Guidance Policy for Establishing Legally and Practically Enforceable Emission Limits for Storage Vessels of Oil, Condensate and Produced Water

North Dakota Department of Health
Division of Air Quality

I. PURPOSE

The purpose of this Guidance Policy and Procedure (Guidance) is to provide an additional approach that may be used to establish legally and practically enforceable volatile organic compound (VOC) emission limits for storage vessels in the Oil and Gas Sector. This policy applies only to the emissions of VOCs from storage vessels; if storage vessel emissions contain other regulated pollutants, they must follow all applicable rules.

This Guidance may be used for any crude oil, condensate, intermediate hydrocarbon liquids and produced water storage vessels installed on or after August 23, 2011. This guidance is not intended to conflict, replace, modify, supplement or supplant any other pre-established mechanism that provides legally and practically enforceable limits for storage vessels, including the Bakken Pool Oil and Gas Production Facilities Air Pollution Control Permitting and Compliance Guidance (hereafter referred to as the Bakken Pool Guidance).

II. BACKGROUND

A. Introduction

All facilities with the potential to emit VOCs operating in North Dakota must comply with Chapter 33-15-07 of the North Dakota Air Pollution Control Rules (NDAPCR), which has been approved as part of the North Dakota State Implementation Plan. The Environmental Protection Agency (EPA) has also developed the federal New Source Performance Standard (NSPS) Subpart OOOO which establishes requirements for storage vessels. This Guidance provides a mechanism to establish enforceable emission limits to comply with requirements of Chapter 33-15-07 of the NDAPCR and NSPS Subpart OOOO.

The creation of this Guidance was a coordinated effort between the North Dakota Department of Health (NDDH) and the Storage Vessel Task Force, which is comprised of certain members from industry. Nothing in this Guidance is intended to relieve owners and operators of the responsibility to comply with all state and federal environmental laws and rules.

B. Applicability

EPA has determined that each storage vessel constructed after August 23, 2011 that emits VOC emissions with or without controls at less than 6 tons per year (TPY) VOC into the atmosphere is not an affected facility subject to control requirements under NSPS Subpart OOOO if there is a legally and practically enforceable limit in place (40 CFR §60.5395(e)). This guidance provides a means of establishing a legally and practically enforceable VOC emission limit of 6 TPY applicable to storage vessels in the Oil and Gas Sector.

Chapter 33-15-07 of the NDAPCR has been approved by the EPA as part of the North Dakota State Implementation Plan and, as a result, is federally enforceable. Subsection 33-15-07-02.1 of the NDAPCR states, “No person may cause or permit the emission of

organic compounds gases and vapors, except from an emergency vapor blowdown system or emergency relief system, unless these gases and vapors are burned by flares, or an equally effective control device as approved by the department. Minor sources, as determined by the department and not subject to New Source Performance Standards (NSPS), may be granted exemptions to this subsection."

Storage vessels that comply with this Guidance are considered by the NDDH to be adequately controlled and in compliance with Subsection 33-15-07-02.1 of the NDAPCR.

This Guidance was developed for storage vessels at non-production facilities. The Bakken Pool Guidance establishes guidance for storage vessels at production facilities and the NDDH Registration for Oil/Gas Production Facility form provides an option for limiting storage vessel emissions from each tank at the production facility to less than 6 TPY VOCs. Given that this option exists to limit emissions from tanks at production facilities, usage of this Guidance by production facilities is not necessary.

C. Potential to Emit

Environmental Protection Agency regulations define "potential to emit" (PTE) as: "The maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable." The definition of "potential to emit" included in the NDAPCR is consistent with the definition included in EPA regulations. Based upon the definition of potential to emit, the PTE of VOCs and the associated HAPs are calculated post-controls.

III. GUIDANCE PROCEDURES

To register, the owner/operator of a storage vessel shall submit a "Certification and Registration for Legally and Practically Enforceable Limits of Less Than 6 TPY VOC Per Storage Vessel" (Cover Letter and Spreadsheet) on forms provided by the NDDH to add or remove the applicability of legally and practically enforceable limits to or from any specific storage vessel.

A. Emission Calculations

Emissions from each storage vessel shall be limited to less than 6 TPY VOC on a 12-month rolling total basis as established in this Guidance, or shall be controlled to 95% for those storage vessels subject to the control requirements of NSPS Subpart OOOO. Storage vessels with emissions of less than 6 TPY of VOCs will be considered adequately controlled under Ch. 33-15-07. Demonstration of compliance with the VOC emission limit shall be determined based on either no control as described in item III.A.1 below, vapor recovery as described in item III.A.2, or the control type described in item III.A.3. Emissions shall be calculated using records of monthly storage vessel throughput, and any model or calculation methodology for working, breathing and flashing emissions that are generally accepted under NSPS Subpart OOOO. The permittee shall maintain, for a period of five (5) years, records of monthly storage vessel

throughput and emissions calculations used to demonstrate compliance, including records of all periods of uncontrolled venting.

1. When the storage vessel vapors are less than 6 TPY due to throughput or inherent design limitations, records must be maintained to log storage vessel throughput and engineering calculations must be made. The throughput can be determined by estimating daily throughput based on the previous monthly production or other NDDH-approved method.

2. When the storage vessel emissions are recovered utilizing a vapor recovery unit (VRU):

   (a) In the demonstration of compliance with the VOC emission limit, a properly installed and operated vapor recovery unit (VRU) is considered to recover 100% of the VOC emissions during the time the VRU is operational.

   (b) When the VRU is not operational, records must be maintained to log storage vessel throughput during the downtime and engineering calculations must be made. The throughput can be determined by not transferring oil or condensate during the downtime; gauging the storage vessel before and after the downtime; or, estimating daily throughput based on the previous monthly production or other NDDH-approved method.

3. When the storage vessel emissions are controlled utilizing a flare or enclosed combustion device, or other equivalent control device:

   (a) The presence of a pilot flame shall be monitored using a thermocouple or any other equivalent device, and records of pilot flame outages and/or control device downtime shall be maintained.

   (b) For each flare or enclosed combustion device with an automatic igniter in lieu of a pilot, the igniter shall be monitored weekly by listening for the actuator to make sure that it is in operation.

   (c) The control device shall be operated according to the manufacturer's specifications.

   (d) Records must be maintained to log storage vessel throughput and engineering calculations must be made. During periods when the flare or enclosed combustion device is operational, the VOC emission estimates may be calculated using 95% VOC destruction efficiency. When the flare or enclosed combustion device is not operational, throughput can be determined by not transferring oil or condensate during the downtime; gauging the storage vessel before and after the downtime; or, estimating daily throughput based on the previous monthly production or other NDDH-approved method.

B. **Storage Vessel Registration**

1. To provide legally and practically enforceable emission limits to less than 6 TPY of VOCs for each storage vessel subject to this Guidance, complete the Certification and Registration for Legally and Practically Enforceable Limits of Less Than 6 TPY VOC Per Storage Vessel (Cover Letter and Spreadsheet) found at: http://www.ndhealth.gov/AQ/airhomepage.htm and send them to the following address:

   North Dakota Department of Health
   Division of Air Quality
   918 E. Divide Ave, 2nd Floor
   Bismarck, ND 58501-1947

2. For NSPS Subpart OOOO Group 1 Storage Vessels subject to this Guidance, constructed between 8/23/2011 and 4/12/2013, emissions must be maintained at less than 6 TPY VOC and registration must be made by 10/15/2013 to be eligible for the voluntary program.

3. For NSPS Subpart OOOO Group 2 Storage Vessels subject to this Guidance, constructed on or after 4/12/2013, registration must be made by 4/15/2014 or before 30 days after the start of operation, whichever comes later, to be eligible for the voluntary program.

C. **Compliance**

The following are actions and statements that an operator who wishes to be subject to this Guidance must follow.

1. No later than 30 days after registration, the operator must place on the storage vessel a label with the following information (specific to the storage vessel):

   Operator
   Operator Contact and Contact Information
   Storage Vessel Unique Identifier
   Storage Vessel Location (GPS coordinates)
   Storage Vessel Contents
   Notice that VOC Emissions are less than 6 TPY
   Date of Submission of Registration
   Type of Control Device

2. The label must be easily legible from outside the containment berm, at approximately 6 feet above grade. Storage vessels without the label will be considered in violation of the Guidance and subject to enforcement.

3. The Department may require the operator to take a photograph of the site, the storage vessel, and the label to submit to the Department at any time it requests. Requests for photographs require a response be submitted electronically (email, fax) to the Department within two (2) business days of the operator receiving the request.

Failure to follow the above requirements will be considered a violation of the Guidance and will subject the owner/operator to enforcement action.

D. **Eligibility**

1. Records of any changes in storage vessel ownership, contents, emissions, and additions of storage vessels must be maintained by the company who first opted into the program. These changes and additions will need to be submitted to the Department within 45 days by listing the changes on an updated copy of the registration spreadsheet. Upon new storage vessel ownership, compliance by the new owner/operator must begin upon closing continuing where the previous owner ended. The new owner/operator must keep the same unique storage vessel identifier as the previous company or provide a legend to correlate the new unique identifiers with the previous ones.

2. If a storage vessel exceeds 6 TPY VOC, it becomes ineligible for this voluntary program.

3. NDDH reserves the right to remove a storage vessel, the facility and/or the operator from this voluntary program if a storage vessel is not in compliance with any of the calculation, registration or compliance items in this Guidance.

4. If an operator wishes to opt out of this voluntary program, they will need to document this in writing to the Department.

5. The Department at its discretion may determine that a storage vessel, location, or operator is not eligible for this program. The Department at its discretion may modify this program.

Approved:  Date: October 9, 2013

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