

Fact Sheet



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

This Fact Sheet serves to address the changes specific to this Minor Modification and shall be considered a supplement to the Fact Sheet corresponding with the Title V operating permit issued on November 5, 2019.

Permit Number: **R30-05100125-2019**
Application Received: **October 27, 2021 and June 2, 2022**
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, Denver, CO 80202-2137**

Permit Action Number: *MM02 and MM03* Revised: *December 28, 2022*

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 (mmscf) 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.

These permit modifications (MM02 and MM03) incorporate the following changes covered by permits R13-2818K (issued January 24, 2022) and R13-2818L (issued July 11, 2022):

Permit R13-2818K:

- For heaters H-D1782 and H-D2782, increased NO_x emission factors from 0.03 lb/MMBtu to 0.04 lb/MMBtu based on historical test data;
- Increased permitted heat input for heaters H-D1741 and H-D2741 from 14.25 to 14.80 MMBtu/hr;
- Increased permitted heat input for heater H-4782 from 10.65 to 11.72 MMBtu/hr;
- Increased flares FL-1991 and FL-991 throughputs based on historical data;
- Removed hourly flare emission limits on flares FL-1991 and FL-991;
- Incorporated and revised Consent Decree (CD) language; and
- Updated emissions associated with the flares, blowdowns to atmosphere, rod packing venting, and fugitive emissions based on recent gas compositions and data.

Permit R13-2818L:

- Revised flares FL-1991 and FL-991 gas flow heating values;
- Revised emergency generators MD1-G-4, MD1-G-5, M7-G-9 and MD2-G-11 horsepower and fuel consumption and emergency generator MD2-G-10 horsepower to standby ratings;
- Increased fugitive component counts;
- Increased the gas flow limit for flare FL-991 for increased operational flexibility;
- Removed Appendix F reference from 40 C.F.R. 60 Subpart Db language (condition 5.2.5); and
- Included 40 C.F.R. 60 Subpart OOOOa Equipment Leak Standards voluntarily accepted by the company starting July 1, 2022.

Emissions Summary

This modification results in the following emission increases:

Pollutant	Change in Potential Emissions (tons/year)
NO _x	12.02
CO	5.3
VOC	15.64
PM ₁₀ /PM _{2.5}	0.16
SO ₂	0.16
Total HAPs	0.84

Title V Program Applicability Basis

With the proposed changes associated with this modification, this facility maintains the potential to emit 129.64 TPY of NO_x, 121.84 TPY of CO, and 103.71 TPY of VOCs. 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.

The modification to this facility has been found to be subject to the following applicable rules:

Federal and State:	45CSR2	Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers
--------------------	--------	---

45CSR6	To Prevent and Control Particulate Air Pollution from Combustion of Refuse
45CSR10	To Prevent and Control Air Pollution from the Emissions of Sulfur Oxides
45CSR13	Construction/modification permits
45CSR16	Standards of Performance for New Stationary Sources
45CSR30	Operating permit requirement
45CSR34	Emission Standards for HAPs
40 C.F.R. 60 Subpart Db	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units
40 C.F.R. 60 Subpart Dc	Standards of Performance for Small Steam Generating Units after June 9, 1989
40 CFR 60, Subpart OOOOa	Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced After September 18, 2015
40 CFR 60, Subpart IIII	NSPS for Stationary Compression Ignition Internal Combustion Engines
State Only:	None.

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

The active permits/consent orders affected by this modification are as follows:

Permit or Consent Order Number	Date of Issuance	Permit Determinations or Amendments That Affect the Permit (<i>if any</i>)
R13-2818K	January 24, 2022	
R13-2818L	July 11, 2022	

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

There are changes from two R13 permits included in these modifications: R13-2818K and R13-2818L.

The following changes were made under these minor modifications:

1. Section 1.1. Emission Units - revised design capacities of flares FL-991 and FL-1991, heaters H-D1741, H-4782 and H-D2741, and engines M7-G-9, MD1-G-4, MD1-G-5, MD2-G-10 and MD2-G-11.
2. Section 4.0 - modified horsepower and emission limits of engines MD1-G-4, MD1-G-5, M7-G-9 and MD2-G-11 (conditions 4.1.6 through 4.1.8), and horsepower of engine MD2-G-10 (condition 4.1.9).
3. Section 5.0 – modified design capacities of heaters H-D1741, H-4782 and H-D2741 (condition 5.1.1); revised emission limits of heaters H-D1782, H-D2782, H-D1741, H-D2741 and H-4782 (condition 5.1.2); added 40 C. F.R. 60 Subpart Db monitoring plan requirements (conditions 5.1.9 through 5.1.15) and reporting requirement (condition 5.5.6); added 40 C.F.R. 60 Subpart Dc requirements (condition 5.1.16 and reporting condition 5.5.7); also, footnote for NO_x limit was revised (condition 5.1.5); and language referencing Appendix F (condition 5.2.5) was removed (see item 10 below for more information).

Condition 5.1.1' streamlining note revision:

PM limit - the heaters that are 10 MMBtu/hr and greater are subject to the particulate matter weight rate emission limitation for Type 'b' units (45CSR§2-4.1.b.) that is based on total design heat inputs for such units in million BTUs per hour. The total design heat inputs for the affected heaters H-781, H-3781, H-D1782, H-D2782, H-D1741, H-D2741, H-4781, H-7781, H-4782 is the sum of their MDHIs. As the result of these modifications, the permitted MDHIs for the affected heaters H-D1741, H-D2741 and H-4782 were increased for a total of 2.17 MMBtu/hr (condition 5.1.1). Therefore, the PM weight rate limit for the nine affected heaters was re-calculated as follows: $(0.09) \times (343.33 \text{ MMBtu/hr}) = 30.9 \text{ lb/hr}$ and the streamlining note was revised to reflect the change. The heaters will remain in compliance with this limit while burning natural gas and operating at the MDHIs permitted in condition 5.1.1.

SO₂ limit - the heaters that are 10 MMBtu/hr and greater (H-781, H-3781, H-D1782, H-D2782, H-D1741, H-D2741, H-4781, H-7781, H-4782) are subject to the applicable SO₂ weight rate standard under 45CSR§10-3.1.e. The limit is based on total design heat inputs for the affected units. As the result of these modifications, the permitted MDHIs for the affected heaters H-D1741, H-D2741 and H-4782 were increased for a total of 2.17 MMBtu/hr (condition 5.1.1). Therefore, the SO₂ weight rate limit for the nine affected heaters was re-calculated as follows: $(3.1) \times (343.33 \text{ MMBtu/hr}) = 1,064 \text{ lb/hr}$, and the streamlining note was revised to reflect the change. The heaters will remain in compliance with this limit while burning natural gas and operating at the MDHIs permitted in condition 5.1.1.

4. Section 6.0 – revised the emission limits for flares FL-991 and FL-1991 based on flare throughputs and removed the hourly emission limits (condition 6.1.4); and increased the maximum waste/purge gas flow rate for flare FL-991 (condition 6.1.10).
5. Section 8.0, condition 8.1.1 – CO and PM emission limits for emergency generator engine MD2-G-10 were reduced according to the 40 C.F.R. 60, Subpart IIII, Table 2 because the engine's horsepower increased from 23 hp to 25 hp, but the NO_x + NMHC limit didn't change (condition 8.1.1.b). The NO_x + NMHC, CO and PM emission limits for engines MD1-G-4, M7-G-9 and MD2-G-11 were reduced according to the 40 C.F.R. part 1039 and appendix I, Table 3 Tier 3 Emission Standards because these engines' power increased between 37 kW and 75 kW each (condition 8.1.1.c). NO_x + NMHC and PM emission limits for the emergency generator engines M3-G-2, M3-G-3, M4-G-6, and M4-G-7 were revised (according to the 40 C.F.R. part 1039 and appendix I, Table 3 Tier 3 Emission Standards) due to a typo in the engines' power rate. The power rate is supposed to be 108 kW, not 60 kW as was indicated in the Emission Units Table 1.0 (condition 8.1.1.d). The horsepower for engine MD1-G-5 was increased from 32 hp to 40.2 hp, but since it is below 50 hp its CO, PM and NO_x + NMHC limits didn't change according to the 40 C.F.R. 60, Subpart IIII, Table 2 (condition 8.1.1.a).

6. Section 9.0 – changed to reflect that 40 C. F. R. 60 Subpart OOOO for pneumatic controllers also applies to Majorsville I and II.
7. Section 11.0 – removed requirements of this section “40 C.F.R. 60 Subpart OOOO Requirements – Majorsville I – VI, De-ethanizer I”, and marked the section as “Reserved”.
8. Section 12.0 – the section was renamed from “40 C.F.R. 60 Subpart OOOOa Requirements – Majorsville VII, De-ethanizer II” to “40 C.F.R. 60 Subpart OOOOa Equipment Leak Requirements”; also, updated R13 permit citations due to re-numbering in R13-2818L. As of July 1, 2022, the company has elected to voluntarily comply with 40 C.F.R. §60.5400a Equipment Leak Standards for equipment located at the Majorsville Gas Plant.
9. Section 13.0 – added citations for the conditions 13.1.1 and 13.1.3 to include a new R13-2818L requirement 11.1.1 for reciprocating engines.
10. Section 14.0 – old Consent Decree language was replaced with the revised Consent Decree language per the company’s request (new conditions 14.1.1 through 14.1.3 were added for Pilot-Operated Modulating Pressure Relief Valves). The company proposed this revision to Section 14.0 Source-Specific Requirements (Additional Requirements) of permits R13-2818J and R30-05100125-2019(MM01). The language included in Section 14.0 during the previous permit modification (MM01) and language referencing Appendix F (condition 5.2.5) was not required to be incorporated into the permits and thus, the company requested the removal of this language for consistency purposes.

Non-Applicability Determinations

The following requirements have been determined not to be applicable to the subject facility due to the following: None.

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: Not Applicable for minor modifications.
Ending Date: N/A

Point of Contact

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

Natalya V. Chertkovky-Veselova
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone: 304/926-0499 ext. 41250• Fax: 304/926-0478
natalya.v.chertkovsky@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.