

AIR POLLUTION CONTROL PERMIT TO CONSTRUCT

Permittee Name: ONEOK Rockies Midstream, L.L.C.	Permit Number: ACP-18280 v1.0
Permittee Address: 100 W Fifth Street Tulsa, OK 74103	Source Description: Synthetic Minor Source Area HAP Source
Source Name & Location: Tree Top Compressor Station NW ¼ NW ¼, Sec. 23, T142N, R100W Lat/Long 47.109306, -103.32785 Billings County, North Dakota	Source Type: Compressor Station
Date of Application:	N/A (Department Initiated)

Pursuant to Chapter 23.1-06 of the North Dakota Century Code, the North Dakota Air Pollution Control Rules (North Dakota Administrative Code [NDAC] 33.1-15), and in reliance on statements and representations heretofore made by the permittee (i.e., owner) designated above, a Permit to Construct (PTC, also referred to as 'permit') is hereby issued authorizing such permittee to construct and initially operate the source unit(s) listed in Condition 1 at the location designated above. The source may be operated under this PTC until a Permit to Operate (PTO) is issued. This PTC is subject to all applicable rules and orders now or hereafter in effect of the North Dakota Department of Environmental Quality (Department), state and federal regulations, and to any conditions specified below:

Date: _____

James L. Semerad
Director
Division of Air Quality

1. Project and Facility Emission Units:

This PTC does not affect the operation of the facility emissions units and does not allow for the construction of any new equipment at the facility. As a result of this permit action, the existing compressor engines (EUs C1 through C3) and condensate storage tanks (EUs T1, T2, T3, T8, & T9) will be subject to federally enforceable synthetic minor emission limits as requested by ONEOK Rockies Midstream, L.L.C. Other emission limits were also re-evaluated and updated or rescinded as appropriate. ACP- 18280 v1.0 AQEA details the facility wide emission profile and regulation analysis associated with this permit.

Table 1-1 lists all the permitted emission units associated with Alexander Compressor Station.

Table 1-1 Facility Emission Units

Emission Unit Description	Emission Unit (EU)	Emission Point (EP)	Air Pollution Control Equipment
Superior 8G-825 4SRB natural gas-fired compressor engine rated at 770 hp (MACT ZZZZ)	C1	C1	Non-Selective Catalytic Reduction (NSCR)
Superior 8G-825 4SRB natural gas-fired compressor engine rated at 770 hp (MACT ZZZZ)	C2	C2	NSCR
Caterpillar Model G3516B 4SLB natural gas-fired compressor engine rated at 1,380 bhp manufactured January 4, 2011 (NSPS JJJJ; MACT ZZZZ)	C3	C3	Catalytic Oxidizer
Emergency flare	FL1	FL1	None
Natural gas-fired glycol heater with a maximum rated capacity of 2.0×10^6 Btu/hr	H1	H1	None
Five 400 bbl condensate storage tanks	T1, T2, T3, T8 & T9	FL2	Tank flare (FL2) & submerged fill pipe (SFP)
400 bbl methanol storage tank	MTK10 ^A	MTK10	SFP
Condensate tanks loading operation	TL1	TL1	None
Tank flare	FL2	FL2	None
Fugitive emissions	FUG ^A	FUG	None

^A Insignificant or fugitive emission sources with no specific emission limit

2. **Applicable Standards, Restrictions and Miscellaneous Conditions:**

A. New Source Performance Standards (NSPS):

The permittee must comply with all applicable requirements of the following NSPS subparts, in addition to Subpart A, as referenced in NDAC 33.1-15-12 and Title 40 of the Code of Federal Regulations (CFR) Part 60.

- 1) 40 CFR 60, Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (EU C3). (Applicability of this subpart is not affected with this permit action.)

B. National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Source Categories/Maximum Achievable Control Technology (MACT):

The permittee must comply with all applicable requirements of the following MACT subparts, in addition to Subpart A, as referenced in NDAC 33.1-15-22 and 40 CFR 63.

- 1) 40 CFR 63, Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (EUs C1, C2, & C3). The North Dakota Department of Environmental Quality has not adopted the area source provisions of this subpart. Please send all required reports and documentation to EPA Region 8.

C. Fuel Restrictions:

Natural gas-fired engines (EUs C1, C2, & C3) and glycol heater (EU H1) are restricted to combusting only natural gas containing no more than 2 grains of sulfur per 100 standard cubic feet.

D. Emergency Flare Restrictions (EU FL1):

- 1) The flare shall be operated with a flame present at all times when gas may be directed to the flare. The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame. If a continuous burning pilot is not installed, the flare must be equipped and operated with an automatic ignitor as outlined in NDAC 33.1-15-07-02.
- 2) The permittee shall monitor the flare to ensure that it is operated and maintained in conformance with the manufacturer designs and specifications.
- 3) When it is necessary to operate the flare during emergency, malfunction or maintenance, all precautions shall be taken to minimize emissions and maintain compliance with the applicable ambient air quality standards as outlined in NDAC 33.1-15-02.

E. Closed Vent System (CVS) Requirements:

- 1) Must be designed to collect and route all vapors from the storage vessels (EUs TK1, TK2, TK3, TK8, & TK9) to the control device (100% collection efficiency is assumed during normal operation).
- 2) Must be operated with no detectable emissions, as determined using auditory, visual, and olfactory inspections or optical gas imaging.
- 3) Must be monitored annually.
- 4) If the CVS contains a bypass, the permittee must track hours the bypass is open on a rolling 12-month period and either:
 - a) Secure the bypass in the non-diverting position using a car-seal or a lock-and-key configuration; or,
 - b) Install a flow indicator at the bypass inlet and maintain and operate it with an alarm system that notifies the nearest field office when the bypass opens and vapors are diverted away from the control device. Records of each time the alarm is activated must be maintained for a period of five (5) years.

F. Vapor Combustion Device (VCD)¹ Requirements (EU FL2):

- 1) Must be operated at all times when vapors are vented from the storage vessels (EUs TK1, TK2, TK3, TK8, & TK9) through the CVS to the VCD.
- 2) Must be operated with no visible emissions during normal operations, except for periods not to exceed a total of 1-minute during any 15-minute period.
- 3) Must be equipped and operated with an automatic ignitor or a continuous burning pilot which must be maintained in good working order per NDAC 33.1-15-07-02.
 - a) Pilot flame presence must be monitored using a thermocouple or other equivalent device, and records of pilot flame outages and/or control device downtime must be maintained. If an automatic ignitor is used in lieu of a pilot, the ignitor must be monitored weekly by listening for the actuator to ensure that the ignitor is in operation.
- 4) Records of downtime must be kept on at least an hourly basis and averaged across a rolling 12-month period. Only hours in which potentially recoverable vapors are generated from any controlled storage vessel are considered in this period.

¹ i.e., flare, combustor, or other functionally equivalent combustion control device.

- a) Sub-hourly downtime records must be converted to hourly, where any recorded downtime within the hour makes the whole hour to be considered down.
- 5) Must be operated according to the manufacturer's specifications.

3. Emission Unit Limits:

Emission limits from the operation of the source unit(s) identified in Table 1-1 of this PTC are as follows in Table 3-1. Source units not listed are subject to the applicable emission limits specified in NDAC 33.1-15.

Upon issuance of this permit, the emission limits set forth in all previous Air Permit to Construct Nos., including but not limited to: ACP-17389 v1.0 (PTC11092) are rescinded. The emission limits are replaced with the following:

Table 3-1: Permit Emission Limits

Emission Unit Description	Emission Unit (EU)	Pollutant / Parameter	Emission Limit ^A
Superior engines	C1 & C2	NO _x	5.29 lb/hr
		CO	5.29 lb/hr ^B
		Opacity	20% ^C
Caterpillar engine	C3	NO _x	1.0 g/hp-hr or 82 ppmvd @ 15% O ₂ ^D
		CO	2.0 g/hp-hr or 270 ppmvd @ 15% O ₂ ^D
		VOC	0.70 g/hp-hr or 60 ppmvd @ 15% O ₂ ^D
		Opacity	20% ^C
Glycol heater	H1	Opacity	20% ^C
Emergency flare	FL1	Opacity	20% ^E
Tank flare	FL2	Opacity	0% ^F
Condensate storage tanks	TK1, TK2, TK3, TK8, & TK9	VOC	< 6 tons, Condition 3.A

^A Emission limits apply to each individual emission point.

^B State limit, no other limits apply as unit is remote stationary under MACT ZZZZ.

^C 40% opacity is permissible for not more than one six-minute period per hour.

^D Limits established by 40 CFR 60 Subpart JJJJ.

^E 60% permissible for not more than one six-minute period per hour.

^F Flare shall be designed for and operated with no visible emissions, except for periods not to exceed a total of 1-minute during any 15-minute period.

A. VOC emission restriction for storage vessel grouping (EUs TK1, TK2, TK3, TK8, & TK9) (to remain non-affected facilities under NSPS OOOOa):

- 1) Emissions are restricted to less than 6 tpy per storage vessel (**averaged** across each above storage vessel grouping) on a 12-month rolling basis.
- 2) Emissions must be calculated using records of monthly throughput and any model or calculation methodology for working, breathing, and flashing emissions that are generally accepted under NSPS OOOOa.
- 3) Records of monthly storage vessel battery throughput, emission calculations used to demonstrate compliance, and all periods of uncontrolled releases must be kept for a period of five (5) years.
- 4) Must calculate storage vessel emissions using the following equation:

$$VOC_{post} = VOC_{pre}(1 - DRE \cdot Uptime)$$

Where:

VOC_{post} = VOC emissions in tpy, 12-month rolling average (post-control)

VOC_{pre} = VOC emissions in tpy routed through the CVS (pre-control)

DRE = destruction efficiency during uptime (96%)

$Uptime$ = hours that the VCD was operating normally with CVS bypass closed divided by the number of hours that vapors were generated, for the 12-month rolling period (ratio between 0 to 1)

4. **Emission Testing Requirements:**

The Department may require the permittee to conduct tests to determine the emission rate of air contaminants from the source. The Department may observe the testing and may specify testing methods to be used. A signed copy of the test results shall be furnished to the Department within 60 days of the test date. The basis for this condition is NDAC 33.1-15-01-12 which is hereby incorporated into this permit by reference. To facilitate preparing for and conducting such tests, and to facilitate reporting the test results to the Department, the permittee shall follow the procedures and formats in the Department's Emission Testing Guideline.

Applicable requirement: NDAC 33.1-15-01-12

5. **General Conditions (Action Required):**

A. Modification:

Any alteration, repair, expansion, or change in the method or physical operation of the source which results in the emission of an additional type or greater amount of air contaminants, or which results in an increase in the ambient concentration of any air contaminant is considered a modification and must be reviewed and approved by the Department before implementation. The Department must be notified 10 days in advance of any significant deviations from the application.

The issuance of this PTC may be suspended or revoked if the Department determines that a significant deviation has been or is to be made without the proper review or approval.

Applicable requirement: NDAC 33.1-15-14-02.9.d

B. Like-Kind Emission Unit Replacement:

This permit allows the permittee to replace an existing emission unit with a like-kind unit. Replacement is subject to the following conditions:

- 1) The replacement unit is subject to the same emission limits and performance testing requirements—both state and federal—as the existing unit. The facility must comply with any additional federal standards (e.g. NSPS, MACT) triggered by the replacement.
- 2) The Department must be notified within 10 days of replacement. The date of manufacture of the replacement unit and any additional federal applicability must be included in the notification.
- 3) The replacement unit must operate in the same manner without increasing throughput and have equal or less emissions than the unit it is replacing.
- 4) Testing must be conducted to confirm compliance with emission limits within 180 days after start-up of the replacement unit. Emergency units must not be required to test if replaced by a like-kind unit.

Applicable requirement: NDAC 33.1-15-14-02.9.d

C. Annual Emission Inventory/Annual Production Reports:

The permittee must submit an annual emission inventory report and/or an annual production report upon Department request on forms approved by the Department.

Applicable requirement: NDAC 33.1-15-14-02.9.d

D. Malfunction Notification:

The permittee must notify the Department of any malfunction which can be expected to last longer than 24 hours and can cause the emission of air contaminants in violation of applicable rules and regulations. Using empirical estimates of emission rates, the permittee must conservatively estimate if the malfunction can cause noncompliance.

Applicable requirement: NDAC 33.1-15-01-13.2.a

E. Transfer of Permit to Construct:

The holder of a PTC may not transfer such permit without prior approval from the Department.

Applicable requirement: NDAC 33.1-15-14-02.11

6. General Conditions (Obligations):

A. Operation:

Operation of the facility must be in accordance with the permit application—which includes technical supplements, revisions, and supporting data. Any operations not listed in this permit are subject to all applicable NDAC 33.1-15 requirements. At all times, including periods of startup, shutdown, and malfunction, the permittee must, to the extent practicable, maintain and operate any affected facility—including associated air pollution control equipment—in a manner consistent with good practice for minimizing emissions.

Applicable requirements: NDAC 33.1-15-12, NDAC 33.1-15-22

B. Recordkeeping:

The permittee must maintain any compliance monitoring records required by this permit or applicable requirements for a period of at least five years (unless otherwise stated) from the date of the monitoring sample, measurement, report or application. Support information may include all calibration and maintenance records, all original strip-chart recordings and computer printouts for continuous monitoring instrumentation, and copies of all reports required by the permit.

Applicable requirements: NDAC 33.1-15-14-02.9.d

C. Control of Organic Compound Emissions:

The permittee must comply with all applicable requirements of NDAC 33.1-15-07, which establishes requirements for the construction of organic compound facilities related to closed-vent systems, control devices, and seals and for the control of VOC vapors using a continuously burning pilot flare or other equally effective control device.

D. Internal Combustion Engine Emissions Restricted:

The permittee must comply with all applicable requirements of NDAC 33.1-15-08-01, which restricts the operation of internal combustion engines which emit, from any source, unreasonable and excessive smoke, obnoxious or noxious gas, fumes or vapor.

E. Restriction of Fugitive Emissions:

The release of fugitive emissions must comply with the applicable requirements in NDAC 33.1-15-17, which restricts particulate matter and gaseous fugitive emissions that would violate other regulations.

F. Permit Invalidation:

This permit must be effective from the date of its issuance unless suspended, revoked or surrendered. The violation of any condition of this permit may result in revocation or suspension of the permit or other appropriate enforcement action. If any provision or application of a provision of this permit is held invalid in any circumstance, the remainder of this permit must remain valid.

Applicable requirement: NDAC 33.1-15-14-02.9

G. Nuisance or Danger:

This permit must in no way authorize the maintenance of a nuisance or a danger to public health or safety.

Applicable requirements: NDAC 33.1-15-02-03, NDAC 33.1-15-14-02.9.c

H. Right of Entry:

Any duly authorized officer, employee, or agent of the Department may enter and inspect any property, premise, or place at which the source is located at any time for the purpose of ascertaining compliance with NDAC 33.1-15. The Department may inspect monitoring equipment, conduct tests, and take samples of air contaminants, fuel, processing material, and other materials, which affect or may affect the emission of air contaminants from any source. The Department must have the right to access and copy any records required by the Department.

Applicable requirement: NDAC 33.1-15-01-06, NDCC 23.1-06-11

7. State Enforceable Conditions (Not Federally Enforceable):

A. Emissions of Odorous Substances Restricted:

The permittee must not discharge into the ambient air any objectionable odorous air contaminant which measures seven odor concentration units or greater.

Applicable requirement: NDAC 33.1-15-16