP and CO_2 based on gas analysis:
CH_4: 90.42% CO_2: 0.26% VOC 1.03% HAP 0.05%
[2]Weight fractions of CH_4 , VOC, HAP and CO_2 based on gas analysis:
CH_4: 82.41% CO_2: 0.65% VOC 3.03% HAP 0.22%
[3] Carbon equivalent emissions (CO_2e) are based on the following Global Warming Potentials (GWP) from 40 CFR Part 98, Table A-1:
Carbon Dioxide (CO_2): 1
Methane (CH_4): 25

Emissions from Compressor Seal:

Number of Compressors	Number of seals Per Compressor	Leak Rate (scf/hr/seal)	Total Volume NG Emitted (scf/yr)	Potential VOC Emissions (tpy)	Potential HAP Emissions (tpy)	Potential CO_2 Emissions (tpy)	Potential CH_4 Emissions (tpy)	Potential CO_2e Emissions (tpy)
4	2	180	12,614,400	8.86	0.65	1.91	241.41	6761.29
Total				**8.86**	**0.65**	**1.91**	**241.41**	**6,761.29**

1. Leak rate and seal information from EPA Natural Gas Star Program (http://www.epa.gov/gasstar/documents/ll_wetseals.pdf)
[4] Potential emissions VOC/HAP (tpy) = Gas volume vented (scf/yr) * Molar weight of natural gas (lb/lb-mol) * Weight % VOC/HAP ÷ 100 ÷ 379 (scf/lb-mol) ÷ 2,000 (lb/ton)
Sample calculation: Volume vented (scf/yr) x density of natural gas (lb/scf) x wt % VOC / 2000 lb/ton
3. GHG emissions calculated in accordance with Equations W-35 and W-36 in Subpart W of 40 CFR 98.
Sample calculation: Volume vented (scf/yr) x density of GHG (kg/scf) x mol % VOC x 2.2 lb/kg / 2000 lb/ton

VOC and HAP Vented Blowdown Emissions

Blowdown Emissions Sources	Vented Gas Volume Per Blowdown Event (scf)	Number of Blowdown Events per year	Total Volume NG Emitted (scf/yr)	Potential VOC Emissions (tpy)	Potential HAP Emissions (tpy)
Station ESD Vent	1,600,000	4	6,400,000	4.50	0.33
Compressor Unit Blowdowns	170,000	64	10,880,000	7.64	0.56
Main Gas Filter Changes	91,000	48	4,368,000	3.07	0.23
Total				**15.21**	**1.12**

GHG Vented Blowdown Emissions

Blowdown Emissions Sources	Vented Gas Volume Per Blowdown Event (scf)	Number of Blowdown Events per year	Total Volume NG Emitted (scf/yr)	Potential CH_4 Emissions[1] (tpy)	Potential CO_2 Emissions[1] (tpy)	Potential CO_2e Emissions (tpy)
Station ESD Vent	1,600,000	4	6,400,000	122.48	0.97	3430
Compressor Unit Blowdowns	170,000	64	10,880,000	208.21	1.65	5832
Main Gas Filter Changes	91,000	48	4,368,000	83.59	0.66	2341
Total				**414.3**	**3.27**	**11603**

1. Calculated in accordance with Equations W-35 and W-36 in Subpart W of 40 CFR 98.

Company Name: Mountain Valley Pipeline, LLC
Facility Name: Bradshaw Compressor Station
Project Description: Title V Permit Application

TABLE 11. Blowdown Emission Calculations

Miscellaneous Blowdowns

Pigging Emissions:

Segment Name	Pigging Events (#/yr)	Diameter (in)	Length of pipeline (ft)	Volume of Gas Occupied in Pipeline* (acf)	Pipeline Operating Pressure (psig)	Event Duration[1] (hr/event)	Total Gas Volume per Event (scf/event)	Gas Volume to Atmosphere per Year
Pig Receiver 42"	4	42	20.5	197	1480	0.017	20014	80057
Pig Receiver 48"	4	48	22	276	1480	0.017	28054	112215
Pig Launcher 42"	4	42	9.5	91	1,480	0.017	9275	37100
Pig Launcher 48"	4	48	21.6	271	1,480	0.017	27544	110175
Total							84887	339547

[1] Assumes pigging event duration of approximately 1 minute.
* If you would rather calculate the volume of gas released and input it here - please do so.

VOC and HAP Vented Pigging Emissions

Blowdown Emissions Sources	Vented Gas Volume Per Blowdown Event (scf)	Number of Blowdown Events per year	Total Volume NG Emitted (scf/yr)	Potential VOC Emissions (tpy)	Potential HAP Emissions (tpy)
Pig Receiver 42"	20,014	4	80,057	0.06	0.00
Pig Receiver 48"	28,054	4	112,215	0.08	0.01
Pig Launcher 42"	9,275	4	37,100	0.03	0.00
Pig Launcher 48"	27,544	4	110,175	0.08	0.01
Total				**0.24**	**0.02**

GHG Vented Pigging Emissions

Segment Name	Vented Gas Volume Per Pigging Event (scf)	Number of Blowdown Events per year	Total Volume NG Emitted (scf/yr)	Potential CH_4 Emissions[1] (tpy)	Potential CO_2 Emissions[1] (tpy)	Potential CO_2e Emissions (tpy)
Pig Receiver 42"	20,014	4	80,057	1.53	0.01	43
Pig Receiver 48"	28,054	4	112,215	2.15	0.02	60
Pig Launcher 42"	9,275	4	37,100	0.71	0.01	20
Pig Launcher 48"	27,544	4	110,175	2.11	0.02	59
Total				**6.5**	**0.05**	**182**

1. Calculated in accordance with Equations W-35 and W-36 in Subpart W of 40 CFR 98.

Blowdowns Emissions Data:

Pollutant	Atmospheric Emissions		Emissions Estimation Method
	lbs/hr	tpy	
VOC	5.55	24.31	EPA Protocol, Table 2-4 & Site-Specific Gas Analysis
HAPs	0.41	1.79	EPA Protocol, Table 2-4 and Site-Specific Gas
GHG (CO_2e)	4,234	18,547	40 CFR 98, Table W-1A and Site-Specific Gas Analysis

Company Name: **Mountain Valley Pipeline, LLC**
Facility Name: **Bradshaw Compressor Station**
Project Description: **Title V Permit Application**

TABLE 12. Total Potential Emissions from All Sources at the Facility

Pollutants	Estimated Site-Wide Emissions	
	lb/hr	tpy
VOC	10.74	47.14
NO_X	40.76	178.62
CO	43.05	197.78
SO_X	2.51	10.98
PM_{10}	10.84	47.46
$PM_{2.5}$	10.81	47.36
Formaldehyde (HCHO)	2.05	8.99
Total HAPs	2.72	11.93
GHG (CO_2e)	92,167	404,247

Notes:
1. PM_{10} and $PM_{2.5}$ emissions are filterable + condensable.

Company Name: **Mountain Valley Pipeline, LLC**
Facility Name: **Bradshaw Compressor Station**
Project Description: **Title V Permit Application**

TABLE 13. Site-Specific Gas Analysis

Sample Location: Multiple Locations
HHV (Btu/scf): 1,083

Constituent	Natural Gas Stream Speciation (Vol. %)	Natural Gas Stream Speciation (Wt. %)	Molar Weight
N2	0.4949	0.788	0.1386
METHANE	90.4241	82.411	14.504
CO2	0.2608	0.652	0.1148
ETHANE	7.6812	13.124	2.3097
PROPANE	0.6778	1.698	0.2989
I-BUTANE	0.0754	0.249	0.0438
N-BUTANE	0.1355	0.447	0.0788
I-PENTANE	0.054	0.223	0.0392
N-PENTANE	0.045	0.186	0.0327
I-H EXAN ES	0.000	0.000	0
N-HEXANE	0.045	0.222	0.0391
BENZENE	0.000	0.000	0
CYCLOHEXANE	0.000	0.000	0
HEPTANES	0.000	0.000	0
TOLUENE	0.000	0.000	0
2,2,4 Trimethylpentane	0.000	0.000	0
N-OCTANE	0.000	0.000	0
*E-BENZENE	0.000	0.000	0
*m,o,&p-XYLENE	0.000	0.000	0
I-NONANES	0.000	0.000	0
N-NONANE	0.000	0.000	0
I-DECANES	0.000	0.000	0
N-DECANE	0.000	0.000	0
I-UNDECANES +	0.000	0.000	0
Totals	99.895	100.000	17.600

*Gas Analysis showed no detectable compounds above hexane +, conservatively assumed all hexane + was n-hexa

TOC (Total)	99.14	98.56
VOC (Total)	1.03	3.03
HAP (Total)	0.05	0.22

Bryan Research & Engineering, LLC

ProMax® 6.0

Simulation Report

Client Name: EQM
Location: Bradshaw
Job: Produced Water Tank Run

ProMax Filename: 2024-0626 Bradshaw PWT v1
ProMax Version: 6.0.23032.0
Property Stencil Name: PWT
Property Stencil Flowsheet: Flowsheet1

Emission Summary [Total]

Component Subset	**Tank Losses**	Flashing Losses	Working Losses	Standing Losses	**Loading Losses**
	[ton/yr]	[ton/yr]	[ton/yr]	[ton/yr]	**[ton/yr]**
VOCs	**0.008**	0.007	0.000	0.000	**0.000**
HAPs	**0.000**	0.000	0.000	0.000	**0.000**
BTEX	**0.000**	0.000	0.000	0.000	**0.000**
H2S	**0.000**	-	-	-	**-**
Methane	**0.328**	0.317	0.003	0.008	**0.000**

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Report Navigator can be activated via the ProMax Navigator Toolbar.

Bryan Research & Engineering, LLC

ProMax® 6.0

Simulation Report

Client Name: EQM
Location: Bradshaw
Job: Produced Water Tank Run

ProMax Filename: 2024-0626 Bradshaw PWT v1
ProMax Version: 6.0.23032.0
Property Stencil Name: Used Oil Tank
Property Stencil Flowsheet: Flowsheet1

Emission Summary [Total]

Component Subset	**Tank Losses**	Flashing Losses	Working Losses	Standing Losses	**Loading Losses**
	[ton/yr]	[ton/yr]	[ton/yr]	[ton/yr]	**[ton/yr]**
VOCs	**0.000**	0.000	0.000	0.000	**0.000**
HAPs	**0.000**	0.000	0.000	0.000	**0.000**
BTEX	**0.000**	0.000	0.000	0.000	**0.000**
H2S	**0.000**	-	-	-	**-**
Methane	**0.000**	0.000	0.000	0.000	**0.000**

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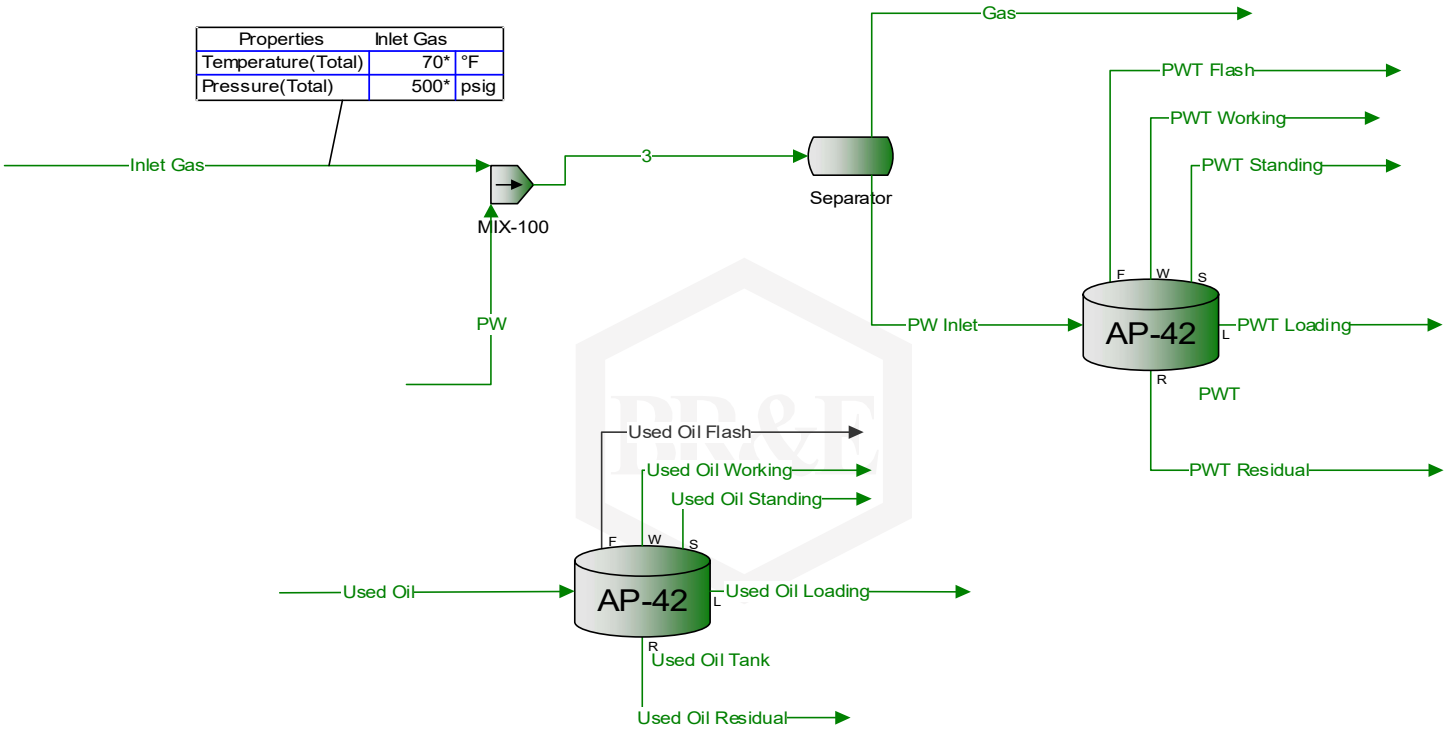
Flowsheet1

Bradshaw Storage Tank Emissions



Inlet Stream Summary				
Stream Name		Inlet Gas	PW	Used Oil
Stream Flowsheet		Flowsheet1	Flowsheet1	Flowsheet1
Temperature	°F	70.000	70.000	60.000
Pressure	psig	500.000	485.304	0.004
Standard Vapor Volumetric Flow	MSCFD	2129176.556	1692.835	0.494
Standard Liquid Volumetric Flow	bbl/d	900589.906	229.505	0.822
Vapor Fraction	(%)	100.000	0.000	0.000
Component		[Mol%]	[Mol%]	[Mol%]
Carbon Dioxide		0.261	0.000	0.000
Nitrogen		0.495	0.000	0.000
Oxygen		0.000	0.000	0.000
Methane		90.520	0.000	0.000
Ethane		7.689	0.000	0.000
Propane		0.679	0.000	0.000
Isobutane		0.075	0.000	0.000
n-Butane		0.136	0.000	0.000
i-Pentane		0.054	0.000	0.000
n-Pentane		0.045	0.000	0.000
Cyclopentane		0.000	0.000	0.000
n-Hexane		0.045	0.000	0.000
Cyclohexane		0.000	0.000	0.000
Heptane		0.000	0.000	0.000
Methylcyclohexane		0.000	0.000	0.000
2,2,4-Trimethylpentane		0.000	0.000	0.000
Benzene		0.000	0.000	0.000
Toluene		0.000	0.000	0.000
Ethylbenzene		0.000	0.000	0.000
m-Xylene		0.000	0.000	0.000
Octane		0.000	0.000	0.000
Water		0.000	100.000	0.000
Lube Oil		0.000	0.000	100.000

Flowsheet Information				
Tank Losses Block Name		PWT		
Tank Losses Block Inlet Stream		PW Inlet		

Tank Characteristics				
Tank Type		Vertical Cylinder		
Time Frame		Year		
Material Category		Light Organics		
Number of Tanks		1		
Shell Height	[ft]	24.000		
Diameter [ft]	[ft]	12.000		
Maximum Liquid Height	[%] | [ft]	90.000	21.600	
Average Liquid Height	[%] | [ft]	50.000	12.000	
Minimum Liquid Height	[%] | [ft]	10.000	2.400	
Sum of Increases in Liquid Level	[ft/yr]	148.802		
Tank Volume	[gal] | [bbl]	20304.644	483.444	
Insulation		Uninsulated		
Bolted or Riveted Construction		False		
Vapor Balanced Tank		False		
Paint Characteristics				
Shell Color		White		
Shell Paint Condition		Average		
Roof Color		White		
Roof Paint Condition		Average		
Roof Characteristics				
Type		Cone		
Diameter	[ft]	-		
Slope	[ft/ft]	0.063		
Breather Vent Settings				
Breather Vacuum Pressure	[psig]	-0.030		
Breather Vent Pressure	[psig]	0.030		

Loading Loss Parameters		
Cargo Carrier		Tank Truck or Rail Tank Car
Land Based Mode of Operation		Submerged Loading of a Clean Cargo Tank
Marine Based Mode of Operation		-
Control Efficiency	[%]	0.000
Truck Annual Leak Test Passed		None
Overall Reduction Efficiency	[%]	0.000

Meteorological Data				
Location		Pittsburgh, PA		
Average Atmospheric Pressure	[psia]	14.100		
Maximum Average Temperature	[°F]	60.400		
Minimum Average Temperature	[°F]	42.800		
Solar Insolation	[BTU/ft^2*day]	1170.000		
Average Wind Speed	[mph]	7.800		
Tank Conditions				
Flashing Temperature	[°F]	58.118		
Maximum Liquid Surface Temperature	[°F]	58.118		
Average Liquid Surface Temperature	[°F]	53.186		
Known Liquid Bulk Temperature?		False		
Bulk Liquid Temperature	[°F]	52.478		
Net Throughput	[bbl/day] | [bbl/yr]	8.213	2997.711	
Net Throughput Per Tank	[bbl/day] | [bbl/yr]	8.213	2997.711	
Annual Turnovers Per Tank		7.750		
Residual Liquid	[bbl/day]	8.219		
Residual Liquid Per Tank	[bbl/day]	8.219		
Raoult's Law Used for Vapor Pressure Calc?		False		
Vapor Pressure @ Minimum Liquid Surface Temperature	[psia]	12.886		
Vapor Pressure @ Maximum Liquid Surface Temperature	[psia]	14.100		
Vapor Pressure @ Average Daily Liquid Surface Temperature	[psia]	13.490		
Tank Conditions				
Heated Tank?		-		

Flowsheet Information				
Tank Losses Block Name		Used Oil Tank		
Tank Losses Block Inlet Stream		Used Oil		

Tank Characteristics				
Tank Type		Vertical Cylinder		
Time Frame		Year		
Material Category		Heavy Crude		
Number of Tanks		1		
Shell Height	[ft]	24.000		
Diameter [ft]	[ft]	12.000		
Maximum Liquid Height	[%] | [ft]	90.000	21.600	
Average Liquid Height	[%] | [ft]	50.000	12.000	
Minimum Liquid Height	[%] | [ft]	10.000	2.400	
Sum of Increases in Liquid Level	[ft/yr]	14.842		
Tank Volume	[gal] | [bbl]	20304.644	483.444	
Insulation		Uninsulated		
Bolted or Riveted Construction		False		
Vapor Balanced Tank		False		
Paint Characteristics				
Shell Color		White		
Shell Paint Condition		Average		
Roof Color		White		
Roof Paint Condition		Average		
Roof Characteristics				
Type		Cone		
Diameter	[ft]	-		
Slope	[ft/ft]	0.063		
Breather Vent Settings				
Breather Vacuum Pressure	[psig]	-0.030		
Breather Vent Pressure	[psig]	0.030		

Loading Loss Parameters		
Cargo Carrier		Tank Truck or Rail Tank Car
Land Based Mode of Operation		Submerged Loading of a Clean Cargo Tank
Marine Based Mode of Operation		-
Control Efficiency	[%]	0.000
Truck Annual Leak Test Passed		None
Overall Reduction Efficiency	[%]	0.000

Meteorological Data				
Location		Pittsburgh, PA		
Average Atmospheric Pressure	[psia]	14.100		
Maximum Average Temperature	[°F]	60.400		
Minimum Average Temperature	[°F]	42.800		
Solar Insolation	[BTU/ft^2*day]	1170.000		
Average Wind Speed	[mph]	7.800		
Tank Conditions				
Flashing Temperature	[°F]	58.118		
Maximum Liquid Surface Temperature	[°F]	58.118		
Average Liquid Surface Temperature	[°F]	53.186		
Known Liquid Bulk Temperature?		False		
Bulk Liquid Temperature	[°F]	52.478		
Net Throughput	[bbl/day] | [bbl/yr]	0.819	298.993	
Net Throughput Per Tank	[bbl/day] | [bbl/yr]	0.819	298.993	
Annual Turnovers Per Tank		0.773		
Residual Liquid	[bbl/day]	0.822		
Residual Liquid Per Tank	[bbl/day]	0.822		
Raoult's Law Used for Vapor Pressure Calc?		False		
Vapor Pressure @ Minimum Liquid Surface Temperature	[psia]	0.000		
Vapor Pressure @ Maximum Liquid Surface Temperature	[psia]	0.000		
Vapor Pressure @ Average Daily Liquid Surface Temperature	[psia]	0.000		
Tank Conditions				
Heated Tank?		-		

Emission Summary [Total]					
Component Subset	**Tank Losses**	Flashing Losses	Working Losses	Standing Losses	**Loading Losses**
	[ton/yr]	[ton/yr]	[ton/yr]	[ton/yr]	**[ton/yr]**
VOCs	**0.008**	0.007	0.000	0.000	**0.000**
HAPs	**0.000**	0.000	0.000	0.000	**0.000**
BTEX	**0.000**	0.000	0.000	0.000	**0.000**
H2S	**0.000**	-	-	-	**-**

Emission Summary [Per Tank]					
Component Subset	**Tank Losses**	Flashing Losses	Working Losses	Standing Losses	**Loading Losses**
	[ton/yr]	[ton/yr]	[ton/yr]	[ton/yr]	**[ton/yr]**
VOCs [C3+]	**0.008**	0.007	0.000	0.000	**0.000**
HAPs	**0.000**	0.000	0.000	0.000	**0.000**
BTEX	**0.000**	0.000	0.000	0.000	**0.000**
H2S	**0.000**	-	-	-	**-**

Stream Properties						
		Tank Inlet	Flashing Losses	Working Losses	Standing Losses	Loading Losses	Residual
Molecular Weight	[lb/lbmol]	18.016	18.410	23.139	23.139	18.015	18.015
Net Ideal Gas Heating Value	[BTU/scf]	-	941.140	315.483	315.483	0.000	-
Standard Vapor Volumetric Flow	[scf/d]	-	48.223	1.281	3.940	0.311	-
Specific Gravity		0.998	-	-	-	-	1.000
Reid Vapor Pressure	[psi]	1.091	-	-	-	-	1.030
API Gravity		10.076	-	-	-	-	9.998
Standard Liquid Volumetric Flow	[bbl/d]	8.241	-	-	-	-	8.219

Stream Mass Flow [Total]							
Component	Tank Inlet	Flashing Losses	Working Losses	Standing Losses	Loading Losses	Residual	Total Emissions
	[ton/yr]	[ton/yr]	[ton/yr]	[ton/yr]	[ton/yr]	[ton/yr]	[ton/yr]
Carbon Dioxide	0.051	0.029	0.005	0.016	0.000	0.000	0.051
Nitrogen	0.002	0.002	0.000	0.000	0.000	0.000	0.002
Oxygen	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Methane	0.328	0.317	0.003	0.008	0.000	0.000	0.328
Ethane	0.068	0.064	0.001	0.003	0.000	0.000	0.068
Propane	0.005	0.005	0.000	0.000	0.000	0.000	0.005
Isobutane	0.001	0.000	0.000	0.000	0.000	0.000	0.001
n-Butane	0.001	0.001	0.000	0.000	0.000	0.000	0.001
i-Pentane	0.000	0.000	0.000	0.000	0.000	0.000	0.000
n-Pentane	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cyclopentane	0.000	0.000	0.000	0.000	0.000	0.000	0.000
n-Hexane	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cyclohexane	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Heptane	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Methylcyclohexane	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2,2,4-Trimethylpentane	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Benzene	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Toluene	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ethylbenzene	0.000	0.000	0.000	0.000	0.000	0.000	0.000
m-Xylene	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Octane	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Water	525.275	0.007	0.006	0.017	0.003	525.245	0.030
Lube Oil	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Stream Compostion						
Component	Tank Inlet	Flashing Losses	Working Losses	Standing Losses	Loading Losses	Residual
	[Mol%]	[Mol%]	[Mol%]	[Mol%]	[Mol%]	[Mol%]
Carbon Dioxide	0.004	2.875	19.295	19.295	0.000	0.000
Nitrogen	0.000	0.255	0.038	0.038	0.000	0.000
Oxygen	0.000	0.000	0.000	0.000	0.000	0.000
Methane	0.070	85.305	25.948	25.948	0.000	0.000
Ethane	0.008	9.205	4.572	4.572	0.000	0.000
Propane	0.000	0.506	0.181	0.181	0.000	0.000
Isobutane	0.000	0.037	0.010	0.010	0.000	0.000
n-Butane	0.000	0.080	0.026	0.026	0.000	0.000
i-Pentane	0.000	0.020	0.005	0.005	0.000	0.000
n-Pentane	0.000	0.006	0.001	0.001	0.000	0.000
Cyclopentane	0.000	0.000	0.000	0.000	0.000	0.000
n-Hexane	0.000	0.004	0.000	0.000	0.000	0.000
Cyclohexane	0.000	0.000	0.000	0.000	0.000	0.000
Heptane	0.000	0.000	0.000	0.000	0.000	0.000
Methylcyclohexane	0.000	0.000	0.000	0.000	0.000	0.000
2,2,4-Trimethylpentane	0.000	0.000	0.000	0.000	0.000	0.000
Benzene	0.000	0.000	0.000	0.000	0.000	0.000
Toluene	0.000	0.000	0.000	0.000	0.000	0.000
Ethylbenzene	0.000	0.000	0.000	0.000	0.000	0.000
m-Xylene	0.000	0.000	0.000	0.000	0.000	0.000
Octane	0.000	0.000	0.000	0.000	0.000	0.000
Water	99.918	1.708	49.924	49.924	100.000	100.000
Lube Oil	0.000	0.000	0.000	0.000	0.000	0.000
Component	Tank Inlet	Flashing Losses	Working Losses	Standing Losses	Loading Losses	Residual
	[Mass%]	[Mass%]	[Mass%]	[Mass%]	[Mass%]	[Mass%]
Carbon Dioxide	0.010	6.872	36.699	36.699	0.000	0.000
Nitrogen	0.000	0.388	0.046	0.046	0.000	0.000
Oxygen	0.000	0.000	0.000	0.000	0.000	0.000
Methane	0.062	74.334	17.990	17.990	0.000	0.000
Ethane	0.013	15.035	5.942	5.942	0.000	0.000
Propane	0.001	1.212	0.344	0.344	0.000	0.000
Isobutane	0.000	0.116	0.026	0.026	0.000	0.000
n-Butane	0.000	0.252	0.065	0.065	0.000	0.000
i-Pentane	0.000	0.077	0.015	0.015	0.000	0.000
n-Pentane	0.000	0.025	0.002	0.002	0.000	0.000
Cyclopentane	0.000	0.000	0.000	0.000	0.000	0.000
n-Hexane	0.000	0.018	0.001	0.001	0.000	0.000
Cyclohexane	0.000	0.000	0.000	0.000	0.000	0.000
Heptane	0.000	0.000	0.000	0.000	0.000	0.000
Methylcyclohexane	0.000	0.000	0.000	0.000	0.000	0.000
2,2,4-Trimethylpentane	0.000	0.000	0.000	0.000	0.000	0.000
Benzene	0.000	0.000	0.000	0.000	0.000	0.000
Toluene	0.000	0.000	0.000	0.000	0.000	0.000
Ethylbenzene	0.000	0.000	0.000	0.000	0.000	0.000
m-Xylene	0.000	0.000	0.000	0.000	0.000	0.000
Octane	0.000	0.000	0.000	0.000	0.000	0.000
Water	99.913	1.672	38.870	38.870	100.000	100.000
Lube Oil	0.000	0.000	0.000	0.000	0.000	0.000

Emission Summary [Total]

Component Subset	Tank Losses [ton/yr]	Flashing Losses [ton/yr]	Working Losses [ton/yr]	Standing Losses [ton/yr]	Loading Losses [ton/yr]
VOCs	**0.000**	0.000	0.000	0.000	**0.000**
HAPs	**0.000**	0.000	0.000	0.000	**0.000**
BTEX	**0.000**	0.000	0.000	0.000	**0.000**
H2S	**0.000**	-	-	-	**-**

Emission Summary [Per Tank]

Component Subset	Tank Losses [ton/yr]	Flashing Losses [ton/yr]	Working Losses [ton/yr]	Standing Losses [ton/yr]	Loading Losses [ton/yr]
VOCs [C3+]	**0.000**	0.000	0.000	0.000	**0.000**
HAPs	**0.000**	0.000	0.000	0.000	**0.000**
BTEX	**0.000**	0.000	0.000	0.000	**0.000**
H2S	**0.000**	-	-	-	**-**

Stream Properties

		Tank Inlet	Flashing Losses	Working Losses	Standing Losses	Loading Losses	Residual
Molecular Weight	[lb/lbmol]	188.000	-	188.000	188.000	188.000	188.000
Net Ideal Gas Heating Value	[BTU/scf]	-	-	9169.961	9169.961	9169.961	-
Standard Vapor Volumetric Flow	[scf/d]	-	0.000	0.000	0.001	0.000	-
Specific Gravity		0.851	-	-	-	-	0.852
Reid Vapor Pressure	[psi]	0.209	-	-	-	-	0.209
API Gravity		34.804	-	-	-	-	34.805
Standard Liquid Volumetric Flow	[bbl/d]	0.822	-	-	-	-	0.822

Stream Mass Flow [Total]

Component	Tank Inlet [ton/yr]	Flashing Losses [ton/yr]	Working Losses [ton/yr]	Standing Losses [ton/yr]	Loading Losses [ton/yr]	Residual [ton/yr]	Total Emissions [ton/yr]
Carbon Dioxide	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Nitrogen	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Oxygen	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Methane	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ethane	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Propane	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Isobutane	0.000	0.000	0.000	0.000	0.000	0.000	0.000
n-Butane	0.000	0.000	0.000	0.000	0.000	0.000	0.000
i-Pentane	0.000	0.000	0.000	0.000	0.000	0.000	0.000
n-Pentane	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cyclopentane	0.000	0.000	0.000	0.000	0.000	0.000	0.000
n-Hexane	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cyclohexane	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Heptane	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Methylcyclohexane	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2,2,4-Trimethylpentane	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Benzene	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Toluene	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ethylbenzene	0.000	0.000	0.000	0.000	0.000	0.000	0.000
m-Xylene	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Octane	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Water	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Lube Oil	44.688	0.000	0.000	0.000	0.000	0.000	0.000

Stream Compostion

Component	Tank Inlet [Mol%]	Flashing Losses [Mol%]	Working Losses [Mol%]	Standing Losses [Mol%]	Loading Losses [Mol%]	Residual [Mol%]
Carbon Dioxide	0.000	-	0.000	0.000	0.000	0.000
Nitrogen	0.000	-	0.000	0.000	0.000	0.000
Oxygen	0.000	-	0.000	0.000	0.000	0.000
Methane	0.000	-	0.000	0.000	0.000	0.000
Ethane	0.000	-	0.000	0.000	0.000	0.000
Propane	0.000	-	0.000	0.000	0.000	0.000
Isobutane	0.000	-	0.000	0.000	0.000	0.000
n-Butane	0.000	-	0.000	0.000	0.000	0.000
i-Pentane	0.000	-	0.000	0.000	0.000	0.000
n-Pentane	0.000	-	0.000	0.000	0.000	0.000
Cyclopentane	0.000	-	0.000	0.000	0.000	0.000
n-Hexane	0.000	-	0.000	0.000	0.000	0.000
Cyclohexane	0.000	-	0.000	0.000	0.000	0.000
Heptane	0.000	-	0.000	0.000	0.000	0.000
Methylcyclohexane	0.000	-	0.000	0.000	0.000	0.000
2,2,4-Trimethylpentane	0.000	-	0.000	0.000	0.000	0.000
Benzene	0.000	-	0.000	0.000	0.000	0.000
Toluene	0.000	-	0.000	0.000	0.000	0.000
Ethylbenzene	0.000	-	0.000	0.000	0.000	0.000
m-Xylene	0.000	-	0.000	0.000	0.000	0.000
Octane	0.000	-	0.000	0.000	0.000	0.000
Water	0.000	-	0.000	0.000	0.000	0.000
Lube Oil	100.000	-	100.000	100.000	100.000	100.000
Component	Tank Inlet [Mass%]	Flashing Losses [Mass%]	Working Losses [Mass%]	Standing Losses [Mass%]	Loading Losses [Mass%]	Residual [Mass%]
Carbon Dioxide	0.000	-	0.000	0.000	0.000	0.000
Nitrogen	0.000	-	0.000	0.000	0.000	0.000
Oxygen	0.000	-	0.000	0.000	0.000	0.000
Methane	0.000	-	0.000	0.000	0.000	0.000
Ethane	0.000	-	0.000	0.000	0.000	0.000
Propane	0.000	-	0.000	0.000	0.000	0.000
Isobutane	0.000	-	0.000	0.000	0.000	0.000
n-Butane	0.000	-	0.000	0.000	0.000	0.000
i-Pentane	0.000	-	0.000	0.000	0.000	0.000
n-Pentane	0.000	-	0.000	0.000	0.000	0.000
Cyclopentane	0.000	-	0.000	0.000	0.000	0.000
n-Hexane	0.000	-	0.000	0.000	0.000	0.000
Cyclohexane	0.000	-	0.000	0.000	0.000	0.000
Heptane	0.000	-	0.000	0.000	0.000	0.000
Methylcyclohexane	0.000	-	0.000	0.000	0.000	0.000
2,2,4-Trimethylpentane	0.000	-	0.000	0.000	0.000	0.000
Benzene	0.000	-	0.000	0.000	0.000	0.000
Toluene	0.000	-	0.000	0.000	0.000	0.000
Ethylbenzene	0.000	-	0.000	0.000	0.000	0.000
m-Xylene	0.000	-	0.000	0.000	0.000	0.000
Octane	0.000	-	0.000	0.000	0.000	0.000
Water	0.000	-	0.000	0.000	0.000	0.000
Lube Oil	100.000	-	100.000	100.000	100.000	100.000