

# Fact Sheet



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

Permit Number: **R30-01700034-2023**

Application Received: **December 15, 2022**

Plant Identification Number: **03-54-017-00034**

Permittee: **MarkWest Liberty Midstream & Resources, L.L.C.**

Facility Name: **Sherwood Gas Plant**

Mailing Address: **1515 Arapahoe Street, Tower 1, Suite 1600; Denver, CO 80202-2137**

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Physical Location:	West Union, Doddridge County, West Virginia
UTM Coordinates:	526.921 km Easting • 4,346.885 km Northing • Zone 17
Directions:	From Smithburg, Take US-50 East and go 2.8 miles. Turn right at Co. Route 50/35 and go 0.1 miles. Take the first right onto Blacklick Rd./Co. Route 15/Sherwood-Greenbriar Rd. and continue 0.4 miles. The site will be 0.5 miles west of Co. Route 15.

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### **Facility Description**

The Sherwood Gas Plant is used as a processing plant and compressor station to process gas from gas wells throughout West Virginia. High pressure natural gas enters the cryogenic plants and passes through a molecular sieve to remove the excess water in the gas stream. The gas then enters the cryogenic plant, which lowers the temperature of the gas in order to separate ethane and heavier hydrocarbons (Y-grade) from methane gas. After this refrigeration, the gas is ready to go to market and passes through outlet compression prior to entering the downstream pipeline to a distribution pipeline operated by a separate entity. Liquids removed from the gas stream will pass through the deethanization units to separate ethane as a purity product from the remainder of the natural gas liquid stream. Purity ethane is distributed by pipeline. Natural gas liquids are transferred via pipeline to a fractionation facility. Atmospheric storage tanks at the inlet compressor station will be controlled with a VRU to recover 98% of VOCs. Under normal operating conditions electric pumps will be utilized to transfer the removed saltwater and

hydrocarbons from the atmospheric storage tanks to another site for further processing. Truck loading may occur; however, the loading will be done in a closed loop system to minimize emissions. A process/emergency flare currently exists to burn vapors released from the reboiler, pressure relief valves on the demethanizer, and refrigeration plant in the event of an emergency and for control of maintenance activities.

### Emissions Summary

<b>Plantwide Emissions Summary [Tons per Year]</b>		
<b>Regulated Pollutants</b>	<b>Potential Emissions</b>	<b>2022 Actual Emissions</b>
Carbon Monoxide (CO)	162.74	133.07
Nitrogen Oxides (NO <sub>x</sub> )	157.26	118.56
Lead	<0.01	Not Reported
Particulate Matter (PM <sub>2.5</sub> )	20.96	19.3
Particulate Matter (PM <sub>10</sub> )	20.96	19.3
Total Particulate Matter (TSP)	20.96	19.3
Sulfur Dioxide (SO <sub>2</sub> )	1.59	1.41
Volatile Organic Compounds (VOC)	87.71	54.59

*PM<sub>10</sub> is a component of TSP.*

<b>Hazardous Air Pollutants</b>	<b>Potential Emissions</b>	<b>2022 Actual Emissions</b>
Acetaldehyde	3.17	Not Reported
Acrolein	1.95	Not Reported
Benzene	0.29	0.13
Ethylbenzene	0.27	0.05
Formaldehyde	4.50	0.57
Methanol	0.95	0.13
n-Hexane	4.38	3.88
Toluene	0.77	0.47
Xylenes	1.17	0.53
Other HAPs	1.79	0.01
Total HAPs	19.24	5.78

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

### Title V Program Applicability Basis

This facility has the potential to emit 162.74 tpy of CO and 157.26 tpy of NO<sub>x</sub>. 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.

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## 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	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 A	General Provisions
	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	Small Steam Generating Units
	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 Production, Transmission and Distribution (8/23/2011 - 9/18/2015)
	40 C.F.R. Part 60, Subpart OOOOa	Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution (After 9/18/2015)
	40 C.F.R. Part 61	Asbestos inspection and removal
	40 C.F.R. Part 63, Subpart HH	National Emission Standards for Hazardous Air Pollutants from Oil and Natural Gas Production Facilities
	40 C.F.R. Part 63, Subpart ZZZZ	National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines
	40 C.F.R. Part 64	Compliance Assurance Monitoring
	40 C.F.R. Part 82, Subpart F	Ozone depleting substances

State Only:	45CSR4 45CSR17	No objectionable odors. Fugitive Particulate Matter
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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 ( <i>if any</i> )
R13-2914J	June 22, 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**

This is the first Title V permit renewal for this facility. The following changes were made to the Title V permit as part of the renewal.

1.1 Emission Units

- Corrected typos in which the emission points for Tanks MT-2 through MT-8 were all listed as MT-1. Note: This typo is a carry over from the R13 Permit.
- Added a facility compressor table listing the compressors at the Sherwood Gas Plant and their applicability to 40 C.F.R. 60 Subparts OOOO and OOOOa.

2.0 General Conditions

- Updated boiler-plate language.

3.0 Facility-Wide Requirements

- Updated boiler-plate language.
- Added 45CSR§17-3.1 fugitive particulate matter emission limits as condition 3.1.11.

4.0 Compressor Engines

- There have been no changes to the applicable requirements of the underlying permit R13-2914 or Federal Regulations 40 C.F.R. 60 Subparts JJJJ and OOOO since the initial permit that have not already been addressed in one of the minor modifications (MM01, MM02, and MM03) of R30-01700034-2018.

#### 5.0 Production Gas Dehydration Unit

- There have been no changes to the applicable requirements of the underlying permit R13-2914, State Rules 45CSR2 and 45CSR6, or Federal Regulations 40 C.F.R. 60 Subparts VVa and OOOOa and 40 C.F.R 63 Subpart HH since the initial permit that have not already been addressed in one of the minor modifications (MM01, MM02, and MM03) of R30-01700034-2018.
- CAM Applicability - Dehydration Unit (DH-001) is a pollutant-specific emissions unit (PSEU) subject to 40 C.F.R. 64 (CAM) for VOCs and HAPs because it has R13-2914 VOC and HAP emission limits, uses flare FL-DH to meet these limits, and has pre-control device emissions greater than the major source thresholds. This resulted in the following changes to the permit.
  - Added gap filling language to condition 5.2.1 specifying that the flare’s pilot flame is monitored continuously via thermocouple.
  - Added the CAM monitoring requirements as conditions 5.2.3, 5.2.4, 5.2.5, 5.2.6, 5.2.7, 5.2.8, and 5.2.9.
  - Added the CAM recordkeeping requirement as condition 5.4.2.
  - Added the CAM reporting requirement as condition 5.5.1.

#### 6.0 Process Heaters

- There have been no changes to the applicable requirements of the underlying permit R13-2914, State Rules 45CSR2 and 45CSR10, or Federal Regulation 40 C.F.R. 60 Subpart Dc since the initial permit that have not already been addressed in one of the minor modifications (MM01, MM02, and MM03) of R30-01700034-2018.

#### 7.0 Storage Tanks

- There have been no changes to the applicable requirements of the underlying permit R13-2914 or Federal Regulation 40 C.F.R. 60 Subpart OOOO since the initial permit that have not already been addressed in one of the minor modifications (MM01, MM02, and MM03) of R30-01700034-2018.

#### 8.0 Gas Processing Units & LDAR Program

- Removed Reserved Condition 8.5.1 and renumbered remaining conditions.
- Removed references to “emergency under Section 2.17” in condition 8.1.3. Section 2.17 has been removed from the Title V permit’s boiler-plate because it was removed from 45CSR30 effective on March 31, 2023.
- On June 30, 2021, a joint resolution of Congress that disapproved the final rule titled “Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources Review”, 85 FR 57018 (September 14, 2020), was signed into law. As a result of this resolution, natural gas processing plants are subject to 2016 Subpart OOOOa requirements found in 81 FR 35898 (June 3, 2016) as amended in 83 FR 10638 (March 12, 2018) for methane requirements and as amended

in 85 FR 57438 (September 15, 2020) for VOC requirements. As a result of this, updates were made to the relevant 40 C.F.R. 60 Subpart OOOOa conditions during minor modification R30-01700034-2018(MM03). There have been no changes to the applicable requirements of Subpart OOOOa since then.

#### 9.0 Emergency Generators

- Removed Reserved Condition 9.1.1 and renumbered remaining conditions.
- Removed references to “emergency under Section 2.17” in condition 9.1.2. Section 2.17 has been removed from the Title V permit’s boiler-plate because it was removed from 45CSR30 effective on March 31, 2023.
- The following conditions were updated to incorporate changes to 40 C.F.R. Part 60 Subpart IIII made since the initial permit: 9.1.4, 9.1.5, 9.1.7, 9.1.9, 9.1.11, 9.3.1, and 9.5.1.

#### 10.0 Additional Requirements

- There have been no changes to the applicable requirements of the underlying permit R13-2914 or Federal Regulation 40 C.F.R. 60 Subparts Db and Dc since the initial permit that have not already been addressed in one of the minor modifications (MM01, MM02, and MM03) of R30-01700034-2018.

#### 11.0 40 C.F.R. 60 Subparts OOOO and OOOOa – Reciprocating Compressor Requirements

- Added section 11.0 to specify the 40 C.F.R. 60 Subparts OOOO and OOOOa – Reciprocating Compressor Requirements which apply to the reciprocating compressors that do not have NSR requirements, but are subject to Subpart OOOO and OOOOa requirements.

#### Appendix A

- There were no changes made to Appendix A.

### **Non-Applicability Determinations**

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

- a. 40 C.F.R. 60 Subpart Dc - The Mole Sieve Regeneration Heaters (H-711a, H-2711a, H-3711, H-4711, H-5711, H-6711, H-7711, H-8711, H-9711, H-10711, H-11711, H-12711, and H-13711) meet the definition of process heaters under 40 C.F.R. 60 subpart Dc. Thus, they are excluded as affected units (per definition of steam generating unit) under this regulation.
- b. 40 C.F.R. 64 - Compliance Assurance Monitoring (CAM)  
The compressor engines CM-1001, CM-1002, and CM-2001 are subject to the emission limitations of 40 CFR 60 Subpart JJJJ and these emission limits are exempt from CAM under 40 CFR §64.2(b)(1)(i).

The pressure relief devices controlled by flare FS-762 are subject to 40 C.F.R. 60 Subpart OOOOa and are exempt from CAM under 40 CFR §64.2(b)(1)(i).

### **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: May 24, 2023

Ending Date: June 23, 2023

### **Point of Contact**

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

Robert Mullins  
West Virginia Department of Environmental Protection  
Division of Air Quality  
601 57<sup>th</sup> Street SE  
Charleston, WV 25304  
304/926-0499 ext. 41286  
Robert.A.Mullins@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.