

STATEMENT OF BASIS

To: Reviewers

Through: Lori Bocchino, Operating Permit Program Manager

From: Despina Nikolova, Air Quality Engineer

Subject: Draft Operating Permit 3-2-026-1 for Mountain Gas Resources LLC
Patrick Draw Gas Processing Plant

Date: March 27, 2015 *Addendum May 5, 2015*

Attached for your review is the draft modification of Wyoming Air Quality Standards and Regulations (WAQSR) Chapter 6, Section 3 operating permit 3-2-026-1 for the Patrick Draw Gas Processing Plant. Permit 3-2-026 was issued May 21, 2010 and is being modified to incorporate new requirements which have become applicable to the Patrick Draw Gas Processing Plant since the issuance of permit 3-2-026.

On June 15, 2004, the Environmental Protection Agency promulgated National Emission Standards for Hazardous Air Pollutants (NESHAPs) for *Stationary Reciprocating Internal Combustion Engines* (40 CFR 63, Subpart ZZZZ). This regulation established maximum achievable control technology (MACT) emission limitations for new and existing affected facilities as defined by the subpart. Subsequently, Subpart ZZZZ has been revised to include all reciprocating internal combustion engines (RICE) at both major and area sources of hazardous air pollutants. The Patrick Draw Gas Processing Plant is currently identified as an area source of HAP emissions and is subject to NESHAP requirements from 40 CFR 63, Subpart ZZZZ. Affected sources at this facility include all stationary internal combustion engines (ICE) (units 05-10, 19-25, 28, 29 and 34).

WAQSR Chapter 6, Section 3(d)(vii) requires the Division of Air Quality to reopen the operating permit if additional requirements under the Act become applicable to a major source with a remaining permit term of 3 or more years. On January 20, 2012, Mountain Gas Resources LLC was notified that the Division intended to reopen operating permit 3-2-026 to add applicable requirements from 40 CFR 63, Subpart ZZZZ.

In August 2012, the Environmental Protection Agency promulgated 40 CFR 60, Subpart OOOO - *Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution*, which were effective on October 15, 2012. These regulations establish emission standards and compliance schedules for the control of volatile organic compound (VOC) and sulfur dioxide (SO₂) emissions from affected facilities that commence construction, modification or reconstruction after August 23, 2011. The regulations cover several types of emission units, including compressors and pneumatic controllers, which may become subject to Subpart OOOO when installed, replaced, or modified. Affected emission units at the Patrick Draw Gas Processing Plant may be, or become, subject to Subpart OOOO during the term of this operating permit.

Since the issuance of operating permit 3-2-026, the following WAQSR Chapter 6, Section 2 permits have been issued for the Patrick Draw Gas Processing Plant:

Permit MD-8151 (5/18/10): was issued to modify the Patrick Draw Gas Plant by adding 1,280 hp Waukesha L5774LT engine or one 1,004 hp Caterpillar G3512LE engine. The engine was not installed and is no longer authorized to be constructed at this facility.

Permit MD-5924A (7/22/10): extended the construction authorized by MD-5924 (2/20/2008) for twelve months to October 3, 2011, and revised the Nitrogen Oxide (NO_x) emission rate for the Caterpillar G3516LE engine (unit 07). This permit is superseded by MD-5924A2.

Division Letter (7/14/11): authorized the use of an alternative formaldehyde emissions test option for engines currently permitted to utilize a portable analyzer to measure NO_x and CO emissions and not subject to 40 CFR 60, Subpart JJJJ – *Standards of Performance for Stationary Spark Ignition Internal Combustion Engines* or the major source requirement for 40 CFR 63, Subpart ZZZZ - *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*.

Permit MD-5924A2 (7/29/13): amended operations at the facility requiring the plant #2 amine unit flash tank off gas to be routed to the low pressure inlet during normal operations, and to the plant #2 HP emergency flare (unit FS-801) for destruction during upsets, superseding condition 16 of Permit MD-1439 (9/18/06). Conditions from previous Chapter 6, Section 2 permits MD-5924 (2/20/08), MD-5924 Corrected (2/2/09), MD-5924 2nd Corrected (2/1/10) and MD-5924A (7/22/10) have been carried forward and all four permits are superseded. The conditions of previously issued permits remain in effect for the White Superior 8G-825 engines (units 05-07) and the White Superior 2416G engine (unit 20) until the authorized modifications in this permit are complete. Upon submittal of startup notification for each replacement engine, Chapter 6, Section 2 permits MD-1439 (9/18/06) for unit 05 and MD-924A3 (9/10/07) for units 06, 07, and 20 will have no applicable requirements. All applicable conditions from MD-1439 and MD-924A3 for units 05, 06, 07, and 20 were incorporated in 3-2-026 permit, and remain in the current draft operating permit 3-2-026-1.

Permit MD-16571 (1/5/15): authorized the restart of plant #1 amine unit (unit 32) controlled by the existing thermal oxidizer and the installation of amine #1 heater. With this action the facility is no longer authorized to install the plant #3 amine unit (V-803) or the hot oil heaters (H-301A and H-301B). The company also stated that the plant #1 HP emergency flare (FS-102) has been removed from the facility. This permit is superseded by MD-17104.

Permit MD-17014 (3/17/15): corrected the NO_x and CO emission limits for the thermal oxidizer (unit TO-100). This permit supersedes startup notifications and commencement of construction conditions from MD-5924A2 for clarity. Upon completion of the modification addressed in this permit, conditions of MD-5924A2 referring to the thermal oxidizer (unit TO-100) will be superseded. Applicable requirements for the thermal oxidizer include NO_x, CO and VOC emission limits; VOC destruction efficiency and re-establishment of the associated minimum operating temperature; operating temperature monitoring; and smokeless operation.

Per MD-5924 (2/20/2008) the plant #1 amine still vent (unit 32) was no longer authorized to operate, without receipt of a permit issued under WAQSR Chapter 6, Section 2 authorizing its use. Therefore, previous permit conditions referring to plant #1 amine still vent are reserved. Applicable requirements from permit MD-17014, authorizing the restart of the plant #1 amine unit are included in this draft operating permit.

Applicable requirements for and references to the plant #1 HP emergency flare (FS-102) are removed from the draft operating permit as well.

In summary, the operating permit 3-2-026 is being modified to include the requirements of the 7/14/11 Division Letter and permits MD-5924A2 and MD-17014, as well as 40 CFR 60, Subpart OOOO and 40 CFR 63, Subpart ZZZZ; to remove requirements for sources no longer authorized to operate at the facility; and update wording to be consistent with Chapter 6, Section 3 operating permits currently issued by Division.

The permit revisions include the following:

- The Table of Contents has been updated to include references to the Facility-Wide Permit Conditions section and changes to the NSPS Subpart requirements. Appendices A, C, and E through I are reserved, as the Division no longer includes the text of federal standards in Title V permits.
- General Information page is updated to include the facility latitude/longitude, SIC code description, and to reserve the responsible official name as the Division no longer lists them in the permit.
- The Source Emission Points table is updated to include equipment authorized to be installed, revise associated permits, clarify some unit descriptions, and revise footnotes for clarity.
- The Total Facility Estimated Emissions Table is updated to reflect the emissions estimate for equipment currently installed, as well for the equipment changes authorized under permits MD-5924A2 and MD-17014.
- Condition F1 is a new condition for the engine configuration requirements from permit MD-5924A2. All subsequent F conditions and cross-references have been re-numbered to reflect this addition.
- Condition F2 has been modified to include visible emission requirements for equipment authorized from permits MD-5924A2 and MD-17014.
- Condition F3 has been modified to reflect emission limits for engines and heaters according to permits MD-5924A2 and MD-1701. The H-901 heat medium heater (unit 33) lb/hr limit is removed from the table, as it is no longer applicable. The VOC limits for the Ford WSG-1068 engine (unit 34) are moved to Table I. Footnotes are also added to Table I for clarity.
- As indicated in condition F3(iv), the Amine #1 Heater is subject to the WAQSR Ch 3, Sec 3 NO_x limit of 0.20 pounds per million BTUs (lb/MMBtu). This uncontrolled unit emits small quantities of NO_x emissions, estimated to be roughly 5.6 tons per year. Generally, small fuel burning sources like this unit 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 this source will operate out of compliance and considers further testing of Amine #1 Heater to be uneconomical.
- Permit requirements, previously in condition F3(a)-(c), are no longer applicable to the plant #1 and #2 amine still vents and are reserved from conditions F4(a)-(c). Additionally, condition F4 is modified to include limits and operation requirements for the thermal oxidizer from permits MD-5924A2 and MD-17014.
- Condition F5 includes wording used in current Chapter 6, Section 3 operating permits issued by the Division regarding revision of the preventative maintenance plan.
- Condition F6 is a new condition added for the commencement of construction requirement from permit MD-17014. All subsequent F conditions and cross references have been re-numbered to reflect the inclusion.
- Condition F7 is modified to reflect the wording used in current Chapter 6, Section 3 operating permits issued by the Division regarding engine replacement.
- Condition F8 includes wording used in current Chapter 6, Section 3 operating permits issued by the Division regarding Division requested testing methods, test methods from MD-5924A2, and formaldehyde alternative testing authorized by the 7/14/2011 Division Letter.

- Condition F9 has been modified to incorporate the requirements of permits MD-5924A2 and MD-17014 for initial performance tests on authorized compressor engines for replacement of units 05, 06, 07 and 20, and the thermal oxidizer upon restarting of the plant #1 amine unit.
- Condition F10 is updated to include revised visible emissions monitoring for the thermal oxidizer.
- The monitoring requirements in condition F11 are revised to include authorized equipment from permit MD-5924A2 and to adjust the frequency of testing for some existing units. Testing notification and reporting requirements are added to this condition as well.
- Compliance Assurance Monitoring (CAM) for NO_x and CO emissions from each Waukesha 7044 GSI compressor engine in condition F12 has been modified with the wording used in current Chapter 6, Section 3 operating permits issued by the Division regarding excursions.
- Condition F13 has been revised to include the catalyst monitoring and maintenance requirements for equipment authorized by permit MD-5924A2. The condition is also updated to include wording from permit MD-5924A2 regarding the alternative monitoring according to 40 CFR 63, Subpart ZZZZ for certain engines.
- The reference to the Division's portable analyzer monitoring protocol in condition F14 has been updated with the wording used in current Chapter 6, Section 3 operating permits issued by the Division. Paragraph (c) is added to include test notification and report requirements.
- Condition F15 is modified to include periodic monitoring and CAM for the thermal oxidizer (TO-100) in sub-conditions (c) and (d), respectively. Paragraph (a) is reserved, as the requirements are included in the new CAM condition. Paragraph (e) is added to include test notification and report requirements.
- Condition F16(a) is updated with the wording used in current Chapter 6, Section 3 operating permits issued by the Division regarding recordkeeping of operating conditions during testing. Recordkeeping requirements for the thermal oxidizer visible emissions monitoring is added as paragraph (d); all subsequent sections have been re-numbered to reflect the inclusion. The recordkeeping requirements associated with thermal oxidizer VOC emissions testing are updated, as well.
- Recordkeeping in condition F17 has been modified to include additional CAM records for the thermal oxidizer, and for consistency with current permit language for CAM indicator excursions.
- Condition F18 has been modified to include the Ford emergency engine's maintenance records. F18(d)(v) has also been updated.
- Condition F19 is reserved, as it is no longer applicable to the plant #1 amine unit.
- Condition F20(a) is corrected and modified to include the test notification requirements for engines subject to 40 CFR 60 Subpart JJJJ. Paragraph (b) is modified for the startup notification requirements from permit MD-17014. This condition is also updated to include current standard permit language.
- The test reporting condition F21 is modified to include requirements from permit MD-5924A2 and wording regarding additional test reporting on engine testing for units subject to CAM; condition F21(b) is updated with current standard permit reporting language.
- Reporting requirements in condition F22 are modified to include visible emissions monitoring for the thermal oxidizer; pilot flame outage monitoring for the flares; replaced the monitoring reports for engine testing (which are now included under condition F21) with reporting the operating hours for the Ford engine; updated wording for engine catalyst monitoring reports; and reporting for thermal oxidizer CAM monitoring. F22(a)(vii) is reserved as it is no longer applicable to the plant #1 amine unit. F22(c) is updated with current standard permit language.
- Condition F23 is reserved; maintenance reports on units 28 and 29 are not required in any underlying applicable requirement.
- Condition F24 is a new condition added for greenhouse gas reporting requirements.

- The NSPS list is revised to include 40 CFR 60, Subpart OOOO requirements, and to update 40 CFR 60, Subpart Dc and 40 CFR 60, Subpart JJJJ applicability. 40 CFR 60, Subpart Kb no longer has applicable requirement for this facility and has been removed. The conditions referencing 40 CFR 60 Subparts Dc, KKK and VV, JJJJ, and 40 CFR 63 Subparts ZZZZ are modified with the wording used in operating permits currently issued by the Division.
- CAM requirements are updated to include the thermal oxidizer and add condition CAM-5, which specifies how the CAM plan should be re-evaluated once the thermal oxidizer is controlling emissions from plant #1 amine still vent.
- The compliance certification requirements, condition C1(b), have been modified to indicate how to assess compliance with the new requirements in the permit and update cross-references.
- General permit conditions are updated with current standard permit wording used by the Division.
- The State Only Permit Conditions table is updated to reflect current ambient standards.
- The Summary Tables are updated to reflect all the above changes, and revised to be consistent with requirements and wording used in operating permits currently being issued by the Division.
- Abbreviations are updated to reflect wording used in permits currently issued by the Division.
- Appendices A,C, and E through I are reserved, as the Division no longer includes the State or Federal regulation text in operating permits.
- The thermal oxidizer CAM plan is added to Appendix B.

Addendum (May 5, 2015)

Condition F4(d)(ii) has been revised to more accurately reflect the underlying condition from permit MD-17014, as requested from the company during the public notice period. This change is clarifying in nature and does not change the requirements for the thermal oxidizer. No additional public notice is warranted.

