

DRAFT



**AIR QUALITY
GENERAL PERMIT TO CONSTRUCT/OPERATE
OIL & GAS FACILITIES
(For Minor Facilities)
OKLAHOMA
DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
707 NORTH ROBINSON, P. O. BOX 1677
OKLAHOMA CITY, OKLAHOMA 73101-1677**

In compliance with the provisions of the Oklahoma Clean Air Act, as amended (27A O.S., et seq.) and rules promulgated thereunder, operators of oil and gas facilities (OGF), as described under Part 1, Section III below, are hereby granted permission to construct/operate such facilities as specified in an Authorization to Construct/Operate (hereinafter referred to as an "Authorization") issued under this general permit by the Department of Environmental Quality (DEQ). Parts 1 through 4 and Appendices A through C of this permit specify emission limitations and standards that constitute applicable requirements, including state-only requirements, and include operational requirements and limitations necessary to assure compliance with all applicable air pollution rules. All OGF shall remain subject to the Oklahoma Clean Air Act, Okla. Stat. tit. 27A §§ 2-5-101 to -118 (2004) and the rules promulgated thereunder at Okla. Admin. Code ("OAC"), Air Pollution Control, Title 252, Chapter 100-1-1 to -47-14 (2015).

The owner or operator of an OGF may request that the facility be granted an Authorization in accordance with this general permit by submitting to the Air Quality Division (AQD) a DEQ Notice of Intent (NOI) Form and a complete set of General Permit Application Forms for an OGF. Eligible facilities may apply for coverage under this permit at any time during the permit term, noting on the applicable form whether the facility will have enforceable limits set below 80 TPY or 100 TPY. No facility, or part thereof, is authorized to construct or operate pursuant to the terms of this general permit unless an application for an Authorization using an NOI Form has been received by the AQD, or an Authorization has been issued for that facility.

Signed and issued this day, _____, 2016.

_____ Eddie Terrill, Director

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Note: All terms written with initial capital letters are defined in Appendix C. Any reader of this permit should first read the definitions in Appendix C. Note that the term engine refers to both reciprocating internal combustion engines and gas-fired turbine engines.

PART 1 - REQUIREMENTS FOR GENERAL PERMIT

This permit is issued for the oil and gas facility (OGF) source category to establish (A) terms and conditions to implement applicable air pollution rules, (B) terms and conditions to implement applicable air pollution rules for specified categories of changes to those permitted sources, (C) terms and conditions for new requirements that apply to sources with existing permits, and (D) federally-enforceable caps on emissions. The permit is issued after finding that there are several permittees, permit applicants, or potential permit applicants who have the same or substantially similar operations, emissions, activities, or facilities; the permittees, permit applicants, or potential permit applicants emit the same types of regulated air pollutants; the operations, emissions, activities, or facilities are subject to the same or similar standards, limitations, and operating requirements; and the operations, emissions, activities, or facilities are subject to the same or similar monitoring requirements.

SECTION I. AUTHORITY

This permit is developed in accordance with the provisions of OAC 252:100-7-15 and 100-7-18.

SECTION II. APPLICABILITY/EXEMPTIONS

Operators of a facility with potential emissions less than 100 TPY of regulated pollutant in an attainment area, less than 10 TPY of an individual hazardous air pollutant (HAP), and less than 25 TPY of total HAP, may use this general permit or obtain a minor source construction or operating permit. Facilities that are a permit exempt facility in accordance with OAC 252:100-7 are not required to obtain either a general permit or a minor source construction or operating permit.

SECTION III. ELIGIBILITY

A. This permit is limited to air pollutant emitting sources located at OGF that are designed and operated for the production, gathering, processing, storage, or transportation of crude oil, refined petroleum products, natural gas, and natural gas liquids (NGL), including condensate.

The following types of facilities are generally eligible for coverage under this permit:

1. New facilities.
2. Existing facilities, including those with previously issued minor source construction and/or operating permits, or those previously exempted from the requirement to obtain a permit.
3. Facilities existing prior to the effective date of any applicable standard that would have created specific quantifiable and enforceable emission rates.

- B. The following facilities are not eligible for this permit:
1. Facilities for which material facts were misrepresented or omitted from the application and the applicant knew or should have known of such misrepresentation or omission.
 2. Facilities with emissions units, unless qualified as a de minimis facility under OAC 252:100, Appendix H, that are affected sources subject to:
 - a. OAC 252:100-8 (Permits for Part 70 Sources)
 - b. OAC 252:100-15 (Motor Vehicle Pollution Control Devices)
 - c. OAC 252:100-17 (Incinerators)
 - d. OAC 252:100-23 (Cotton Gins)
 - e. OAC 252:100-24 (Grain, Feed, or Seed Operations)
 - f. OAC 252:100-35 (Control of Emissions of Carbon Monoxide)
 - g. 40 CFR Part 59 (National VOC Standards)
 - h. 40 CFR Part 82, Subparts B, D, E, G, and H (Stratospheric Ozone Protection)
 - i. 40 CFR Part 264 (Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities)
- C. The following facilities, unless qualified as a de minimis facility under OAC 252:100, Appendix H, are not eligible to obtain an Authorization to Construct under this permit, but may be eligible for coverage under an Authorization to Operate if they obtain a minor source construction permit and all relevant requirements and limitations in that construction permit are incorporated into the Authorization to Operate:
1. Facilities with combustion equipment fired with fuels other than liquid petroleum gas (LPG) or natural gas with a maximum total sulfur content greater than 162 ppmv, or stationary reciprocating engines burning liquid fuels other than gasoline or diesel fuel with a total sulfur content greater than 0.05% by weight, or No. 2 fuel oil with a total sulfur content greater than 0.05% by weight.
 2. Facilities storing/distributing crude oil that do not meet all of the following.
 - a. Facilities that can demonstrate a maximum H₂S concentration of 135 ppmw for all categories of crude oil stored at the facility. Such demonstration must be documented using the methods outlined in Appendix B of this permit.
 3. Facilities that use incinerators, regenerative or non-regenerative carbon absorbers, or catalytic systems to control emissions of H₂S.
 4. Facilities using a vapor-recovery/vapor disposal system, or other equipment of equal efficiency, required by any part of OAC 252:100-37, Control of VOCs, or

OAC 252:100-39, Control of VOCs in Nonattainment Areas. Note that VOC storage vessels that are subject to equipment standards (e.g., a fixed roof in combination with an internal floating cover, an external floating roof, or a closed vent system and control device) in 40 CFR 60 Subparts K, Ka, or Kb are exempt from the requirements of OAC 252:100-37-15(a) and (b). In addition, VOC storage vessels that are subject to the equipment standards for external floating roofs in 40 CFR 60 Subparts Ka or Kb are exempt from the requirements of OAC 252:100-39-30.

5. Facilities with a VOC loading facility subject to OAC 252:100-37-16(a) or OAC 252:100-39-41.
6. Facilities with amine units that process natural gas with an H₂S content greater than 4 ppmv or that do not control emissions from the rich amine flash tank and amine regeneration vent. The rich amine flash tank can be routed to the facility inlet, fuel gas system, or to a flare meeting the requirements of OAC 252:100-31-26. The amine regeneration still vent must be routed to a flare meeting the requirements of OAC 252:100-31-26 or re-injected into oil-or-gas bearing geologic strata. Facilities with amine units that process natural gas with a H₂S content greater than 4 ppmv and amine units that process sweet natural gas with an H₂S content less than 4 ppmv that do not control emissions from the rich amine flash tank and amine regeneration vent would require a site-specific determination of compliance with the H₂S ambient concentration limit of OAC 252:100-31-7 and the SO₂ 1-hr NAAQS.
7. Facilities with amine units that process more than 0.1276 LTPD of sulfur. Facilities with amine units that process more than 0.1276 LTPD of sulfur would be a major source for SO₂.
8. Facilities with "new fuel-burning equipment," as that term is defined in OAC 252:100-33, with a rated heat input of 50 MMBtu/hr or greater for one piece of equipment or a total of 50 MMBtu/hr or greater at the facility.
9. Facilities with emissions units subject to NSPS or NESHAP subparts other than the following:
 - a. NSPS requirements under 40 CFR Part 60 Subpart A, Subpart Dc, Subpart K, Subpart Ka, Subpart Kb, Subpart GG, Subpart KKK, Subpart IIII, Subpart JJJJ, Subpart KKKK, Subpart OOOO or
 - b. NESHAP requirements under 40 CFR Part 61, or
 - c. NESHAP requirements under 40 CFR Part 63, , Subpart HH requirements for triethylene glycol dehydration units at area sources; any Subpart ZZZZ requirements for RICE at area sources; and Subpart BBBB requirements for gasoline distribution bulk terminals, bulk plants and pipeline facilities at area sources.

10. Facilities with selective catalytic reduction (SCR) and selective non-catalytic reduction (SNCR) control systems on any engine or other combustion source. These are control systems that require injection of ammonia and do not include a 3-way catalyst (NSCR) or oxidation catalyst.
 11. Facilities that require a specific limitation(s) for a glycol dehydration unit in order to be a minor source, other than operation of a condenser on still vent emissions or the operation of a flare.
 12. Facilities with the potential to emit more than 100,000 TPY CO_{2e} and would otherwise be considered a major source of GHG emissions.
 13. Facilities located in an area that is federally designated as non-attainment.
 14. Facilities that request an Alternative Emissions Reduction Authorization under OAC 252:100-11.
 15. Facilities requesting control efficiencies above the levels allowed in Appendix A.
- D. The DEQ may not issue a permit authorization sought by an applicant that has not paid all money owed to the DEQ or is not in substantial compliance with the Environmental Quality Code, rules of the Board, and/or the terms of any existing DEQ permits and orders. The DEQ may impose specific conditions on the applicant to assure compliance and/or a separate schedule that the DEQ considers necessary to achieve required compliance. Facilities that are not in compliance with all applicable State and Federal air requirements may become eligible for coverage under this permit through submission of a compliance plan meeting the requirements of Part 3 of this Permit.
- E. The DEQ may refuse issuance of an Authorization to an applicant even though the facility meets the above eligibility criteria. In such a case, DEQ will provide to the facility a written explanation providing the reason(s) for the decision.

SECTION IV. AUTHORIZATIONS

An applicant for an Authorization under this General Permit may obtain coverage under this permit in one of the following ways.

- A. An applicant proposing to construct a new facility that meets all of the eligibility requirements, excluding those facilities listed in Part 1, Section III.C, may apply for an Authorization to Construct by submitting an NOI Form and a complete set of General Permit Application Forms for an OGF, whether it be for a facility with enforceable limits set below 80 TPY or a facility with enforceable limits set below 100 TPY. Coverage under this permit is effective, and the permittee may commence construction, upon receipt by the DEQ of the NOI. The earliest of (1) a legible dated U.S. Postal Service postmark (private metered postmarks are not acceptable); (2) a dated receipt from a commercial carrier or the U.S. Postal Service; or (3) a DEQ date stamped application, is

acceptable documentation of receipt of the NOI. The Authorization to Construct is issued by the DEQ after confirming that the application is administratively complete, the proper fee has been received, and that the facility is eligible for coverage under the permit.

- B. An applicant proposing to construct a new facility that meets the eligibility requirements listed in Part 1, Section III.C, must apply for a minor source construction permit for the facility since a case-by-case determination is most likely required in order to establish enforceable limitations for some particular emission unit. All relevant requirements and limitations in the minor source construction permit can be incorporated into the Authorization to Operate under the General Permit.
- C. An applicant proposing to obtain coverage under this permit for an existing, previously permitted facility, need only submit an application for an Authorization to Operate if the facility meets all of the eligibility requirements, including those listed in Part 1, Section III.C. Any of the relevant requirements and limitations in the existing operating permit, and any new specific conditions that may be necessary to insure compliance with applicable rules and regulations, may be incorporated into the Authorization to Operate under the General Permit.
- D. An applicant proposing to obtain coverage under this permit for an existing facility, not previously permitted, need only submit an application for an Authorization to Operate if the facility meets all of the eligibility requirements, excluding those facilities listed in Part 1, Section III.C. If the facility meets the eligibility requirements listed in Part 1, Section III.C, the applicant may apply for an Authorization to Operate for the facility, and shall include fees for both a minor source construction permit and the Authorization to Operate. The AQD will make any determinations for specific conditions that need to be incorporated into the Authorization to Operate.
- E. An applicant proposing to modify an existing facility (e.g., add, modify, reconstruct, or replace equipment or increase emissions) already covered by an Authorization to Operate under this general permit must meet the requirements specified in Part 4, Section II of this permit. Note that an applicant proposing to modify an existing facility need not obtain a new Authorization to Operate. However, if a minor source construction permit is required to make a modification as described under Part 1, Section III.C of this permit or if the facility is moving to a Class I or Class II status, i.e., above or below 80TPY, a new Authorization will be required.
- F. A new Authorization is not required to add or replace an engine, as long as the facility-wide emissions cap is not equaled or exceeded (80TPY for Class I facilities or 100TPY for Class II facilities) assuming operation of the new engine at its potential emission rates for its intended hours of operation. The addition or replacement of an engine shall be made in accordance with Paragraph H, Paragraph I, or Paragraph J of Part 2, Section IV.
- G. An applicant proposing to operate under an individual minor source permit for an existing facility already covered by an Authorization to Construct under this general permit must meet the requirements for a minor source individual permit and submit the required applications forms and fees within the specified time frame.

SECTION V. PERMIT TERM

This general permit shall remain valid and in effect unless it is modified or revoked in accordance with DEQ rules.

The DEQ shall establish, at the time this permit is modified, the terms and conditions under which existing Authorizations under this permit will be eligible for reauthorization under a modified general permit.

PART 2 – SPECIFIC CONDITIONS

Facilities shall be designed, constructed, and operated to meet the following terms and conditions, and any other applicable air pollution rules specified in this permit, the facility's Authorization, and any other requirements specified by rule or statute.

Points of Emissions and Limitations for Each Point

SECTION I. Facility-Wide Emissions Cap

- A. Emission limitations shall be established in each Authorization issued under this permit as a facility-wide emissions cap. The emission limitations must be less than 80% of major source levels for a Class I status or less than 100% of major source levels and not classified as a Class I facility for a Class II status.
- B. In no case shall the permittee cause or allow the emission of any regulated air pollutant in such a concentration as to cause or contribute to a violation of ambient air quality standards or other applicable air pollution rules.
- C. Compliance with these emission limitations shall be determined on a 12-month rolling total basis. Emissions shall be calculated and documented in accordance with OAC 252:100-5-2.1(c) and (d), or as otherwise specified in this permit or an Authorization.
- D. The facility throughput and/or equipment hours of operation shall be constrained as necessary to not exceed any facility-wide emissions cap.
- E. Start-up and shutdown emissions shall be included as part of the facility-wide emissions cap.

SECTION II. Storage Tanks

The following specific conditions apply to VOC storage tanks, including those which qualify as a de minimis facility under OAC 252:100, Appendix H.

Emission Calculations

- A. To demonstrate compliance with Part 2, Section I.A of this permit, the permittee shall estimate annual emissions of VOC and HAP from all storage tanks with a capacity of 400 gallons or more that store VOC (as defined in OAC 252:100-1-3). Estimates of emissions of VOC and HAP from storage tanks shall be calculated in accordance with AP-42 Chapter 7 and/or EPA approved software programs. Flash emission calculations shall follow the procedures presented in the AQD Fact Sheet, "Calculation of Flashing Losses/VOC Emissions from Hydrocarbon Storage Tanks," and be based on actual annual throughputs. [OAC 252:100-43]

- B. The permittee may estimate VOC and HAP emissions from storage of crude oil, slop oil, or oily water (condensate excluded) using AQD approved "default" factors listed in the current GP-OGF application forms.

Oklahoma Air Pollution Control Rules

- C. For all storage tanks equipped with an external floating roof (EFR) and with a capacity of more than 40,000 gallons, and that are not subject to an NSPS standard, the permittee shall perform routine inspections of all seal closure devices annually; measure the secondary seal gap annually when the floating roof is equipped with a vapor-mounted primary seal; and maintain records of the above inspections and maintenance or other repairs. [OAC 252:100-43]
- D. VOC storage tanks built after December 28, 1974, and with a capacity of 400 gallons or more storing a liquid with a vapor pressure of 1.5 psia or greater under actual storage conditions, except for petroleum or condensate stored, processed and/or treated at a drilling or production facility prior to lease custody transfer and except for methanol stored at drilling or production facilities, shall be equipped with a permanent submerged fill pipe or be bottom filled. [OAC 252:100-37-15 and OAC 252:100-39-41]
- E. VOC storage tanks constructed after December 28, 1974, with a capacity greater than 40,000 gallons storing a liquid with a vapor pressure of 1.5 psia or greater under actual storage conditions, except for petroleum or condensate stored, processed and/or treated at a drilling or production facility prior to lease custody transfer and except for methanol stored at drilling or production facilities, shall be a pressure vessel capable of maintaining working pressures that prevent the loss of VOC to the atmosphere, or shall be equipped with an external floating roof that meets the standards of OAC 252:100-37-15 (a)(1). [OAC 252:100-37-15(a)]
- F. The permittee shall comply with all applicable requirements set forth in OAC 252:100-39-30.
1. Any petroleum liquid storage vessel operated under this permit which is equipped with an external floating roof, has a capacity greater than 40,000 gallons, and is located in Tulsa or Oklahoma County, is required to meet the additional requirements of OAC 252:100-39-30, Petroleum Liquid Storage including, but not limited to:
 - a. Standards of OAC 252:100-39-30(c)(1);
 - b. Monitoring requirements of OAC 252:100-39-30(c)(2), and;
 - c. Recordkeeping requirements of OAC 252:100-39-30(c)(3).
 2. These requirements do not apply to petroleum liquid storage vessels that:
 - a. Are used to store waxy, high pour point crude oil;
 - b. Have a capacity less than 422,675 gallons and are used to store produced crude oil or condensate prior to lease custody transfer;

- c. Contain a petroleum liquid with a true vapor pressure less than 1.5 psia;
- d. Contain a petroleum liquid with a true vapor pressure less than 4.0 psia, is of welded construction, and presently possesses a metallic-type shoe seal, a liquid-mounted foam seal, or a liquid-mounted liquid filled type seal;
- e. Are of welded construction and are equipped with a metallic-type shoe primary seal and have a secondary seal from the top of the shoe seal to the tank wall (shoe-mounted secondary seal). [OAC 252:100-39-30(b)(2)]

Federal Regulations

- G. The permittee shall comply with all applicable requirements set forth in NSPS 40 CFR Part 60, including, but not limited to, the following.
- 1. Subpart K - Standards of Performance for Storage Vessels for Petroleum Liquids. This subpart applies to storage tanks that have a capacity greater than 40,000 gallons, but not exceeding 65,000 gallons, and commenced construction, or modification after March 8, 1974, and prior to May 19, 1978; and to storage tanks that have a capacity greater than 65,000 gallons and commenced construction or modification after June 11, 1973, and prior to May 19, 1978. [40 CFR 60.110 to 60.113]
 - a. § 60.110 Applicability and designation of affected facility.
 - b. § 60.111 Definitions.
 - c. § 60.112 Standard for volatile organic compounds (VOC).
 - d. § 60.113 Monitoring of operations.
 - 2. Subpart Ka – Standards of Performance for Storage Vessels for Petroleum Liquids. This subpart applies to storage tanks that have a capacity greater than 40,000 gallons and commenced construction after May 18, 1978, and prior to July 23, 1984. [40 CFR 60.110a to 60.115a]
 - a. § 60.110a Applicability and designation of affected facility.
 - b. § 60.111a Definitions.
 - c. § 60.112a Standard for volatile organic compounds (VOC).
 - d. § 60.113a Testing and procedures.
 - e. § 60.114a Alternative means of emission limitation.
 - f. § 60.115a Monitoring of operations.
 - 3. Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels). This subpart applies to storage tanks that have a capacity greater than 19,812 gallons and commenced construction, reconstruction, or modification after July 23, 1984. [40 CFR 60.110b to 60.117b]
 - a. § 60.110b Applicability and designation of affected facility.
 - b. § 60.111b Definitions.
 - c. § 60.112b Standard for volatile organic compounds (VOC).
 - d. § 60.113b Testing and procedures.

- e. § 60.114b Alternative means of emission limitation.
 - f. § 60.115b Reporting and recordkeeping requirements.
 - g. § 60.116b Monitoring of operations.
4. Subpart OOOO – Crude Oil and Natural Gas Production, Transmission, and Distribution. This subpart was promulgated on August 16, 2012 and affects storage vessels located in the oil and natural gas production segment, natural gas processing segment or natural gas transmission and storage segment that commence construction, reconstruction, or modification after August 23, 2011 and have the potential for VOC emissions equal to or greater than 6 tpy.
[40 CFR 60.5360 to 60.5430]
- a. §60.5360 What is the purpose of this subpart
 - b. §60.5365 Am I subject to this subpart
 - c. §60.5370 When must I comply with this subpart
 - d. §60.5395 What standards apply to storage vessel affected facilities
 - e. §60.5410 How do I demonstrate initial compliance with the standards for my gas well affected facility, my centrifugal compressor affected facility, my reciprocating compressor affected facility, my pneumatic controller affected facility, my storage vessel affected facility, and my equipment leaks and sweetening unit affected facilities at onshore natural gas processing plants?
 - f. §60.5411 What additional requirements must I meet to determine initial compliance for my covers and closed vent systems routing materials from storage vessels, reciprocating compressors and centrifugal compressor wet seal degassing systems?
 - g. §60.5412 What additional requirements must I meet for determining initial compliance with control devices used to comply with the emission standards for my storage vessel or centrifugal compressor affected facility?
 - h. §60.5413 What are the performance testing procedures for control devices used to demonstrate compliance at my storage vessel or centrifugal compressor affected facility?
 - i. §60.5415 How do I demonstrate continuous compliance with the standards for my gas well affected facility, my centrifugal compressor affected facility, my stationary reciprocating compressor affected facility, my pneumatic controller affected facility, my storage vessel affected facility, and my affected facilities at onshore natural gas processing plants?
 - j. §60.5416 What are the initial and continuous cover and closed vent system inspection and monitoring requirements for my storage vessel, centrifugal compressor and reciprocating compressor affected facilities?
 - k. §60.5417 What are the continuous control device monitoring requirements for my storage vessel or centrifugal compressor affected facility?
 - l. §60.5420 What are my notification, reporting, and recordkeeping requirements?
 - m. §60.5425 What part of the General Provisions apply to me?
 - n. §60.5430 What definitions apply to this subpart?

Recordkeeping

- H. The permittee shall maintain records for all storage tanks with a capacity of 400 gallons or more that store VOC (as defined in OAC 252:100-1-3). The records shall include the tank identification number; date of manufacture; date of installation; tank capacity; type of tank; a description of the type of floating roof and seals if applicable; NSPS applicability; whether equipped with a submerged fill pipe or vapor recovery system; and the type of liquid stored. [OAC 252:100-43]

SECTION III. VOC Loading Operations

The following specific conditions apply to VOC Loading Operations.

Emission Calculations

- A. The permittee shall estimate annual emissions of VOC and HAP from loading operations to demonstrate compliance with Part 2, Section I.A of this permit. Estimates of emissions of VOC from loading operations shall be calculated using the latest approved version of AP-42, "Compilation of Air Pollution Emission Factors," e.g., Chapter 5.2, equation 1, or an equivalent method approved by Air Quality and based on actual annual throughputs. [OAC 252:100-43]
- B. The permittee may estimate VOC and HAP emissions from loading operations of crude oil, slop oil, oily water, and condensate using AQD approved "default" factors listed in the current GP-OGF application forms.

Oklahoma Air Pollution Control Rules

- C. Each loading pipe handling a liquid with a vapor pressure of 1.5 psia or greater under actual storage conditions, except for petroleum or condensate stored, processed and/or treated at a drilling or production facility prior to lease custody transfer and except for methanol stored at drilling or production facilities, shall be equipped with a system for submerged filling of tank trucks or trailers which is installed and operated to maintain a 97 percent submergence factor. [OAC 252:100-37-16(b)]

SECTION IV. Combustion Equipment

The following specific conditions apply to combustion equipment, including those that qualify as a de minimis facility under OAC 252:100, Appendix H.

Emission Calculations

- A. The permittee shall estimate annual emissions of NO_x, CO, and VOC from all combustion equipment, and estimate annual emissions of formaldehyde (CH₂O) from engines, to demonstrate compliance with Part 2, Section I.A of this permit. For an engine, the annual emissions shall be calculated as either the engine's potential to emit

(lb/hr) or the engine's permitted limit (lb/hr) of each pollutant, times the actual annual hours of operation, and converted to tons. For all other combustion equipment, the annual emissions shall be calculated based on actual annual hours of operation, maximum fired duty, and the emission factors that were used for the facility-wide emissions cap limitations established per Part 2, Section I.A or the latest revision of AP-42, and converted to tons. [OAC 252:100-43]

- B. An emission factor considering add-on controls for CH₂O is acceptable when testing demonstrates continual compliance with the CO limits established in the authorization. [OAC 252:100-43]
- C. Unless continuous operation (8,760 hours) is assumed for the calculation of actual emissions to demonstrate compliance with Part 2, Section I.A., the hours of operation of an engine or other combustion equipment shall be recorded with an hour meter, with a fuel meter recorded at least hourly, or monitored and recorded manually each day. If equipped with an hour meter, it must either be non-resettable or, if resettable, the date and hour each time the meter is reset must be maintained. [OAC 252:100-43]

Engine Emissions Tests (see Appendix D)

- D. The permittee shall conduct an initial test of NO_x and CO emissions from any engine other than (1) an Emergency Use Engine, or (2) a natural gas-fired engine that has been certified to an emissions standard under NSPS Subpart JJJJ, or (3) an NSPS Subpart JJJJ applicable certified engine operated as a non-certified engine less than 100 HP. This test may be counted as the first quarterly test of an engine. Testing shall be conducted using EPA reference methods, if applicable, or a portable analyzer in accordance with a protocol meeting the requirements of the latest AQD "Portable Analyzer Guidance" document, or an equivalent method approved by AQD. The permittee shall send AQD a copy of the initial test as part of the NOI to Operate application, or within 60 days of startup of a new, modified, reconstructed, or replacement Engine. [OAC 252:100-43]
- E. Initially, a quarterly test of NO_x and CO emissions conducted within 10 percent of 100 percent peak (or the highest achievable) load is required for any uncontrolled Emissions Limited Engine not located at a True Minor Facility. At least once per calendar quarter, the permittee shall conduct tests of NO_x and CO emissions from the engine. Testing shall be conducted using a portable analyzer in accordance with a protocol meeting the requirements of the latest AQD "Portable Analyzer Guidance" document, or an equivalent method approved by AQD. Testing is required for any engine that runs for more than 220 hours during that calendar quarter. A quarterly test may be conducted no sooner than 20 calendar days after the most recent test. When four consecutive quarterly tests show the engine in compliance with its hourly permit limits, the testing frequency may be reduced to semi-annual testing. A semi-annual test may be conducted no sooner than 60 calendar days nor later than 180 calendar days after the most recent test. Likewise, when the following two consecutive semi-annual tests show compliance, the testing frequency may be reduced to annual testing. An annual test may be conducted no sooner than 120 calendar days nor later than 365 calendar days after the most recent test.

Upon any showing of non-compliance with hourly permit limits, the testing frequency shall revert back to quarterly. [OAC 252:100-43]

- F. For any controlled Emissions Limited Engine, the following requirements apply. [OAC 252:100-43]
1. Four-stroke rich-burn (4SRB) engines using NSCR catalyst shall be equipped with an Air to Fuel Ratio Controller (AFRC). The AFRC shall be inspected and maintained at least once a month to ensure that the controller is functioning properly, is not in alarm mode, and is being operated in accordance with manufacturers' recommendations. Replacement of the oxygen sensor(s) is required every 2,200 operating hours or less, or in accordance with manufacturers' recommendations, and replacement shall be documented in accordance with Part 4, Section IV.A. A maintenance log of all AFRC inspections, periods of operation in alarm mode, and engine or AFRC maintenance shall be kept. At least once per calendar quarter, the permittee shall conduct tests of NO_x and CO emissions from the engines. Testing shall be conducted using a portable analyzer in accordance with a protocol meeting the requirements of the latest AQD "Portable Analyzer Guidance" document, or an equivalent method approved by AQD. Testing is required for any engine that runs for more than 220 hours during that calendar quarter. A quarterly test may be conducted no sooner than 20 calendar days after the most recent test.
 2. At least once per calendar quarter, the permittee shall conduct tests of NO_x and CO emissions from any two-stroke and four-stroke lean-burn (2SLB and 4SLB) and compression ignition (CI) engine and gas turbine equipped with oxidation catalyst. Testing shall be conducted using a portable analyzer in accordance with a protocol meeting the requirements of the latest AQD "Portable Analyzer Guidance" document, or an equivalent method approved by AQD. Testing is required for any engine that runs for more than 220 hours during that calendar quarter. A quarterly test may be conducted no sooner than 20 calendar days after the last test.
- G. If any engine tested is not in compliance with its hourly permit limits, the permittee shall make the necessary adjustments to bring the engine into compliance and an excess emissions report shall be filed in accordance with the Standard Conditions, Part 4 Section III, of this permit.
- H. For a new, reconstructed, or rebuilt [as that term is defined in 40 CFR §94.11(a) and (b)] Emissions Limited Engine, deviations from the emission or operating limitations that occur during the first 200 hours of operation from engine start-up (engine burn-in period) are not considered as excess emissions or violations of this permit.

Engine Addition, Modification, Reconstruction, or Replacement

- I. Addition, modification, reconstruction, or replacement of an Emergency Use Engine is allowed at any time. The permittee shall keep a record of the date of the change; the new

engine make, model, serial number, Maximum Rated Horsepower; and potential to emit (g/hp-hr, lb/hr, TPY).

J. Addition, modification, reconstruction, or replacement of any Uncontrolled Engine at a True Minor Facility is authorized under the following conditions.

1. The permittee shall send a Notice of Modification to AQD within 10 days of the start-up of the engine. The Notice of Modification shall include the date of the change; the new engine make, model, serial number, Maximum Rated Horsepower, intended hours of operation, fuel consumption (Btu/bhp-hr), stack flow (ACFM), stack temperature (°F), stack height (feet), and stack diameter (inches); potential to emit (g/hp-hr, lb/hr, and TPY); and a demonstration of compliance with the facility-wide emissions cap assuming operation of the new engine at its potential emissions rates for its intended hours of operation. Within 60 days of start-up, the permittee shall send to AQD a copy of an initial test of NO_x and CO emissions from the engine demonstrating that actual emission rates (lb/hr) are less than or equal to the potential emission rates (lb/hr) specified in the Notice of Modification. Testing shall be conducted using a portable analyzer in accordance with a protocol meeting the requirements of the latest AQD "Portable Analyzer Guidance" document, or an equivalent method approved by AQD.
2. The permittee shall attach a copy of the Notice of Modification to a copy of the Authorization to Operate kept either on-site, at a nearby manned facility, or at the nearest field office per the recordkeeping requirements of Part 4, Section IV.A.

K. Addition, modification, reconstruction, or replacement of an Emissions Limited Engine is authorized under the following conditions.

1. The permittee shall send AQD a Notice of Modification within 10 days of the start-up of the engine. The Notice of Modification shall include the date of the change; the new engine make, model, serial number, Maximum Rated Horsepower, intended hours of operation, fuel consumption (Btu/bhp-hr), stack flow (ACFM), stack temperature (°F), stack height (feet), and stack diameter (inches); potential to emit (g/hp-hr, lb/hr, and TPY); NO_x and CO emission limits (lb/hr); and a demonstration of compliance with the facility-wide emissions cap assuming operation of the new engine at its potential emission rate (for VOC) and limited emission rates (for NO_x and CO) for its intended hours of operation.
2. The permittee shall comply with the hourly emission rates for NO_x and CO (lb/hr) cited in the Notice of Modification for that engine and those limitations shall become an enforceable part of the existing Authorization to Operate. The permittee shall attach a copy of the Notice of Modification to a copy of the Authorization to Operate kept either on-site, at a nearby manned facility, or at the nearest field office per the recordkeeping requirements of Part 4, Section IV.A.

3. The new engine is subject to periodic testing in accordance with Part 2, Section IV of this permit. A copy of the first emissions test shall be provided to AQD within 60 days of start-up of the added, modified, reconstructed, or replacement engine. The test report shall include the new engine make, model, serial number, Maximum Rated Horsepower, fuel consumption (Btu/bhp-hr), stack flow (ACFM), stack temperature (°F), stack height (feet), stack diameter (inches), proof the performance test was conducted with 10 percent of 100 percent peak load, and emissions rates (g/hp-hr, lb/hr, and TPY) at Maximum Rated Horsepower and continuous operation.

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- L. Each engine shall have a readily accessible permanent identification plate attached that shows the make, model number, and serial number. [OAC 252:100-43]
- M. All fuel-burning equipment, including engines, shall at all times be properly operated and maintained in a manner that will minimize emissions of VOC. For heaters, temperature and available air shall be sufficient to provide essentially complete combustion. The permittee shall maintain maintenance records on engines to document compliance. [OAC 252:100-37-36]
- N. Liquid fuel may be combusted only in Emergency Use Engines or in engines rated less than 50 horsepower. [OAC 252:100-31-25]
- O. An Emergency Use Engine shall be equipped with a non-resettable hour meter. Operating hours for that engine shall not exceed 500 hours in any 12-month period. The permittee shall maintain a record of the operating hours for each Emergency Use Engine. [OAC 252:100-43]

Federal Regulations

- P. The permittee shall comply with all applicable requirements set forth in NSPS 40 CFR Part 60, including, but not limited to, the following.
 1. Subpart Dc - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units. This subpart affects Steam Generating Units (defined in the subpart) that commenced construction, modification, or reconstruction after June 9, 1989, and that have a maximum design heat input capacity of 100 MMBtu/hr or less, but greater than or equal to 10 MMBtu/hr.. [40 CFR 60.40c – 60.48c]
 - a. §60.40c Applicability and delegation of authority
 - b. §60.41c Definitions
 - c. §60.42c Standards for sulfur dioxide (SO₂)
 - d. §60.43c Standards for particulate matter (PM)
 - e. §60.44c Compliance and performance test methods and procedures for sulfur dioxide

- f. §60.45c Compliance and performance test methods and procedures for particulate matter
 - g. §60.46c Emission monitoring for sulfur dioxide
 - h. §60.47c Emission monitoring for particulate matter
 - i. §60.48c Reporting and recordkeeping requirements
2. Subpart GG - Standards of Performance for Stationary Gas Turbines. This subpart regulates NO_x and SO₂ emissions for gas turbines that commenced construction, modification, or reconstruction after October 3, 1977, with a heat input at peak load equal to or greater than 10 MMBtu/hr, based on the lower heating value of the fuel.
[40 CFR 60.330 to 60.335]
- a. §60.330 Applicability and designation of affected facility
 - b. §60.331 Definitions
 - c. §60.332 Standards for nitrogen oxides
 - d. §60.333 Standards for sulfur dioxides
 - e. §60.334 Monitoring of operations
 - f. §60.335 Test methods and procedures
3. Subpart IIII – Standards of Performance for Stationary Compressor Ignition Internal Combustion Engines. This subpart regulates NO_x, particulate matter, CO, and Non-methane hydrocarbons (NMOC) from stationary compression ignition internal combustion engines (CI ICE) that commenced construction modification, or reconstruction after July 11, 2005. [40 CFR 60.4200 to 60.4219]
- a. §60.4200 Am I subject to this subpart
 - b. §60.4201 What emission standards must I meet for non-emergency engines if I am a stationary CI internal combustion engine manufacturer?
 - c. §60.4202 What emission standards must I meet for emergency engines if I am a stationary CI internal combustion engine manufacturer?
 - d. §60.4203 How long must my engines meet the emission standards if I am a manufacturer of stationary CI internal combustion engines?
 - e. §60.4204 What emission standards must I meet for non-emergency engines if I am an owner or operator of a stationary CI internal combustion engine?
 - f. §60.4205 What emissions standards must I meet for emergency engines if I am an owner or operator of a stationary CI internal combustion engine?
 - g. §60.4206 How long must I meet the emission standards if I am an owner or operator of a stationary CI internal combustion engine ?
 - h. §60.4207 What fuel requirements must I meet if I am an owner or operator of a stationary CI internal combustion engine subject to this subpart?
 - i. §60.4208 What is the deadline for importing or installing stationary CI ICE produced in the previous model years?
 - j. §60.4209 What are the monitoring requirements if I am an owner or operator of a stationary CI internal combustion engine?
 - k. §60.4210 What are my compliance requirements if I am a stationary CI internal combustion engine manufacturer?

- l. §60.4211 What are my compliance requirements if I am an owner or operator of a stationary CI internal combustion engine?
 - m. §60.4212 What test methods and other procedures must I use if I am an owner or operator of a stationary CI internal combustion engine with a displacement of less than 30 liters per cylinder?
 - n. §60.4213 What test methods or other procedures must I use if I am an owner or operator of a stationary CI internal combustion engine with a displacement of greater than or equal to 30 liters per cylinder?
 - o. §60.4214 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary CI internal combustion engine?
 - p. §60.4217 What engine standards must I meet if I am an owner or operator of a stationary internal combustion engine using special fuels?
 - q. §60.4218 What parts of the General Provisions apply to me?
 - r. §60.4219 What definitions apply to this subpart?
4. Subpart JJJJ - Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (SI-ICE). This subpart promulgates emission standards for new SI engines ordered after June 12, 2006, that are manufactured after certain dates, and for SI engines modified or reconstructed after June 12, 2006.
- [40 CFR 60.4230 to 60.4246]
- a. §60.4230 Am I subject to this subpart?
 - b. §60.4231 What emission standards must I meet if I am a manufacturer of stationary SI internal combustion engines or equipment containing such engines?
 - c. §60.4232 How long must my engines meet the emission standards if I am a manufacturer of stationary SI internal combustion engines?
 - d. §60.4233 What emission standards must I meet if I am an owner or operator of a stationary SI internal combustion engine?
 - e. §60.4234 How long must I meet the emission standards if I am an owner or operator of a stationary SI internal combustion engine?
 - f. §60.4235 What fuel requirements must I meet if I am an owner or operator of a stationary SI gasoline fired internal combustion engine subject to this subpart?
 - g. §60.4236 What is the deadline for importing or installing stationary SI ICE produced in previous model years?
 - h. §60.4237 What are the monitoring requirements if I am an owner or operator of an emergency stationary SI internal combustion engine?
 - i. §60.4238 What are my compliance requirements if I am a manufacturer of stationary SI internal combustion engines \leq 19 KW (25 HP) or a manufacturer of equipment containing such engines?
 - j. §60.4239 What are my compliance requirements if I am a manufacturer of stationary SI internal combustion engines $>$ 19 KW (25 HP) that use gasoline or a manufacturer of equipment containing such engines?

- k. §60.4240 What are my compliance requirements if I am a manufacturer of stationary SI internal combustion engines >19 KW (25 HP) that are rich burn engines that use LPG or a manufacturer of equipment containing such engines?
 - l. §60.4241 What are my compliance requirements if I am a manufacturer of stationary SI internal combustion engines participating in the voluntary certification program or a manufacturer of equipment containing such engines?
 - m. §60.4242 What other requirements must I meet if I am a manufacturer of stationary SI internal combustion engines or equipment containing stationary SI internal combustion engines or a manufacturer of equipment containing such engines?
 - n. §60.4243 What are my compliance requirements if I am an owner or operator of a stationary SI internal combustion engine?
 - o. §60.4244 What test methods and other procedures must I use if I am an owner or operator of a stationary SI internal combustion engine?
 - p. §60.4245 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary SI internal combustion engine?
 - q. §60.4246 What parts of the General Provisions apply to me?
 - r. §60.4247 What parts of the mobile source provisions apply to me if I am a manufacturer of stationary SI internal combustion engines or a manufacturer of equipment containing such engines?
 - s. § 60.4248: What definitions apply to this subpart?
5. Subpart KKKK - Standards of Performance for Stationary Combustion Turbines. This subpart regulates NO_x and SO₂ emissions for turbines that commenced construction, modification, or reconstruction after February 18, 2005, with a heat input at peak load equal to or greater than 10 MMBtu/hr, based on the higher heating value of the fuel. [40 CFR 60.4300 to 60.4420]
- a. §60.4300 What is the purpose of this subpart
 - b. §60.4305 Does this subpart apply to my stationary combustion turbine
 - c. §60.4310 What type of operations are exempt from these standards of performance
 - d. §60.4315 What pollutants are regulated by this subpart
 - e. §60.4320 What emissions limits must I meet for nitrogen oxides (NO_x)
 - f. §60.4325 What emissions limits must I meet for NO_x if my turbine burns both natural gas and distillate oil (or some other combination of fuels)?
 - g. §60.4330 What emission limits must I meet for sulfur dioxide (SO₂)
 - h. §60.4333 What are my general requirements for complying with this subpart?
 - i. §60.4335 What are my general requirements for complying with this subpart
 - j. §60.4335 How do I demonstrate compliance for NO_x if I use water or stream injection
 - k. §60.4340 How do I demonstrate compliance for NO_x if I do not use water or steam injection

- l. §60.4345 What are the requirements for the continuous emissions monitoring system equipment, if I choose to use this option?
 - m. §60.4350 How do I use data from the continuous emission monitoring equipment to identify excess emissions?
 - n. §60.4355 How do I establish and document a proper parameter monitoring plan?
 - o. §60.4360 How do I determine the total sulfur content of the turbines' combustion fuel?
 - p. §60.4365 How can I be exempt for monitoring the total sulfur content of the fuel?
 - q. §60.4370 How often must I determine the sulfur content of the fuel?
 - r. §60.4375 What reports must I submit?
 - s. §60.4380 How are excess emissions and monitor downtime for NO_x?
 - t. §60.4385 How are excess emissions and monitoring downtime defined for SO₂?
 - u. §60.4390 What are my reporting requirements if I operate an emergency combustion turbine or a research and development turbine?
 - v. §60.4395 When must I submit my reports?
 - w. §60.4400 How do I conduct the initial and subsequent performance tests, regarding NO_x?
 - x. §60.4405 How do I perform the initial performance test if I have chosen to install a NO_x-diluent CEMS?
 - y. §60.4410 How do I establish a valid parameter range if I have chosen to continuously monitor parameters?
 - z. §60.4415 How do I conduct the initial and subsequent performance tests for sulfur?
 - aa. §60.4420 What definitions apply to this subpart?
6. Subpart OOOO - Crude Oil and Natural Gas Production, Transmission, and Distribution. This subpart affects each centrifugal compressor affected facility, which is a single centrifugal compressor using wet seals that is located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment as well as each reciprocating compressor affected facility, which is a single reciprocating compressor located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment that commence construction, reconstruction, or modification after August 23, 2011. [40 CFR 60.5360 to 60.5430]
- a. §60.5360 What is the purpose of this subpart?
 - b. §60.5365 Am I subject to this subpart?
 - c. §60.5370 When must I comply with this subpart?
 - d. §60.5380 What standards apply to centrifugal compressor affected facilities?
 - e. §60.5385 What standards apply to reciprocating compressor affected facilities?
 - f. §60.5385 What standards apply to centrifugal compressor affected facilities?
 - g. §60.5410 How do I demonstrate initial compliance with the standards for my gas well affected facility, my centrifugal compressor affected facility, my reciprocating compressor affected facility, my pneumatic controller affected facility, my storage vessel affected facility, and my equipment leaks and sweetening unit affected facilities at onshore natural gas processing plants?

- h. §60.5411 What additional requirements must I meet to determine initial compliance for my covers and closed vent systems routing materials from storage vessels, reciprocating compressors and centrifugal compressor wet seal degassing systems.
 - i. §60.5412 What additional requirements must I meet for determining initial compliance with control devices used to comply with the emission standards for my storage vessel or centrifugal compressor affected facility?
 - j. §60.5413 What are the performance testing procedures for control devices used to demonstrate compliance at my storage vessel or centrifugal compressor affected facility?
 - k. §60.5415 How do I demonstrate continuous compliance with the standards for my gas well affected facility, my centrifugal compressor affected facility, my stationary reciprocating compressor affected facility, my pneumatic controller affected facility, my storage vessel affected facility, and my affected facilities at onshore natural gas processing plants?
 - l. §60.5416 What are the initial and continuous cover and closed vent system inspection and monitoring requirements for my storage vessel, centrifugal compressor and reciprocating compressor affected facilities?
 - m. §60.5417 What are the continuous control device monitoring requirements for my storage vessel or centrifugal compressor affected facility?
 - n. §60.5420 What are my notification, reporting, and recordkeeping requirements?
 - o. §60.5425 What part of the General Provisions apply to me?
 - p. §60.5430 What definitions apply to this subpart?
- Q. The permittee shall comply with all applicable requirements set forth in NESHAP 40 CFR Part 63, including, but not limited to, the following.
- 1. Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE). This subpart affects any existing, new, or reconstructed stationary RICE located at a major or area source of HAP emissions. Owners or operators of the following new or reconstructed RICE must meet the requirements of Subpart ZZZZ by complying with either 40 CFR Part 60 Subpart IIII (for CI engines) or 40 CFR Part 60 Subpart JJJJ (for SI engines).
[40 CFR 63.6580 to 63.6675]
 - a. § 63.6580 What is the purpose of subpart ZZZZ?
 - b. § 63.6585 Am I subject to this subpart?
 - c. § 63.6590 What parts of my plant does this subpart cover?
 - d. § 63.6595 When do I have to comply with this subpart?
 - e. § 63.6603 What emission limitations, operating limitations, and other requirements must I meet if I own or operate an existing stationary RICE located at an area source of HAP emissions?
 - f. § 63.6604 What fuel requirements must I meet if I own or operate a stationary CI RICE?
 - g. § 63.6605 What are my general requirements for complying with this subpart?

- h. §63.6612 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate an existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing stationary RICE located at an area source of HAP emissions?
- i. § 63.6615 When must I conduct subsequent performance tests?
- j. § 63.6620 What performance tests and other procedures must I use?
- k. § 63.6625 What are my monitoring, installation, operation, and maintenance requirements?
- l. § 63.6630 How do I demonstrate initial compliance with the emission limitations, operating limitations, and other requirements?
- m. § 63.6635 How do I monitor and collect data to demonstrate continuous compliance?
- n. § 63.6640 How do I demonstrate continuous compliance with the emission limitations, operating limitations, and other requirements?
- o. § 63.6645 What notifications must I submit and when?
- p. § 63.6650 What reports must I submit and when?
- q. § 63.6655 What records must I keep?
- r. § 63.6660 In what form and how long must I keep my records?
- s. § 63.6665 What parts of the General Provisions apply to me?
- t. § 63.6670 Who implements and enforces this subpart?
- u. § 63.6675 What definitions apply to this subpart?

Notification and Recordkeeping

- R. The permittee shall maintain a record of any malfunction that prevents quarterly testing of NO_x and CO emissions from an Emissions Limited Engine and notify AQD of the malfunction that prevented testing within 30 days of the end of that quarter.
[OAC 252:100-43]
- S. The permittee shall keep records of the actual annual hours of operation, in accordance with the methods in Part 2, Section IV.B, for any engine or other combustion equipment for which actual hours of operation, instead of continuous operation, are used to calculate annual emissions.
[OAC 252:100-43]
- T. The permittee shall keep records that document each engine's maximum horsepower at International Organization for Standardization (ISO) or manufacturer's standard condition and maximum RPM, and any de-rating factors used to determine a site-rated maximum horsepower (e.g., site ambient conditions, jacket water temperature, compression load limitations, speed limitations of engine or driven equipment, etc.).
[OAC 252:100-43]

SECTION V. Glycol Dehydration Unit Process Vents

The following specific conditions apply to emissions from glycol dehydration unit process vents.

Emission Calculations

A. The permittee shall calculate emissions of VOC and HAP from glycol dehydration process vents to demonstrate compliance with Part 2, Section I.A of this permit. Estimates of emissions of VOC and HAP from any rich glycol flash tank vents or glycol regenerator still vents shall be calculated using either the GRI-GLYCalc program (Version 4.0 or later), a process simulator program, or the Atmospheric Rich/Lean (ARL) Method. The emission calculations shall be based on the potential to emit by assuming continuous operation using (1) the maximum design wet gas rate for the dehydrator unit, or (2) the maximum facility wet gas rate based on an inherent process limitation such as compressor horsepower or capacity limitations, or (3) the maximum facility wet gas rate based on an inherent limit on gas production, or (4) the average wet gas rate for the last 2 years plus a 20% safety factor; a Representative Extended Wet Gas Analysis; the normal process operating temperature and pressure; the expected removal efficiency of any glycol still vent condenser at its maximum design temperature; and the maximum pump rate of the lean glycol circulation pump. For combustion of gasses from a glycol still vent or flash tank in a reboiler only 50% destruction efficiency shall be allowed.

[OAC 252:100-43]

B. For facilities that have total potential HAP emissions from all dehydrator units above 80% of major source levels, based on the Representative Extended Wet Gas Analysis used in the permit application, the permittee shall sample and perform an extended wet gas analysis at least once each year for calculating compliance with the permit HAP limits per the procedures in paragraph A above.

[OAC 252:100-43]

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C. If a condenser is used to control the emissions from the glycol still vent, then all of the still vent vapors must pass through the condenser. The condenser shall be designed to achieve the expected removal efficiency at the maximum expected condenser outlet temperature. The permittee shall inspect the condenser for proper operation and measure and record the condenser outlet temperature at least one day each month during daylight hours. Recording of the condenser outlet temperature is not required if the uncondensed vapors are burned in a combustion device or recycled to the process.

[OAC 252:100-43]

Federal Regulations

D. The permittee shall comply with all applicable requirements set forth in NESHAP 40 CFR Part 63, including, but not limited to, the following.

1. Subpart HH - Oil and Natural Gas Production Facilities. This subpart applies to TEG dehydration units affected emission points that are located at facilities that are major and area sources of HAPs and either process, upgrade, or store hydrocarbons prior to the point of custody transfer or prior to which the natural gas enters the natural gas transmission and storage source category. Facilities covered under OGF-GP are considered an "area" source of HAPs. [40 CFR 63.760 to 63.775]
 - a. §63.760 Applicability and designation of affected source
 - b. §63.761 Definitions
 - c. §63.762 Affirmative defense for violations of emission standards during malfunction
 - d. §63.764 General standards
 - e. §63.765 Glycol dehydration unit process vents standards
 - f. §63.766 Storage vessel standards
 - g. §63.769 Equipment leak standards
 - h. §63.771 Control equipment requirements
 - i. §63.772 Test methods, compliance procedures, and compliance demonstrations
 - j. §63.773 Inspection and monitoring requirements
 - k. §63.774 Recordkeeping requirements
 - l. §63.775 Reporting requirements
 - m. §63.776 Implementation and enforcement
 - n. §63.777 Alternate means of emission limitation

Recordkeeping

- E. The permittee shall keep records demonstrating the method and data used for determining the maximum wet gas rate used to calculate the potential to emit from a glycol dehydrator per Part 2, Section V.A.; records of any required Representative Extended Wet Gas Analysis; and records of the GRI-GLYCalc printout or other emission calculation methods, including the condenser expected removal efficiency at its maximum design temperature. [OAC 252:100-43]

SECTION VI. Amine Units

The following specific conditions apply to emissions from amine units and regenerator still vents.

Emission Calculations

- A. The permittee shall calculate emissions of VOC and HAPS from rich amine flash tank and regenerator still vents to demonstrate compliance with Part 2, Section IA of this permit. Potential emissions can be estimated using the AMINE-Calc program, a process simulator program, and/or mass balance equations. The emissions should be based on the potential to emit by assuming continuous operation using the maximum throughput, a representative extended gas analysis or natural gas liquid analysis, the normal process operating temperatures and pressures, and the maximum pump rate of the lean amine

circulation pump. Emissions from amine unit flash tanks are often controlled by routing the gases to the fuel gas system or by using a flare. Emissions from the regenerator still vent are often controlled by flaring or are vented to the atmosphere.

Testing Requirements

The permittee shall conduct testing of the inlet H₂S concentration at least quarterly to ensure compliance with OAC 252:100-31-7 H₂S ambient air concentration limit of 0.2 ppm (283 µg/m³).

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- B. Emissions from the rich amine flash tank are to be routed to a flare meeting the requirements of OAC 252:100-31-26, to the facility inlet, or to the fuel gas system. Emissions from the amine unit regenerator still vent are to be routed to a flare with a combustion efficiency of 95%.
- C. Flares used to control emissions from the amine unit are to be equipped with an alarm system that will signal when there is no pilot flame.

Federal Regulations

- D. The permittee shall comply with all applicable requirements set forth in NSPS 40 CFR Part 60, including, but not limited to, the following.
 - 1. Subpart OOOO –Crude Oil and Natural Gas Production, Transmission, and Distribution. This subpart affects sweetening units located at onshore natural gas processing plants that process natural gas produced from either onshore or offshore wells that commence construction, reconstruction or modification after August 23, 2011. [40 CFR 60.5360 to 60.5430]
 - a. §60.5360 What is the purpose of this subpart?
 - b. §60.5365 Am I subject to this subpart?
 - c. §60.5370 When must I comply with this subpart?
 - d. §60.5405 What standards apply to sweetening units at onshore natural gas processing plants?
 - e. §60.5406 What test methods and procedures must I use for my sweetening units affected facilities at onshore natural gas processing plants
 - f. §60.5407 What are the requirements for monitoring of emissions and operations from my sweetening unit affected facilities at onshore natural gas processing plants?
 - g. § 60.5408 What is an optional procedure for measuring hydrogen sulfide in acid gas-Tutwiler Procedure?
 - h. §60.5410 How do I demonstrate initial compliance with the standards for my gas well affected facility, my centrifugal compressor affected facility, my reciprocating compressor affected facility, my pneumatic controller affected

- facility, my storage vessel affected facility, and my equipment leaks and sweetening unit affected facilities at onshore natural gas processing plants?
- i. §60.5415 How do I demonstrate continuous compliance with the standards for my gas well affected facility, my centrifugal compressor affected facility, my stationary reciprocating compressor affected facility, my pneumatic controller affected facility, my storage vessel affected facility, and my affected facilities at onshore natural gas processing plants?
 - j. §60.5420 What are my notification, reporting and recordkeeping requirements?
 - k. §60.5423 What additional recordkeeping and reporting requirements apply to my sweetening unit affected facilities at onshore natural gas processing plants?
 - l. §60.5425 What part of the General Provisions apply to me?
 - m. §60.5430 What definitions apply to this subpart
2. Subpart LLL – Natural Gas Production. This subpart affects sweetening units and sweetening units followed by a sulfur recovery unit located at an onshore natural gas processing plant that was constructed, reconstructed or modified after January 20, 1984 and on or before August 23, 2011.
- a. §60.640 Applicability and designation of affected facilities
 - b. §60.641 Definitions
 - c. §60.642 Standards for sulfur dioxide
 - d. §60.644 Test methods and procedures
 - e. §60.646 Monitoring of emissions and operations
 - f. §60.647 Recordkeeping and reporting requirements
 - g. §60.648 Optional procedure for measuring hydrogen sulfide in acid gas – Tutwiler Procedure

Recordkeeping

- E. The permittee shall keep records demonstrating the method and data used for determining the maximum wet gas rate used to calculate the potential to emit from an amine unit per Part 2, Section VI.A.; records of any required Representative Extended Gas Analysis; and records of the AMINE-Calc Program printout or other emission calculation methods.
[OAC 252:100-31]

SECTION VII. Fugitive Emission Sources

The following specific conditions apply to fugitive VOC emission sources, unless qualified as a de minimis facility under OAC 252:100, Appendix H.

Emission Calculations

- A. For any facility with a storage tank subject to, or grandfathered from, NSPS Subparts K, Ka or Kb, the permittee shall estimate annual emissions of VOC from fugitive emission sources to demonstrate compliance with Part 2, Section 1.A of this permit. Emissions of VOCs from fugitive sources shall be calculated using the factors in Table 2-4 (Oil and

Gas Production Operations) of EPA's 1995 Protocol for Equipment Leak Emission Estimates (EPA-453/R-95-017) or other methods approved by DEQ. [OAC 252:100-43]

Federal Regulations

- B. The permittee shall comply with all applicable requirements set forth in NSPS 40 CFR Part 60, including, but not limited to, the following.
1. Subpart KKK - Standards of Performance for Equipment Leaks of VOC from Onshore Natural Gas Processing Plants. This subpart requires leak detection and reporting (LDAR) for fugitive components and compressors at natural gas processing plants that were constructed, reconstructed, or modified after January 20, 1984.
[40 CFR 60.630 – 60.636]
 - a. §60.630 Applicability and designation of affected facilities
 - b. §60.631 Definitions
 - c. §60.632 Standards
 - d. §60.633 Exceptions
 - e. §60.634 Alternate means of emission limitations
 - f. §60.635 Recordkeeping requirements
 - g. §60.636 Reporting requirements

 2. Subpart OOOO, Crude Oil and Natural Gas Production, Transmission, and Distribution. This subpart affects each pneumatic controller affected facility, which is a single continuous bleed gas-driven pneumatic controller operating at natural gas bleed rate greater than 6 scfh that commence construction, reconstruction, or modification after August 23, 2011. [40 CFR 60.5360 to 60.5430]
 - a. §60.5360 What is the purpose of this subpart?
 - b. §60.5365 Am I subject to this subpart?
 - c. §60.5370 When must I comply with this subpart?
 - d. §60.5390 What standards apply to pneumatic controller affected facilities?
 - e. §60.5400 What equipment leak standards apply to affected facilities at onshore gas processing plants?
 - f. §60.5401 What are the exceptions to the equipment leak standards for affected facilities at onshore gas processing plants?
 - g. §60.5402 What are the alternative emission limitations for equipment leaks from onshore natural gas processing plants?
 - h. §60.5410 How do I demonstrate initial compliance with the standards for my gas well affected facility, my centrifugal compressor affected facility, my reciprocating compressor affected facility, my pneumatic controller affected facility, my storage vessel affected facility, and my equipment leaks and sweetening unit affected facilities at onshore natural gas processing plants?
 - i. §60.5415 How do I demonstrate continuous compliance with the standards for my gas well affected facility, my centrifugal compressor affected facility, my stationary reciprocating compressor affected facility, my pneumatic controller

affected facility, my storage vessel affected facility, and my affected facilities at onshore natural gas processing plants?

- j. §60.5420 What are my notification, reporting and recordkeeping requirements
- k. §60.5421 What are my additional recordkeeping requirements for my affected facility subject to VOC requirements for onshore natural gas processing plants
- l. §60.5422 What are my additional reporting requirements for my affected facility subject to VOC requirements for onshore natural gas processing plants
- m. §60.5425 What part of the General Provisions apply to me?
- n. §60.5430 What definitions apply to this subpart

Recordkeeping

- C. The permittee shall maintain an approximate inventory record of fugitive emission sources at the facility. The record shall include the material handled for each fugitive source group, along with the following data sets for each fugitive component type: service (gas, heavy oil, light oil, and water/oil), component count, emission factor, and VOC content in weight percent. [OAC 252:100-43]

SECTION VIII. Facility-wide Requirements

The following specific conditions apply facility-wide. [OAC 252:100-43]

Emission Calculations

- A. For emission sources qualified as a de minimis facility under OAC 252:100, Appendix H, (other than storage tanks and combustion equipment), the permittee may calculate emissions or assume emissions are 5 TPY for each regulated pollutant emitted by each listed source. Emissions related to start-up and shutdown shall be included as part of the facility-wide total.

Oklahoma Air Pollution Control Rules

- B. Gas-fired combustion equipment operated under this permit shall be fueled only with liquid petroleum gas (LPG) or natural gas with a maximum total sulfur content of 162 ppmvd. Compliance shall be demonstrated at least once annually and may be demonstrated by one of the following recordkeeping requirements. [OAC 252:100-43]

- 1. For gaseous fuel, a current gas company bill or a current gas contract, tariff sheet, or transportation contract for the natural gas fuel which demonstrates that the maximum total sulfur content of the natural gas fuel does not exceed 20 grains/100 scf.
- 2. Technical data or gas sampling data demonstrating that the maximum total sulfur content of natural gas from the facility's production area does not exceed 20 grains/100 scf.

3. Representative fuel sampling data (including on-line analyzer data, lab analysis, or sampling by Draeger tubes), which show that the maximum total sulfur content of the natural gas fuel does not exceed 20 grains/100 scf. The fuel shall be sampled and results recorded once each calendar year.

- C. Liquid-fired combustion equipment operated under this permit shall be fueled only with gasoline, diesel or No. 2 through No. 6 fuel oil. Liquid fuels are limited to a maximum of 0.05% sulfur by weight, except for CI ICE that are subject to 40 CFR Part 60 Subpart IIII and RICE that are subject to 40 CFR Part 60 Subpart JJJJ, which must use fuel that meets the more stringent requirements of those subparts (see Part II, Sections IV.P and IV.S). The permittee shall provide with the application a fuel composition analysis that shows total sulfur content. Thereafter, the permittee shall perform a fuel analysis that shows total sulfur content once per load received and shall maintain records of the required fuel sulfur analysis. A one-time certification of sulfur content of a grade of fuel, with subsequent receipts stating the fuel grade delivered from the supplier, is sufficient to document compliance with this requirement. A new certification shall be obtained from each new supplier. [OAC 252:100-43]

- D. Open burning of refuse and other combustible material is prohibited except as authorized in the specific examples and under the conditions listed in OAC 252:100-13. [OAC 252:100-13]

- E. Emission units, and control devices associated with any emission units constructed under this permit, shall comply with all applicable requirements of OAC 252:100-43, Testing, Monitoring, and Recordkeeping, and Appendix A of this permit. [OAC 252:100-43]

- F. The permittee shall install, use, and maintain such monitoring equipment as specified in Appendix A of this permit, except as otherwise specified elsewhere in this permit or in an Authorization, or in applicable rules or statutes. [OAC 252:100-43]

- G. The permittee shall document that all testing is conducted using methods specified in 40 CFR Parts 51, 60, 61, or 63, as applicable, or as otherwise specified in this permit or in an Authorization. A copy of these records shall be retained with the records containing the facility's test results. [OAC 252:100-43]

- H. The permittee shall implement reasonable precautions or measures to minimize fugitive dust emissions from the handling, transporting or disposition of any substance or material which is likely to be scattered by the air or wind or is susceptible to being airborne or wind-borne. In addition, the permittee shall not cause or permit the discharge of any visible fugitive dust emissions beyond the property line in such a manner as to damage or to interfere with the use of adjacent properties, or to cause or contribute to the violation of ambient air quality standards. [OAC 252:100-29]

Recordkeeping

- I. The permittee shall maintain records of emissions, including facility-wide 12-month rolling totals of NO_x, CO, VOC, and HAP emissions, and any compliance demonstrations required by this permit. An emissions record shall describe calculated emissions of regulated air pollutants from all emission units. This record shall include the emission unit identification number, control method used, operating hours, and other operating parameters as specified in specific conditions for each particular emission unit. A copy of the records or a summary including sample calculations shall be submitted with the application for an Authorization to Operate under this permit. [OAC 252:100-43]
- J. The permittee shall keep documents demonstrating the sulfur content of any fuel burned per paragraphs B and C of this section. [OAC 252:100-43]
- K. The permittee shall maintain an equipment inventory. Such inventory shall be updated each time there is any change to any facility equipment (i.e., addition, removal, or replacement) that is subject to this permit, except for the fugitive components addressed in Section VI. The records shall include the equipment description, equipment serial or identification number, date of the change, description of the change, NSPS and/or NESHAP applicability, and a calculation of the potential to emit of the facility. A copy or summary of this record shall be provided with any application for a minor source construction permit or an application for an Authorization. If equipment is being added subject to NSPS or NESHAP that has not undergone the initial compliance demonstration as required by 40 CFR 60.8, the notification shall include a date and time for such required demonstration. [OAC 252:100-43]

PART 3 – SCHEDULE OF COMPLIANCE

Any facility reporting non-compliance in an application for Authorization under this permit must submit with such application a schedule of compliance for emission units or stationary sources that are not in compliance with all applicable air pollution rules.

- A. This schedule shall include a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance with any applicable air pollution rules for which the emission unit or stationary source is not in compliance.
- B. This compliance schedule shall correspond to and be at least as stringent as that contained in any judicial consent decree or administrative order to which the emission unit or stationary source is subject.
- C. Any such schedule of compliance shall be supplemental to, and shall not sanction non-compliance with, the applicable air pollution rules on which it is based.
- D. The approvable schedule of compliance may be incorporated into an Authorization if such is issued to the facility.
- E. The permittee of a facility that is operating subject to a schedule of compliance shall submit to AQD progress reports at least semi-annually. The progress reports shall contain dates for achieving the activities, milestones, or compliance required in the schedule of compliance and the dates when such activities, milestones, or compliance was achieved. The progress reports shall also contain an explanation of why any dates in the schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.

Part 4 – STANDARD CONDITIONS

SECTION I. DUTY TO COMPLY

The permittee shall comply with all conditions of this permit and any Authorizations issued hereunder. This permit does not relieve the holder of the obligation to comply with other applicable federal, state, or local statutes, regulations, rules, or ordinances. Any permit non-compliance shall constitute a violation of the Oklahoma Clean Air Act and shall be grounds for enforcement action, for revocation of the approval to operate under the terms of this general permit, or for denial of an application to operate under the terms of this general permit.

[OAC 252:100-7-15(e) and 7-18]

**SECTION II. FACILITY MODIFICATIONS AND MODIFICATION OF
AUTHORIZATIONS UNDER THE TERMS OF THE GENERAL
PERMIT**

- A. An Authorization shall be corrected if any applicable emission limitation or standard is found to be absent or is found to be in error. Correction of an Authorization shall not change the Effective Date of the Authorization.
- B. The permittee shall obtain a major source construction permit for any modification that would cause an existing facility to no longer be classified as a minor facility.
[OAC 252:100-7-15(a)]
- C. The permittee shall obtain a minor source construction permit for any modification described under Part 1, Section III.C of this permit. Facility modifications may be constructed without a new Authorization, or without a construction permit, provided that the modification will not increase emissions above the authorized limits (i.e., 80TPY or 100TPY depending on the Class. If the facility status will not be changed and a new authorization is not required then the permittee will only need to notify the DEQ in writing of the modification within 10 days following the start of operation.
[OAC 252:100-7-18(a)]
- D. The permittee shall apply for a new Authorization to Operate within 180 days of commencing operation of any modified facility authorized under a minor source construction permit or an Authorization to Construct issued under this permit, except for a de minimis facility under OAC 252:100, Appendix H.
[OAC 252:100-7-18(a)]
- E. The permittee shall apply for either a new Authorization to Operate or a relocation permit to relocate any portable source authorized under this permit. A facility must still meet the eligibility requirements of Part 1, Section III at the new location to use the general permit.
[OAC 252:100-7-17]

- F. An Authorization to Construct issued under this permit will terminate and become null and void if the construction is not commenced within 18 months of the issuance date, or if work is suspended for more than 18 months after it is commenced.

[OAC 252:100-7-15(f)]

SECTION III. REPORTING OF DEVIATIONS FROM PERMIT TERMS

In the event of any release which results in excess emissions, or when periodic compliance testing shows engine exhaust emissions in excess of the lb/hr limitations, the permittee shall comply with the provisions of OAC 252:100-9.

[OAC 252:100-9]

SECTION IV. MONITORING, TESTING, RECORDKEEPING & REPORTING

- A. The permittee shall keep a permanent copy of the Authorization to Operate, with the latest Notice of Modification attached, either on-site, at a nearby manned facility, or at the nearest field office. The permittee shall keep records as specified in this permit and any Authorization issued under this permit, including a copy of all Notices of Modification. These records, including monitoring data and support information, shall be retained either on-site, at a nearby manned facility, or at the nearest field office for a period of at least five years unless a longer period is specified by an applicable rule or statute. Support information includes all original recordings for continuous monitoring instrumentation and copies of all reports required by this permit or the Authorization. Records may be maintained in paper, electronic, or computerized form.

[OAC 252:100-5-2.1(c); OAC 252:100-7-15; OAC 252:100-7-18]

- B. Any owner or operator subject to provisions of NSPS shall provide written notification as follows. However, a Notice of Modification that is timely submitted (within 10 days of start-up) shall suffice for notification under items 1, 2, and 3.

[40 CFR §60.7]

1. A notification of the date of when construction of an affected facility will be commenced postmarked no later than 30 days after such date. This requirement shall not apply in the case of mass-produced facilities which are purchased in completed form.
2. A notification of the actual date of initial start-up of an affected facility postmarked within 15 days after such date.
3. A notification of any physical or operational change to an existing facility which may increase the emission rate of any air pollutant to which a standard applies, unless that change is specifically exempted under an applicable subpart or in 40 CFR 60.14(e). This notice shall be postmarked 60 days or as soon as practicable before the change is commenced and shall include information describing the precise nature of the change, present and proposed emission control systems, productive capacity of the facility before and after the change, and the expected completion date of the change.

4. If a continuous emission monitoring system is included in the construction, a notification of the date upon which the test demonstrating the system performance will commence, along with a pretest plan, postmarked no less than 30 days prior to such a date.
- C. Any owner or operator subject to the provisions of NSPS shall maintain records of the occurrence and duration of any start-up or shutdown of the process containing such affected facilities, and shall record malfunctions in the operation of an affected facility or any malfunction of the air pollution control equipment, or any periods during which a continuous monitoring system or monitoring device is inoperative. [40 CFR §60.7(b)]
- D. Any owner or operator subject to the provisions of NSPS shall maintain a file of all measurements and other information required by the subpart recorded in a permanent file suitable for inspection. This file shall be retained for at least two years following the date of such measurements, maintenance, and records. (Per paragraph A above, records shall be maintained for five years). [40 CFR §60.7(f)]
- E. All testing must be conducted by methods approved by the Executive Director under the direction of qualified personnel. All tests shall be made and the results calculated in accordance with test procedures described or referenced in the permit and approved by Air Quality. [OAC 252:100-43]
- F. The permittee shall document that all testing is conducted using methods specified in 40 CFR Parts 51 (SIP), 60 (NSPS), 61 (NESHAP), and 63 (MACT), as applicable, or as otherwise specified in this permit or in an Authorization. A copy of these records shall be retained with the facility's testing records. [OAC 252:100-43]
- G. If the permittee monitors any pollutant more frequently than required by this permit, the results of this monitoring shall be included in the calculations used for determining compliance with the conditions of this permit. [OAC 252:100-43-6]
- H. The permittee shall submit to AQD a copy of all reports submitted to EPA as required by 40 CFR Part 60, 61, and 63 for all equipment constructed or operated under this permit subject to such standards. [OAC 252:100-4 and 41-15]

SECTION V. REQUIREMENTS THAT BECOME APPLICABLE DURING THE PERMIT TERM

Any Authorization issued after the effective date of a new or modified requirement or standard applicable to a unit located at the facility, may incorporate such requirement or standard, which shall supersede any corresponding permit requirement that is less stringent than the newer requirement or standard. [OAC 252:100-7-15(a); OAC 252:100-7-18]

SECTION VI. ANNUAL EMISSIONS INVENTORY AND FEE PAYMENT

The permittee shall file with the AQD an annual emission inventory and shall pay annual fees based on emission inventories or allowable emissions. [OAC 252:100-5]

SECTION VII. SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby.

SECTION VIII. PROPERTY RIGHTS

- A. This permit does not convey any property rights of any sort or any exclusive privilege.
- B. This permit shall not be considered in any manner affecting the title of the premises upon which the equipment is located and does not release the permittee from any liability for damage to persons or property caused by or resulting from the maintenance or operation of the equipment for which the permit is issued.

SECTION IX. DUTY TO PROVIDE INFORMATION

- A. The permittee shall furnish to the DEQ upon receipt of a written request and within sixty (60) days of the request, unless the DEQ specifies another time period, any information that the DEQ may request to determine whether cause exists for modifying, reopening, or revoking and reissuing or terminating the permit or to determine compliance with the permit or the Authorization. [27A O.S. Supp. 1999, § 2-5-105(18)]
- B. The permittee may make a claim of confidentiality for any information or records submitted pursuant to 27A O.S. Supp. 1999, § 2-5-105(18). Confidential information shall be clearly labeled as such and shall be separable from the main body of the document such as in an attachment.
- C. The transferor shall notify the AQD of the sale or transfer of ownership of this facility in writing not later than 30 days following the change in ownership. [Title 27A-2-5-112.G)]

SECTION X. DUTY TO SUPPLEMENT

The permittee, upon becoming aware that any relevant facts were omitted or incorrect information was submitted in any information submittal, shall promptly submit such supplementary facts or corrected information. [OAC 252:100-4-7-8]

SECTION XI. REOPENING, MODIFICATION, AND REVOCATION

- A. This permit may be modified, revoked, reopened and reissued, or terminated for cause. The filing of a request by the permittee for a permit or an Authorization modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated non-compliance does not stay any permit condition.

[27A O.S. Supp. 1999, § 2-5-112(B)(1)]

- B. The permitting authority will reopen and revise or revoke this permit as necessary to remedy deficiencies if the DEQ or the EPA determines that this permit contains a material mistake or that the permit must be revised or revoked to assure compliance with the applicable air pollution rules.

[27A O.S. Supp. 1999, § 2-5-112(B)(3)]

- C. Upon issuance of this permit, the terms and conditions of this updated Oil and Gas General Permit supersede all previous versions of the Oil and Gas General Permit. All Facilities constructing or operating under the previous Oil and Gas GP are subject to and must comply with this updated Oil and Gas GP, and must come into compliance with the provisions of this updated Oil and Gas GP within 24 months of its issuance date. During that 24-month compliance period, all facilities constructing or operating under the previous Oil and Gas GP must meet the minimum compliance standards set forth therein.

[27A O.S. Supp. 2004, §2-5-112(B)(1)]

SECTION XII. INSPECTION AND ENTRY

Upon presentation of credentials and other documents as may be required by law, the permittee shall allow authorized officials of the DEQ to perform the following (subject to the permittee's right to seek confidential treatment pursuant to 27A O.S. Supp. 1999, § 2-5-105 (18) for confidential information submitted to or obtained by the DEQ under this section).

[27A O.S. Supp. 1999, § 2-5-105]

- A. Enter upon the permittee's premises during reasonable/normal working hours where a source is located or emission-related activity is conducted, or where records must be kept under the conditions of the permit or the Authorization;
- B. Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit or the Authorization;
- C. Inspect, at reasonable times and using reasonable safety practices, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit or the Authorization; and
- D. Sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit or the Authorization.

SECTION XIII. DE MINIMIS FACILITIES

The permittee is hereby authorized to operate emission sources and/or conduct activities that are listed on the "De Minimis Facilities" list in OAC 252:100, Appendix H.

SECTION XIV. GENERAL PROVISIONS UNDER NSPS AND NESHAPS

The permittee shall comply with all applicable requirements of the corresponding General Provisions, as set forth in 40 CFR Part 60 Subpart A, 40 CFR Part 61 Subpart A, and 40 CFR Part 63 Subpart A, for all equipment constructed or operated under this permit subject to NSPS or NESHAP. [OAC 252:100-4]

SECTION XV. STRATOPHERIC OZONE PROTECTION 40 CFR PART 82

The permittee shall comply with all applicable requirements of 40 CFR Part 82 Subparts A through H for the use of ozone-depleting substances, especially regulated refrigerants; and the maintaining, servicing, and repairing of any equipment using such substances.

SECTION XVI. UPDATE OF AUTHORIZATION TO OPERATE

AQD reserves the right to require a facility to apply for an updated Authorization to Operate in order to clarify the Authorization based on a substantial number of Notices of Modification.

**APPENDIX A – CONSTRUCTION, OPERATION, MAINTENANCE, AND
MONITORING REQUIREMENTS FOR CONTROL DEVICES**

- A. All control devices shall be constructed, operated, and maintained according to manufacturers’ specifications, except as otherwise required by this permit, an Authorization, or applicable rules or statutes. Manufacturer’s specifications shall be kept on-site or at the closest field office and made available to regulatory personnel upon request.
- B. Non-selective catalytic reduction (NSCR) systems shall, at a minimum, be constructed with an Air-to-Fuel Ratio Controller (AFRC) that operates on exhaust oxygen sensor control, with a sensor to measure the inlet temperature to the catalyst.
- C. Oxidation catalyst systems shall, at a minimum, be constructed with a sensor to measure the inlet temperature to the catalyst.

Maximum Allowed Control Efficiency	Requirements
Control Device : Catalytic converters	
Manufacture guarantee as stated in application (Not to exceed 90%)	<ul style="list-style-type: none"> • Use a portable analyzer to monitor nitrogen oxides, CO and oxygen concentration in the exhaust stream of the control device. <ul style="list-style-type: none"> ▪ The portable analyzer shall be operated in accordance with the requirements of the latest AQD “Portable Analyzer Guidance” document or an equivalent method approved by the AQD. ▪ Testing shall be performed quarterly • Monitoring device shall be installed to record the inlet flue gas temperature to the catalyst and be measured at least once daily. <ul style="list-style-type: none"> ▪ Each monitoring device shall be calibrated at a frequency in accordance with the manufacturer’s specifications or other written procedures that provide an adequate assurance that the device is calibrated accurately.
Control Device : Oxidation Catalysts	
H ₂ CO reduction = CO reduction (Not to exceed 90%)	<ul style="list-style-type: none"> • Meet requirements listed above for catalytic converters.

D. Condensers shall be constructed with a temperature sensor in the outlet and designed to achieve the expected removal efficiency at the maximum expected condenser outlet temperature, unless all vapor from the condenser is combusted or recycled to the process.

Maximum Allowed Control Efficiency	Requirements
Control Device : Condenser	
≤ 90% for VOC's and HAP's	<ul style="list-style-type: none"> • Have exhaust temperature monitored at the outlet of the condenser <ul style="list-style-type: none"> ▪ Exhaust temperature at 120° for a max efficiency of 90% ▪ Monitored exhaust temperature monthly • Must be maintained and operated as specified by the manufacturer or design engineering. • Not followed by further control such as reboilers, flares or glowplugs. If such controls are installed, greater than 90% destruction may be applied if meeting the device requirements of the control selected.

Maximum Allowed Control Efficiency	Requirements
Control Device : Combustion device such as reboiler or heater	
≤ 50% for VOC's and HAP's	<ul style="list-style-type: none"> • Have waste gas delivered to the flame zone/firebox
< 98% for VOC's and HAP's	<ul style="list-style-type: none"> • Must meet requirements to claim 90% destruction efficiency as described by the condenser table and • Have the waste gas pre-mixed with the primary fuel gas and used to fuel the device or • Routed to the facility inlet or • Utilize a glow plug and maintain per operators/manufacturer's instructions

E. Flares shall be constructed with a sensor to measure temperature, designed to achieve the expected removal efficiency, and there must be a pilot flame present immediately before and during use.

Maximum Allowed Control Efficiency	Requirements
Control Device : Flares or enclosed combustion device	
<p>≤ 98% for VOC's, HAP's and H₂S</p>	<ul style="list-style-type: none"> • Meet 40 CFR §60.18 requirements for minimum heating value and maximum flare tip velocities • Be operated with a flame present at all times by having a continuous pilot flame or an automatic ignition system <ul style="list-style-type: none"> ▪ Presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame, and ▪ Records of the pilot flame(s) outages and/or flare downtime shall be maintained • Monitors must be accurate to and calibrated at the frequency in accordance with manufacturers specifications • Be designed for the variability of the waste gas stream it controls

**APPENDIX B - DEMONSTRATION OF MAXIMUM H₂S CONCENTRATION IN
CRUDE OILS**

For the general permit, a facility must demonstrate that the maximum H₂S concentration of any category of crude oil stored at the facility is no more than 135 ppmw. To do this, each category of crude oil handled at a facility shall be characterized by name using the standard terminology used in the petroleum industry to describe crude oils from specific locales and having similar characteristics, such as (but not limited to) "US-West Texas Sour," "US-Oklahoma Sour," "US-Mid Continent," "Kirkuk," "Hawkins," etc. A permit applicant may demonstrate the maximum expected H₂S concentration in each category of crude oil stored at the facility by one of three methods, subject to approval of AQD:

- A. Certification by a responsible official in the permit application that only "sweet" crude oil is stored at the facility or that the maximum H₂S concentration of any "sour" crude oil stored at the facility is no more than 135 ppmw. "Sweet" crude oil is defined as having a total sulfur content of less than 0.5 wt%.
- B. Documentation from a Crude Oil Assay Library or assays from the crude oil producer, seller, or buyer, that demonstrate that only "sweet" crude oil is stored at the facility or that the maximum H₂S concentration of any "sour" crude oil stored at the facility is no more than 135 ppmw.
- C. Sampling by the applicant for H₂S concentration. Test methods may include UOP 163-89, ASTM D 5705 (the so-called "can test"), liquid phase H₂S analyzers, or lab certified liquid phase methods. For an initial compliance demonstration, one sample is required for each category of sour crude oil that requires sampling for compliance documentation, i.e., not demonstrated by A or B above. If the initial sample shows an H₂S concentration of 75 ppmw or less, then no more sampling is required for that category of sour crude oil. Otherwise, that category of crude oil must be sampled again, once each week for four weeks, and an average of the four samples calculated. If the average H₂S concentration is no more than 135 ppmv, compliance for that category of sour crude oil is demonstrated. This sampling procedure must be repeated in the future for any new category of sour crude oil stored at the facility that requires sampling for compliance with the 135 ppmw H₂S limit.

APPENDIX C - DEFINITIONS

The following definitions apply to this memorandum and general permit. All defined terms are written with initial capital letters in the memorandum and permit.

“Certified Engine” means any engine that has been certified by the EPA to meet emissions standards for the purposes of meeting a NSPS or NESHAP.

“Class I” means a facility that has an enforceable limit less than 80% of major source levels for each regulated air pollutant.

“Class II” means a facility that has an enforceable limit of less than 100% of major source levels for each regulated air pollutant and is not a Class I facility.

“Engine” means any reciprocating internal combustion engine or any gas-fired turbine.

“Emergency Use Engine” means any engine that drives an emergency power generator, peaking power generator, firewater pump, or other emergency use equipment, and operates less than or equal to 500 hours per year.

“Emissions Limited Engine” means any engine that has pounds per hour emission limitations specified under the conditions of an Authorization. Pound per hour emission limits shall be established for all engines located at a Class II facility and for all controlled engines, except for engines subject to NSPS which have federally enforceable emission limits.

“Maximum Rated Horsepower” means an engine’s maximum horsepower at ISO or manufacturer’s standard conditions and maximum RPM, or an engine’s maximum horsepower at engine site conditions and maximum RPM.

“Notice of Modification” means a written notice informing AQD of: (1) any modification or change of operations at the facility that would add a piece of equipment or a process that is subject to NSPS or NESHAP, or that would modify a piece of equipment or a process such that it becomes subject to NSPS or NESHAP, or that would change its facility classification (either from or to a True Minor Facility, a Class I Facility or a Class II facility); or (2) any modification to add a storage tank with a capacity of 400 gallons or more storing VOC, a VOC Loading Operation, any combustion equipment, or any dehydration unit; or (3) any modification to change the hourly emissions limitations of an Emissions Limited Engine; or (4) any modification to add, modify, reconstruct, or replace an engine. Such notice shall contain calculations of the facility’s new facility-wide potential to emit; the change in the facility’s classification, if any; and the engine’s potential to emit (g/hp-hr, lb/hr, and TPY) for all engines at the facility. Any emissions limits for NO_x and CO (lb/hr) cited in the latest Notice of Modification, for any Emissions Limited Engine, become permit limitations for that engine and an enforceable part of the existing Authorization to Operate. The permittee shall attach a copy of the latest Notice of Modification to a copy of the Authorization to Operate kept either on site, at a nearby manned facility, or at the nearest field office.

“Representative Extended Wet Gas Analysis” means an extended analysis (using GPA 2286 or similar approved methods) that provides speciated data for HAP components benzene, toluene, ethyl benzene, xylenes, and n-hexane. The sample must be representative of the maximum expected HAP content for normal operations of the glycol dehydrator or amine unit.

“Synthetic Minor Facility” means a facility that has the potential to emit over major source levels of any regulated air pollutant but with controlled actual emissions below major source levels.

“True Minor Facility” means a facility that has the potential to emit less than or equal to 80 TPY each of NO_x and CO.

“Uncontrolled Engine” means an engine, with or without an Air to Fuel Ratio Controller, that has no catalytic or oxidation catalyst control.

“VOC Loading Operation” means loading liquid VOC into a tank truck or trailer for transportation off-site or unloading of liquid VOC from a tank truck or trailer to a storage tank on-site. A VOC Loading Operation does not have the physical equipment (loading arm and pump) to conduct the type of loading regulated by OAC 252:100-37-16 and 100-39-41 for VOC loading facilities, even though it may or may not use tank trucks or trailers that meet the requirements for delivery vessels in OAC:252-100-39-41(d).

“Voluntary Controls” means facilities not requesting the use of control devices for compliance with emissions cap or federal limits.

APPENDIX D - SUMMARY OF ENGINE EMISSIONS TEST REQUIREMENTS

Engine Classification	One Time Initial Emissions Test?	Hourly Emission Limits?	Quarterly Emissions Tests?
All Emergency Use Engines	No	No	No
All Certified Engines	No	No	No
Uncontrolled Engines less than 100 HP	Yes	No	No
Uncontrolled Engines greater than 100 HP at a True Minor Facility	Yes	No	No. Must keep maintenance records for the engine.
All Other Uncontrolled Engines	Yes	Yes	Yes, initially. May go to semi-annual and then to annual upon consecutive tests demonstrating compliance.
All Other Controlled Emissions Limited Engines	Yes	Yes	Yes, plus monthly assurance monitoring (MAM) for rich-burn engines per Section IV.E of the specific conditions.