



John R. Kasich, Governor
 Mary Taylor, Lt. Governor
 Craig W. Butler, Director

11/9/2015

Kristin Ikard
 Salem CDP
 P.O. Box 54342
 Oklahoma City, OK 73154

Certified Mail

No	TOXIC REVIEW
No	SYNTHETIC MINOR TO AVOID MAJOR NSR
No	CEMS
No	MACT/GACT
No	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: 0641045006
 Permit Number: P0119078
 Permit Type: Initial Installation
 County: Jefferson

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,



Michael E. Hopkins, P.E.
Assistant Chief, Permitting Section, DAPC

Cc: Ohio EPA-SEDO



FINAL

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

Facility ID:	0641045006
Permit Number:	P0119078
Permit Type:	Initial Installation
Issued:	11/9/2015
Effective:	11/9/2015
Expiration:	10/20/2025



Division of Air Pollution Control
Permit-to-Install and Operate
for
Salem CDP

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Final Permit-to-Install and Operate
Salem CDP
Permit Number: P0119078
Facility ID: 0641045006
Effective Date: 11/9/2015

Authorization

Facility ID: 0641045006
Application Number(s): A0053666, A0054452, A0054480, A0054672
Permit Number: P0119078
Permit Description: This is an initial installation of an oil and gas processing facility. The EUs in this permit are: J001 (Produced Water Truck Loading), J002 (Methanol Truck Loading), P001 (Dehydration Unit), P002 (Dehydration Unit), and P801 (Fugitive Emissions).
Permit Type: Initial Installation
Permit Fee: \$4,700.00
Issue Date: 11/9/2015
Effective Date: 11/9/2015
Expiration Date: 10/20/2025
Permit Evaluation Report (PER) Annual Date: Oct 1 - Sept 30, Due Nov 15

This document constitutes issuance to:

Salem CDP
285 - 1201 Twp 221
Bloomingdale, OH 43910

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: P0119078

Permit Description: This is an initial installation of an oil and gas processing facility. The EUs in this permit are: J001 (Produced Water Truck Loading), J002 (Methanol Truck Loading), P001 (Dehydration Unit), P002 (Dehydration Unit), and P801 (Fugitive Emissions).

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

- | | |
|-----------------------------------|----------------|
| Emissions Unit ID: | J001 |
| Company Equipment ID: | TL-1 |
| Superseded Permit Number: | |
| General Permit Category and Type: | Not Applicable |
| Emissions Unit ID: | J002 |
| Company Equipment ID: | TL-2 |
| Superseded Permit Number: | |
| General Permit Category and Type: | Not Applicable |
| Emissions Unit ID: | P801 |
| Company Equipment ID: | FUG |
| Superseded Permit Number: | |
| General Permit Category and Type: | Not Applicable |

Group Name: Dehydration Units

Emissions Unit ID:	P001
Company Equipment ID:	DEHY-1
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P002
Company Equipment ID:	DEHY-2
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable



Final Permit-to-Install and Operate
Salem CDP
Permit Number: P0119078
Facility ID: 0641045006
Effective Date: 11/9/2015

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
Salem CDP
Permit Number: P0119078
Facility ID: 0641045006
Effective Date: 11/9/2015

B. Facility-Wide Terms and Conditions

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. 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) are not subject to emission standards established within this permit. Although this permit does not apply to de minimis or exempt sources, emissions from de minimis or exempt sources must be included in the total potential to emit (PTE) calculations for this permit. PTE calculations should include sources such as:
 - a) 400-bbl produced water storage tanks, T001-T004 (de minimis per OAC rule 3745-15-05 and exempt per OAC 3745-31-03(a)(1)(l));
 - b) 210-bbl Methanol Storage Tank, T005 (de minimis per OAC rule 3745-15-05);
 - c) 535-bbl Methanol Storage Tanks, T006 & T007 (de minimis per OAC rule 3745-15-05);
 - d) 1,000-gal TEG Storage Tanks, T008 & T009 (de minimis per OAC rule 3745-15-05);
 - e) 127-hp Caterpillar Olympian G80LG6 Industrial Spark-Ignited Generator Set, P003 (PBR14422 issued 10/14/2015); and
 - f) 2.0 mmBtu/hrReboilers, B001 & B002 (de minimis per OAC rule 3745-31-03(A)).
3. Modeling to demonstrate compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F)(4)(b), is not necessary if/when the maximum annual emissions for each toxic air contaminant, as defined in OAC rule 3745-114-01, from all sources in the project, is less than 1.0 ton per year (or are subject to a standard under 40 CFR Part 63). OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified PTIO prior to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials or use of new materials that would cause the emissions of any toxic air contaminant to increase to above 1.0 ton per year may require the permittee to apply for and obtain a new PTIO.
4. Within six months of startup of the facility, the permittee shall collect and analyze a representative sample of the incoming gas and liquids. The permittee shall use the results of the analysis to recalculate the emissions from the various components at the facility utilizing the GRI-GLYCalc or other standard software/emission factors. The permittee shall then compare the results of the revised calculation with the calculations submitted with the air pollution permit applications. If the emissions results are significantly different from those results submitted with the application, then the applicant shall submit the revised calculations to the appropriate District Office or Local Air Authority. The



Final Permit-to-Install and Operate

Salem CDP

Permit Number: P0119078

Facility ID: 0641045006

Effective Date: 11/9/2015

applicant should provide all input data used, the basis for each input value used and the results provided by the program.

5. The composition of the gas being processed may vary due to the nature of the industry. The company will sample the gas semiannually to perform a detailed gas analysis in order to determine if the composition has changed such that it will result in an increase in emissions of any toxic air contaminant. These records shall be maintained for a period of not less than five years and shall be made available to the Ohio EPA upon request.
6. The emissions unit contained in this permit must comply with various federal Maximum Achievable Control Technology (MACT) standards. The complete NSPS and MACT requirements 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 or local air agency. The permittee must comply with the applicable requirements of 40 CFR Part 63 Subpart HH as it applies to the emissions source.



Final Permit-to-Install and Operate
Salem CDP
Permit Number: P0119078
Facility ID: 0641045006
Effective Date: 11/9/2015

C. Emissions Unit Terms and Conditions

1. J001, TL-1

Operations, Property and/or Equipment Description:

Produced water truck loading with a maximum loading rate of 7,665,000 gallons per year

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), as effective June 30, 2008	Fugitive volatile organic compound (VOC) emissions shall not exceed 0.061 ton per month averaged over a twelve-month rolling period. See b)(2)a.
b.	OAC rule 3745-31-05(A)(3)(a)(ii), as effective June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the VOC emissions from this air contaminant source since the potential to emit is less than 10 tons per year (TPY). See b)(2)b. below.

- (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 delivery vessel and flash/storage vessel hatches shall be verified by the driver/operator to be in good condition, closed and properly seated at all times during the loading of the delivery vessel. Prior to connecting the transfer line(s) from the tank to the tank truck, the permittee shall inspect all fittings, valves, gaskets and fasteners that will be used during the transfer to ensure they are in proper condition (i.e., not corroded, torn, worn, stripped or otherwise damaged) and will result in vapor tight connections.
 - (2) During the loading of materials from the tank to the tank truck, the permittee shall continually monitor the transfer equipment, the tank and the tank truck for any leaks through visual, olfactory, or other observations. If any leak is detected, loading of the materials shall cease until the leaking component has been repaired.
 - (3) The permittee shall not permit materials to be spilled, discarded in sewers, stored in open containers or handled in any other manner that would result in evaporation.
- d) Monitoring and/or Recordkeeping Requirements
 - (1) The permittee shall maintain monthly records of the following information:
 - a. the throughput of produced water for each month, in gallons;
 - b. the rolling, 12-month summation of the produced water throughput, in gallons.
 - c. for transfer operations, the permittee shall maintain a record of the following information:
 - i. the date any leak was detected;
 - ii. the findings of the inspection for the leak, which shall indicate the location, nature, and severity of the leak;
 - iii. the leak detection method;
 - iv. the corrective action(s) taken to repair each leak and the date of final repair; and
 - v. the inspector's name and signature.

e) Reporting Requirements

(1) None.

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. Emission Limitation:

Fugitive VOC emissions shall not exceed 0.061 ton per month averaged over a twelve-month rolling period.

Applicable Compliance Method:

VOC emissions shall be based on multiplying loading loss factors (*L), calculated for the produced water, by the rolling, 12-month summations produced water throughputs, in gallons, divided by 2000 lbs/ton and 12 months/yr.

The loading loss factor was derived using AP-42, Section 5.2, "Loading Loss Equation".

$$*L = 12.46 \text{ SPM/T}$$

where:

L = loading loss, pounds per 1000 gallons loaded;

S = saturation factor, 0.6 for submerged loading: dedicated vapor balance service;

P = vapor pressure of liquid loaded, in psia (0.3617);

M = molecular weight of vapor, in lb/lb-mol (36.1985); and

T = temperature of bulk liquid loaded, in °R (510.52).

g) Miscellaneous Requirements

(1) None.

2. J002, TL-2

Operations, Property and/or Equipment Description:

Methanol truck loading with a maximum annual throughput of 1,200,000 gallons per year

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), as effective June 30, 2008	Fugitive volatile organic compound (VOC) emissions shall not exceed 0.068 ton per month averaged over a twelve-month rolling period. See b)(2)a.
b.	OAC rule 3745-31-05(A)(3)(a)(ii), as effective June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the VOC emissions from this air contaminant source since the potential to emit is less than 10 tons per year (TPY). See b)(2)b. below.

- (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 delivery vessel and flash/storage vessel hatches shall be verified by the driver/operator to be in good condition, closed and properly seated at all times during the loading of the delivery vessel. Prior to connecting the transfer line(s) from the tank to the tank truck, the permittee shall inspect all fittings, valves, gaskets and fasteners that will be used during the transfer to ensure they are in proper condition (i.e., not corroded, torn, worn, stripped or otherwise damaged) and will result in vapor tight connections.
 - (2) During the loading of materials from the tank to the tank truck, the permittee shall continually monitor the transfer equipment, the tank and the tank truck for any leaks through visual, olfactory, or other observations. If any leak is detected, loading of the materials shall cease until the leaking component has been repaired.
 - (3) The permittee shall not permit materials to be spilled, discarded in sewers, stored in open containers or handled in any other manner that would result in evaporation.
- d) Monitoring and/or Recordkeeping Requirements
- (1) The permittee shall maintain monthly records of the following information:
 - a. the throughput of methanol for each month, in gallons;
 - b. the rolling, 12-month summation of the methanol throughput, in gallons.
- e) Reporting Requirements
- (1) None.
- 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. Emission Limitation:

Fugitive VOC emissions shall not exceed 0.068 ton per month averaged over a twelve-month rolling period.



Applicable Compliance Method:

VOC emissions shall be based on multiplying loading loss factors (*L), calculated for the produced water, by the rolling, 12-month summations produced water throughputs, in gallons, divided by 2000 lbs/ton and 12 months/yr.

The loading loss factor was derived using AP-42, Section 5.2, "Loading Loss Equation".

$$*L = 12.46 \text{ SPM/T}$$

where:

L = loading loss, pounds per 1000 gallons loaded;

S = saturation factor, 0.6 for submerged loading: dedicated vapor balance service;

P = vapor pressure of liquid loaded, in psia (1.2077);

M = molecular weight of vapor, in lb/lb-mol (32.04); and

T = temperature of bulk liquid loaded, in °R (510.52).

g) Miscellaneous Requirements

- (1) None.

3. P801, FUG

Operations, Property and/or Equipment Description:

Fugitive Emissions - Components

- 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), as effective June 30, 2008	Develop and implement a site-specific leak detection and repair program for ancillary equipment as described in c) below. See b)(2)a. below.
b.	OAC rule 3745-31-05(A)(3)(a)(ii), as effective June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the VOC emissions from this air contaminant source since the potential to emit is less than 10 tons per year (TPY) taking into account the voluntary restriction from b)(1)c. below. See b)(2)b. below.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
c.	OAC rule 3745-31-05(E), as effective June 30, 2008	VOC emissions shall not exceed 7.96 TPY. Develop and implement a site-specific leak detection and repair program for ancillary equipment as described in c) below.

(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) Ancillary Equipment Leak Detection and Repair Program

The permittee shall develop and implement a leak detection and repair program designed to monitor and repair leaks from ancillary equipment covered by this permit, including each pump, compressor, pressure relief device, connector, valve, flange, vent, cover, any bypass in the closed vent system, and each storage vessel. This program shall meet the following requirements:

- a. Leaks shall be detected by the use of either a “Forward Looking Infra-Red” (FLIR) camera or an analyzer meeting U.S. EPA Method 21 of 40 CFR Part 60, Appendix A.
- b. An initial monitoring shall be completed within 90 days of startup and quarterly thereafter for a period of four consecutive quarters (1 year).
- c. If following the initial four consecutive quarters, less than or equal to 2.0% of the ancillary equipment are determined to be leaking during the most recent quarterly monitoring event, then the frequency of monitoring can be reduced to semi-annual.
- d. If following two consecutive semi-annual periods, less than 2.0% of the ancillary equipment are determined to be leaking during the most recent semi-annual monitoring event, then the frequency of the monitoring can be reduced to annual.

- e. If more than or equal to 2.0% of the ancillary equipment are determined to be leaking during any one of the semi-annual or annual monitoring events, then the frequency of monitoring shall be returned to quarterly.
 - f. The program shall require the first attempt at repair within five (5) calendar days of determining a leak.
 - g. The program shall require that the leaking component is repaired within 30 calendar days after the leak is detected.
 - h. The program shall allow for the delayed repair of a leaking component following the language found in 40 CFR 60.5416(c)(5).
 - i. The program shall following the Monitoring and Record Keeping requirements described in paragraph 5.d) of this permit.
- (2) In the event that a leak or defect is detected in the cover, closed vent system, process equipment, or control device, the permittee shall make a first attempt at repair no later than 5 calendar days after the leak is detected. Repair shall be completed no later than 30 calendar days after the leak is detected as allowed in 40 CFR 60.5416(c)(4). Any delay of repair of a leak or defect shall meet the requirements of 40 CFR 60.5416(c)(5).
- d) **Monitoring and/or Recordkeeping Requirements**
- (1) **Ancillary Equipment Leak Detection and Repair Program Monitoring and Record Keeping for Programs Utilizing FLIR Cameras**
- a. Leaks shall be determined by visually observing each ancillary component through the FLIR camera to determine if leaks are visible.
 - b. The following information shall be recorded during each leak inspection:
 - i. the date the inspection was conducted;
 - ii. the name of the employee conducting the leak check;
 - iii. the identification of any component that was determined to be leaking;
 - iv. the date the first attempt to repair the component was made;
 - v. the reason the repair was delayed following the language found in 40 CFR 60.5416(c)(5);
 - vi. the date the component was repaired and determined to no longer be leaking;
 - vii. the total number of components that are leaking; and
 - viii. the percentage of components leaking, determined as the sum of the number of components for which a leak was detected, divided by the total



number of ancillary components capable of developing a leak, and multiplied by 100.

- c. The permittee shall maintain records that demonstrate the FLIR camera is operated and maintained in accordance with the manufacturer's operation and maintenance instructions.
 - d. The records from each inspection and the dates each leak is detected and repaired shall be maintained for at least 5 years and shall be made available to the Director or his representative upon verbal or written request.
- (2) Ancillary Equipment Leak Detection and Repair Program Monitoring and Record Keeping for Programs Utilizing a Method 21 Analyzer

a. Leaks shall be measured by utilizing U.S. EPA Method 21 (40 CFR Part 60, Appendix A). All potential leak interfaces shall be traversed as close to the interface as possible. The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 ppm or 10,000 ppm (as applicable) for determining compliance.

b. A component is considered to be leaking if the instrument reading is equal to or greater than:

pressure relief device in gas/vapor service	10,000 ppm
pressure relief device in light liquid service	10,000 ppm
pumps in light liquid service	10,000 ppm
compressor	500 ppm
sampling connection system*	*
open ended valves or lines**	**
valves in gas/vapor and light liquid service	10,000 ppm
closed vent system	500 ppm
connectors	10,000 ppm
all other ancillary and associated equipment in VOC service	10,000 ppm

* must be equipped with a closed-purge, closed-loop, or closed-vent system

** must be equipped with a cap, blind flange, plug, or a second valve

- c. The following information shall be recorded during each leak inspection:
 - i. the date the inspection was conducted;
 - ii. the name of the employee conducting the leak check;
 - iii. the identification of any component that was determined to be leaking (company ID and component type (flange, pump, etc.);
 - iv. the date the first attempt to repair the component was made;
 - v. the reason the repair was delayed following the language found in 40 CFR 60.5416(c)(5);
 - vi. the date the component was repaired and determined to no longer be leaking;
 - vii. the total number of components that are leaking; and
 - viii. the percentage of components leaking, determined as the sum of the number of components for which a leak was detected, divided by the total number of ancillary components capable of developing a leak, and multiplied by 100.
 - d. The permittee shall maintain records that demonstrate the Method 21 analyzer is operated and maintained in accordance with the manufacturer's operation and maintenance instructions.
 - e. In order to calibrate the analyzer, the following calibration gases shall be used:
 - i. zero air, which consists of less than 10 ppm of hydrocarbon in air; and
 - ii. a mixture of air and methane or n-hexane at a concentration of approximately, but less than, 10,000 ppm of methane or n-hexane.
 - f. The records from each inspection and the dates each leak is detected and repaired shall be maintained for at least 5 years and shall be made available to the Director or his representative upon verbal or written request.
- (3) The permittee shall perform daily inspections, each day that an operator is at the facility and when the facility is in operation, for indications of releases from the pressure relief valves, and any olfactory, visual, or auditory indications of equipment leaks. The positive indication of a release or a leak shall be noted in an operations log, along with the following information:
- a. the name of the inspector;
 - b. the date and time inspected;
 - c. the identification of the pressure relief valve that released and/or piece of equipment that leaked;

- d. the estimated or calculated duration of the pressure relief valve release and/or equipment leak and the estimated emission totals; and
- e. any corrective actions taken to minimize or eliminate the release or leak.

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) Supplement to the PER for the Ancillary Equipment Leak Detection and Repair Program

For each inspection that occurred during the year, the permittee shall submit the following information with the annual PER from data collected by the ancillary equipment leak detection and repair program:

- a. the date of the inspection;
- b. the number of components determined to be leaking;
- c. the company ID and component type (flange, pump, etc.) of each leaking component;
- d. the total number of components at the site;
- e. the percent of components determined to be leaking;
- f. a list of all components that have not been repaired due to a delay of repair and the reason for the delay; and
- g. a notification indicating if the permittee has changed future inspection frequencies based on the percent of components leaking.

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 7.96 TPY.

Applicable Compliance Method:

The monthly VOC limitation is the estimated potential-to-emit based upon the maximum number of components and type of service (gas/vapor and light oil) expected at the natural gas production site. The appropriate emissions factors from U.S. EPA's "Protocol for Equipment Leak Emission Estimates", Table 2-4, for Oil and Gas production Operations (a conservative estimate), shall be used to demonstrate compliance with the limit. The facility's potential emissions from ancillary and associated equipment shall be documented from the summation of the following calculations:

Component Type # of components x emission factor x % VOC* = lb VOC/hr

In Gas/Vapor Service

Number of valves (300) x 0.00992 lb/hr x %VOC + 10% safety factor = lb VOC/hr

Number of flanges (400) x 0.00086 lb/hr x % VOC + 10% safety factor = lb VOC/hr

Number of compressor seals (0) x 0.01940 lb/hr x % VOC + 10% safety factor = lb VOC/hr

Number of connectors (800) x 0.000441 lb/hr x % VOC + 10% safety factor = lb VOC/hr

Number of relief valves (20) x 0.01940 lb/hr x % VOC + 10% safety factor = lb VOC/hr

Number of other components (5) x 0.0194 lb/hr x % VOC + 10% safety factor = lb VOC/hr

*Where: % VOC = 3.3330 per company's analysis

In Light Oil Service

Number of connectors (500) x 0.000463 lb/hr x % VOC + 10% safety factor = lb VOC/hr

Number of valves (200) x 0.00551 lb/hr x % VOC + 10% safety factor = lb VOC/hr

Number of flanges (0) x 0.00024 lb/hr x % VOC + 10% safety factor = lb VOC/hr

Number of pump seals (4) x 0.0287 lb/hr x % VOC + 10% safety factor = lb VOC/hr

Number of relief valves (0) x 0.01653 lb/hr x % VOC + 10% safety factor = lb VOC/hr



Final Permit-to-Install and Operate

Salem CDP

Permit Number: P0119078

Facility ID: 0641045006

Effective Date: 11/9/2015

Number of other components (4) x 0.01653 lb/hr x % VOC + 10% safety factor =
lb VOC/hr

*where: % VOC = 100 per company's assumption

The total summation of VOC emissions per hour shall be multiplied by 8760 hours per year and divided 2000 pounds per ton to calculate the estimated tons per year fugitive VOC emissions for the demonstration of compliance.

g) Miscellaneous Requirements

(1) None.

4. Emissions Unit Group -Dehydration Units: P001,P002,

EU ID	Operations, Property and/or Equipment Description
P001	115- MMSCFD Dehydration Unit including TEG contactor towers, flash tank, and reboiler burner. Flash tanks off-gases controlled by use as fuel for the reboiler with a 90% control efficiency. Still vent vapors controlled by condenser, with noncondensables routed to the reboiler firebox for destruction. When using electric pump, all flash tank emissions are routed to reboiler. When using back-up gas pump, flash tank emissions route to the reboiler with excess venting to atmosphere.
P002	115- MMSCFD Dehydration Unit including TEG contactor towers, flash tank, and reboiler burner. Flash tanks off-gases controlled by use as fuel for the reboiler with a 90% control efficiency. Still vent vapors controlled by condenser, with noncondensables routed to the reboiler firebox for destruction. When using electric pump, all flash tank emissions are routed to reboiler. When using back-up gas pump, flash tank emissions route to the reboiler with excess venting to atmosphere.

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. d)(1).

(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.

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.	ORC 3704.03(T) and OAC rule 3745-31-05(A)(3)	Install a glycol dehydration system designed with still vent vapors routed to the condenser and flash tank off-gases routed to the reboiler for use as fuel. The system shall be designed such that the noncondensable VOC from the dehydration units is controlled 90% by reboiler burners.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
b.	40 CFR Part 60, Subpart OOOO (40 CFR 60.5360-60.5430)	See b)(2)a. below.
c.	40 CFR Part 63, Subpart HH (40 CFR 63.760-63.63.779) [In accordance with 40 CFR 63.760(a)(1) and (2) and 63.760(b)(2), this emissions unit is a triethylene glycol (TEG) dehydration unit located at an oil and gas production facility that is an area source of hazardous air pollutant (HAP) emissions subject to the emissions limitations and control measures in this section.	See b)(2)b. below.
d.	40 CFR Part 63, Subpart A (40 CFR 63.1-63.16)	Pursuant to 40 CFR 63.774(a) and 63.775, Table 2 of Subpart HH of Part 63 – Applicability of 40 CFR Part 63 General Provisions to Subpart HH specifies the provisions of subpart A that apply and do not apply to owners or operators of affected sources subject to 40 CFR Part 63, Subpart HH.

(2) Additional Terms and Conditions

- a. This facility is not an onshore natural gas processing plant. Therefore, the dehydration unit equipment is exempt from the equipment leak provisions of NSPS Subpart OOOO.
- b. Pursuant to 40 CFR 63.764(e)(1)(ii), this emission unit is exempt from the requirements of paragraph (d) of 40 CFR 63.764 if the permittee maintains records of the determination that the actual average emissions of benzene from the glycol dehydration unit process vent to the atmosphere are less than 0.90 megagram per year, as determined by the procedures in 40 CFR 63.772(b)(2).
- c. Emission units and any required control and monitoring equipment shall be operated in a manner consistent with safety and good air pollution control practices for minimizing emissions.

c) Operational Restrictions

- (1) The permittee shall only burn gaseous fuels in this emissions unit.
- (2) The permittee shall not operate the dehydration gas pump for more than 4,500 hours per year.



- (3) All emissions from the dehydrator still vent shall be vented to a condenser that shall meet the monitoring and record keeping requirements of this permit, when the emissions unit is in operation, including the following:
 - a. The condenser shall be operated at all times when gases are vented to it.
 - b. The condenser must be equipped with a temperature monitoring device that monitors and records the dehydration still vent temperature.
 - c. The condenser, temperature monitoring device and recorder shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.
- (2) The condenser temperature shall be maintained below 120 degrees Fahrenheit during operation of this emissions unit.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall comply with the applicable monitoring and recordkeeping requirements required under 40 CFR Part 63, Subpart HH, including the following sections:

63.774(d)(1)(ii) and 63.772(b)(2)	Maintain records of the actual average benzene emissions per year as determined in accordance with 63.772(b)(2)(i).
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- (2) The permittee shall monitor and record the following: The permittee shall maintain the following records for the condenser:
 - a. monitor and record the temperature of the exit of the condenser on a daily basis (Monday through Friday, excluding major holidays);
 - b. record all periods of time when the condenser is not operating correctly to control the emissions from the dehydration still vent
 - c. the number of hours that the dehydration unit is powered by the electric pump;
 - d. the number of hours that the dehydration unit is powered by the gas pump

e) Reporting Requirements

- (1) The permittee shall submit an annual Permit Evaluation Report (PER) to 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. It is recommended that the PER is submitted electronically through the Ohio EPA's "e-Business Center: Air Services" although PERs can be submitted via U.S. postal service or can be hand delivered.



- (2) The permittee shall identify in the PER all periods of time when the temperature of the exit of the condenser was not recorded and the periods of time when the condenser was not operating correctly to control the emissions from the dehydration still vent.
- (3) The permittee shall comply with the applicable reporting requirements required under 40 CFR Part 63, Subpart HH, including the following sections, if the permittee fails to maintain exemption status:

63.775(d) and 63.9(h)	Submit Notice of Compliance Status Report within 180 days of startup
63.775(f)	Notification of process changes

- (4) The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than a gaseous fuel 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:

Install a glycol dehydration system designed with still vent vapors routed to the condenser and flash tank off-gases routed to the reboiler for use as fuel. The system shall be designed such that the noncondensable VOC from the dehydration units is controlled 90% by reboiler burners.

Applicable Compliance Method:

Compliance with this limitation is based on information submitted in the permittee's application.

g) Miscellaneous Requirements

- (1) None.