

## STATEMENT OF BASIS

To: Reviewers  
Through: Lori Bocchino, Operating Permit Program Manager  
From: Donovan Benton, Operating Permit Program  
Subject: Draft Chapter 6, Section 3 Operating Permit 3-0-263  
WGR Asset Holding Company LLC, Morgan Draw-Crenshaw Hill Compressor  
Station  
Date: October 30, 2014      *Addendum December 8, 2014*

### Introduction

Attached for your review is the draft Wyoming Air Quality Standards and Regulations (WAQSR) Ch 6, Sec 3 operating permit for the Morgan Draw-Crenshaw Hill Compressor Station. The facility compresses coal-bed methane gas to transmission line pressure. Permitted emission sources at the facility include: five Waukesha compressor engines; four additional compressor engines not yet started up; two triethylene glycol (TEG) dehydration units and reboilers; and two 400-barrel produced water storage tanks.

Note: As of 2/8/11, ownership of the facility changed from Western Gas Resources to WGR Asset Holding Company LLC.

### Permitting History

All permits are listed to document the permitting history. The permits listed in this section have no remaining applicable requirements.

CT-3299 (5/13/03): was issued to Western Gas Resources, Inc. for construction of the Morgan Draw-Crenshaw Hill Compressor Station, allowing for a total of seven compressor engines, one TEG dehydration unit, and one produced water storage tank. No sources were installed under this permit. This permit was invalidated by permit CT-3962.

CT-3962 (6/14/05): reauthorized construction of the Morgan Draw-Crenshaw Hill Compressor Station, allowing for the following sources: five compressor engines of any combination of Caterpillar G3606LE or Waukesha L7044GSI makes (E1-E5), four compressor engines of any combination of Caterpillar G3512LE or Waukesha F3524GSI makes (E6-E9), one TEG dehydration unit (D1), and one produced water storage tank (T1). No sources were installed under this permit. This permit was superseded by permit MD-1265.

MD-1265 (11/15/05): modified CT-3962 by changing the location of the Morgan Draw-Crenshaw Hill Compressor Station. Engines E1 and E6, dehydration unit D1, and tank T1 were installed under this permit. Engines E1 and E6 were performance tested showing compliance within 3 months of startup, in January 2008. This permit was superseded by permit MD-1265A.

MD-1265A (9/16/09): modified MD-1265 by extending construction authorization for 12 months for engines E2-E5 and E7-E9, revising NO<sub>x</sub> emissions limits for all permitted but unconstructed Waukesha engines, and establishing VOC (volatile organic compounds) emissions limits for all permitted but unconstructed Waukesha and Caterpillar engines. Engine E2 was installed under this permit. It was performance tested showing compliance in November 2011. This permit was superseded by permit MD-10851.

The following is the only permit with remaining applicable requirements:

MD-10851 (6/21/11): modified MD-1265A by recognizing installed engines E1 and E6, and authorizing construction of an additional TEG dehydration unit (D2) and produced water storage tank (T2). The permit limits the facility to a total of nine compressor engines. Requirements set by this permit include the following: each Caterpillar engine shall be equipped with an oxidation catalyst, and each Waukesha engine shall be equipped with air-fuel ratio controls (AFRC) and non-selective catalytic reduction (NSCR) catalysts; devices shall be installed in each engine to monitor inlet catalyst temperature and pressure drop across the catalyst; NO<sub>x</sub> and CO limits for all engines, VOC limits for engines E2-E5 and E7-E9, and formaldehyde limits for any potential Caterpillar engines (E3-E5 and E9); initial performance testing and stack height requirements for unconstructed engines; periodic monitoring for all engines; maintaining the engines and air pollution equipment, and monitoring the control equipment; and a 24-hour notification requirement for engines testing out of compliance. Engines E7 and E8 were installed under this permit and were performance tested showing compliance in November 2011 (E7) and August 2013 (E8). This permit supersedes all conditions in all previous Ch 6, Sec 2 permits.

#### **Applicable Requirements**

The sources at the facility are subject to the visible emission limits set forth in WAQSR Ch 3, Sec 2. The dehydration unit reboilers (D1b and D2b) are limited to NO<sub>x</sub> emissions of 0.20 lb/MMBtu heat input under Ch 3, Sec 3.

The permittee must comply with any applicable requirements from the following Ch 5, Sec 2 New Source Performance Standards, and 40 CFR 60:

Subpart JJJJ – *Stationary Spark Ignition Internal Combustion Engines* – On the date of drafting this Statement of Basis, no engines were subject to the requirements of 40 CFR 60 Subpart JJJJ. Due to the dates construction commenced and/or dates of engine manufacture, engines E1, E2, and E6-E8 are subject to Subpart JJJJ, but they have no applicable requirements under the subpart. Subpart applicability shall be assessed for engines E3-E5 and E9 upon installation of each.

Subpart OOOO – *Crude Oil and Natural Gas Production, Transmission, and Distribution* – The facility may have applicable requirements from this subpart, or may become subject to the standard during the term of the permit.

The permittee must also comply with any applicable requirements from the following Ch 5, Sec 3 National Emission Standards for Hazardous Air Pollutants, and 40 CFR 63:

Subpart HH – *Oil and Natural Gas Production Facilities* – The dehydration units (D1a, and upon construction, D2a) are subject to any applicable requirements from Subpart HH.

The permittee must also comply with any applicable requirements from Ch 5, Sec 3 National Emission Standard for Hazardous Air Pollutants and 40 CFR 63, Subpart ZZZZ for *Stationary Reciprocating Internal Combustion Engines (RICE)*. All engines (E1, E2, and E6-E8, and upon construction, E3-E5 and E9) are subject to requirements at an area source.

### **Periodic Monitoring and CAM**

For periodic monitoring of visible emissions from the compressor engines (E1-E9) and dehydration unit reboilers (D1b and D2b), the permittee shall monitor the type of fuel used to ensure natural gas is the sole fuel source for these units. Testing of NO<sub>x</sub> and CO emissions from all compressor engines (E1-E9) shall be conducted at least every twelve calendar months. Additionally, VOC emissions from engines E2-E6 and E7-E9, and formaldehyde emissions from any potential Caterpillar engine (E3-E5 and E9), shall be tested every twelve calendar months. For all engines (E1-E9), monitoring of inlet temperature into the catalyst and pressure drop across the catalyst shall be conducted on a monthly basis.

Compliance Assurance Monitoring (CAM) requirements do not apply to this facility because this is its initial Title V operating permit. CAM applicability will be assessed upon renewal of this permit.

The dehydration unit reboilers are fuel burning equipment as defined in WAQSR Ch 1. These uncontrolled units emit oxides of nitrogen (NO<sub>x</sub>) in relatively small quantities (each less than 1 ton per year). In the absence of more stringent permit limits, the NO<sub>x</sub> emission limit for fuel burning equipment defaults to 0.20 pounds per million BTUs (lb/MMBtu) for sources constructed after April 9, 1973. Generally, small fuel burning sources like these units 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 gaseous fuel burning sources (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 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.

### **Addendum (December 8, 2014)**

*During the public comment period the permittee notified the Division of a typo found on page four of the draft permit; engine E1 had an incorrect source description. The error has been corrected to describe engine E1 as "Waukesha L7044GSI Engine (Morgan Draw #1)." This change is administrative in nature and does not warrant an additional public notice period.*

