

Suggestions from Matt Stanfield, TDES, on the glycol dehydration unit

## **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. The following emissions units contained in this permit are subject to 40 CFR Part 60, Subpart(s) A, Kb, KKK, VV, IIII, and JJJJ, and 40 CFR Part 63, Subpart(s) A, HH, and ZZZZ: Storage Tanks, Stationary Internal Combustion Engines (and Compression Ignition), Equipment Leaks and Glycol Dehydration Units. The complete NSPS/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.
3. Air contaminant sources that qualify as de minimis under OAC rule 3745-15-05, or under OAC rule 3745-31-03(A)(1) for exemption or are registered for a permit-by-rule (PBR) under OAC rule 3745-31-03(A)(4), are not subject to emission standards under this permit. Emissions from de minimis or exempt sources that are listed in this permit must be included in the total restricted potential to emit (PTE) calculations for this permit.
4. Emissions units permitted under a previously issued PTI/PTIO as portable sources, provided that the qualifying criteria for this General permit are met, shall be subject to the requirements of this permit during the time located at this well site.
5. The requirements of this permit are not intended to supersede any Ohio Department of Natural Resources requirements.
6. No type of equipment other than that listed in this permit, which would constitute a non exempt stationary air contaminant source, shall be installed or utilized on site. The permittee shall maintain an annual record of the equipment in use on site, and submit an annual report describing the equipment in use during the last year.
7. Modeling to demonstrate compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F)(4)(b), was not necessary because the maximum annual emissions for each toxic air contaminant, as defined in OAC rule 3745-114-01, will be 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.
8. The permittee remains subject to all applicable federal law and regulations and all applicable provisions of the Ohio State Implementation Plan as approved by the Administrator of the U.S. EPA. The provisions of the Ohio State Implementation Plan are independently enforceable by the U.S. EPA.

**Permit Number:**  
**Facility Name:** General Permit for Natural Gas Well  
**Facility ID:**  
**Working Copy of a Permit in Progress**

2.

## **C. Emissions Unit Terms and Conditions**

**1. Dehydration System, P001**

**Operations, Property and/or Equipment Description:**

Glycol dehydration unit (includes contact tower or absorption column and glycol dehydration unit reboiler) and gas-condensate-glycol (GCG) separator (flash separator) controlled by an enclosed combustion or a vapor recovery device

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 11/30/01	Emissions of volatile organic compounds (VOC) shall not exceed 0.84 pound per hour and 3.68 tons per year.  See b)(2)a.
b.	OAC rule 3745-31-05(D)	See b)(2)b.
c.	OAC rule 3745-17-07(A)(1)(a)	Visible particulate emissions from the stack serving this emissions unit shall not exceed 20 percent opacity as a six-minute average, except as provided by rule.
d.	ORC 3704.03(F)(4)	<i>[Comment – The Air Toxics Policy does apply if the permittee chooses to comply with one of the exemptions allowed under 63.764(e) and if permit allowable air toxic emissions are greater than 1 ton/yr. If total permit allowable air toxics emissions are greater than 1 ton per year Central Office should do modeling based on the</i>

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		<i>General Permit emission limitations and add Air Toxics requirements to the General Permit. A statement can be added to the General Permit indicating the Air Toxics terms are only applicable when the permittee chooses to comply with an exemption under 63.764(e).]</i>
e.	40 CFR Part 60, Subpart HH (40 CFR 63.760-779)  [In accordance with 40 CFR 63.764(d), this emissions unit is a triethylene glycol dehydration unit located at an area source of HAP emissions and subject to the emissions limitations/control requirements specified in this section.]	see b)(2)c.
f.	40 CFR 63.1-15 (40 CFR 63.764(a))	Table 2 to Subpart HH of 40 CFR Part 63 – Applicability of 40 CFR Part 63 General Provisions to Subpart HH shows which parts of the General Provisions in 40 CFR 63.1-15 apply.

(2) Additional Terms and Conditions

- a. The permittee has satisfied the Best Available Technology (BAT) requirements pursuant to OAC paragraph 3745-31-05(A)(3), as effective November 30, 2001, in this permit. On December 1, 2006, paragraph (A)(3) of OAC rule 3745-31-05 was revised to conform to ORC changes effective August 3, 2006 (S.B. 265 changes), such that BAT is no longer required by State regulation for NAAQS pollutant less than ten tons per year. However, that rule revision has not yet been approved by U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revision to OAC rule 3745-31-05, the requirement to satisfy BAT still exists as part of the federally-approved SIP for Ohio. Once U.S. EPA approves the December 1, 2006 version of 3745-31-05, then these emission limits/control measures no longer apply.
- b. These rule paragraphs apply once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05 as part of the State Implementation Plan.
  - i. This permit takes into account the following voluntary restrictions (including the use of any applicable air pollution control equipment) as proposed by the permittee for the purposes of avoiding BAT requirements under OAC rule 3745-31-05(A)(3) for VOC emissions.

- (a) Use of closed-vent system flash tank (100 percent) and still vent control of 95 percent, such that emissions do not exceed 9.9 tons/year.
- c. Except as specified in 40 CFR 63.764(e)(1), the permittee shall comply with the following depending on the location of the emissions unit:
  - i. the permittee shall comply with control requirements for glycol dehydration vents specified in 40 CFR 63.765 when located in an urbanized area (UA) plus offset and urban cluster(UC) boundary; or
  - ii. the permittee operate the triethylene glycol dehydration unit such that the actual glycol circulation rate does not exceed the optimum glycol circulation rate when not located in an UA plus offset and UC boundary.
- d. The estimated emissions of hazardous air pollutants (HAP), calculated from the designed maximum natural gas and hydrocarbon liquid throughput to the glycol dehydration units and losses from the storage vessels with the potential for flash emissions, demonstrate this facility to be an "area source" of HAP.

[40 CFR 760(a)] and [40 CFR 761]

c) Operational Restrictions

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

63.764(d)(2)	glycol circulation rate restriction
63.764(e)	exemption from control requirements
63.765(a)	process vent standard applicability requirements
63.765(b)	process vent control requirements
63.765(c)	alternative process vent control requirements

d) Monitoring and/or Recordkeeping Requirements

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

63.764(d)(1)(ii)	comply with the monitoring requirements specified in 63.773
63.764(d)(1)(iii)	comply with the recordkeeping requirements in 63.774
63.771(c)(3)(i)(A)	flow indicator requirements
63.771(e)(2), 63.771(e)(3)(i)	documenting process modifications
63.772(b)(1)	documentation for control requirement exemption

63.772(b)(2)	determination of benzene emissions
63.773(c)	closed vent system inspection and monitoring requirements
63.773(d)	control device monitoring requirements
63.774(a)	general provisions recordkeeping requirements
63.774(b)	recordkeeping requirements
63.774(c)	benzene emission limit records
63.774(d)	records documenting control exemption
63.774(e)	flare records

e) Reporting Requirements

- (1) The permittee shall submit semi-annual reports and other such notifications and reports to the Ohio EPA District office or local air agency as are required pursuant to 40 CFR Part 63, Subpart HH, per the following sections:

63.775(a)	general provisions reporting requirements
63.775(c)	area source notification and reporting requirements
63.775(d)	Notification of Compliance Status Report
63.775(e)	Periodic Reports
63.775(f)	notification of process change

- (2) Annual Permit Evaluation Report (PER) forms will be mailed to the permittee at the end of the reporting period specified in the Authorization section of this permit. The permittee shall submit the PER in the form and manner provided by the director 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:

Emissions of VOC shall not exceed 0.84 lb/hr and 3.68 tons/year.

Applicable Compliance Method:

VOC emissions are based on the GRI-GLY Calc™ model and procedures documented in the Gas Research Institute (GRI) report entitled "Atmospheric Rich/Lean Method for Determining Glycol Dehydrator Emissions and gas analysis. Potential VOC emissions are based on the maximum glycol circulation rate (gpm) for the largest glycol circulation pump on the dehydration unit, a representative extended gas analysis of the inlet wet gas, and the natural gas flowrate as determined by §63.772(b)(1)(i) times 110%. Alternatively Method 18 of 40 CFR Part 60 Appendix A; or ASTM D6420-99, Standard Test Method for

Determination of Gaseous Organic Compounds by Direct Interface Gas Chromatography-Mass Spectrometry, with the provisions of 63.772(b)(1)(ii) may be used.

The gas stream from the glycol dehydration unit process vent, i.e., from the reboiler vent and the vent from the gas-condensate-glycol separator (flash tank), shall be routed through a closed-vent system to control device that meets the requirements of §63.771(d).

[40 CFR 63.772(b)] and [40 CFR 63.771(c) and (d)]

- (2) The permittee shall comply with the applicable test methods, compliance procedures, and compliance determinations required under 40 CFR Part 63, Subpart HH, including the following sections:

63.772(b)	determination of glycol dehydration unit flowrate or benzene emissions
63.772(c)	no detectable emissions test procedure
63.772(e)	control device performance test procedures
63.772(f)	compliance demonstration for control device performance requirements
63.772(g)	compliance demonstration with percent reduction performance requirements – condensers

g) Miscellaneous Requirements

- (1) None.