

MEMORANDUM

To: Reviewers
Through: Lori Bocchino, Operating Permit Program Manager
From: Maggie Endres, Scientist
Subject: Draft Chapter 6, Section 3 Operating Permit 3-3-076 - Williston Basin Interstate Pipeline Company, Lovell Compressor Station
Date: November 16, 2010

Introduction:

Attached for your review is the draft renewal Wyoming Air Quality Standards and Regulations (WAQSR) Chapter 6, Section 3 Operating Permit 3-3-076 for the Lovell Compressor Station. This facility is involved in natural gas transmission. Two engines provide mechanical power to drive natural gas compressors. Emission sources include two 880 hp Cooper Bessemer GMVA-6 compressor engines, a 1.82 MMBtu/hr plant boiler, a 0.750 MMBtu/hr line heater, a 0.08 MMBtu/hr office space heater, and a 0.03 MMBtu/hr water heater. The engines, boiler and heaters are fired on natural gas. Fugitive emissions also occur at the facility and are the result of equipment leaks.

Applicable Requirements

The compressor engines predate WAQSR Chapter 6, Section 2 construction permit requirements. Under Ch 3, Sec 2 of the WAQSR the plant boiler and water heater have 20 percent opacity limits, and the office space heater and the line heater have 40 percent opacity limits. The plant boiler and water heater are subject to the 0.20 lb/MMBtu NO_x emission limit, and the line and office heaters are subject to the 0.23 lb/MMBtu NO_x limit under WAQSR Ch 3, Sec 3.

The engines are subject to 40 CFR 63 Subpart ZZZZ for *Stationary Reciprocating Internal Combustion Engines*. Under Subpart ZZZZ the two Cooper Bessemer engines are considered existing engines at an area source.

Periodic Monitoring

For periodic monitoring of visible emissions from the compressor engines, boiler and heaters, the permittee shall monitor the type of fuel used to ensure natural gas is the sole fuel source for these units. The boiler and heaters are fuel burning equipment as defined in WAQSR Chapter 1. These units emit oxides of nitrogen (NO_x) relatively small quantities (less than 1 ton per year (TPY) of NO_x). 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) for sources constructed after April 9, 1973, and 0.23 lb/MMBtu for units constructed before April 9, 1973, as stated in WAQSR Ch 3, Sec 3. 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.