



3/27/2015

Certified Mail

Nathan Wheldon
Cadiz Gas Plant
1515 Arapahoe Street
Suite 1600 - Tower 1
Denver, CO 80202-2137

No	TOXIC REVIEW
No	SYNTHETIC MINOR TO AVOID MAJOR NSR
No	CEMS
No	MACT/GACT
Yes	NSPS
No	NESHAPS
No	NETTING
No	MODELING SUBMITTED
No	SYNTHETIC MINOR TO AVOID TITLE V
No	FEDERALLY ENFORCABLE PTIO (FEPTIO)
No	SYNTHETIC MINOR TO AVOID MAJOR GHG

RE: FINALAIR POLLUTION PERMIT-TO-INSTALL AND OPERATE

Facility ID: 0634005029
Permit Number: P0117766
Permit Type: Initial Installation
County: Harrison

Dear Permit Holder:

Enclosed please find a final Ohio Environmental Protection Agency (EPA) Air Pollution Permit-to-Install and Operate (PTIO) which will allow you to install, modify, and/or operate the described emissions unit(s) in the manner indicated in the permit. Because this permit contains conditions and restrictions, please read it very carefully. In this letter you will find the information on the following topics:

- **How to appeal this permit**
- **How to save money, reduce pollution and reduce energy consumption**
- **How to give us feedback on your permitting experience**
- **How to get an electronic copy of your permit**

How to appeal this permit

The issuance of this PTIO is a final action of the Director and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of \$70.00, made payable to "Ohio Treasurer Josh Mandel," which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission
77 South High Street, 17th Floor
Columbus, OH 43215

How to save money, reduce pollution and reduce energy consumption

The Ohio EPA is encouraging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Compliance Assistance and Pollution Prevention at (614) 644-3469. Additionally, all or a portion of the capital expenditures related to installing air pollution control equipment under this permit may be eligible for financing and State tax exemptions through the Ohio Air Quality Development Authority (OAQDA) under Ohio Revised Code Section 3706. For more information, see the OAQDA website: www.ohioairquality.org/clean_air

How to give us feedback on your permitting experience

Please complete a survey at www.epa.ohio.gov/survey.aspx and give us feedback on your permitting experience. We value your opinion.

How to get an electronic copy of your permit

This permit can be accessed electronically via the eBusiness Center: Air Services in Microsoft Word format or in Adobe PDF on the Division of Air Pollution Control (DAPC) Web page, www.epa.ohio.gov/dapc by clicking the "Search for Permits" link under the Permitting topic on the Programs tab.

If you have any questions, please contact Ohio EPA DAPC, Southeast District Office at (740)385-8501 or the Office of Compliance Assistance and Pollution Prevention at (614) 644-3469.

Sincerely,



Erica R. Engel-Ishida, Manager
Permit Issuance and Data Management Section, DAPC

Cc: Ohio EPA-SEDO



FINAL

**Division of Air Pollution Control
Permit-to-Install and Operate
for
Cadiz Gas Plant**

Facility ID:	0634005029
Permit Number:	P0117766
Permit Type:	Initial Installation
Issued:	3/27/2015
Effective:	3/27/2015
Expiration:	9/28/2022



**Division of Air Pollution Control
Permit-to-Install and Operate**

for
Cadiz Gas Plant

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Authorization

Facility ID: 0634005029
Application Number(s): A0051659
Permit Number: P0117766
Permit Description: Chapter 31 modification for the following emissions units (EUs): F001 (unpaved roadways and parking areas), P009 (emergency flare), P010 (equipment maintenance blowdowns) and P801 (equipment leaks) and an initial installation permit for EU B013 [Cadiz III Hot Oil Heater (H-2781)].
Permit Type: Initial Installation
Permit Fee: \$1,200.00
Issue Date: 3/27/2015
Effective Date: 3/27/2015
Expiration Date: 9/28/2022
Permit Evaluation Report (PER) Annual Date: Jan 1 - Dec 31, Due Feb 15

This document constitutes issuance to:

Cadiz Gas Plant
43071 Industrial Park Rd
Cadiz, OH 43907

of a Permit-to-Install and Operate for the emissions unit(s) identified on the following page.

Ohio Environmental Protection Agency (EPA) District Office or local air agency responsible for processing and administering your permit:

Ohio EPA DAPC, Southeast District Office
2195 Front Street
Logan, OH 43138
(740)385-8501

The above named entity is hereby granted this Permit-to-Install and Operate for the air contaminant source(s) (emissions unit(s)) listed in this section pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the described emissions unit(s) will operate in compliance with applicable State and federal laws and regulations.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency


Craig W. Butler
Director



Authorization (continued)

Permit Number: P0117766
 Permit Description: Chapter 31 modification for the following emissions units (EUs): F001 (unpaved roadways and parking areas), P009 (emergency flare), P010 (equipment maintenance blowdowns) and P801 (equipment leaks) and an initial installation permit for EU B013 [Cadiz III Hot Oil Heater (H-2781)].

Permits for the following Emissions Unit(s) or groups of Emissions Units are in this document as indicated below:

Emissions Unit ID:	B013
Company Equipment ID:	B013
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	F001
Company Equipment ID:	F001
Superseded Permit Number:	P0115638
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P009
Company Equipment ID:	P009
Superseded Permit Number:	P0115638
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P010
Company Equipment ID:	P010
Superseded Permit Number:	P0115638
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P801
Company Equipment ID:	P801
Superseded Permit Number:	P0115638
General Permit Category and Type:	Not Applicable



Final Permit-to-Install and Operate
Cadiz Gas Plant
Permit Number: P0117766
Facility ID: 0634005029
Effective Date: 3/27/2015

A. Standard Terms and Conditions



1. What does this permit-to-install and operate ("PTIO") allow me to do?

This permit allows you to install and operate the emissions unit(s) identified in this PTIO. You must install and operate the unit(s) in accordance with the application you submitted and all the terms and conditions contained in this PTIO, including emission limits and those terms that ensure compliance with the emission limits (for example, operating, recordkeeping and monitoring requirements).

2. Who is responsible for complying with this permit?

The person identified on the "Authorization" page, above, is responsible for complying with this permit until the permit is revoked, terminated, or transferred. "Person" means a person, firm, corporation, association, or partnership. The words "you," "your," or "permittee" refer to the "person" identified on the "Authorization" page above.

The permit applies only to the emissions unit(s) identified in the permit. If you install or modify any other equipment that requires an air permit, you must apply for an additional PTIO(s) for these sources.

3. What records must I keep under this permit?

You must keep all records required by this permit, including monitoring data, test results, strip-chart recordings, calibration data, maintenance records, and any other record required by this permit for five years from the date the record was created. You can keep these records electronically, provided they can be made available to Ohio EPA during an inspection at the facility. Failure to make requested records available to Ohio EPA upon request is a violation of this permit requirement.

4. What are my permit fees and when do I pay them?

There are two fees associated with permitted air contaminant sources in Ohio:

- PTIO fee. This one-time fee is based on a fee schedule in accordance with Ohio Revised Code (ORC) section 3745.11, or based on a time and materials charge for permit application review and permit processing if required by the Director.

You will be sent an invoice for this fee after you receive this PTIO and payment is due within 30 days of the invoice date. You are required to pay the fee for this PTIO even if you do not install or modify your operations as authorized by this permit.

- Annual emissions fee. Ohio EPA will assess a separate fee based on the total annual emissions from your facility. You self-report your emissions in accordance with Ohio Administrative Code (OAC) Chapter 3745-78. This fee assessed is based on a fee schedule in ORC section 3745.11 and funds Ohio EPA's permit compliance oversight activities. For facilities that are permitted as synthetic minor sources, the fee schedule is adjusted annually for inflation. Ohio EPA will notify you when it is time to report your emissions and to pay your annual emission fees.

5. When does my PTIO expire, and when do I need to submit my renewal application?

This permit expires on the date identified at the beginning of this permit document (see "Authorization" page above) and you must submit a renewal application to renew the permit. Ohio EPA will send a renewal notice to you approximately six months prior to the expiration date of this permit. However, it is



very important that you submit a complete renewal permit application (postmarked prior to expiration of this permit) even if you do not receive the renewal notice.

If a complete renewal application is submitted before the expiration date, Ohio EPA considers this a timely application for purposes of ORC section 119.06, and you are authorized to continue operating the emissions unit(s) covered by this permit beyond the expiration date of this permit until final action is taken by Ohio EPA on the renewal application.

6. What happens to this permit if my project is delayed or I do not install or modify my source?

This PTIO expires 18 months after the issue date identified on the "Authorization" page above unless otherwise specified if you have not (1) started constructing the new or modified emission sources identified in this permit, or (2) entered into a binding contract to undertake such construction. This deadline can be extended by up to 12 months, provided you apply to Ohio EPA for this extension within a reasonable time before the 18-month period has ended and you can show good cause for any such extension.

7. What reports must I submit under this permit?

An annual permit evaluation report (PER) is required in addition to any malfunction reporting required by OAC rule 3745-15-06 or other specific rule-based reporting requirement identified in this permit. Your PER due date is identified in the Authorization section of this permit.

8. If I am required to obtain a Title V operating permit in the future, what happens to the operating provisions and PER obligations under this permit?

If you are required to obtain a Title V permit under OAC Chapter 3745-77 in the future, the permit-to-operate portion of this permit will be superseded by the issued Title V permit. From the effective date of the Title V permit forward, this PTIO will effectively become a PTI (permit-to-install) in accordance with OAC rule 3745-31-02(B). The following terms and conditions of this permit will no longer be applicable after issuance of the Title V permit: Section B, Term 1.b) and Section C, for each emissions unit, Term a)(2).

The PER requirements in this permit remain effective until the date the Title V permit is issued and is effective, and cease to apply after the effective date of the Title V permit. The final PER obligation will cover operations up to the effective date of the Title V permit and must be submitted on or before the submission deadline identified in this permit on the last day prior to the effective date of the Title V permit.

9. What are my obligations when I perform scheduled maintenance on air pollution control equipment?

You must perform scheduled maintenance of air pollution control equipment in accordance with OAC rule 3745-15-06(A). If scheduled maintenance requires shutting down or bypassing any air pollution control equipment, you must also shut down the emissions unit(s) served by the air pollution control equipment during maintenance, unless the conditions of OAC rule 3745-15-06(A)(3) are met. Any emissions that exceed permitted amount(s) under this permit (unless specifically exempted by rule) must be reported as deviations in the annual permit evaluation report (PER), including nonexempt excess emissions that occur during approved scheduled maintenance.



10. Do I have to report malfunctions of emissions units or air pollution control equipment? If so, how must I report?

If you have a reportable malfunction of any emissions unit(s) or any associated air pollution control system, you must report this to the [DO/LAA] in accordance with OAC rule 3745-15-06(B). Malfunctions that must be reported are those that result in emissions that exceed permitted emission levels. It is your responsibility to evaluate control equipment breakdowns and operational upsets to determine if a reportable malfunction has occurred.

If you have a malfunction, but determine that it is not a reportable malfunction under OAC rule 3745-15-06(B), it is recommended that you maintain records associated with control equipment breakdown or process upsets. Although it is not a requirement of this permit, Ohio EPA recommends that you maintain records for non-reportable malfunctions.

11. Can Ohio EPA or my local air agency inspect the facility where the emission unit(s) is/are located?

Yes. Under Ohio law, the Director or his authorized representative may inspect the facility, conduct tests, examine records or reports to determine compliance with air pollution laws and regulations and the terms and conditions of this permit. You must provide, within a reasonable time, any information Ohio EPA requests either verbally or in writing.

12. What happens if one or more emissions units operated under this permit is/are shut down permanently?

Ohio EPA can terminate the permit terms associated with any permanently shut down emissions unit. "Shut down" means the emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31.

You should notify Ohio EPA of any emissions unit that is permanently shut down by submitting a certification that identifies the date on which the emissions unit was permanently shut down. The certification must be submitted by an authorized official from the facility. You cannot continue to operate an emission unit once the certification has been submitted to Ohio EPA by the authorized official.

You must comply with all recordkeeping and reporting for any permanently shut down emissions unit in accordance with the provisions of the permit, regulations or laws that were enforceable during the period of operation, such as the requirement to submit a PER, air fee emission report, or malfunction report. You must also keep all records relating to any permanently shutdown emissions unit, generated while the emissions unit was in operation, for at least five years from the date the record was generated.

Again, you cannot resume operation of any emissions unit certified by the authorized official as being permanently shut down without first applying for and obtaining a permit pursuant to OAC Chapter 3745-31.



13. Can I transfer this permit to a new owner or operator?

You can transfer this permit to a new owner or operator. If you transfer the permit, you must follow the procedures in OAC Chapter 3745-31, including notifying Ohio EPA or the local air agency of the change in ownership or operator. Any transferee of this permit must assume the responsibilities of the transferor permit holder.

14. Does compliance with this permit constitute compliance with OAC rule 3745-15-07, "air pollution nuisance"?

This permit and OAC rule 3745-15-07 prohibit operation of the air contaminant source(s) regulated under this permit in a manner that causes a nuisance. Ohio EPA can require additional controls or modification of the requirements of this permit through enforcement orders or judicial enforcement action if, upon investigation, Ohio EPA determines existing operations are causing a nuisance.

15. What happens if a portion of this permit is determined to be invalid?

If a portion of this permit is determined to be invalid, the remainder of the terms and conditions remain valid and enforceable. The exception is where the enforceability of terms and conditions are dependent on the term or condition that was declared invalid.



Final Permit-to-Install and Operate
Cadiz Gas Plant
Permit Number: P0117766
Facility ID: 0634005029
Effective Date: 3/27/2015

B. Facility-Wide Terms and Conditions



Final Permit-to-Install and Operate

Cadiz Gas Plant

Permit Number: P0117766

Facility ID: 0634005029

Effective Date: 3/27/2015

1. This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).
 - a) For the purpose of a permit-to-install document, the facility-wide terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
 - (1) None.
 - b) For the purpose of a permit-to-operate document, the facility-wide terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
 - (1) None.
2. Specific emissions units contained in this permit are subject to 40 CFR Part 60, Subpart VVa (P009 and P801), and OOOO (P009 and P801). The complete NSPS requirements, including the NSPS General Provisions, may be accessed via the internet from the Electronic Code of Federal Regulations (e-CFR) website: <http://ecfr.gpoaccess.gov> or by contacting the appropriate Ohio EPA District office of local air agency.
3. The emissions of air contaminant sources that qualify as de minimis under OAC rule 3745-15-05, or are exempt under OAC rule 3745-31-03(A)(1) or (4), must be included in the total potential to emit (PTE) calculations for the facility.
4. The Cadiz Gas Plant must comply with the Used Oil Management Standards of OAC Chapter 3745-279.
5. Risk Management Plans:

If the permittee is required to develop and register a risk management plan pursuant to section 112(r) of the Clean Air Act, as amended, 42 U.S.C. 7401 et seq. ("Act"), the permittee shall comply with the requirement to register such a plan.



Final Permit-to-Install and Operate
Cadiz Gas Plant
Permit Number: P0117766
Facility ID: 0634005029
Effective Date: 3/27/2015

C. Emissions Unit Terms and Conditions



1. B013, Cadiz III Hot Oil Heater (H-2781)

Operations, Property and/or Equipment Description:

Cadiz III Hot Oil Heater (H-2781) - natural gas-fired process heater rated at a heat input capacity of 15.04 MMBtu/hr that will maintain the temperature of a hot oil system that will be used to provide heat to various portions of the plant

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. b)(1)b., b)(2)b.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3) June 30, 2008	<p>Nitrogen oxides (NO_x) emissions shall not exceed 0.54 ton per month averaged over a twelve-month, rolling period.</p> <p>Carbon monoxide (CO) emissions shall not exceed 0.45 ton per month averaged over a twelve-month, rolling period.</p> <p>See b)(2)(a) below.</p>
b.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	<p>The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the NO_x, CO, SO₂, VOC, and particulate emissions from this air contaminant source since the potential to emit is less than 10 tons/year.</p> <p>See b)(2)(b) below.</p>



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
c.	OAC rule 3745-17-07(A)	Visible PE from any stack serving this emissions unit shall not exceed 20 percent opacity as a six-minute average, except as provided by rule.
d.	OAC rule 3745-17-10(B)(1)	PE shall not exceed 0.020 lb/MMBtu of actual heat input. This emissions limitation is less stringent than the limitation listed under OAC rule 3745-31-05(A)(3), until such time as U.S. EPA approves the December 1, 2006, version of OAC rule 3745-31-05 as part of the State Implementation Plan.

(2) Additional Terms and Conditions

- a. This Best Available Technology (BAT) emission limit applies until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).
- b. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) as part of the Ohio SIP.

c) Operational Restrictions

- (1) The permittee shall burn only natural gas in this emissions unit.

d) Monitoring and/or Recordkeeping Requirements

- (1) For each day during which the permittee burns a fuel other than natural gas, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.

e) Reporting Requirements

- (1) The reports required by this permit may be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal; or they may be mailed as a hard copy to the appropriate district office or local air agency.
- (2) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA District Office or Local Air Agency by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve months for each air contaminant source identified in this permit.



- (3) The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs.

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:

- a. Emissions Limitation:

NO_x emissions shall not exceed 0.54 ton per month averaged over a twelve-month, rolling period.

Applicable Compliance Method:

The NO_xemissions limitation was derived by the following calculations using the inputs provided in the permittee’s application:

$$\begin{aligned}
 \text{NO}_x(\text{lbs/hr}) &= (\text{fuel usage mmscf/hr} \times \text{NO}_x\text{emissions factor lb/mmscf} \times \text{actual heat content Btu/scf}) / \text{standard heat content Btu/scf} \\
 \text{NO}_x(\text{lbs/hr}) &= (0.0125\text{mmscf/hr} \times 100\text{lb/mmscf} \times 1,200 \text{ Btu/scf}) / 1,020 \text{ Btu/scf} \\
 &= 1.47\text{lb/hr}
 \end{aligned}$$

Where:

Maximum hourly fuel usage = 0.0125mmscf/hr, based on manufacturer specifications

NO_xEF = 100lb/mmscf, AP-42, Section 1.4, Table 1.4-1

Actual heat content = 1,200 Btu/scf, based on manufacturer specifications

Standard heat content = 1,020 Btu/scf

Therefore:

$$[(1.47\text{lb/hr} \times 8,760 \text{ hrs/year}) / (2,000 \text{ lbs/ ton})] / (12 \text{ months/year}) = \mathbf{0.54 \text{ ton per month averaged over a twelve-month, rolling period}}$$

If required, the NO_xemission rate shall be determined according to test Methods 1 - 4, and 7 as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources". Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office.



b. Emissions Limitation:

CO emissions shall not exceed 0.45 ton per month averaged over a twelve-month, rolling period.

Applicable Compliance Method:

The CO emissions limitation was derived by the following calculations using the inputs provided in the permittee's application:

$$\begin{aligned} \text{CO (lbs/hr)} &= (\text{fuel usage mmscf/hr} \times \text{CO emissions factor lb/mmscf} \times \\ &\quad \text{actual heat content Btu/scf}) / \text{standard heat content Btu/scf} \\ \text{CO (lbs/hr)} &= (0.0125\text{mmscf/hr} \times 84\text{lb/mmscf} \times 1,200 \text{ Btu/scf}) / 1,020 \\ &\quad \text{Btu/scf} \\ &= 1.24\text{lb/hr} \end{aligned}$$

Where:

Maximum hourly fuel usage = 0.0125mmscf/hr, based on manufacturer specifications

CO EF = 84lb/mmscf, AP-42, Section 1.4, Table 1.4-1

Actual heat content = 1,200 Btu/scf, based on manufacturer specifications

Standard heat content = 1,020 Btu/scf

Therefore:

$$[(1.24\text{lb/hr} \times 8,760 \text{ hrs/year}) / (2,000 \text{ lbs/ ton})] / (12 \text{ months/year}) = \mathbf{0.45 \text{ ton per month averaged over a twelve-month, rolling period}}$$

If required, the CO emission rate shall be determined according to test Methods 1 - 4, and 10 as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources". Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office.

c. Emissions Limitation:

PE shall not exceed 0.020 lb/MMBtu actual heat input.

Applicable Compliance Method:

If required, particulate emissions shall be determined according to test Methods 1 - 5, as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources". Alternative US EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office.



Final Permit-to-Install and Operate

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d. Emissions Limitation:

Visible PE from any stack serving this emissions unit shall not exceed 20 percent opacity as a six-minute average, except as provided by rule.

Applicable Compliance Method:

If required, visible particulate emissions shall be determined according to USEPA Method 9.

g) Miscellaneous Requirements

(1) None.



2. F001, Unpaved Roadways and Parking Areas

Operations, Property and/or Equipment Description:

Unpaved roadways and parking areas with a maximum of 16,771 vehicle miles traveled per year (Chapter 31 Modification to PTI P0115638, issued effective 4/17/2014).

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. b)(1)b., b)(1)c., b)(2)b.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3) June 30, 2008	No visible particulate emissions (PE) from unpaved roadways and parking areas except for a period of time not to exceed 3 minutes during any 60-minute observation period. See b)(2)(a) below.
b.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to PE from this air contaminant source since the calculated annual emission rate is less than 10 tons/yr taking into account the voluntary restriction from OAC rule 3745-31-05(E). See b)(2)(b) below.
c.	OAC rule 3745-31-05(E)	Emissions shall not exceed 6.27 tons of fugitive PE per year.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		A speed limit of 15 miles per hour (mph) shall be posted and enforced on all plant roadways and, on an as needed basis, water shall be employed to reduce visible emissions.

(2) Additional Terms and Conditions

- a. This Best Available Technology (BAT) emission limit applies until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).
- b. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) as part of the Ohio SIP.

c) Operational Restrictions

- (1) None.

d) Monitoring and/or Recordkeeping Requirements

- (1) Except as otherwise provided in this section, the permittee shall perform inspections of each of the roadway segments and parking areas in accordance with the following frequencies:

<u>unpaved roadways and parking areas</u>	<u>minimum inspection frequency</u>
all roads and parking areas	daily

- (2) The purpose of the inspections is to determine the need for implementing the above-mentioned control measures. The inspections shall be performed during representative, normal traffic conditions. No inspection shall be necessary for a roadway or parking area that is covered with snow and/or ice or if precipitation has occurred that is sufficient for that day to ensure compliance with the above-mentioned applicable requirements. Any required inspection that is not performed due to any of the above-identified events shall be performed as soon as such event(s) has (have) ended, except if the next required inspection is within one week.

- (3) The permittee shall maintain records of the following information:

- a. the date and reason any required inspection was not performed, including those inspections that were not performed due to snow and/or ice cover or precipitation;
- b. the date of each inspection where it was determined by the permittee that it was necessary to implement the control measures;



- c. the dates the control measures were implemented; and
- d. on a calendar quarter basis, the total number of days the control measures were implemented and the total number of days where snow and/or ice cover or precipitation were sufficient to not require the control measures.

The information required in Term d)(3)d. shall be updated on a calendar quarter basis within 30 days after the end of each calendar quarter.

e) Reporting Requirements

- (1) The reports required by this permit may be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal; or they may be mailed as a hard copy to the appropriate district office or local air agency.
- (2) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA District Office or Local Air Agency by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve months for each air contaminant source identified in this permit.

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emissions Limitation:

No visible PE from unpaved roadways and parking areas except for a period of time not to exceed 3 minutes during any 60-minute observation period.

Applicable Compliance Method:

If required, visible particulate emissions shall be determined according to USEPA Method 22.

b. Voluntary Emissions Limitation:

Emissions shall not exceed 6.27 tons of fugitive PE per year.

Applicable Compliance Method:

Compliance shall be determined based on the emissions factor calculation for unpaved roadways and parking areas in AP-42 section 13.2.2 (Final: 12/2003). Initial compliance has been determined using inputs representing current conditions as follows:

$$E = [k(s/12)^a(W/3)^b][(365-p)/365]$$



Where:

E = size-specific emission factor (lb/VMT)

s = silt content of road surface material (%) = 4.3%

W = mean vehicle weight (tons) = 23.77

a = constant (dimensionless) = 0.7 PM

b = constant (dimensionless) = 0.45

k = particle size multiplier (dimensionless) = 4.9 PM

p = number of rain days per year >0.01 in. = 140

Therefore, E = 3.74 lbs PM/VMT

Maximum Travel = 16,770 VMT/year

$(16,770 \text{ VMT/yr})(3.74 \text{ lbs/VMT})(1 \text{ ton}/2,000 \text{ lbs}) = 31.34 \text{ TPY uncontrolled PM}$

Assume 80% control for reduced speed limit (RACM, Table 2.1.1)

$(31.34 \text{ tons/year})(0.20) = 6.27 \text{ TPY controlled PM}$

g) Miscellaneous Requirements

(1) None.



3. P009, Plant Flare

Operations, Property and/or Equipment Description:

Flare used to control emergency releases, pigging gas, and blowdown emissions (Chapter 31 Modification to PTI P0115638, issued effective 4/17/2014).

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. b)(1)b., b)(2)b.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3) June 30, 2008	Nitrogen oxides (NO _x) emissions shall not exceed 0.087 ton per month averaged over a twelve-month, rolling period. Carbon monoxide (CO) emissions shall not exceed 0.153 tonper month averaged over a twelve-month, rolling period. See b)(2)(a) below.
b.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the NO _x , CO, SO ₂ , VOC, and particulate emissions from this air contaminant source since the potential to emit is less than 10 tons/year. See b)(2)(b) below.
c.	40 CFR Part 60, Subparts A, OOOO	See c)(1), d(1), and e(3) below.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
	and VVa (40 CFR 60.5360-5430, 40 CFR 60.18, 60.480a-489a) [In accordance with 40 CFR 60.482-10a, this emissions unit consists of a flare and closed vent system used to control equipment leak emissions from process units subject to the standards of NSPS OOOO.]	

(2) Additional Terms and Conditions

- a. The Best Available Technology (BAT) emission limit applies until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).
- b. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) as part of the Ohio SIP.

c) Operational Restrictions

- (1) The permittee shall comply with the applicable restrictions required under 40 CFR Part 60, Subparts A, OOOO, and VVa, including the following sections:

60.5400(a), 60.482-10a(d), 60.482-10a(m), and 60.18(e)	Operate closed vent systems and control devices used to comply with the provisions of 40 CFR 60, Subpart VVa at all times when emissions may be vented to them.
60.5400(a), 60.482-10a(d) and 60.18(c)(1)	Design and operate the flare with no visible emissions except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.
60.5400(a), 60.482-10a(d) and 60.18(c)(2)	Operate the flare with a flame present at all times.
60.5400(a), 60.482-10a(d), 60.18(c)(3), 60.18(c)(3)(ii), 60.18(c)(5), 60.18(f)(3), (4), and (6)	Adhere to the minimum net heating value of gas specified in 60.18(c)(3)(ii) and maximum tip velocity specifications in 60.18(c)(5). Calculate heat content as specified in 60.18(f)(3). Calculate exit velocities as specified in 60.18(f)(4) and (6).*



60.5400(a) and 60.482-10a(g)	Repair detected leaks in the closed vent system.
60.5400(a) and 60.482-10a(h)	Allowances for delay of repair for leaks in closed vent systems.

* The permittee may choose to comply with any alternative standards provided in 40 CFR 60, Subparts A, OOOO, of VVa.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall comply with the applicable monitoring and recordkeeping requirements under 40 CFR Part 60, Subparts A, OOOO, and VVa including the following sections:

60.5400(a), 60.482-10a(e), and 60.18(d)	Monitor the control device to ensure it is operated and maintained in conformance with its design.
60.5400(a), 60.482-10a(f), 60.485a(b)	Inspect each closed vent system, except as provided in 60.482-10a(i)-(k).
60.5400(a), 60.482-10a(d), 60.18(d), 60.18(f)(2)	Install, calibrate, operate and maintain the heat sensing monitoring device to monitor the presence of the flare pilot flame.
60.5400(a), 60.482-10a(l)	Maintain required records for all inspections of the closed vent systems.
60.5400(e), 60.486a(d)	Record the required information on design requirements and keep in a readily accessible location.

e) Reporting Requirements

- (1) The reports required by this permit may be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal; or they may be mailed as a hard copy to the appropriate district office or local air agency.
- (2) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA District Office or Local Air Agency by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve months for each air contaminant source identified in this permit.
- (3) The permittee shall comply with the applicable reporting requirements required under 40 CFR Part 60, Subparts A, OOOO, and VVa, including the following sections:



60.7(a)(4)	Notification of any physical or operational change which might increase emissions.
60.5400(e), 60.487a(a)	Submit semiannual reports beginning 6 months after the initial startup date.
60.5400(e), 60.487a(c)	Include all required information in each subsequent semiannual report.

f) Testing Requirements

(1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emissions Limitation:

NO_x emissions shall not exceed 0.087ton per month averaged over a twelve-month, rolling period.

Applicable Compliance Method:

The NO_x emissions limitation was derived by the following calculations using the inputs provided in the permittee's application:

Pilot/Purge/Pigging Gas Emissions

$$\begin{aligned}
 \text{NO}_x \text{ (tons/yr)} &= [(\text{pilot/purge/pigging gas mmscf/yr} \times \text{NO}_x \text{ emissions factor lb/mmscf} \times \text{actual heat content Btu/scf}) / \text{standard heat content Btu/scf}] / 2,000 \text{ lbs/ton} \\
 &= [(12.6 \text{ mmscf/yr} \times 100 \text{ lb/mmscf} \times 1,200 \text{ Btu/scf}) / 1,020 \text{ Btu/scf}] / 2,000 \text{ lbs/ton} \\
 &= 0.74\text{ton/yr}
 \end{aligned}$$

Where:

Maximum hourly pilot/purge/pigging fuel usage = 12.6mmscf/yr, based on manufacturer specifications

NO_x EF (pilot light) = 100 lb/mmscf, AP-42, Section 1.4, Table 1.4-1, 2, 3

Actual heat content = 1,200 Btu/scf, based on manufacturer specifications

Standard heat content = 1,020 Btu/scf

Flared Gas Emissions

$$\text{NO}_x \text{ (ton/yr)} = (\text{flared material heat input million Btu/yr} \times \text{NO}_x \text{ emissions factor lb/million Btu}) / 2,000 \text{ lbs/ton}$$



$$= (4,422 \text{ million Btu/hr} \times 0.138 \text{ lb/million Btu}) / 2,000 \text{ lbs/ton}$$

$$= 0.30 \text{ tons/yr}$$

Where:

$$\text{Flared material heat input} = 4,422 \text{ MMBtu/yr}$$

NO_x EF (flared gas) = 0.138 lb/million Btu, TNRCC RG-109, Table 4 for other flares combusting high-Btu waste streams based on permittee's application

Total:

$$(0.74 \text{ ton/yr} + 0.30 \text{ ton/yr}) / 12 \text{ months/yr} = \mathbf{0.087 \text{ ton per month averaged over a twelve month, rolling period}}$$

b. Emissions Limitation:

CO emissions shall not exceed 0.153 ton per month averaged over a twelve-month, rolling period.

Applicable Compliance Method:

The CO emissions limitation was derived by the following calculations using the inputs provided in the permittee's application:

Pilot/Purge/Pigging Gas Emissions

$$\text{CO (tons/yr)} = [(\text{pilot/purge/pigging gas mmscf/yr} \times \text{CO emissions factor lb/mmscf} \times \text{actual heat content Btu/scf}) / \text{standard heat content Btu/scf}] / 2,000 \text{ lbs/ton}$$

$$= [(12.6 \text{ mmscf/yr} \times 84 \text{ lb/mmscf} \times 1,200 \text{ Btu/scf}) / 1,020 \text{ Btu/scf}] / 2,000 \text{ lbs/ton}$$

$$= 0.62 \text{ ton/yr}$$

Where:

Maximum hourly pilot/purge/pigging fuel usage = 12.6 mmscf/yr, based on manufacturer specifications

CO EF (pilot/purge/pigging) = 84 lb/mmscf, AP-42, Section 1.4, Table 1.4-1

Actual heat content = 1,200 Btu/scf, based on manufacturer specifications

Standard heat content = 1,020 Btu/scf

Flared Gas Emissions

$$\text{CO (ton/yr)} = (\text{flared material heat input million Btu/yr} \times \text{CO emissions factor lb/million Btu}) / 2,000 \text{ lbs/ton}$$

$$= (4,422 \text{ million Btu/yr} \times 0.55 \text{ lb/million Btu}) / 2,000 \text{ lbs/ton}$$

$$= 1.22 \text{ tons/yr}$$



Where:

Flared material heat input = 4,422 MMBtu/yr, based on manufacturer specifications

CO EF (flared gas) = 0.55 lb/million Btu, TNRCC RG-109, Table 4 for other flares combusting low-Btu waste streams

Total:

$(0.62 \text{ ton/yr} + 1.22 \text{ ton/yr}) / 12 \text{ months/yr} = 0.153 \text{ ton per month averaged over a twelve month, rolling period}$

c. Emissions Limitation:

The flare shall be designed and operated with no visible emissions, except for a total of five minutes during any two consecutive hours.

Applicable Compliance Method:

Visible particulate emissions shall be determined according to USEPA Method 22. See f)(2).

- (2) The permittee has satisfied the requirement to conduct initial performance testing for this unit.

g) Miscellaneous Requirements

- (1) None.



4. P010, Equipment Maintenance Blowdowns

Operations, Property and/or Equipment Description:

Equipment Maintenance Blowdowns (Chapter 31 Modification to PTI P0115638, issued effective 4/17/2014).

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. b)(1)b., b)(1)c., b)(2)b.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3) June 30, 2008	Volatile organic compound (VOC) emissions shall not exceed 0.02 tonper month averaged over a twelve-month, rolling period. See b)(2)(a) below.
b.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to VOC emissions from this air contaminant source since the calculated annual emission rate is less than 10 tons/yr taking into account the voluntary restriction from OAC rule 3745-31-05(E). See b)(2)(b) below.
c.	OAC rule 3745-31-05(E)	Emissions shall not exceed 0.296 tons of VOC per year.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		The permittee shall install and operate a flare with a control efficiency of 98% VOC emissions from this unit.

(2) Additional Terms and Conditions

- a. This Best Available Technology (BAT) emission limit applies until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).
- b. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) as part of the Ohio SIP.

c) Operational Restrictions

- (1) The permittee shall minimize the frequency and size of blowdown events by conducting routine operation and maintenance activities in a manner consistent with safety and good air pollution control practices.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall maintain the following records on a monthly basis:
 - a. The date, number and type of each maintenance blowdown event;
 - b. Total volume of gas emitted from each maintenance blowdown event; and
 - c. Total volume of gas emitted from all maintenance blowdown events as a rolling, 12-month total.

e) Reporting Requirements

- (1) The reports required by this permit may be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal; or they may be mailed as a hard copy to the appropriate district office or local air agency.
- (2) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA District Office or Local Air Agency by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve months for each air contaminant source identified in this permit.



f) Testing Requirements

(1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emissions Limitation:

VOC emissions shall not exceed 0.02 ton per month averaged over a twelve-month, rolling period and 0.296 tons of VOC per year.

Applicable Compliance Method:

Compliance with the monthly VOC emissions limitation shall be based upon the following calculation using the inputs provided in the permittee's application and the recordkeeping requirements in d)(1):

$$\begin{aligned} \text{Uncontrolled VOC (tons/yr)} &= \\ &[(\text{annual blowdown mass lbs/yr for compressor blowdowns} \times \text{compressor} \\ &\text{component weight fraction VOC}) \\ &+ (\text{annual blowdown mass lbs/yr for electric engine blowdowns} \times \text{engine electric} \\ &\text{component weight fraction VOC}) \\ &+ (\text{annual blowdown mass lbs/yr for ESD blowdowns} \times \text{ESD component weight} \\ &\text{fraction VOC})] \\ &/ 2,000 \text{ lbs/ton} \end{aligned}$$

$$\begin{aligned} \text{Controlled VOC (tons/yr)} &= \\ &(\text{Uncontrolled VOC tons/yr}) \times (1 - \text{control efficiency}) \end{aligned}$$

$$\begin{aligned} \text{Controlled VOC (ton/month)} &= \\ &(\text{Controlled VOC tons/year}) / (12 \text{ months/1 year}) \end{aligned}$$

Where:

- Annual blowdown mass for compressor blowdowns = 27,432 lbs/yr
- Annual blowdown mass for engine blowdowns = 19,296 lbs/yr
- Annual blowdown mass for ESD blowdowns = 150,000 lbs/yr
- Compressor component weight fraction VOC = 12.5%
- Engine component weight fraction VOC = 1.56%
- ESD component weight fraction VOC = 17.24%
- Control Efficiency of Plant Flare = 98%, based on manufacturer specifications

Therefore:

$$\begin{aligned} \text{Uncontrolled VOC (tons/yr)} &= \\ &[(27,432 \text{ lbs/yr} \times 12.5\%) + (19,296 \text{ lbs/yr} \times 1.56\%) + (150,000 \times 17.24\%) / 2,000 \\ &\text{lbs/ton} = 14.795 \text{ uncontrolled VOC tons/yr} \end{aligned}$$



Final Permit-to-Install and Operate

Cadiz Gas Plant

Permit Number: P0117766

Facility ID: 0634005029

Effective Date: 3/27/2015

Controlled VOC (tons/yr) =
 $(14.795) \times (1 - 0.98) = \mathbf{0.296}$ controlled VOC tons/yr

Controlled VOC (ton/month) =
 $(0.296) / (12 \text{ months}/1 \text{ year}) = \mathbf{0.02}$ tons per month averaged over a twelve-month, rolling period

g) Miscellaneous Requirements

(1) None.



5. P801, Fugitive Equipment Leaks

Operations, Property and/or Equipment Description:

Fugitive Equipment Leaks (Chapter 31 Modification to PTI P0115638, issued effective 4/17/2014).

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. None.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3) June 30, 2008	Volatile organic compound (VOC) emissions shall not exceed 0.99 tonper month averaged over a twelve-month, rolling period.
b.	40 CFR Part 60, Subparts A, OOOO, and VVa (40 CFR 60.5360-60.5430, 40 CFR 60.482-2a, 60.482-4a-60.482-11a) [In accordance with 40 CFR 60.5365(f), this emissions unit includes the group of all equipment except compressors, within a process unit at an onshore natural gas processing plant.]	See c)(1), d)(1) and e)(3) below.



(2) Additional Terms and Conditions

a. None.

c) Operational Restrictions

(1) The permittee shall comply with the applicable restrictions required under 40 CFR Part 60, Subpart OOOO, and VVaincluding the following sections:

60.5400(a) and 60.482-2a(b)(2)(ii)	Designate visual indication of liquids dripping from a pump seal as a leak, and repair the leak within 15 days of detection by eliminating visual indications of liquids dripping.
60.5400(a) and 60.482-2a(c)(1)	Repair detected leaks from pumps in light liquid service not later than 15 calendar days after detection, except as provided in 60.482-9a.
60.5400(a) and 60.482-2a(c)(2)	Attempt first repair of detected leaks from pumps in light liquid service within 5 days after each leak is detected.
60.5400(a) and 60.482-2a(d)	Meet the requirements of 60.482-2a(d) for pumps equipped with a dual mechanical seal system.
60.5400(a), 60.482-2a(e) and 60.486a(e)	Meet the requirements of 60.482-2a(e) for pumps designated for no detectable emissions (less than 500ppm above background) in lieu of 60.482-2a(a), (c) and (d).
60.5400(a), 60.482-2a(g) and 60.486a(f)	Meet the requirements of 60.482-2(g) for pumps designated as unsafe to monitor in lieu of 60.482-2a(a) and (d)(4)-(6).
60.5400(a), 60.482-4a and 60.5401(b)(3)	Repair detected leaks from pressure relief devices in gas/vapor service as soon as practicable, but not later than 15 calendar days after detection, except as provided in 60.482-9a, and attempt first repair within 5 days after each leak is detected.*
60.5400(a) and 60.482-4a(d)	Meet the requirements of 60.482-4a(d)(2) for any pressure relief device equipped with a rupture disk upstream of the pressure relief device in lieu of 60.482-4(a) and (b).
60.5400(a), 60.482-5a and	Sampling connection systems are exempt



60.5401(c)	from the requirements of 60.482-5a.
60.5400(a) and 60.482-6a(a)(1)	Equip each open-ended valve or line with a cap, blind flange, plug or a second valve, except as provided in 60.482-1a(c), and 60.482-6a(d) and (e).
60.5400(a), 60.482-6a(a)(2) and (b) through (e)	Operate each open-ended valve or line in compliance with the requirements of 60.482-6a(a)(2) and (b) through (e).
60.5400(a), 60.482-7a(d)(1) and (2)	Repair detected leaks from valves in gas/vapor or light liquid service as soon as practicable, but not later than 15 calendar days after detection, except as provided in 60.482-9a, and attempt first repair within 5 days after each leak is detected.
60.5400(a) and 60.482-7a(e)	Use best practices in the first attempt at repair of leaks from valves in gas/vapor or light liquid service.
60.5400(a) and 60.482-7a(f)	Meet the requirements of 60.482-7a(f) for valves in gas/vapor or light liquid service designated for no detectable emissions (less than 500 ppm above background) in lieu of 60.482-7a(a).
60.5400(a) and 60.482-7a(g)	Meet the requirements of 60.482-7a(g) for valves in gas/vapor or light liquid service designated as unsafe to monitor in lieu of 60.482-7a(a).
60.5400(a) and 60.482-7a(h)	Meet the requirements of 60.482-7a(h) for valves in gas/vapor or light liquid service designated as difficult to monitor in lieu of 60.482-7a(a).
60.5400(a) and 60.482-8a(c)	Repair detected leaks from pumps and valves in heavy liquid service, pressure relief devices in light or heavy liquid service, and connectors as soon as practicable, but not later than 15 calendar days after detection, except as provided in 60.482-9a, and attempt first repair within 5 days after each leak is detected.
60.5400(a) and 60.482-8a(d)	Use best practices in the first attempt at repair of leaks from pumps and valves in heavy liquid service, pressure relief devices in light or



	heavy liquid service, and connectors.
60.5400(a) and 60.482-9a	Comply with the requirements in 60.482-9a for delays of repair.
60.5400(a) and 60.482-11a(d)	Repair detected leaks from connectors in gas/vapor or light liquid service as soon as practicable, but not later than 15 calendar days after detection, except as provided in 60.482-9a, and attempt first repair within 5 days after each leak is detected.
60.5400(a) and 60.482-11a(e)	Meet the requirements of 40 CFR 60.482-11a(e) for connectors that are designated as unsafe to monitor in lieu of 40 CFR part 60.482-11a(a) and (b).
60.5400(a) and 60.482-11a(f)	Meet the requirements of 40 CFR 60.482-11a(f) for connectors that are inaccessible, ceramic, or ceramic-lined in lieu of 40 CFR 60.482-11a(a) and (b).
60.5400(a) and 60.482-11a(g)	Identification requirements for connectors in gas/vapor or light liquid service.

*The permittee may choose to comply with any alternative standards provided in 40 CFR Part 60, Subparts OOOO and VVa.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall comply with the applicable monitoring and recordkeeping requirements required under 40 CFR Part 60, Subpart OOOO and VVa, including the following sections:

60.5400(a) and (d), 60.482-2a(a)(1) and 60.485a(b)	Monitor each pump in light liquid service within 30 days after the end of the startup period and monthly thereafter to detect leaks, except as provided in 60.482-1a(f) and 60.482-2a(d), (e) and (f).
60.5400(a) and 60.482-2a(a)(2)	Visually inspect each pump in light liquid service each week for indications of liquids dripping from the pump seal, except as provided in 60.482-1a(f).
60.5400(a) and (d), 60.482-2a(b)(1) and 60.485a(b)(1)	Detect leaks from pumps in light liquid service at an instrument rating of 5,000 ppm for pumps handling polymerizing monomers or at an instrument rating of 2,000 ppm for all other



	pumps.
60.5400(a) and 60.482-2a(b)(2)(i)	Monitor each pump in light liquid service in accordance with 60.485a(b) within 5 days of discovery of liquids dripping from the pump seal.*
60.5400(a) and 60.482-2a(h)	Alternate inspection requirements for pumps located at unmanned plant sites.
60.5400(a), 60.482-4a and 60.5401(b)(1)	Monitor each pressure relief device in gas/vapor service quarterly and within 5 days after each pressure release to detect leaks in accordance with 60.485a(b).*
60.5400(a) and (d), 60.5401(b)(2), 60.482-4a and 60.485a(b)	Detect leaks from pressure relief devices in gas/vapor service at an instrument rating of 500 ppm.*
60.5400(a) and 60.482-7a(a)	Monitor each valve in gas/vapor and light liquid service within 30 days after the end of the startup period and monthly thereafter to detect leaks, except as provided in 60.482-1a(c) and (f), 60.483-1a and 60.483-2a and 60.482-7a(f), (g) and (h).*
60.5400(a) and (d), 60.482-7a(b), and 60.485a(b)(1)	Detect leaks from valves in gas/vapor and light liquid service at an instrument rating of 500 ppm.
60.5400(a), 60.482-7a(c)(1)(i)	Monitor each valve in gas/vapor or light liquid service for which a leak is not detected for 2 successive months during the first month of each quarter until a leak is detected.*
60.5400(a), 60.482-7a(c)(1)(ii)	Monitor assigned subgroups of valves in gas/vapor or light liquid service that are inspected during a different month during the quarter, provided each subgroup is monitored ever 3 months.*
60.5400(a), 60.482-7a(c)(2)	Monitor leaking valves in gas/vapor or light liquid service monthly until a leak is not detected for 2 successive months.
60.5400(a) and 60.482-8a(a)(1) or (2)	Monitor pumps and valves in heavy liquid service, pressure relief devices in light or heavy liquid service, and connectors within 5 days and comply with 60.482-8a(b) through (d) if visual, audible, olfactory or other



	detection methods indicate a potential leak, or eliminate indications of leaks within 5 calendar days of detection.
60.5400(a) and (d), 60.482-8a(b) and 60.485(b)(1)	Detect leaks from pumps and valves in heavy liquid service, pressure relief devices in light or heavy liquid service, and connectors at an instrument rating of 10,000 ppm.
60.5400(a) and 60.482-11a(a) and (b)(3)	Monitor all connectors in gas/vapor and light liquid service for leaks within 12 months of compliance date or initial startup and thereafter in accordance with 60.482-11a(b)(3) to detect leaks, except as provided in 60.482-1a(c) and 60.482-11a(e).
60.5400(a) and (d), 60.482-11a(b)(1)-(2), and 60.485a(b)(1)	Detect leaks from connectors in gas/vapor and light liquid service at an instrument rating of 500 ppm.
60.5400(a), 60.482-11a(b)(3)(iv)	Monitor leaking connectors in gas/vapor or light liquid service within 90 days after repair to confirm that the connector is no longer leaking.
60.5400(a), 60.482-11a(c)	Procedures for calculating the percentage of leaking connectors in gas/vapor or light liquid service.
60.5400(d) and 60.485a(d) through (f)	Comply with procedures and sampling requirements for determining VOC service and light liquid service.*
60.5400(e) and 60.5421(b)	Maintain required information for pressure relief devices.*
60.5400(e), 60.486a(b) and (c)	Comply with tagging leak identification requirements and maintain required information for detected leaks.
60.5400(e) and 60.486a(e)	Maintain required information pertaining to equipment subject to the requirements of 60.482-1a(a), (b), and (d), 60.482-2a, and 60.482-4a to 60.482-11a.
60.5400(e) and 60.486a(f)	Maintain required information for valves subject to 60.482-7a(g) and (h), all pumps subject to 60.482-2a(g), and all connectors subject to 60.482-11a(e).



60.5400(e) and 60.486a(h)	Maintain required information on design criteria in 60.482-2a(d)(5).
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*The permittee may choose to comply with any alternative standards provided in 40 CFR Part 60, Subparts OOOO and VVa.

e) Reporting Requirements

- (1) The reports required by this permit may be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal; or they may be mailed as a hard copy to the appropriate district office or local air agency.
- (2) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA District Office or Local Air Agency by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve months for each air contaminant source identified in this permit.
- (3) The permittee shall comply with the applicable reporting requirements required under 40 CFR Part 60, Subparts OOOO and VVa, including the following sections:

60.7(a)(4)	Notification of any physical or operational change which might increase emissions.
60.5400(e), and 60.487a(a)	Submit semiannual reports beginning six months after the initial startup date.
60.5400(e), 60.487a(c), and 60.5422	Semiannual report requirements.
60.5400(e), 60.5422	Perform reporting with respect to VOC requirements.

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emissions Limitation:

Fugitive emissions of VOC shall not exceed 0.99 ton per month averaged over a twelve-month, rolling period.

Applicable Compliance Method:

Compliance with the monthly VOC emissions limitation shall be demonstrated by the following calculation based on the emissions factors (lb/hr/component) provided in Table 2-4 of U.S. EPA's Protocol for Equipment Leak Emission Estimates (11/95) for components in gas, light oil, and water/oil service and inputs provided in the permittee's application:



VOC = [(# of valves in gas service X gas service valve EF)
+ (# of valves in light oil service X light oil service valve EF)
+ (# of pump seals in gas service X gas service pump seal EF)
+ (# of pump seals in light oil service X light oil service pump seal EF)
+ (# of connectors in gas service X gas service connector EF)
+ (# of connectors in light oil service X light oil service connector EF)
+ (# of flanges in gas service X gas service flange EF)
+ (# of flanges in light oil service X light oil service flange EF)
+ (# of other components in gas service x gas service other equipment EF)], then
X 15.58 VOC wt% X 8,760 hrs/yr X 1 ton/2,000 lbs / (12 months/year) = **≥ 0.99ton VOC per month averaged over a twelve-month, rolling period**

Where:

Valve EFs* = 0.012 lb/hr/source for gas service, and 0.0066 lb/hr/source for light oil service;

Pump Seal EFs = 0.0064 lb/hr/source for gas service, and 0.034 lb/hr/source for light oil service;

Connector EFs = 0.0005 lb/hr/source for gas service, and 0.0006 lb/hr/source for light oil service;

Flange EFs = 0.001 lb/hr/source for gas service, and 0.0003 lb/hr/source for light oil service

Other** EFs = 0.023 lb/hr/source for gas service

*Emissions factors calculated by converting kg/hr/source to lb/hr/source and then including a 20% scalar increase.

**Includes compressors, drains/vents, pressure safety valves and sample points

***As an alternative to using the above emissions factors to calculate VOC emissions, the facility may use facility specific VOC information for site specific emissions factors.

g) Miscellaneous Requirements

- (1) None.