West Virginia Department of Environmental Protection
Division of Air Quality

Fact Sheet

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

Permit Number: **R30-05100125-2024**
Application Received: **May 3, 2024**
Plant Identification Number: **03-54-051-00125**
Permittee: **MarkWest Liberty Midstream & Resources, L.L.C.**
Facility Name: **Majorsville Gas Plant**
Mailing Address: **1515 Arapahoe Street, Tower 1, Suite 1600, Denver, CO 80202-2137**

Physical Location:	Dallas, Marshall County, West Virginia
UTM Coordinates:	540.95 km Easting • 4,423.83 km Northing • Zone 17
Directions:	From Dallas, head south on Dallas Pike Road toward Dallas Street. Turn right onto Number 2 Ridge Road (1.4 mi), turn left onto Warton Hill Road (341 ft), take the first right to stay on Warton Hill Road (2.6 mi), turn right onto Calis Majorsville Road (0.2 mi), destination is on the right.

Facility Description

The permittee owns and operates the Majorsville Gas Plant. The facility has a capacity of 1,500 million standard cubic feet per day (mmscfd) of wet natural gas. The plant is used as a gathering station for gas wells throughout southwest Pennsylvania and West Virginia. Upon entering the plant, the gas is sent through a molecular sieve which is designed to remove liquids from the gas stream. Heaters are used to regenerate the molecular sieve on a regular basis to remove the water and hydrocarbons. After the molecular sieve, the gas will be cooled through a cryogenic plant with mechanical refrigeration which serves to remove propane and heavier hydrocarbons in the gas stream. The natural gas liquids from the new plant then pass through a stabilizer to remove any carryover methane and ethane in the liquid stream. The remaining gas stream (mostly methane and ethane) passes through the de-ethanizers, so that ethane can be separated and recovered from the gas stream. The ethane is then transferred via pipeline to market. The

remaining natural gas will pass through the existing compressor engines or one of the electric driven compressors prior to entering the downstream pipeline to market. Electric pumps are located on site to transfer the recovered liquids to another facility for disposal or further processing.

Emissions Summary

Plantwide Emissions Summary [Tons per Year]

Regulated Pollutants	Potential Emissions	2023 Actual Emissions
Carbon Monoxide (CO)	131.75	78.07
Nitrogen Oxides (NO_X)	131.87	74.70
Particulate Matter ($PM_{2.5}$)	15.90	2.48
Particulate Matter (PM_{10})	15.90	2.48
Total Particulate Matter (TSP)	15.90	11.90
Sulfur Dioxide (SO_2)	1.86	0.93
Volatile Organic Compounds (VOC)	109.81	45.11

PM_{10} is a component of TSP.

Hazardous Air Pollutants	Potential Emissions	2023 Actual Emissions
Acrolein	1.06	None Reported
Acetaldehyde	1.73	None Reported
Benzene	0.10	0.02
Ethylbenzene	<0.01	<0.01
Formaldehyde	5.62	0.89
Methanol	0.59	0.08
n-Hexane	4.02	3.01
Toluene	0.09	0.02
Xylenes	0.04	0.01
Other HAPs	1.03	None reported
Total HAPs	14.29	4.03

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

Title V Program Applicability Basis

This facility has the potential to emit 131.75 tpy of CO, 131.87 tpy of NO_X, and 109.81 tpy of VOC. Due to this facility's potential to emit over 100 tons per year of criteria pollutant, MarkWest Liberty Midstream & Resources, L.L.C. is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 45CSR30.

Legal and Factual Basis for Permit Conditions

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

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

Federal and State:	45CSR2	To Prevent and Control Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers
	45CSR6	Open burning prohibited.
	45CSR10	To Prevent and Control Air Pollution from the Emission of Sulfur Oxides
	45CSR11	Standby plans for emergency episodes.
	45CSR13	Minor NSR Permits
	45CSR16	Standards Of Performance For New Stationary Sources
	WV Code § 22-5-4 (a) (14)	The Secretary can request any pertinent information such as annual emission inventory reporting.
	45CSR30	Operating permit requirement.
	45CSR34	Emission Standards for Hazardous Air Pollutants
	40 C.F.R. Part 60, Subpart Db	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units
	40 C.F.R. Part 60, Subpart Dc	Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units
	40 C.F.R. Part 60, Subpart VVa	Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006, and on or Before April 25, 2023
	40 C.F.R. Part 60, Subpart IIII	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
	40 C.F.R. Part 60, Subpart JJJJ	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines
	40 C.F.R. Part 60, Subpart OOOO	Standards of Performance for Crude Oil and Natural Gas Facilities for Which Construction, Modification, or Reconstruction Commenced After August 23, 2011, and on or Before September 18, 2015
	40 C.F.R. Part 60, Subpart OOOOa	Standards of Performance for Crude Oil and Natural Gas Facilities for Which Construction, Modification or Reconstruction Commenced After

		September 18, 2015 and On or Before December 6, 2022
	40 C.F.R. Part 63, Subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines
	40 C.F.R. Part 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	Permit Determinations or Amendments That Affect the Permit *(if any)*
R13-2818N	February 15, 2024	

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

Determinations and Justifications

This is the first Title V permit renewal for this facility.There have been no changes to the equipment at the facility since the last minor modification R30-05100125-2019(MM05). The following changes were made to the Title V Permit as part of this renewal:

4.0 Engines and Emergency Generators

- This section has conditions from R13-2818N. There have been no changes to the underlying requirements of R13-2818N. Therefore, no changes were made.

5.0. Heaters

- This section has conditions from R13-2818N, 45CSR2, 45CSR10, and 40 C.F.R 60 Subparts Db and Dc. 40 C.F.R. 60 Subparts Db and Dc have not been amended since the issuance of the initial

Title V Permit. 45CSR2 and 45CSR10 were amended in 2024 resulting in the following changes to the Title V Permit:

- Condition 5.1.1 - citations for 45CSR2 and 45CSR10 were updated.
- Condition 5.1.7 - removed because 45CSR§2-9.1. is now reserved.
- Condition 5.2.2 - citation for 45CSR2 was updated.
- Condition 5.3.1 - updated condition to correspond with changes to 45CSR§2-3.2.
- Condition 5.4.4 - citations for 45CSR2 were updated.

6.0. Flares

- This section has conditions from R13-2818N, 45CSR6, and 40 C.F.R 60 Subparts OOOO and VVa. 45CSR6 and 40 C.F.R 60 Subpart VVa were amended in 2024 resulting in the following changes to the Title V Permit:

  - Condition 6.1.1. - citations for 40 C.F.R. §60.482-11a were replaced with §60.482-10a.
  - Condition 6.1.11 - removed because Section 2.17 is now reserved.

7.0. 40 C.F.R. 60 Subpart JJJJ and 40 C.F.R. 63 Subpart ZZZZ Requirements

- This section has conditions from R13-2818N, 40 C.F.R 60 Subpart JJJJ, and 40 C.F.R. 63 Subpart ZZZZ. 40 C.F.R 60 Subpart JJJJ and 40 C.F.R. 63 Subpart ZZZZ have been amended since the last Title V permit was issued resulting in the following changes to the Title V Permit:

  - Condition 7.4.1.c - updated due to amendments in the underlying 40 C.F.R. 60 Subpart JJJJ requirement.
  - Conditions 7.5.1 and 7.5.2 - added electronic reporting requirements due to amendments in the underlying 40 C.F.R. 60 Subpart JJJJ requirement.

8.0. 40 C.F.R. 60 Subpart IIII and 40 C.F.R. 63 Subpart ZZZZ Requirements

- This section has conditions from R13-2818N, 40 C.F.R 60 Subpart JJJJ, and 40 C.F.R. 63 Subpart ZZZZ. 40 C.F.R 60 Subpart IIII and 40 C.F.R. 63 Subpart ZZZZ have been amended since the last Title V permit was issued, however, no changes to the applicable requirements were needed as part of this renewal.

9.0. 40 C.F.R. 60 Subpart OOOO/OOOOa – Pneumatic Controllers Requirements

- This section has conditions from R13-2818N, 40 C.F.R 60 Subparts OOOO and OOOOa. 40 C.F.R 60 Subparts OOOO and OOOOa have been amended since the issuance of the last Title V permit resulting in the following changes.

  - Conditions 9.1.3, 9.4.1, and 9.5.1 - updated due to 40 C.F.R. 60 Subpart OOOOa being amended.

10.0. 40 C.F.R. 60 Subpart OOOOa Equipment Leak Requirements

- This section was previously Section 12.0, but was renumbered when reserved sections 10.0 and 11.0 were deleted. This section has conditions from R13-2818N and 40 C.F.R 60 Subpart OOOOa. 40 C.F.R 60 Subpart OOOOa has been amended since the issuance of the last Title V permit resulting in the following changes.

  - Conditions 10.1.4, 10.1.5, 10.1.6, 10.1.7, 10.5.1 and 10.5.2 - updated due to 40 C.F.R. 60 Subpart OOOOa being amended.

11.0. 40 C.F.R. 60 Subpart OOOO/OOOOa – Reciprocating Compressors Requirements

- This section was previously Section 13.0, but was renumbered when reserved sections 10.0 and 11.0 were deleted. This section has conditions from 40 C.F.R 60 Subpart OOOOa. 40 C.F.R 60 Subpart OOOOa has been amended since the issuance of the last Title V permit resulting in the following changes.

    - Conditions 11.1.3, 11.1.4, 11.2.3, 11.2.4, 11.3.3, 11.4.2, and 11.5.2 - updated due to 40 C.F.R. 60 Subpart OOOOa being amended.

Non-Applicability Determinations

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

a. **45CSR40 – Control of Ozone Season Nitrogen Oxides Emissions.** This rule establishes ozone season NOx emission limitations, MRR, NOx reduction, and NOx control standards. There are no NOx Ozone Season units, as defined in 40CSR§40-2.30., present at the facility; therefore, this rule does not apply.

b. **40 C.F.R. 60 Subpart LLL – Standards of Performance for SO_2 Emissions from Onshore Natural Gas Processing for Which Construction, Reconstruction, or Modification Commenced After January 20, 1984, and on or Before August 23, 2011.** The provisions of this subpart are applicable to the following affected facilities that process natural gas: each sweetening unit, and each sweetening unit followed by a sulfur recovery unit (40 C.F.R. §60.640(a)). There are no sweetening units, as defined in this subpart, present at the facility; therefore, this subpart does not apply.

c. **40 C.F.R. 60 Subpart OOOOb—Standards of Performance for Crude Oil and Natural Gas Facilities for Which Construction, Modification or Reconstruction Commenced After December 6, 2022.** This subpart establishes emission standards and compliance schedules for the control of the pollutant greenhouse gases (GHG). The greenhouse gas standard in this subpart is in the form of a limitation on emissions of methane from affected facilities in the crude oil and natural gas source category that commence construction, modification, or reconstruction after December 6, 2022. There are no emission units at this facility constructed after December 6, 2022, therefore the facility is not subject to the subpart.

d. **40 C.F.R. 63 Subpart DDDDD – National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters**. This subpart establishes national emission limitations and work practice standards for hazardous air pollutants (HAP) emitted from industrial, commercial, and institutional boilers and process heaters located at major sources of HAP (40 C.F.R. §63.7480). The facility is not a major source of HAPs; therefore, this regulation is not applicable to any heater at the facility.

e. **40 C.F.R. 63 Subpart JJJJJJ – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources.** This subpart is applicable to each industrial, commercial, or institutional boiler as defined in §63.11237 that is located at, or is part of, an area source of hazardous air pollutants (HAP). The facility is an area source of HAPs that operates heaters. All the heaters combust natural gas, and as such, are not subject to this regulation as provided in §63.11195(e). Based upon these facts, Subpart JJJJJJ is not applicable to the heaters H-741, H-781, H-2741, H-3741, H-4741, H-3781, H-D1782, H- D1741, H-5741, H-6741, H-7741, H-4781, H-7781, H-4782, H-D2782, and H-D2741.

f. **40 C.F.R. Part 64 Compliance Assurance Monitoring (CAM).** According to 5/24/2019 technical correspondence from the permittee, each emission unit that emits to the flare FL-991 and FL-1991 have potential pre-control VOC emissions less than 100 tpy. Flare FL-991 controls four (4) sources (Maj-I, Maj-II, Maj-III, Maj-V) and pipeline blowdowns that vent to the flare in addition to the pilot sweep gas. This is an average of less than 40 tpy uncontrolled VOC per PSEU. Flare FL-1991 controls five (5) sources (Maj-IV, Maj-VI, Maj-VII, DeEth-I, DeEth-II) in addition to the pilot and sweep gas, which yields an average of approximately 60 tpy of uncontrolled VOC per PSEU. It is noted that Maj-I and Maj-II are designed to be 120 mmscf/d plants while III, IV, V, VI, VII are designed to be 200 mmscf/d, which helps explain why FL-1991 has a higher average uncontrolled VOC emission rate than FL-991 per PSEU and why each PSEU venting to FL-1991 is still below 100 tpy uncontrolled VOC. Since none of the PSEUs controlled by the flares FL-991 and FL-1991 meet the applicability criterion in 40 C.F.R. §64.2(a)(3), CAM is not applicable. The engines C-102, C-103, and C-104 are equipped with oxidation catalysts that (according to the application) control CO, VOC, and HCHO, for which there are non-exempt emission limitations in permit R13-2818N. However, pre-control potential emissions of these pollutants do not exceed the respective major source thresholds (cf. 40 C.F.R. §64.2(a)(3)). Therefore, CAM is not applicable to the engines C-102, C-103, and C-104. Diesel particulate filters are used on the compression ignition engines M3-G-2, M3-G-3, M4-G-6, M4-G-7, M7-G-9, MD1-G-4, MD1-G-5, MD2-G-11, and MD2-G-10. However, the engines are not subject to a non-exempt particulate matter emission limitation or standard (cf. 40 C.F.R. §64.2(a)(1)). Therefore, CAM is not applicable to the compression ignition engines.

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:	October 28, 2024
Ending Date:	November 27, 2024

Point of Contact

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

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Procedure for Requesting Public Hearing

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

Response to Comments (Statement of Basis)

(**Choose**) Not applicable.

OR

Describe response to comments that are received and/or document any changes to the final permit from the draft/proposed permit.