

STATEMENT OF BASIS

To: Reviewers
Through: Lori Bocchino, Operating Permit Program Manager
From: Brian Fehr, Air Quality Engineer
Subject: Draft Operating Permit 3-0-256, *Warren Energy Services, LLC*, Doty Mountain Compressor Station
Date: July 17, 2012 (*Amended January 8, 2013*)

Introduction:

Attached is the draft Wyoming Air Quality Standards and Regulations (WAQSR) Ch 6, Sec 3 operating permit for the Doty Mountain Compressor Station. This facility is a natural gas compressor station. Emission points at the facility include two Caterpillar G3516TALE engines, two Caterpillar G3608LE engines, three Caterpillar G3516TA engines, two Caterpillar G3516LE engines, a 30 MMscfd Dehydrator, a 0.5 MMBtu/hr reboiler, and two storage tanks. The Caterpillar G3516TA engines are equipped with an AFRC and a NSCR catalyst while the other engines are equipped with an oxidation catalyst. The two storage tanks have no applicable requirements.

Permitting History:

Permit CT-3349 (7/7/03): authorized construction of two Caterpillar G3516TALE engines, one Caterpillar G3516TA engine, one 10 MMCFD dehy unit, and one 400 bbl storage tank. This permit has been superseded by MD-1452.

Permit CT-3349A (8/30/04): allowed for the replacement of one Caterpillar G3516TALE engine with one Caterpillar G3516TA engine. This permit has been superseded by MD-1452.

Permit MD-1071 (10/4/04): allowed for the addition of one Caterpillar G3516LE engine. This permit has been superseded by MD-1452.

Permit MD-1452 (10/3/06): authorized the installation of one engine consisting of either a Caterpillar G3516TA or Caterpillar 3608LE engine and one Caterpillar G3516TALE engine. This permit superseded permits MD-1071, CT-3349A, and CT-3349 and has been superseded by MD-8144.

Permit MD-8144 (6/8/09): allowed for the installation of one Caterpillar G3516TA engine, two Deutz TBG 620 V12K engines, and two Caterpillar G3516TALE engines. This permit superseded all previous permits and waivers and has been superseded by MD-8144A.

Permit MD-8144A (11/10/09): removed two Caterpillar G3516TALE compressor engines and authorized installation of one Caterpillar G3608LE engine. This permit superseded all previous permits and waivers and has been superseded by MD-10804.

Permit MD-10804 (1/6/11): removed two Deutz TBG 620 V12K engines and one 10 MMscfd dehydrator with 0.25 MMBtu/hr reboiler, and authorized the installation of three Caterpillar G3608LE engines, two Caterpillar G3516B LE engines, four Caterpillar G3516TA engines, and two 30 MMscfd dehydrators with 0.5 MMBtu/hr reboilers. This permit superseded MD-8144A and has been superseded by MD-10804A.

Permit MD-10804A (6/22/11): removed formaldehyde limits and testing requirements for the rich burn engines. This permit supersedes all previous permits and waivers. Applicable requirements include the engine configuration; initial performance testing and stack height requirements for engines authorized for

construction; NO_x, CO, VOC, and Formaldehyde emission limits and periodic monitoring for the engines; as well as catalyst monitoring and maintenance.

Applicable Requirements:

In addition to the permit requirements listed above, the sources at the facility are subject to the visible emission limit in accordance with WAQSR Ch 3, Sec 2. The reboilers are limited to NO_x emissions of 0.20 lb/MMBtu heat input under WAQSR Ch 3, Sec 3.

The permittee must also comply with any applicable requirements from Ch 5, Sec 2 New Source Performance Standards, and 40 CFR Part 60, Subpart JJJJ - *Stationary Spark Ignition Internal Combustion Engines*. Affected engines are defined at §60.4230 of the subpart. Currently, the Caterpillar G3608LE and Caterpillar G3516LE engines at the facility have requirements under Subpart JJJJ. However, as required by the temporary engine replacement condition in the operating permit, if an engine is replaced or reconstructed, subpart applicability will need to be re-evaluated and a statement regarding applicability submitted to the Division.

Per 40 CFR 63, Subpart ZZZZ *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, all Caterpillar engines are subject to the requirements of 40 CFR 63 Subpart ZZZZ.

Per 40 CFR 63, Subpart HH for *Oil and Natural Gas Production Facilities*, the dehydration unit is subject to any applicable requirements from Subpart HH.

Periodic Monitoring

For periodic monitoring of visible emissions from all sources, the permittee will monitor the type of fuel used to ensure natural gas is the sole fuel source for these sources. Periodic emissions monitoring for the engines shall consist of annual testing for NO_x, CO, VOC, and formaldehyde emissions, as applicable. Formaldehyde testing is only required for the lean burn engines. VOC testing is only required for engines with VOC limits or engines subject to Subpart JJJJ. The inlet catalyst temperature and pressure drop across the catalyst will be measured monthly.

The dehydration unit reboilers are fuel burning equipment as defined in WAQSR Chapter 1. These uncontrolled units emit oxides of nitrogen (NO_x) in relatively small quantities (less than 2.2 tons per year). In the absence of more stringent permit limits, the NO_x emission limit for fuel burning equipment defaults to 0.20 pounds per million BTUs (lb/MMBtu). Generally, small fuel burning sources like these units are uncontrolled and operate at a steady state; emission variations are not likely. AP-42 emission factors were developed by the EPA to help estimate the quantity of a pollutant from a given source type. In developing an AP-42 emission factor, emission data is averaged from sources of similar size and type, and the emission factor is then assigned a reliability rating based on quality and quantity of the data used. The rating scale runs from A to E with an A rating providing the highest quality. The AP-42 emission factor for small units (less than 100 MMBtu/hr) is 0.1 lb/MMBtu with a B rating. Considering the amount of data evaluated to develop the AP-42 emission factor and considering that the WAQSR Ch 3, Sec 3 emission limit is twice the AP-42 value, the Division feels it is extremely unlikely these sources will operate out of compliance and considers further testing of these sources to be uneconomical.

Amendment (January 8, 2013)

While the proposed permit was under EPA review, the Division was notified of an ownership change for this facility from Anadarko to Warren Energy Services. The ownership and associated personnel changes have been made to the permit prior to issuance. As these changes are administrative in nature, a second public notice period is not warranted.