West Virginia Department of Environmental Protection
Division of Air Quality

Fact Sheet

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

Permit Number: **R30-10300049-2023**
Application Received: **December 02, 2022**
Plant Identification Number: **03-54-103-00049**
Permittee: **Eureka Midstream, LLC**
Facility Name: **Carbide Compressor Station**
Mailing Address: **2200 Energy Drive, Canonsburg, PA 15317**

Physical Location:	Hastings, Wetzel County, West Virginia
UTM Coordinates:	528.7365 km Easting • 4,376.709 km Northing • Zone 17
Directions:	From Hastings, proceed east on Route 20 for approximately two miles to Union Carbide Road. Turn right on Union Carbide Road and follow the gravel road approximately one mile to the facility.

Facility Description
The Carbide Compressor Station is a natural gas compressor facility that receives raw natural gas and produced liquids from nearby wells. The natural gas and liquids undergo compression and dehydration processes, after which the product is transported to a gas gathering line for additional processing.
SIC: 1311, NAICS: 211130

Emissions Summary

Plantwide Emissions Summary [Tons per Year]

Regulated Pollutants	Potential Emissions	2022 Actual Emissions
Carbon Monoxide (CO)	44.12	6.83
Nitrogen Oxides (NO_X)	66.58	34.86
Particulate Matter ($PM_{2.5}$)	4.41	0.14
Particulate Matter (PM_{10})	4.41	0.14
Total Particulate Matter (TSP)	4.41	0.14
Sulfur Dioxide (SO_2)	0.26	0.17
Volatile Organic Compounds (VOC)	169.40	48.6

PM_{10} is a component of TSP.

Hazardous Air Pollutants	Potential Emissions	2022 Actual Emissions
Formaldehyde	7.26	5.04
Benzene	0.24	0.1
Toluene	2.40	0.1
Ethylbenzene	0.04	< 0.01
Xylene	0.13	0.04
n-Hexane	5.82	1.01
Other HAPs	6.31	4.36
Total HAPs	22.20	10.66

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

Title V Program Applicability Basis

This facility has the potential to emit 169.40 tpy of VOCs. Due to this facility's potential to emit over 100 tons per year of criteria pollutant, Eureka Midstream, 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	To Prevent and Control Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers.

	45CSR6	Control of Air Pollution from Combustion of Refuse.
	45CSR11	Standby Plans for Emergency Episodes.
	45CSR13	NSR Permit Requirements.
	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 Requirements.
	45CSR34	Emission Standards for Hazardous Air Pollutants.
	40 C.F.R. Part 60 Subpart JJJJ	Standards of Performance for Stationary Compression 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.
	40 C.F.R. Part 61	Asbestos Inspection and Removal.
	40 C.F.R. Part 63 Subpart HH	National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities.
	40 C.F.R. Part 63 Subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.
	40 C.F.R. Part 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 Emissions

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
R13-3007H	April 18, 2023

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

Determinations and Justifications

Eureka Midstream, LLC's Carbide Compressor Station is an existing facility that was initially permitted under the NSR Permit R13-3007. With the issuance of R13-3007G, the facility became subject to Title V due to a potential to emit over 100 tpy of volatile organic compounds. Following the submission of the Title V permit application, the Class II Administrative Update R13-3007H was issued on April 18, 2023.

The Emission Units Table of Section 1.0. includes a 4,300-gallon tank safe (TK25) and a 50-barrel produced water tank (TK26). These tanks collectively have the potential to emit over 1.93 tpy of VOCs. Neither tank is currently subject to any applicable requirements under this operating permit.

The installation/modification dates of certain units in the Emission Units Table of Section 1.0. have been corrected according to the updated Equipment Table sent in an email dated June 01, 2023.

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

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	R13-3007H Condition
3.1.8.	A Risk Management Plan (RMP) is required if the permittee becomes subject to Part 68. Part 68 is currently inapplicable to the Carbide Compressor Station as prior to entry into a natural gas processing plant, regulated substances in naturally occurring hydrocarbon mixtures (including condensate, field gas, and produced water) are not considered when determining whether more than a threshold quantity is present at a stationary source, per 40 C.F.R. §68.115(b)(2)(iii).	40 C.F.R. 68	N/A
3.1.9.	Facility-wide HAP emissions are limited to ensure the facility remains a minor source of HAPs.	45CSR13	4.1.2.
3.1.10.	Operation and Maintenance of Air Pollution Control Equipment.	45CSR13	4.1.3. and 11.1.1.

Title V Permit Condition	Summary of Permit Condition	Regulatory Citation	R13-3007H Condition
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 45CSR§30-5.1.c.2.A.	4.1.1.
3.4.2.	Retention of Records.	45CSR13 45CSR§30-5.1.c.2.B.	3.4.1.
3.4.4.	Record of Malfunctions of Air Pollution Control Equipment.	45CSR13	4.1.4.

Section 4.0. – Reciprocating Internal Combustion Engines (RICE) [Emission Point IDs: E1-E4, E5A, E9-E11, and E20]

The Carbide Compressor Station operates nine spark ignition (SI) reciprocating internal combustion engines (RICE): seven Caterpillar G3516B engines (S1-S4 and S9-S11) rated at 1,380 horsepower (hp), one Caterpillar 3406 NA engine (S5A) rated at 215 hp, and one Caterpillar G3608 engine (S20) rated at 2,370 hp.

Each of the engines are fueled by raw natural gas. Emissions of carbon monoxide, volatile organic compounds, and formaldehyde from engines S1-S4, S9-S11, and S20 are controlled by oxidation catalysts. Emissions of carbon monoxide, nitrogen oxides, and formaldehyde from engine S5A are controlled by non-selective catalytic reduction (NSCR).

The RICEs are subject to the following regulations:

1. **45CSR13** – *NSR Permit Requirements*

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

3. **40 C.F.R. Part 60 Subpart JJJJ** – *Standards of Performance for Stationary Spark Ignition Internal Combustion Engines* – Engines S1 through S4, S9 through S11, and S20 are subject to Subpart JJJJ.

    a. Construction of S1-S4, S9-S11, and S20 commenced after July 12, 2006; the manufacture date of each engine is after July 01, 2007; and each has a maximum engine power greater than 1,350 hp. Therefore, these compressor engines are subject to Subpart JJJJ of the NSPS via 40 C.F.R. §60.4230(a)(4)(i). S1-S4, S9-S11, and S20 are non-emergency, lean burn 4-stroke engines. The engines are subject to emission standards for NO_X, CO, and VOCs. Because the engines are non-certified under Subpart JJJJ, compliance with these limits is demonstrated through periodic performance tests.

    b. The engine S5A was initially installed at the facility in 2013. However, the date of manufacture for S5A is September 28, 1993. Therefore, Subpart JJJJ does not apply to S5A per the applicability requirements of 40 C.F.R. §§60.4230(a)(4) and (a)(4)(iii).

4. **45CSR34** – *Emission Standards for Hazardous Air Pollutants*

5. **40 C.F.R. Part 63 Subpart ZZZZ** – *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines* – The RICEs are subject to Subpart ZZZZ of the NESHAP which applies to both major and area sources of HAPs. The Carbide Compressor Station is an area source of HAP emissions.

a. Under 40 C.F.R. §63.6590(a)(2)(iii), the compressor engines S1-S4 (constructed: 2012), S9 and S11 (constructed: 2012), S20 (constructed: 2015), and S10 (constructed: 2019) are new stationary RICEs. As new stationary RICEs located at an area source of HAPs, these engines demonstrate compliance with the requirements of Subpart ZZZZ through compliance with the requirements of Part 60 Subpart JJJJ per 40 C.F.R. §§63.6590(c) and (c)(1).

b. The compressor engine S5A was installed at the facility in 2013 but was manufactured in 1993. Therefore, per 40 C.F.R. §63.6590(a)(1)(iii), S5A is considered an existing stationary RICE. S5A is a non-emergency, rich burn 4-stroke engine. The engine is subject to the management practices to periodically change the oil and filter, inspect/replace the spark plugs, and inspect/replace all hoses and belts. The engine must also be operated and maintained according to the manufacturer's instructions or a maintenance plan. Compliance with these is demonstrated through recordkeeping for maintenance conducted on engine S5A.

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	R13-3007H Condition
4.1.1.	Emission limits for the RICEs S1-S4 and S9-S11.	45CSR13	5.1.1.
4.1.2.	Emission limits for the RICE S5A.	45CSR13	5.1.2.
4.1.3.	Emission limits for the RICE S20.	45CSR13	5.1.3.
4.1.4.	Requirements for the use of catalytic reduction devices to control emissions from the RICEs.	45CSR13	5.1.4.
4.1.5.	Emission standards from Table 1 to Subpart JJJJ of Part 60 that are applicable to non-emergency SI natural gas-fired engines with a maximum engine power greater than 500 hp and manufactured after July 01, 2010.	45CSR13 45CSR16 40 C.F.R. §60.4233(e) Table 1 to Subpart JJJJ of Part 60	6.1.1. and 6.1.3.
4.1.6	The permittee must operate and maintain SI ICEs that achieve the emission standards of 40 C.F.R. §60.4233(e) over the entire life of the engine.	45CSR13 45CSR16 40 C.F.R. §60.4234	6.1.2. and 6.1.4.
4.1.7.	Compliance demonstration requirements for non-certified stationary SI ICEs. A performance test of each non-certified engine must be completed every 8,760 hours or 3 years, whichever comes first.	45CSR13 45CSR16 40 C.F.R. §§60.4243(b), (b)(2), and (b)(2)(ii)	6.2.1.
4.1.8.	Propane may be used as an alternative fuel during emergency operations for up to 100 hours.	45CSR16 40 C.F.R. §60.4243(e)	N/A
4.1.9.	Operate and maintain air-to-fuel ratio controller with the operation of three-way catalysts/non-selective catalytic reduction.	45CSR13 45CSR16 40 C.F.R. §60.4243(g)	6.2.2.
4.1.10.	S1-S4, S9-S11, and S20 comply with 40 C.F.R. Part 63 Subpart ZZZZ by meeting the requirements of 40 C.F.R. Part 60 Subpart JJJJ.	45CSR13 45CSR34 40 C.F.R. §§63.6590(c) and (c)(1)	8.1.2.

Title V Permit Condition	Summary of Permit Condition	Regulatory Citation	R13-3007H Condition
4.1.11.	The management practices from Item 10 of Table 2d to Subpart ZZZZ of Part 63 are applicable to S5A.	45CSR13 45CSR34 40 C.F.R. §63.6603(a) Item 10 of Table 2d to Subpart ZZZZ of Part 63	8.1.3. through 8.1.5.
4.1.12.	General requirements for S5A from 40 C.F.R. Part 63 Subpart ZZZZ.	45CSR34 40 C.F.R. §63.6605	N/A
4.1.13.	Requirement to minimize the time spent at idle and the startup time of engine S5A.	45CSR34 40 C.F.R. §63.6625(h)	N/A
4.1.14.	Optional oil analysis program which may be used to extend the oil change requirement of Condition 4.1.11.	45CSR34 40 C.F.R. §63.6625(j)	N/A
4.1.15.	40 C.F.R. Part 63 Subpart A General Provisions applicable to engine S5A.	45CSR34 40 C.F.R. §63.6665 Table 8 to Subpart ZZZZ of Part 63	N/A
4.2.1.	Monitoring requirements for catalytic oxidizer control devices and auxiliary air pollution control devices of the RICEs.	45CSR13	5.2.1.
4.2.2.	Maintain and operate the engine S5A and any associated control device according to manufacturer's emission-related instructions or a maintenance plan.	45CSR34 40 C.F.R. §§63.6625(e) and (e)(8) and 63.6640(a) Item 9 of Table 6 to Subpart ZZZZ of Part 63	N/A
4.3.1.	Performance testing procedures for the engines S1-S4, S9-S11, and S20.	45CSR13 45CSR16 40 C.F.R. §60.4244	6.3.1.
4.4.1.	Maintain records of hours of operation for each engine.	45CSR13	5.4.1.
4.4.2.	Maintain records of maintenance for catalytic reduction devices.	45CSR13	5.4.2.
4.4.3.	Recordkeeping requirements of Part 60 Subpart JJJJ.	45CSR13 45CSR16 40 C.F.R. §§60.4245(a), (a)(1), (a)(2), and (a)(4)	6.4.1. through 6.4.3.
4.4.4.	Records of maintenance conducted on S5A.	45CSR34 40 C.F.R. §§63.6655(e) and (e)(3)	N/A

Title V Permit Condition	Summary of Permit Condition	Regulatory Citation	R13-3007H Condition
4.4.5.	Recordkeeping requirements for Part 63 Subpart ZZZZ.	45CSR34 40 C.F.R. §63.6660	N/A
4.5.1.	Initial notification requirements for engines subject to Part 60 Subpart JJJJ.	45CSR13 45CSR16 40 C.F.R. §60.4245(c)	6.5.1.
4.5.2.	Reporting requirements for performance tests.	45CSR13 45CSR16 40 C.F.R. §60.4245(d)	6.5.2.
4.5.3.	Report when the general provisions applicable to S5A are not met.	45CSR34 40 C.F.R. §63.6640(e)	N/A
4.5.4.	Notifications of Part 63 Subpart A that must be submitted as applicable for S5A.	45CSR34 40 C.F.R. §§63.6645(a) and (a)(2)	N/A
4.5.5.	The permittee must report deviations from the requirements of Subpart ZZZZ that apply to S5A.	45CSR34 40 C.F.R. §63.6650(f)	N/A

Sections 5.0. and 6.0. – 40 C.F.R. Part 60 Subparts OOOO and OOOOa Requirements

Sections 5.0. and 6.0. of the operating permit contain the applicable requirements from 40 C.F.R. Part 60 Subpart OOOO and Subpart OOOOa. These subparts contain standards for the control of emissions from affected facilities in the crude oil and natural gas industry. The Carbide Compressor Station is included in the natural gas production and processing source category of these standards.

Subpart OOOO applies to affected facilities for which construction modification, or reconstruction commenced after August 23, 2011 and on or before September 18, 2015. At the Carbide Compressor Station, this includes the reciprocating compressors associated with engines S1-S4, S5A, S9, S11, and S20 according to 40 C.F.R. §60.5365(c).

Subpart OOOOa applies to affected facilities for which construction, modification, or reconstruction commenced after September 18, 2015. At the Carbide Compressor Station, this includes the reciprocating compressor associated with engine S10 according to 40 C.F.R. §60.5365a(c) and the fugitive emissions components according to 40 C.F.R. §60.5365a(j).

The facility also operates storage tanks and pneumatic controllers which were installed or modified after the date of applicability of Subpart OOOOa. The condensate tanks TK01 to TK08 were installed at the facility in 2016, but, as the potential VOC emissions from each tank are less than 6 tpy, the storage vessels are not considered an affected facility per 40 C.F.R. §60.5365a(e). Additionally, the permittee reported that high-bleed (having a natural gas bleed rate greater than 6 scfh) pneumatic controllers were discovered at the Carbide Compressor Station during an audit in 2020. The high-bleed controllers were reportedly replaced with low-bleed (having a natural gas bleed rate less than or equal to 6 scfh) controllers. Therefore, the pneumatic controllers currently located at the facility are not subject to Subpart OOOOa per 40 C.F.R. §60.5365a(d)(1).

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. Due to this resolution, sources in the production and processing segments of the natural gas industry that are subject to Subpart OOOOa must meet the VOC standards of 85 FR 57438 (September 15, 2020) and

the methane standards of 81 FR 35898 (June 03, 2016) as amended by 83 FR 10638 (March 12, 2018). The applicable VOC standards and methane standards of Subpart OOOOa have both been included in this operating permit. However, compliance with the VOC standards may be demonstrated through compliance with the more stringent methane standards.

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

Section 5.0. – 40 C.F.R. Part 60 Subparts OOOO and OOOOa Requirements for Reciprocating Compressors

Section 5.0. contains the standards of Subparts OOOO and OOOOa which are applicable to the reciprocating compressors located at the Carbide Compressor Station.

Per 40 C.F.R. §§60.5360(a) and 60.5365(c), the VOC standards of Subpart OOOO are applicable to the reciprocating compressors associated with the engines S1 to S4, S5A, S9, S11 and S20.

Per 40 C.F.R. §§60.5360a(a) and 60.5365a(c), the VOC and methane standards of Subpart OOOOa are applicable to the compressor associated with the engine S10. Emission unit S10 was initially permitted under R13-3007 and was included as an affected facility subject to Subpart OOOO. This determination was carried forward through to R13-3007H. However, during the writing of this Title V operating permit, it was found that an engine subject to Subpart OOOOa had been included in the 2020 annual report required by Subparts OOOO and OOOOa. Upon asking Eureka Midstream, LLC for clarification, the permittee stated that the engine S10 was initially constructed and installed at the facility in 2019. This engine S10 was not a replacement for an existing engine. Therefore, per 40 C.F.R. §60.5360a(a), the engine S10 was constructed within the applicability dates of Subpart OOOOa, rather than Subpart OOOO.

The reciprocating compressors associated with the engines S1-S4, S5A, S9, S11, and S20 are subject to the following regulations:

1. **45CSR13** – *NSR Permit Requirements*
2. **45CSR16** – *Standards of Performance for New Stationary Sources*
3. **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*

   Subpart OOOO applies to those affected facilities for which construction, modification, or reconstruction commenced after August 23, 2011 and on or before September 18, 2015. At the Carbide Compressor Station, the reciprocating compressors associated with the emission units S1-S4, S5A, S9, S11, and S20 were constructed and installed at the facility within the applicability dates for Subpart OOOO.

The reciprocating compressor associated with the engine S10 is subject to the following regulations:

1. **45CSR13** – *NSR Permit Requirements*
2. **45CSR16** – *Standards of Performance for New Stationary Sources*
3. **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*

   Subpart OOOOa applies to those affected facilities for which construction, modification, or reconstruction commenced after September 18, 2015. At the Carbide Compressor Station, the reciprocating compressor

associated with the emission unit S10 was constructed and installed at the facility after the applicability date for Subpart OOOOa.

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	R13-3007H Condition
5.1.1.	Reciprocating compressors must be operated in a manner consistent with good air pollution control practice for minimizing emissions.	45CSR16 40 C.F.R. §60.5370(b) 40 C.F.R. §60.5370a(b)	N/A
5.1.2.	Applicable VOC standards of Subpart OOOO and applicable VOC and methane standards of Subpart OOOOa for reciprocating compressors.	45CSR13 45CSR16 40 C.F.R. §60.5385 40 C.F.R. §60.5385a	7.1.1.
5.2.1.	Requirements for the initial compliance demonstration for reciprocating compressors.	45CSR16 40 C.F.R. §§60.5410(c), (c)(1), (c)(3), and (c)(4) 40 C.F.R. §§60.5410a(c), (c)(1), (c)(3), and (c)(4)	N/A
5.2.2.	Requirements for the continuous compliance demonstration for reciprocating compressors.	45CSR16 40 C.F.R. §§60.5415(c) and (c)(1) through (c)(3) 40 C.F.R. §§60.5415a(c) and (c)(1) through (c)(3)	N/A
5.4.1.	Recordkeeping requirements.	45CSR13 45CSR16 40 C.F.R. §§60.5420(c) and (c)(3) 40 C.F.R. §§60.5420a(c) and (c)(3)	7.2.1. and 7.2.2.
5.5.1.	Reporting requirements.	45CSR13 45CSR16 40 C.F.R. §§60.5420(b), (b)(1) and (b)(4) 40 C.F.R. §§60.5420a(b), (b)(1), (b)(4), and (b)(11)	7.3.1.

Section 6.0. – 40 C.F.R. Part 60 Subpart OOOOa Requirements for Fugitive Emissions Components

Per 40 C.F.R. §60.5430a, a fugitive emissions component is "any component that has the potential to emit fugitive emissions of methane or VOCs at a compressor station, including but not limited to valves, connectors, pressure relief devices, open-ended lines, flanges, covers and closed vent systems not subject to §60.5411a, thief hatches or other openings on a controlled storage vessel not subject to §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 fugitive emissions components at the compressor station are subject to the following regulations:

1. **45CSR13** – *NSR Permit Requirements*

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

3. **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*

   Subpart OOOOa applies to those affected facilities for which construction, modification, or reconstruction commenced after September 18, 2015. At the Carbide Compressor Station, this includes any fugitive emissions components.

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	R13-3007H Condition
6.1.1.	Affected facilities 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
6.1.2.	Methane standards for fugitive emissions components affected facilities. Refer to 81 FR 35898 (June 03, 2016) as amended by 83 FR 10638 (March 12, 2018).	45CSR13 45CSR16 40 C.F.R. §§60.5397a(a) through (e), (f)(2), (g), (g)(2) through (4), and (h) through (j)	4.1.5.
6.1.3.	VOC standards for fugitive emissions components affected facilities. Refer to 85 FR 57438 (September 15, 2020).	45CSR13 45CSR16 40 C.F.R. §§60.5397a(a), (a)(1), (b) through (e), (f)(2), (g), (g)(2) through (4), and (h) through (j)	4.1.5.
6.2.1.	Initial compliance demonstration for the VOC and Methane Standards.	45CSR16 40 C.F.R. §60.5410a(j)	N/A
6.2.2.	Continuous compliance demonstration for the VOC and Methane Standards.	45CSR16 40 C.F.R. §60.5415a(h)	N/A
6.4.1.	Recordkeeping requirements for Methane Standards. Refer to 81 FR 35898 (June 03, 2016) as amended by 83 FR 10638 (March 12, 2018).	45CSR16 40 C.F.R. §§60.5420a(c), (c)(15), and (c)(15)(i) to (ii)	N/A

Title V Permit Condition	Summary of Permit Condition	Regulatory Citation	R13-3007H Condition
6.4.2.	Recordkeeping requirements for VOC Standards. Refer to 85 FR 57438 (September 15, 2020).	45CSR16 40 C.F.R. §§60.5420a(c), (c)(15), (c)(15)(i), (c)(15)(vi), and (c)(15)(vii)	N/A
6.5.1.	Reporting requirements for Methane Standards. Refer to 81 FR 35898 (June 03, 2016) as amended by 83 FR 10638 (March 12, 2018).	45CSR16 40 C.F.R. §§60.5420a(b), (b)(1), (b)(7), and (b)(11)	N/A
6.5.2.	Reporting requirements for VOC Standards. Refer to 85 FR 57438 (September 15, 2020).	45CSR16 40 C.F.R. §§60.5420a(b), (b)(1), (b)(7), and (b)(11)	N/A

Section 7.0. – Triethylene Glycol (TEG) Dehydration Unit [Emission Point ID: E7]

A TEG Dehydration Unit is operated at the compressor station in association with a 1.5 mmBTU/hr reboiler. (NOTE: The applicable requirements for the reboiler are included in Section 8.0. of this operating permit.) The flow rate of the natural gas stream through the dehydration unit is 80 mmscf/day. Following compression of the natural gas, moisture is removed from the natural gas by the TEG dehydration unit. Dehydrated gas exits the facility via pipeline. Vapors from the still vent are first condensed and then routed to the associated reboiler to be used as fuel and to achieve a 95% control efficiency for the dehydration unit.

The dehydration unit is subject to the following regulations:

1. **45CR13** – *NSR Permitting Requirements*

2. **45CSR34** – *Emission Standards for Hazardous Air Pollutants*

3. **40 C.F.R. Part 63 Subpart HH** – *National Emission Standards for Hazardous Air Pollutants from Oil and Natural Gas Production Facilities*

   Subpart HH of the NESHAP is applicable to facilities in the oil and natural gas production source category, which includes compressor stations located prior to a natural gas processing plant. As the Carbide Compressor Station is an area source of HAPs, the TEG dehydration unit is the only affected source subject to Subpart HH per 40 C.F.R. §63.760(b)(2).

   Provided that the actual average benzene emissions from the TEG dehydration unit remain less than 1 tpy, 40 C.F.R. §§63.764(e)(1) and (e)(1)(ii) exempt the TEG dehydration unit from the standards set forth in §63.764(d). With this exemption, the permittee is only subject to the requirement to annually update the major source determination per 40 C.F.R. §63.760(c), the general requirement of §63.764(j), the monitoring requirement of §63.772(b)(2)(i), and the recordkeeping requirements of §§63.774(d)(1) and (d)(1)(ii).

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	R13-3007H Condition
7.1.1.	Maximum wet natural gas throughput to the glycol dehydration unit/still column.	45CSR13	9.1.1.
7.1.2.	Emission limits from the glycol dehydration unit/still column.	45CSR13	9.1.2.
7.1.3.	Potential HAP emissions are determined in accordance with Subpart HH.	45CSR13	9.1.3.
7.1.4.	Major source determination must be updated annually if actual emissions are greater than 5 tpy for a single HAP or 12.5 tpy for aggregate HAPs.	45CSR13 45CSR34 40 C.F.R. §63.760(c)	9.1.4.
7.1.5.	Exemption to the requirements of 40 C.F.R. §63.764(d) if actual average emissions of benzene from the TEG dehydration unit are less than 1 tpy.	45CSR13 45CSR34 40 C.F.R. §§63.764(e)(1) and (e)(1)(ii)	9.1.5.
7.1.6.	Vapors from the regenerator are condensed and used to fuel the reboiler to achieve a minimum control efficiency of 95% from the dehydration unit.	45CSR13	9.1.6.
7.1.7.	Any affected source and control equipment must be operated and maintained in a manner consistent with good air pollution control practice to minimize emissions.	45CSR34 40 C.F.R. §63.764(j)	N/A
7.2.1.	Monitor the throughput of wet natural gas process stream.	45CSR13	9.2.1.
7.2.2.	Monitoring parameters used to demonstrate compliance with the requirements for area source status and the benzene exemption which must be measured quarterly or as specified.	45CSR13 45CSR34 40 C.F.R. §§63.772(b)(2) and (b)(2)(i)	9.2.2
7.3.1.	The Director may request a demonstration of compliance with the HAP emission thresholds of Condition 3.1.9.	45CSR13	9.3.3.
7.3.2.	Procedure to determine the actual average benzene emissions from the glycol dehydration unit.	45CSR13 45CSR34 40 C.F.R. §§63.772(b)(2) and (b)(2)(i)	9.3.4.
7.4.1.	Maintain records of the wet natural gas throughput for the TEG dehydration contactor to demonstrate compliance with the limit of Condition 7.1.1.	45CSR13	9.4.1.

Title V Permit Condition	Summary of Permit Condition	Regulatory Citation	R13-3007H Condition
7.4.2.	Maintain records of actual average benzene emissions to demonstrate that the permittee is exempt from the requirements of 40 C.F.R. §63.764(d).	45CSR13 45CSR34 40 C.F.R. §§63.764(e), 63.774(d)(1) and (d)(1)(ii)	9.4.2.
7.5.1.	Exemption to the reporting requirements for area sources meeting the benzene exemption and subject to 40 C.F.R. Part 63 Subpart HH.	45CSR34 40 C.F.R. §§63.775(c) and (c)(8)	N/A

NOTE: Conditions 9.3.1. and 9.3.2. of R13-3007H have not been included in this operating permit. These conditions seem to have been inadvertently added to the NSR permit with the issuance of the Modification Permit R13-3007G. The reason for the addition of these conditions to the NSR permit was not included in the engineering evaluation for R13-3007G. Each condition contains compliance demonstration requirements to ensure the proper operation of a thermal oxidizer: Condition 9.3.1. requires the permittee to conduct a Method 22 opacity assessment and Condition 9.3.2. requires the permittee to conduct a Method 18 assessment. However, the Carbide Compressor Station does not operate a thermal oxidizer to control emissions from the dehydration unit, and the conditions referenced in the requirements are unrelated and were not included in the permit.

Section 8.0. – Reboiler and Line Heaters [Emission Point IDs: E7, E17, E17-A, and E17-B]

Associated with the TEG dehydration unit is a 1.5 mmBTU/hr reboiler (Emission Unit: S7). The reboiler heats the rich TEG sent to the regenerator to remove moisture. The vapors from the regenerator of the TEG dehydration unit are sent to a condenser and are then used as fuel for the reboiler to achieve a 95% combustion efficiency of VOCs from the dehydration unit.

One-0.75 mmBTU/hr line heater (S17), one-4.0 mmBTU/hr line heater (S17-A), and one-2.0 mmBTU/hr line heater (S17-B) are operated at the facility. The line heaters are fueled by natural gas.

40 C.F.R. Part 63 Subpart JJJJJJ – *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources* does not apply to the reboiler or the line heaters. Subpart JJJJJJ applies to boilers as defined in 40 C.F.R. §63.11237 which are located at an area source of HAPs. Per §63.11237, a boiler is "an enclosed device using controlled flame combustion in which water is heated to recover thermal energy in the form of steam and/or hot water". The reboiler does not meet this definition and, therefore, is not subject to Subpart JJJJJJ. Furthermore, process heaters are excluded from the definition of a boiler and are defined as "an enclosed device using controlled flame and the unit's primary purpose is to transfer heat indirectly to a process material or to heat a transfer material for use in a process unit, instead of generating steam". The line heaters are process heaters and, therefore, are also not subject to Subpart JJJJJJ.

The reboiler and line heaters are subject to the following regulations:

1. **45CSR2** – *To Prevent and Control Particulate Air Pollution from 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 reboiler and line heaters are subject to the particulate matter emission standards of this rule.

The reboiler and line 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 8.1.2. Compliance with this limit is demonstrated through visible emission checks conducted in accordance with Method 9 of 40 C.F.R. Part 60 Appendix A, as designated by the Director. The permittee is also required to maintain records of each visible emission check and to report any deviations discovered during Method 9 observations.

As the reboiler and line 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 fugitive emissions control 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** – *To Prevent and 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 reboiler and line 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 registration requirements of Section 6; the permit requirements of Section 7; and the testing, monitoring, recordkeeping, and reporting requirements of Section 8. Furthermore, Section 4 is inapplicable because the line heaters and reboiler 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 S7, S17, S17-A, and S17-B are subject to 45CSR10, the emission units currently have no applicable requirements under this rule.

3. **45CSR13** – *NSR Permitting Requirements*

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	R13-3007H Condition
8.1.1.	Maximum design heat input.	45CSR13	10.1.1.
8.1.2.	Visible emission limit.	45CSR13 45CSR§2-3.1.	10.1.2.
8.2.1.	Requirement for visible emission observations.	45CSR13	10.2.1.
8.3.1.	Testing methods for visible emission observations.	45CSR13 45CSR§2-3.2.	10.3.1.
8.4.1.	Recordkeeping requirement for visible emission observations.	45CSR13	10.4.1.
8.5.1.	Reporting requirement for deviations for allowable visible emissions limit.	45CSR13	10.5.1.

Section 9.0. – Condensate Tanks, Condensate Truck Loading, and Vapor Combustion Units [Emission Point IDs: E16 and E21]

The condensate generated during separation processes is accumulated in eight - 500 bbl storage tanks (TK01 to TK08) prior to being loaded into a truck to be transported off-site. VOC and HAP emissions from the truck loading and the storage tanks are controlled by vapor combustion units (VCU). VCU-1 controls emissions from the truck loading operations and consists of an enclosed ground flare (S15-B) and a pilot (S15-C). VCU-2 controls emissions from the condensate storage tanks and consists of four enclosed ground flares (S21-A to -D) and four pilots (S22-A to -D).

The condensate storage tanks are subject to requirements in the NSR permit, but do not have any other applicable requirements. 40 C.F.R. Part 60 Subparts K and Ka are inapplicable to TK01-TK08 because the tanks were constructed after the applicability dates of each subpart. Although the storage tanks have a capacity of 500 bbl (79.5 cubic meters) and were constructed after July 23, 1984, Subpart Kb is inapplicable to the tanks because 40 C.F.R. §60.110b(d)(4) excludes storage vessels with a design capacity less than 1,589.874 cubic meters and that are used for condensate storage prior to the point of custody transfer.

The condensate truck loading, the condensate tanks, and enclosed combustors are subject to the following regulations:

1. **45CSR6** – *Control of Air Pollution from Combustion of Refuse* – The enclosed combustors VCU-1 and VCU-2 are subject to 45CSR6.

   This rule establishes emission requirements for operations involving the incineration of refuse. Under 45CSR§6-2.7., incineration is defined as the destruction of combustible refuse by burning in a furnace designed for that purpose. For the purposes of this rule, the destruction of any combustible liquid or gaseous material by burning in a flare or flare stack, thermal oxidizer, or thermal catalytic oxidizer stack shall be considered incineration. VCU-1 and VCU-2 utilize enclosed flares to combust waste vapors and reduce emissions of VOCs and HAPs from the condensate truck loading processes and the condensate storage tanks, respectively. Therefore, the emission standards for incinerators of 45CSR§6-4 are applicable to VCU-1 and VCU-2.

   a. Per 45CSR§6-4.1., PM emission limits for each unit are established using the following formula:

   $$F \times Incinerator\ Capacity\ (tons/hr) = Emissions\ (lbs/hr)$$

   The incinerator capacity of VCU-1 is 150 lbs/hr (0.075 tons/hr), and the incinerator capacity of VCU-2 is 470 lbs/hr (0.235 tons/hr). Since the incinerator capacity of each unit is less than 15,000 lbs/hr, the factor F is 5.43 for each unit in accordance with Table I of 45CSR§6-4.1.

   i. The PM emission limit of VCU-1 is:

   $$5.43 \times 0.075\ tons/hr = 0.41\ lbs/hr$$

   ii. The PM emission limit of VCU-2 is:

   $$5.43 \times 0.235\ tons/hr = 1.28\ lbs/hr$$

   Potential emissions of PM from VCU-1 are negligible (less than 0.001 lbs/hr) and from VCU-2 are only 0.02 lbs/hr. As the respective limits established above are much greater than the PTE of either vapor combustion unit, compliance with the PM emission limits should be demonstrated through the R13-3007H requirements to continuously monitor the pilot flames (Condition 9.2.1.) and the waste gas throughput of each vapor combustor (Conditions 9.1.6. and 9.1.9.).

   b. The combustors must also meet the 20% opacity limit of 45CSR§6-4.3., except as specified in 45CSR§6-4.4. As the potential PM emissions from VCU-1 and VCU-2 are minimal, compliance with these requirements should be demonstrated by operating the units with no visible emissions except for periods

not to exceed five minutes in any two-hour period (Condition 9.1.3.), by continuously monitoring the pilot flame of each unit (Condition 9.2.1.), and by conducting a Method 22 opacity test (Condition 9.3.1.).

c. VCU-1 and VCU-2 are also subject to the standards in 45CSR§§6-4.5. and -4.6. which prohibit the emission of unburned refuse and require the prevention of objectionable odors from the combustor, respectively.

d. At the discretion of the Secretary, the permittee may also be required to conduct stack testing to determine particulate matter loading in accordance with 45CSR§§6-7.1. and -7.2.

2. **45CSR13** – *NSR Permit Requirements*

The table below describes each condition added to Section 9.0. of the Title V operating permit.

Title V Permit Condition	Summary of Permit Condition	Regulatory Citation	R13-3007H Condition
9.1.1.	Limits the amount of time per day that truck loading of condensate can be conducted.	45CSR13	11.1.2.
9.1.2.	VCU-1 must be operational during truck loading.	45CSR13	11.1.3.*
9.1.3.	Visible emissions limit for the vapor combustor.	45CSR13	11.1.4.
9.1.4.	All VOC and HAP emissions from the condensate truck loading and condensate storage tanks must be routed to the respective VCUs. A reference to condensate storage tanks TK07 and TK08 was added to this condition.	45CSR13	11.1.3.*
9.1.5.	Annual condensate truck loading limit.	45CSR13	11.1.5.
9.1.6.	Limit on the amount of waste gas fed into VCU-1. Compliance with this limit demonstrates compliance with the emission limitations in 9.1.7.	45CSR13	11.1.6.
9.1.7.	Emission Limitations for VOCs, NO_X, and CO from VCU-1.	45CSR13	11.1.7.
9.1.8.	Annual limit for the throughput of condensate for storage tanks TK01 to TK08.	45CSR13	11.1.8.
9.1.9.	Limit on the amount of waste gas fed into VCU-2. Compliance with this limit demonstrates compliance with the emission limitations in 9.1.10.	45CSR13	11.1.9.
9.1.10.	Emission Limitations for VOCs, NO_X, CO, toluene, and hexane from VCU-2.	45CSR13	11.1.10.
9.1.11.	45CSR6 particulate matter emission limit for VCU-1.	45CSR§6-4.1.	N/A
9.1.12.	45CSR6 particulate matter emission limit for VCU-2.	45CSR§6-4.1.	N/A
9.1.13.	Opacity limit for any visible emissions from VCU-1 and VCU-2 allowed under Condition 9.1.3.	45CSR§6-4.3.	N/A
9.1.14.	Exception for the opacity limit of 45CSR§6-4.3.	45CSR§6-4.4.	N/A

Title V Permit Condition	Summary of Permit Condition	Regulatory Citation	R13-3007H Condition
9.1.15.	Prohibits the emission of partially burned refuse or ash.	45CSR§6-4.5.	N/A
9.1.16.	Prevent objectionable odors from incinerators.	45CSR§6-4.6.	N/A
9.2.1.	Pilot flames of each VCU must be monitored continuously with a thermocouple or an infrared monitor.	45CSR13	11.2.1.
9.2.2.	The throughput of waste gases through each VCU must be monitored on a monthly basis. This condition demonstrates compliance with Conditions 9.1.6. and 9.1.9.	45CSR13	11.2.2.
9.3.1.	Method 22 visible emissions testing of each vapor combustion unit.	45CSR13	11.3.1.
9.3.2.	Particulate matter emissions testing for each combustor.	45CSR§§6-7.1. and -7.2.	N/A
9.4.1.	Recordkeeping requirement for when pilot flames of VCUs are absent. These records are used to demonstrate compliance with Condition 9.2.1.	45CSR13	11.4.1.
9.4.2.	Recordkeeping requirements for visible emissions testing. These records demonstrate compliance with Condition 9.3.1.	45CSR13	11.4.2.
9.4.3.	Recordkeeping requirement of condensate throughputs for tank trucks and storage tanks. Compliance with this condition demonstrates compliance with the annual limits of 9.1.5. and 9.1.8.	45CSR13	11.4.3.
9.4.4.	Requirement for the availability of the records required under Section 9.4. of the operating permit.	45CSR13	11.4.4.
9.5.1.	Reporting requirement for any deviations from visible emission requirements.	45CSR13	11.5.1.

* NOTE: Two conditions are numbered as 11.1.3. in Section 11.0. of R13-3007H.

Section 10.0. – Pigging and Blowdowns [Emission Point ID: E18]

Pigging and blowdown operations are subject to the following regulations:

1. 45CSR13 – *NSR Permit Requirements*

The table below describes each condition added to Section 10.0. of the Title V operating permit.

Title V Permit Condition	Summary of Permit Condition	Regulatory Citation	R13-3007H Condition
10.1.1.	Annual limit for number of blowdown events.	45CSR13	12.1.1.
10.1.2.	Emission limits for VOCs from pigging and blowdown operations.	45CSR13	12.1.2.

Title V Permit Condition	Summary of Permit Condition	Regulatory Citation	R13-3007H Condition
10.4.1.	Recordkeeping requirement for Condition 10.1.1.	45CSR13	12.2.1. and 12.2.2.

Non-Applicability Determinations

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

40 C.F.R. Part 64 – *Compliance Assurance Monitoring (CAM)*:

Neither the engines (S1-S4, S5A, S9-S11, and S20) nor the truck loading operations (S14) have pre-control device emissions that exceed the major source thresholds. Therefore, per 40 C.F.R. §64.2(a)(3), the engines and the truck loading operations are not considered Pollutant Specific Emission Units (PSEUs) and are not subject to CAM.

CAM is applicable to the condensate storage tanks (TK01 through TK08) which meets the applicability requirements in 40 C.F.R. §64.2(a):

a. Emissions of VOCs, toluene, and hexane from TK01 through TK08 are controlled by the vapor combustion unit VCU-2.

b. VCU-2 is subject to emissions limits for VOCs, toluene, and hexane under the NSR permit R13-3007H.

c. The condensate storage tanks are not subject to any individual limits for each tank. Therefore, the average pre-control device emissions from each tank were calculated based on the VCU-2 emission limits (which are the same as the collective post-control device emissions from the tanks) and the vapor combustor's 98% control efficiency for VOCs and HAPs.

   i. The emissions limit for VOCs from VCU-2 is 41.16 tpy. The average pre-control device emissions of VOC from each tank are:

$$\frac{41.16\ tpy}{(1-0.98)*8\ tanks} = 257\ tpy\ per\ tank$$

   ii. The emissions limit for toluene from VCU-2 is 2.20 tpy. The average pre-control device emissions of toluene from each tank are:

$$\frac{2.20\ tpy}{(1-0.98)*8\ tanks} = 14\ tpy\ per\ tank$$

   iii. The emissions limit for hexane from VCU-2 is 4.14 tpy. The average pre-control device emissions of hexane from each tank are:

$$\frac{4.14\ tpy}{(1-0.98)*8\ tanks} = 26\ tpy\ per\ tank$$

   Thus, the average pre-control device emissions from each condensate storage tank exceed 100 tpy of VOCs, 10 tpy of toluene, and 10 tpy of hexane and are greater than the major source thresholds for Title V.

However, as post-control device emissions of VOCs, toluene, and hexane are collectively less than the major source thresholds, TK01 through TK08 are considered Other PSEUs per 40 C.F.R. §64.5(b). Therefore, the submission of a CAM Plan is deferred until the renewal application is submitted for this Title V 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: September 20, 2023
Ending Date: October 20, 2023

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)
None.