

AIR QUALITY DIVISION
CHAPTER 6, SECTION 3
OPERATING PERMIT

**WYOMING DEPARTMENT OF
ENVIRONMENTAL QUALITY**
AIR QUALITY DIVISION
122 West 25th Street
Cheyenne, Wyoming 82002



PERMIT NO. 3-3-030

Issue Date: **April 18, 2014**
Expiration Date: **April 18, 2019**
Effective Date: **April 18, 2014**
Replaces Permit No.: **3-2-030**

In accordance with the provisions of W.S. §35-11-203 through W.S. §35-11-212 and Chapter 6, Section 3 of the Wyoming Air Quality Standards and Regulations,

WGR Operating, LP
Hilight Gas Plant (Amended October 24, 2014)
Section 26, Township 45 North, Range 71 West
Campbell County, Wyoming

is authorized to operate a stationary source of air contaminants consisting of emission units described in this permit. The units described are subject to the terms and conditions specified in this permit. All terms and conditions of the permit are enforceable by the State of Wyoming. All terms and conditions of the permit, except those designated as not federally enforceable, are enforceable by EPA and citizens under the Act. A copy of this permit shall be kept on-site at the above named facility or at an acceptable alternate location.

Steven A. Dietrich, Administrator
Air Quality Division

Date

Todd Parfitt, Director
Department of Environmental Quality

Date

WAQSR CHAPTER 6, SECTION 3 OPERATING PERMIT

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY AIR QUALITY DIVISION

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GENERAL INFORMATION

(Amended October 24, 2014)

Company Name: WGR Operating, LP

Mailing Address: PO Box 173779

City: Denver

State: CO

Zip: 80217-3779

Plant Name: *Hilight Gas Plant*

Plant Location: Section 26, Township 45 North, Range 71 West, Campbell County, Wyoming
(10 miles northeast of Wright, Wyoming)

Latitude/Longitude (WGS84): 43.84185223/-105.35655358

Plant Mailing Address: 1400 East Lincoln Street

City: Gillette

State: WY

Zip: 82716

Name of Owner: WGR Operating, LP

Phone: (720) 929-6000

Responsible Official: *Reserved*

Plant Manager/Contact: Brice Hatcher

Phone: (307) 670-6401

DEQ Air Quality Contact: District 3 Engineer
2100 West 5th Street
Sheridan, WY 82801

Phone: (307) 673-9337

SIC Code: 1321

NAICS Code: 211112

Description of Process: This facility produces liquid hydrocarbons from field gas.

SOURCE EMISSION POINTS

This table may not include any or all insignificant activities at this facility.

SOURCE ID#	SOURCE DESCRIPTION	SIZE	CH. 6, SEC. 2 PERMITS
2	Worthington SUTC 8 Compressor Engine ¹	2000 hp	MD-378A ³ , MD-10680A
10	Cooper GMW A-8 Compressor Engine ¹	2000 hp	MD-124, MD-10680A
11	Cooper GMW A-8 Compressor Engine ¹	2000 hp	MD-124, MD-10680A
16	Waukesha L7042GSI Compressor Engine ²	1500 hp	MD-10680A
17	Waukesha L7042GSI Compressor Engine ²	1500 hp	MD-10680A
18	Waukesha L7042GSI Compressor Engine ²	1500 hp	MD-10680A
19	Waukesha L7042GSI Compressor Engine ²	1500 hp	MD-10680A
25	Waukesha 7042 GU Generator Engine ²	705 hp	MD-124
26	Waukesha 7042 GU Generator Engine ²	705 hp	MD-124
27	Waukesha 7042 GU Generator Engine ²	705 hp	MD-124
28	Waukesha 7042 GU Generator Engine ²	705 hp	MD-124
29	Waukesha 7042 GU Generator Engine ²	705 hp	MD-124
51	Waukesha L7042GSI Compressor Engine ²	1500 hp	MD-378A ³
52	Waukesha L7042GSI Compressor Engine ²	1500 hp	MD-378A ³
53	Waukesha L7044GSI Compressor Engine ²	1650 hp	MD-378A ³
54	Waukesha L7044GSI Compressor Engine ²	1650 hp	MD-378A ³
Genset	Generac GH-410 Emergency Generator Engine ¹	14.8 hp	wv-13971
H100	Heater Treater	0.25 MMBtu/hr	None
H110a/b	Hot Oil Heater (two stacks)	20.0 MMBtu/hr	None
H120	Hot Oil Heater	12.0 MMBtu/hr	None
H130a/b	Heat Medium Heater (two stacks)	50 MMBtu/hr	MD-124
H140	Hydrogen Plant Heater	1.5 MMBtu/hr	MD-124
P1EG	Plant 1 Ethylene Glycol Dehydration System	30 MMSCFD	wv-11304
P2EG	Plant 2 Ethylene Glycol Dehydration System	30 MMSCFD	wv-11304
FLARE	Emergency Flare	0.6 MMBtu/hr	MD-124
FUG	Fugitive Emissions from Equipment Leaks	NA	None
TK-31	Condensate Storage Tank	500 bbl	wv-11304
TK-32	Condensate Storage Tank	500 bbl	wv-11304
TK-33	Condensate Storage Tank	400 bbl	wv-11304
TK-34	Condensate Storage Tank	400 bbl	wv-11304

¹ Engine is 2-stroke lean burn

² Engine is 4-stroke rich burn controlled with air-fuel ratio controls (AFRC) and non-selective catalytic reduction (NSCR) catalysts

³ Permit MD-378A corrected March 31, 2008

TOTAL FACILITY ESTIMATED EMISSIONS

For informational purposes only. These emissions are not to be assumed as permit limits.

POLLUTANT	EMISSIONS (TPY)
CRITERIA POLLUTANT EMISSIONS	
Particulate Matter	23
PM ₁₀ Particulate Matter	23
PM _{2.5} Particulate Matter	23
Sulfur Dioxide (SO ₂)	Negligible
Nitrogen Oxides (NO _x)	899
Carbon Monoxide (CO)	596
Volatile Organic Compounds (VOCs)	246
HAZARDOUS AIR POLLUTANT (HAP) EMISSIONS	12.8
GREENHOUSE GAS EMISSIONS (CO₂e)	131,681

Emission estimates are from the operating permit application. The highest single HAP is formaldehyde at 12.8 TPY.

FACILITY-SPECIFIC PERMIT CONDITIONS

Source-Specific Permit Conditions

- (F1) **VISIBLE EMISSIONS** [WAQSR Ch 3, Sec 2; Ch 3, Sec 6(b)(i); Ch 6, Sec 2 Permit MD-124]
- (a) The emergency flare (unit FLARE) shall be operated and maintained to be smokeless, with no visible emissions except for periods not to exceed a total of five minutes during any two consecutive hours as determined by 40 CFR 60, Appendix A, Method 22. The flare must be equipped and operated with an automatic ignitor or a continuous burning pilot which must be maintained in good working order.
 - (b) Visible emissions of any contaminant discharged into the atmosphere from any other single emission source shall not exhibit greater than 20 percent opacity except for one period or periods aggregating not more than six minutes in any one hour of not more than 40 percent opacity.
- (F2) **ENGINE OPERATION AND) EMISSION LIMITATIONS**
[WAQSR Ch 6, Sec 2 Permit MD-124, MD-378A, and MD-10680A, and Waiver wv-13971]
- (a) NO_x, CO, VOC and formaldehyde emissions shall not exceed the limits specified for each unit listed in Table I.
 - (b) Compliance with the g/hp-hr limits is considered compliance with the lb/hr and TPY limits as long as each engine is operated at or below its site-rated capacity and, for the Worthington SUTC 8 engine (unit 2), actual operation does not exceed the operating hours limit in paragraph (d).
 - (c) In accordance with 40 CFR 63.6600, the permittee shall comply with the following for four of the Waukesha L7042GSI compressor engines (units 16 - 19):
 - (i) Reduce formaldehyde emissions by 76 percent or more; or
 - (ii) Limit the concentration of formaldehyde in the exhaust to 350 ppbvd or less at 15 percent Q.
 - (d) The Worthington SUTC 8 compressor engine (unit 2) shall not exceed 6,300 hours of operation per year. The Generac GH-410 emergency generator engine (unit Genset) shall not exceed 500 hours of operation per year. The permittee shall operate and maintain non-resettable hours meters on units 2 and Genset to demonstrate compliance with these limits.
 - (e) The permittee shall operate and maintain the Waukesha L7042GSI compressor engines (units 51 and 52) and the Waukesha L7044GSI compressor engines (units 53 and 54), air pollution control equipment, and monitoring equipment according to manufacturer's instructions at all times, including startup, shutdown, and malfunction.
 - (f) The permittee shall operate and maintain the Generac GH-410 emergency generator engine (unit Genset), air pollution control equipment, and monitoring equipment according to good air pollution control practices at all times, including startup, shutdown, and malfunction.
 - (g) The permittee shall remove the two Cooper GMW A-8 compressor engines (units 10 and 11) by December 31, 2014, unless otherwise authorized by the Division. The Division shall be notified within 15 days of the removal of the respective units(s).
 - (h) Once removed from the facility, an engine cannot be installed and operated in its place unless authorized by an appropriate permit modification (except as allowed for temporary engine replacement under condition F5).

Table I: NO _x , CO, VOC and Formaldehyde Emission Limits												
Engine Description		NO _x			CO			VOC			Formaldehyde	
		g/hp-hr	lb/hr	TPY	g/hp-hr	lb/hr	TPY	g/hp-hr	lb/hr	TPY	lb/hr	TPY
Unit 2	Worthington SUTC 8	11.0	48.5	212.2	11.0	48.5	212.2					
Units 10 & 11	Cooper GMW A-8	11			1.4							
Units 16-19	Waukesha L7042GSI	0.7	2.3	10.1	2.0	6.6	29.0	0.7	2.3	10.1	0.04	0.16
Units 25-29	Waukesha 7042 GU	2			2							
Units 51-52	Waukesha L7042GSI	2.0	6.6	28.9	2.0	6.6	28.9					

Engine Description		NO _x			CO			VOC			Formaldehyde	
		g/hp-hr	lb/hr	TPY	g/hp-hr	lb/hr	TPY	g/hp-hr	lb/hr	TPY	lb/hr	TPY
Units 53-54	Waukesha L7044GSI	1.0	3.6	15.9	2.0	7.3	31.9					

- (F3) FUEL BURNING EQUIPMENT [WAQSR Ch 3, Sec 3; Ch 6, Sec 2 Permit MD-124]
- (a) NO_x emissions from the heater treater (unit H100) and the hot oil heaters (units H110a/b, and H120) shall not exceed 0.23 lb/MMBtu heat input.
 - (b) NO_x emissions from the heat medium heater (unit H130a/b) shall not exceed 7.1 lb/hr, and CO emissions shall not exceed 3.5 lb/hr.
 - (c) NO_x emissions from the hydrogen plant heater (unit H140) shall not exceed 0.24 lb/hr, and CO emissions shall not exceed 0.12 lb/hr.
- (F4) CONDENSATE STORAGE TANKS [WAQSR Ch 6, Sec 2 Waiver wv-11304]
The specific gravity of the condensate stored in the four condensate storage tanks (units TK-31 through TK-34) shall be maintained between 0.600 and 0.800 at 60/60° F.
- (F5) ENGINE REPLACEMENT [WAQSR Ch 6, Sec 2; Ch 6, Sec 3(h)(i)(I)]
- (a) Permanent replacement of an engine must be evaluated by the Division under WAQSR Ch 6, Sec 2 prior to such replacement to determine the appropriate permitting action and evaluate the need for additional requirements resulting from the permanent replacement.
 - (b) Should an engine break down or require an overhaul, the permittee may bring on site and operate a temporary replacement engine until repairs are made. The temporary replacement unit shall be identical or similar to the unit replaced, with emission levels at or below those of the unit replaced. The permittee shall notify the Division in writing of such temporary replacement within five working days and include the following:
 - (i) The startup date of the temporary replacement unit; and
 - (ii) A statement regarding the applicability of any New Source Performance Standards (NSPS) in 40 CFR Part 60; any National Emission Standards for Hazardous Air Pollutants (NESHAPs) in 40 CFR Part 63; and Compliance Assurance Monitoring (CAM) in WAQSR Ch 7, Sec 3 for the temporary replacement unit.

Testing and Monitoring Requirements

- (F6) EMISSIONS TESTING [W.S. 35-11-110 and WAQSR Ch 6, Sec 2 Permit MD-10680A]
- (a) The Division reserves the right to require additional testing as provided under condition G1 of this permit. Should testing be required, test methods found at 40 CFR 60, Appendix A, shall be used as follows:
 - (i) For visible emissions from the emergency flare (unit FLARE), Method 22 shall be used.
 - (ii) For visible emissions from all other sources, Method 9 shall be used.
 - (iii) For NO_x, CO, and VOC emissions from four of the Waukesha L7042GSI compressor engines (units 16 - 19), testing shall follow 40 CFR 60 Subpart JJJ §60.4244, except that §60.8 only applies to engines subject to 40 CFR 60 Subpart JJJ.
 - (iv) For other NO_x emission sources, Methods 1-4 and 7 or 7E shall be used.
 - (v) For other CO emissions, Methods 1-4 and 10 shall be used.
 - (vi) For formaldehyde emissions from four of the Waukesha L7042GSI compressor engines (units 16-19), testing shall be conducted in accordance with 40 CFR 63.6615. Results of the formaldehyde tests shall be reported in terms of ppbvd at 15% O₂ and lb/hr. Emissions in terms of lb/hr shall be calculated using the methodology in Sections 10.1.1.1 and 10.1.1.2 of the State of Wyoming's Portable Analyzer Protocol.
 - (vii) For alternative test methods, or methods used for other pollutants, the approval of the Administrator must be obtained prior to using the test method to measure emissions.
 - (b) Unless otherwise specified, testing shall be conducted in accordance with WAQSR Ch 5, Sec 2(h).

- (F7) **VISIBLE EMISSIONS MONITORING** [WAQSR Ch 6, Sec 3(h)(i)(C)(I)]
For visible emissions from all engines and fuel-burning equipment at the facility, the permittee shall monitor the type of fuel used to ensure natural gas is the sole fuel source for these units.
- (F8) **ENGINE EMISSIONS & CATALYST MONITORING**
[WAQSR Ch 6, Sec 3(h)(i)(C)(I); Ch 7, Sec 3(c)(ii); Ch 6, Sec 2 Permits MD-378A and MD-10680A]
- (a) For NO_x and CO emissions from each Waukesha L7042GSI and L7044GSI compressor engine (units 16 – 19 and 51 - 54), the permittee shall adhere to the CAM plan, attached as Appendix A of this permit, and shall conduct monitoring as follows during active operation of each emission source:
- (i) For each engine, the permittee shall monitor and record, at minimum once daily, the inlet engine catalyst temperature, and at minimum monthly, the pressure differential across the engine catalyst.
- (ii) The permittee shall measure NO_x and CO emissions from each compressor engine at least once every 12 calendar months for comparison with the emission limits specified in condition F2, and to further refine the relationship between emissions and the indicator ranges in the CAM plan.
- (A) The permittee shall measure the CAM indicators during the tests. Following each test, the permittee shall evaluate the data from the test, together with data from previous testing, to determine if the indicator ranges in the CAM plan should be revised.
- (B) For units 16 through 19, testing shall follow 40 CFR 60 Subpart JJJJ §60.4244, except that §60.8 only applies to engines subject to 40 CFR 60 Subpart JJJJ. For units 51 through 54, emissions shall be measured using the Division's portable analyzer monitoring protocol, or the EPA reference methods described in condition F6. The monitoring protocol can be downloaded at <http://deq.state.wy.us/aqd/operating.asp> or is available from the Division upon request.
- (iii) An excursion, which is considered operation outside of the ranges established in the approved CAM plan, shall trigger prompt inspection and, if appropriate, corrective action.
- (iv) The permittee shall follow all other applicable requirements under conditions CAM-1 through CAM-4 of this permit.
- (b) The permittee shall measure NO_x and CO emissions from the Worthington SUTC 8 compressor engine (unit 2) at least semiannually for comparison with the emission limits specified in condition F2.
- (c) The permittee shall measure NO_x emissions from each Cooper GMW A-8 compressor engine (units 10 and 11) at least semiannually for comparison with the emission limits specified in condition F2.
- (d) The permittee shall measure VOC emissions at least annually, and formaldehyde emissions in accordance with the frequency established under 40 CFR 63 §63.6615, from units 16 – 19 Waukesha L7042GSI compressor engines for comparison with the emission limits specified in condition F2.
- (e) The permittee shall measure NO_x and CO emissions from each Waukesha 7042 GU generator engine (units 25 - 29) at least annually for comparison with the emission limits specified in condition F2.
- (f) For engines 16 through 19, testing shall follow the methods specified in condition F6(a)(iii) and (vi). For all other engines specified in this condition, NO_x and CO emissions shall be measured using the Division's portable analyzer monitoring protocol, or the EPA reference methods described in condition F6.
- (g) Prior notification of the test date shall be provided to the Division as specified in condition F16. Results of the tests shall be submitted to the Division in accordance with condition F17 or paragraph (h) of this condition, as applicable.
- (h) For any engine installed:
- (i) The permittee shall notify the Division within 24-hours if any engine testing shows operation outside the emission limits specified in condition F2.
- (ii) The permittee shall repair the engines no later than seven calendar days of such a testing event, and shall repair and retest the affected engine to demonstrate the engine has been returned to operation within the limits in condition F2.
- (iii) Compliance with this condition regarding repair and retesting shall not be deemed to limit the authority of the Division to cite the owner or operator for an exceedance of the emission limits for any testing which shows noncompliance.
- (F9) **FLARE MONITORING** [WAQSR Ch 6, Sec 3(h)(i)(C)(I)]
- (a) The permittee shall monitor for the presence of a pilot flame for the emergency flare (unit FLARE) using a thermocouple or other equivalent device to detect the presence of a flame.
- (b) Emissions from the emergency flare (unit FLARE) shall be included in the annual emissions inventory required by condition G9 of this permit.

- (F10) OPERATING HOURS MONITORING [WAQSR Ch 6, Sec 3(h)(i)(C)(I); Ch 6, Sec 2 Permit MD-10680A and Waiver wv-13971]
 The permittee shall monitor the hours of operation of the Worthington SUTC 8 compressor engine (unit 2) and the Generac GH-410 emergency generator engine (unit Genset) using the non-resettable hours meters required by condition F2.
- (F11) FUEL BURNING EQUIPMENT MONITORING [WAQSR Ch 6, Sec 3(h)(i)(C)(I)]
 To assess compliance with the emission limits specified in condition F3, the permittee shall:
- (a) Measure NO_x emissions from the heat medium heater (unit H130a/b) at least annually.
 - (b) Measure NO_x emissions from the hot oil heaters (units H110a/b and H120) at least once every two years. If emission results from biennial tests are less than or equal to 75 percent of the emission limit for the unit, the frequency of subsequent performance tests may be reduced to once every four years. If the results of any subsequent test exceed 75 percent of the emission limit, biennial testing shall resume.
 - (c) Conduct visual inspections of the heat medium heater (unit H130a/b) and the hydrogen plant heater (unit H140) at least weekly to check for proper operation and flame conditions.
 - (d) The monitoring shall be conducted using the Division's portable analyzer monitoring protocol, or the EPA reference methods described in condition F6. The monitoring protocol can be downloaded at <http://deq.state.wy.us/aqd/operating.asp> or is available from the Division upon request.
- (F12) CONDENSATE STORAGE TANKS MONITORING [WAQSR Ch 6, Sec 2 Waiver wv-11304]
 The permittee shall test the condensate stored in the four condensate storage tanks (units TK-31 through TK-34) daily with a hydrometer to assess compliance with condition F4.
- (F13) AMBIENT MONITORING NETWORK [WAQSR Ch 6, Sec 2 Permit MD-10680A]
- (a) The permittee shall operate, in accordance with the requirements of 40 CFR Parts 50 and 58, an ambient monitoring program approved by the Division that includes an ambient NO₂ monitoring network to demonstrate compliance with the ambient standards for NO₂.
 - (i) The permittee shall maintain a quality assurance plan for the ambient NO₂ monitoring network, as required by 40 CFR 58. The quality assurance plan shall be approved by the Division.
 - (ii) The ambient NO₂ monitoring network shall remain in operation for a minimum of three years from the date of removal, replacement or control of the two Cooper GMW A-8 compressor engines (units 10 and 11) as required under condition F2(g). The permittee shall obtain the approval of the Division prior to shutdown of the ambient NO₂ monitoring network.
 - (b) The permittee shall maintain a meteorological station at the facility in conjunction with the ambient NO₂ monitoring network. Surface air meteorological data measurements shall be collected at the facility, as specified in the EPA document "Meteorological Monitoring Guidance for Regulatory Modeling Applications." The meteorological data measurements shall consist of hourly observations of:
 - (i) Wind speed using an anemometer height of 10 meters;
 - (ii) Wind direction;
 - (iii) Ambient temperature; and
 - (iv) Vertical temperature difference (delta-temperature) between 2 meters and 10 meters.

Recordkeeping Requirements

- (F14) TESTING AND MONITORING RECORDS [WAQSR Ch 6, Sec 3(h)(i)(C)(II); Ch 7, Sec 3(i)(ii); Ch 6, Sec 2 Permit MD-10680A, Waiver wv-11304, and Waiver wv-13971]
- (a) For any testing or monitoring performed under conditions F6, F8, F11(a)-(b), and F12 other than Method 9 or Method 22 observations, the permittee shall record, as applicable, the following:
 - (i) The date, place, and time of sampling, measurements, or observations;
 - (ii) The date(s) analyses were performed;
 - (iii) The company or entity that performed the analyses or observations;
 - (iv) The analytical techniques or methods used;
 - (v) The results of such analyses or observations;
 - (vi) The operating conditions and parameters as they existed at the time of testing or monitoring; and
 - (vii) Any corrective actions taken.

- (b) For the CAM monitoring required under condition F8(a), the permittee shall also record the following:
 - (i) The engine catalyst inlet temperature, and pressure differential across the catalyst, as measured during the NOx and CO emissions testing required by condition F8(a)(ii), and the evaluation of indicator ranges;
 - (ii) The date, time, and duration of any excursions as well as the CAM indicator value(s) during each excursion; and
 - (iii) Monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan required pursuant to WAQSR Ch 7, Sec 3(h), any activities undertaken to implement a Quality Improvement Plan (QIP), and other supporting information required to be maintained under WAQSR Ch 7, Sec 3.
- (c) For any Method 9 observations required by the Division under condition F6, the permittee shall keep field records in accordance with Section 2.2 of Method 9.
- (d) For any Method 22 observations required by the Division under condition F6, the permittee shall keep field records in accordance with Sections 11.2 and 11.5 of Method 22.
- (e) For any formaldehyde testing for engine units 16 – 19 required by condition F8(d), results shall be recorded in terms of ppbvd at 15% O2 and in lb/hr.
- (f) The permittee shall maintain a log of the visual inspections conducted on the heaters specified in condition F11(c). The record shall include any deviations from proper operation or flame conditions and any corrective actions taken.
- (g) The permittee shall record the operating hours of the Worthington SUTC 8 compressor engine (unit 2) and the Generac GH-410 emergency generator engine (unit Genset) on a monthly basis.
- (h) The permittee shall maintain records of the data generated by the ambient monitoring network and the meteorological station such that compliance with condition F13 may be assessed.
- (i) The permittee shall record the date and duration of time when the pilot flame is not present on the emergency flare (unit FLARE).
- (j) The permittee shall retain these records on-site at the facility, or at an acceptable alternative location, for a period of at least five years from the date the records are generated.

(F15) MAINTENANCE RECORDS

[WAQSR Ch 6, Sec 3(h)(i)(C)(II); Ch 6, Sec 2 Permit MD-378A and Waiver wv-13971]

- (a) The permittee shall maintain records of maintenance activities for two Waukesha L7042GSI compressor engines (units 51 and 52), the two Waukesha L7044GSI compressor engines (units 53 and 54) and the Generac GH-410 emergency generator engine (unit Genset), which shall include:
 - (i) The maintenance activity performed;
 - (ii) The date and place the activity was performed;
 - (iii) The company and individual(s) that performed the activity;
 - (iv) The purpose of the activity; and
 - (v) An explanation for any deviation from manufacturer's instructions for units 51 through 54 and from good air pollution control practices for unit Genset.
- (b) The permittee shall retain these records on-site at the facility, or at an acceptable alternative location, for a period of at least five years from the date the records are generated.

Reporting Requirements

(F16) NOTIFICATION OF TESTING AND SHUTDOWN AND REMOVAL

[WAQSR Ch 6, Sec 2 Permit MD-378A and MD-10680A]

- (a) For the testing required by conditions F8, F9, and F11, the permittee shall notify the Division as follows:
 - (i) For engines subject to the requirements of 40 CFR 60 Subpart JJJJ, the permittee shall provide test notification as specified in §60.8 of 40 CFR 60. §63.7 of 40 CFR 63.
 - (ii) For other engines and for the heat medium heater (unit H130a /b), notification of the test date shall be provided at least 15 days prior to testing.
- (b) Upon shutdown and removal of an engine from the facility, written notification is required within 15 days of removal. Such notification shall be submitted on a complete Engine Installation/Removal form. The form can be downloaded at <http://deq.state.wy.us/aqd> or is available from the Division upon request.

(F17) TEST REPORTS

[WAQSR Ch 6, Sec 3(h)(i)(C)(III); WAQSR Ch 6, Sec 2 Permit MD-378A and MD-10680A]

- (a) The permittee shall report the results of any emissions tests performed under conditions F8 and F11, within 30 days of completing the tests.
 - (i) However, if testing for any engine shows operation out of compliance, the Division must be notified within 24 hours as indicated under condition F8(h).
 - (ii) For engine units 16 – 19 and 51 – 54, the reports shall also include the evaluation of CAM indicator ranges as required by condition F8(a)(ii). If the evaluation indicates the CAM ranges need to be revised, the permittee shall submit a revised CAM plan to the Division, along with a request to administratively amend the CAM plan, within 60 days of completing the test.
- (b) The reports shall include the information specified under condition F14(a) and (e), as appropriate, reference this permit condition (F17), and be submitted to the Division in accordance with condition G4.

(F18) SEMIANNUAL MONITORING REPORTS [WAQSR Ch 6, Sec 3(h)(i)(C)(III)]

- (a) The following shall be reported to the Division for each semiannual reporting period from January 1 through June 30, and from July 1 through December 31, within 31 days of the end of each period (by July 31 and January 31, respectively, each year):
 - (i) A statement verifying that all engines and fuel-burning equipment at the facility fired natural gas during the reporting period.
 - (ii) The calendar year-to-date operating hours for the Worthington SUTC 8 compressor engine (unit 2) and the Generac GH-410 emergency generator engine (unit Genset).
 - (iii) Summary results of the flare emissions monitoring required under condition F9(a). If no pilot flame outages occurred during the reporting period, this shall be stated in the report. If there were outages of the pilot flame, the permittee shall report the date(s) and duration of time when the pilot flame was not present.
 - (iv) Summary results of the CAM monitoring required under conditions F8(a). The results shall include the following, as applicable:
 - (A) Information on the number, duration, and cause of excursions, as applicable, and the corrective actions taken;
 - (B) Summary information on the number, duration, and cause for monitor downtime incidents; and
 - (C) A description of the action taken to implement a QIP (if required) during the reporting period as specified in Chapter 7, Section 3 (h). Upon completion of a QIP, the permittee shall include in the next summary report documentation that the implementation of the plan has reduced the likelihood of similar excursions.
 - (v) Information on the number, duration, and cause of deviations from the specific gravity ranges specified in condition F4 for the condensate storage tanks (units TK-31 through TK-34), and any corrective actions taken. If no deviations occurred during the reporting period, this shall be stated in the report.
- (b) All instances of deviations from the conditions of this permit must be clearly identified in each report.
- (c) The reports shall reference this permit condition (F18), and be submitted to the Division in accordance with condition G4.

(F19) AMBIENT MONITORING NOTIFICATIONS AND REPORTS

[WAQSR Ch 6, Sec 3(h)(i)(C)(III) and Division letter July 15, 2011]

- (a) Should an exceedance occur for the monitoring network required by condition F13, the permittee shall notify the Division's Monitoring Section Project Advisor via e-mail, as soon as possible, but no later than within seven days of the event.
- (b) The data generated by the ambient monitoring network required by condition F13 shall be submitted in a Division approved format, within 60 days following the end of each quarter. In the event of an exceedance the following shall also be submitted with the quarterly report:
 - (i) A narrative of the event including meteorological/air quality parameters, facility activities, operations and mitigation/control information for the time frame in which the exceedance occurred.
 - (ii) If the facility wishes to have the exceedance flagged as an exceptional event under 40 CFR 50.14, any additional information must be submitted to the Division under an exceptional event documentation package.

- (c) Ambient monitoring network reports shall reference this condition (F19) and be submitted in accordance with condition G4 of this permit. A copy of each report shall also be submitted to the Division's Ambient Monitoring Program.

(F20) GREENHOUSE GAS REPORTS [W.S. 35-11-110]

The permittee shall submit to the Division a summary of any report(s) required to be submitted to the EPA under 40 CFR 98.

- (a) The reports shall be submitted to the Division within 60 days of submission to EPA, in a format as specified by the Division.
- (b) The reports shall be submitted in accordance with condition G4(a)(i) of this permit, to the attention of the Division's Emission Inventory Program. A copy need not be sent to the DEQ AirQuality contact.

(F21) REPORTING EXCESS EMISSIONS & DEVIATIONS FROM PERMIT REQUIREMENTS
[WAQSR Ch 6, Sec 3(h)(i)(C)(III)]

- (a) General reporting requirements are described under the General Conditions of this permit. The Division reserves the right to require reports as provided under condition G1 of this permit.
- (b) Emissions which exceed the limits specified in this permit and which are not reported under a different condition of this permit shall be reported annually with the emission inventory unless specifically superseded by condition G17, condition G19, or other condition(s) of this permit. The probable cause of such exceedance, the duration of the exceedance, the magnitude of the exceedance, and any corrective actions or preventative measures taken shall be included in this annual report. For sources and pollutants which are not continuously monitored, if at any time emissions exceed the limits specified in this permit by 100 percent, or if a single episode of emission limit exceedance spans a period of 24 hours or more, such exceedance shall be reported to the Division within one working day of the exceedance. (Excess emissions due to an emergency shall be reported as specified in condition G17. Excess emissions due to unavoidable equipment malfunction shall be reported as specified in condition G19.)
- (c) Any other deviation from the conditions of this permit shall be reported to the Division in writing within 30 days of the deviation or discovery of the deviation.

Accidental Release Prevention Requirements

(F22) ACCIDENTAL RELEASE PREVENTION REQUIREMENTS [40 CFR 68]

- (a) The permittee shall meet all requirements of 40 CFR 68 as they apply to the facility.
- (b) The permittee shall submit, as part of the annual compliance certification submitted under condition C1 of this permit, a certification statement concerning the facility's compliance with all requirements of 40 CFR 68, including the registration and submission of a Risk Management Plan.

**WAQSR CHAPTER 5, SECTION 2 NEW SOURCE PERFORMANCE STANDARDS (NSPS)
AND 40 CFR 60 SUBPART JJJJ REQUIREMENTS
FOR STATIONARY SPARK IGNITION INTERNAL COMBUSTION ENGINES**

SUBPART JJJJ REQUIREMENTS

[40 CFR Part 60 Subparts A and JJJJ; WAQSR Ch 5, Sec 2; Ch 6, Sec 2 Waiver wv-13971]

As applicable, the permittee shall meet all requirements of 40 CFR 60 Subparts A and JJJJ, and WAQSR Ch 5, Sec 2, as they apply to affected stationary spark ignition (SI) internal combustion engines (ICE). (As required by condition F5(b), if an engine is replaced or reconstructed, subpart applicability will need to be reevaluated and a statement regarding applicability submitted to the Division.) For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator. An affected source is defined at §60.4230, including the Generac GH-410 emergency generator engine (unit Genset).

On March 6, 2013, units 2, 10, 11, 16 through 19, 25 through 29, and 51 through 54 were not subject to Subpart JJJJ according to information submitted to the Division by the permittee.

**WAQSR CHAPTER 5, SECTION 2 NEW SOURCE PERFORMANCE STANDARDS (NSPS) AND
40 CFR 60 SUBPART Dc REQUIREMENTS FOR SMALL INDUSTRIAL-COMMERCIAL-
INSTITUTIONAL STEAM GENERATING UNITS**

SUBPART Dc REQUIREMENTS [40 CFR 60 Subparts A and Dc; WAQSR Ch 5, Sec 2]

The permittee shall meet all applicable requirements of 40 CFR 60 Subparts A and Dc and WAQSR Ch 5, Sec 2, as they apply to each steam generating unit as defined under §60.40c, including the heat medium heater (unit H130a/b).

**WAQSR CHAPTER 5, SECTION 2 NEW SOURCE PERFORMANCE STANDARDS (NSPS) AND
40 CFR 60 SUBPART KKK REQUIREMENTS (FOR EQUIPMENT LEAKS OF VOC FROM ONSHORE
NATURAL GAS PROCESSING PLANTS) AND VV (FOR EQUIPMENT LEAKS OF VOC IN THE
SYNTHETIC ORGANIC CHEMICALS MANUFACTURING INDUSTRY)**

SUBPART KKK REQUIREMENTS

[40 CFR 60 - Subparts A, KKK and VV; WAQSR Ch 5, Sec 2; Ch 6, Sec 2 Permit MD-124]

The permittee shall meet all applicable requirements of 40 CFR 60 - Subparts A, KKK, and VV; and WAQSR Ch 5, Sec 2, as they apply to affected facilities in onshore natural gas processing plants as defined under §60.630, including fugitive emissions from equipment leaks (unit FUG) and the emergency flare (unit FLARE).

**WAQSR CHAPTER 5, SECTION 2 NEW SOURCE PERFORMANCE STANDARDS (NSPS) AND
40 CFR 60 SUBPART OOOO REQUIREMENTS FOR CRUDE OIL AND NATURAL GAS PRODUCTION,
TRANSMISSION AND DISTRIBUTION**

SUBPART OOOO REQUIREMENTS [40 CFR 60 Subparts A and OOOO; and WAQSR Ch 5, Sec 2]

The permittee shall meet all applicable requirements of 40 CFR 60 Subparts A and OOOO and WAQSR Ch 5, Sec 2 as they apply to affected facilities as specified under §60.5365.

The subparts are available at <http://www.gpoaccess.gov/cfr/retrieve.html>, or from the Division upon request.

**WAQSR CHAPTER 5, SECTION 3 NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR
POLLUTANTS (NESHAPS) AND 40 CFR 63 SUBPART ZZZZ REQUIREMENTS FOR
STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES**

SUBPART ZZZZ REQUIREMENTS

[40 CFR 63 Subparts A and ZZZZ; WAQSR Ch 5, Sec 3; Ch 6, Sec 2 Waiver wv-13971

The permittee shall meet all requirements of 40 CFR 63 Subparts A and ZZZZ and WAQSR Ch 5, Sec 3 as they apply to each affected source as indicated in §63.6590(a). An affected source is any existing, new, or reconstructed stationary RICE located at a major or area source of HAP emissions, excluding stationary RICE being tested at a stationary RICE test cell/stand. (As required by condition F5(b), if an engine is replaced or reconstructed, subpart applicability will need to be re-evaluated and a statement regarding applicability submitted to the Division.) This facility is currently identified as a major source of HAP emissions. Affected sources at this facility include the Worthington SUTC 8 compressor engine (unit 2), the two Cooper GMW A-8 compressor engines (units 10 and 11), the six Waukesha L7042GSI compressor engines (units 16 through 19 and units 51 and 52), the five Waukesha 7042 GU generator engines (units 25 through 29), the two Waukesha L7044GSI compressor engines (units 53 and 54), and the Generac GH-410 emergency generator engine (unit Genset).

**WAQSR CHAPTER 5, SECTION 3
NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAPS) AND
40 CFR 63 SUBPART DDDDD REQUIREMENTS FOR
INDUSTRIAL, COMMERCIAL, AND INSTITUTIONAL BOILERS AND PROCESS HEATERS**

SUBPART DDDDD REQUIREMENTS [40 CFR 63 Subparts A and DDDDD; WAQSR Ch 5, Sec 3]

The permittee shall meet all requirements of 40 CFR 63 Subparts A and DDDDD and WAQSR Ch 5, Sec 3, as they apply to owners or operators of industrial, commercial, or institutional boilers or process heaters as defined in §63.7575 that are located at, or are part of, a major source of HAPs as defined in §63.2, except that for oil and natural gas production facilities, a major source of HAPs is as defined in §63.761 (40 CFR Part 63 Subpart HH). The types of boilers and process heaters listed in §63.7491 are not subject to Subpart DDDDD. This subpart applies to:

- (a) The collection of existing industrial, commercial, and institutional boilers and process heaters within a subcategory, including the heater treater (unit H100), the hot oil heaters (units H110a/b and H120), the heat medium heater (H130a/b), and the hydrogen plant heater (unit H140).
- (b) New or reconstructed industrial, commercial, or institutional boilers or process heaters.

**WAQSR CHAPTER 5, SECTION 3 NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR
POLLUTANTS (NESHAPS) AND 40 CFR 63 SUBPART HH REQUIREMENTS
FOR OIL AND NATURAL GAS PRODUCTION FACILITIES**

SUBPART HH REQUIREMENTS [40 CFR 63, Subparts A and HH; WAQSR Ch 5, Sec 3]

The permittee shall meet all requirements of 40 CFR 63, Subparts A and HH and WAQSR Ch 5, Sec 3, as they apply to affected sources as defined in §63.760, located at oil and natural gas production facilities. For major sources, the affected source includes the equipment described in §63.760(b)(1), including the plant 1 ethylene glycol dehydration system (unit PIEG) and the plant 2 ethylene glycol dehydration system (unit P2EG).

The subparts are available at <http://www.gpoaccess.gov/cfr/retrieve.html>, or from the Division upon request.

WAQSR CHAPTER 7, SECTION 3
COMPLIANCE ASSURANCE MONITORING (CAM) REQUIREMENTS

WAQSR Ch 7, Sec 3 is available at <http://deq.state.wy.us/aqd/standards.asp>, or from the Division upon request.

- (CAM-1) **COMPLIANCE ASSURANCE MONITORING REQUIREMENTS [WAQSR Ch 7, Sec 3(b) and (c)]**
The permittee shall follow the CAM plan attached as Appendix A of this permit and meet all CAM requirements of WAQSR Chapter 7, Section 3 as they apply to the units identified in condition F8(a). Compliance with the source specific monitoring, recordkeeping, and reporting requirements of this permit meets the monitoring, recordkeeping, and reporting requirements of WAQSR Ch 7, Sec 3, except for additional requirements specified under conditions CAM-2 through CAM-4.
- (CAM-2) **OPERATION OF APPROVED MONITORING [WAQSR Ch 7, Sec 3(g)]**
- (a) At all times, the permittee shall maintain the monitoring under this section, including but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment.
 - (b) Except for monitoring malfunctions, associated repairs, and required quality assurance or control activities, the permittee shall conduct all monitoring in continuous operation (or at all required intervals) at all times that the pollutant specific emissions unit is operating.
 - (c) Upon detecting an excursion, the permittee shall restore operation of the pollutant-specific emission unit to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices. The response shall include minimizing the period of any start-up, shutdown or malfunction and taking any corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion.
 - (d) If the permittee identifies a failure to achieve compliance with an emission limit for which the monitoring did not provide an indication of an excursion while providing valid data, or the results of compliance or performance testing documents a need to modify the existing indicator ranges, the permittee shall promptly notify the Division and, if necessary, submit a proposed modification to this permit to address the necessary monitoring changes.
- (CAM-3) **QUALITY IMPROVEMENT PLAN (QIP) REQUIREMENTS [WAQSR Ch 7, Sec 3(h)]**
- (a) If the Division or the EPA Administrator determines, based on available information, that the permittee has used unacceptable procedures in response to an excursion or exceedance, the permittee may be required to develop and implement a Quality Improvement Plan (QIP).
 - (b) If required, the permittee shall maintain a written Quality Improvement Plan (QIP) and have it available for inspection.
 - (c) The plan shall include procedures for conducting one or more of the following:
 - (i) Improved preventative maintenance practices.
 - (ii) Process operation changes.
 - (iii) Appropriate improvements to control methods.
 - (iv) Other steps appropriate to correct control.
 - (v) More frequent or improved monitoring (in conjunction with (i)- (iv) above).
 - (d) If a QIP is required, the permittee shall develop and implement a QIP as expeditiously as practicable and shall notify the Division if the period for completing the QIP exceeds 180 days from the date on which the need to implement the QIP was determined.
 - (e) Following implementation of a QIP, upon any subsequent determination under paragraph (a) above, the Division may require the permittee to make reasonable changes to the QIP if the QIP failed to address the cause of control device problems, or failed to provide adequate procedures for correcting control device problems as expeditiously as practicable.
 - (f) Implementation of a QIP shall not excuse the permittee from compliance with any existing emission limit(s) or any existing monitoring, testing, reporting, or recordkeeping requirements that may be applicable to the facility.
- (CAM-4) **SAVINGS PROVISIONS [WAQSR Ch 7, Sec 3(j)]**
Nothing in the CAM regulations shall excuse the permittee from compliance with any existing emission limit or standard, or any existing monitoring, testing, reporting or recordkeeping requirement that may be applicable to the facility.

COMPLIANCE CERTIFICATION AND SCHEDULE

Compliance Certification [WAQSR Ch 6, Sec 3(h)(iii)(E)]

- (C1) (a) The permittee shall submit by January 31 each year a certification addressing compliance with the requirements of this permit. The certification shall be submitted as a stand-alone document separate from any monitoring reports required under this permit.
- (b) (i) For the emergency flare (unit FLARE), the permittee shall assess compliance with condition F1 of this permit by conducting the monitoring required by condition F9(a).
- (ii) For visible emissions, the permittee shall assess compliance with condition F1 of this permit by verifying natural gas was the sole fuel source used for the units specified in condition F7(a).
- (iii) For NO_x, CO, VOC, and formaldehyde emissions from the engines, the permittee shall assess compliance with condition F2 by conducting the testing and monitoring required by condition F8 and reviewing records kept in accordance with condition F15.
- (iv) For operating hours limitations, the permittee shall assess compliance with condition F2(d) by conducting the monitoring required by condition F10 and reviewing the records kept in accordance with condition F14(g).
- (v) For NO_x and CO emissions from the fuel burning equipment, the permittee shall assess compliance with condition F3 by conducting the monitoring required by condition F11.
- (vi) For condensate specific gravity limitations for the condensate storage tanks (units TK-31 through TK-34), the permittee shall assess compliance with condition F4 by conducting the monitoring required by condition F12.
- (vii) For the ambient monitoring network the permittee shall assess compliance with condition F13 by reviewing records kept in accordance with condition F14(h).
- (viii) For greenhouse gas reporting, the permittee shall assess compliance with condition F20 by verifying that reports were submitted in accordance with conditions F20 (a) and (b).
- (ix) For accidental release prevention, the permittee shall submit a certification statement as described in condition F22(b).
- (x) For any engine subject to 40 CFR 60 Subpart JJJJ, the permittee shall assess compliance with Subpart JJJJ by conducting any applicable testing and monitoring required by §§60.4237, 60.4243, and 60.4244, and by reviewing the records required by §§60.4245 and 60.4246.
- (xi) For any units subject to 40 CFR 60, Subpart Dc, the permittee shall assess compliance with Subpart Dc by conducting any applicable testing and monitoring required by §§60.44c through 60.47c, and reviewing records required by §60.48c(g).
- (xii) For any unit subject to 40 CFR 60 Subpart KKK, the permittee shall assess compliance with Subpart KKK by reviewing the records required by §60.635.
- (xiii) For any affected facility subject to 40 CFR 60 Subpart OOOO, the permittee shall assess compliance with Subpart OOOO by conducting any applicable testing and monitoring required by §§60.5413 through 60.5417 and by reviewing any applicable records required by §§60.5420, 60.5421, and 60.5423.
- (xiv) The permittee shall assess compliance with Part 63 Subpart ZZZZ by conducting any applicable testing and monitoring required by §§63.6610 through 63.6640 and by reviewing the records required by §§63.6655 and 63.6665.
- (xv) The permittee shall assess compliance with Part 63 Subpart DDDDD by conducting any applicable testing and monitoring required by §§63.7505 through 63.7541 and by reviewing any records required by §§63.7555 and 63.7560.
- (xvi) The permittee shall assess compliance with Part 63 Subpart HH by conducting any compliance demonstrations and monitoring required by §§63.772 and 63.773 and reviewing any records required by §§63.760 and 63.774.
- (c) In the compliance certification submitted for calendar year 2014, the permittee shall verify that the two Cooper GMW A-8 compressor engines (units 10 and 11) were removed by December 31, 2014, unless otherwise authorized by the Division.
- (d) The compliance certification shall include:
- (i) The permit condition or applicable requirement that is the basis of the certification;
- (ii) The current compliance status;
- (iii) Whether compliance was continuous or intermittent; and
- (iv) The methods used for determining compliance.

- (e) For any permit conditions or applicable requirements for which the source is not in compliance, the permittee shall submit with the compliance certification a proposed compliance plan and schedule for Division approval.
- (f) The compliance certification shall be submitted to the Division in accordance with condition G4 of this permit and to the Assistant Regional Administrator, Office of Enforcement, Compliance, and Environmental Justice (8ENF-T), U.S. EPA - Region VIII, 1595 Wynkoop Street, Denver, CO 80202-1129.
- (g) Determinations of compliance or violations of this permit are not restricted to the monitoring requirements listed in paragraph (b) of this condition; other credible evidence may be used.

Compliance Schedule [WAQSR Ch 6, Sec 3(h)(iii)(C) and (D)]

- (C2) The permittee shall continue to comply with the applicable requirements with which the permittee has certified that it is already in compliance.
- (C3) The permittee shall comply in a timely manner with applicable requirements that become effective during the term of this permit.

GENERAL PERMIT CONDITIONS

Powers of the Administrator: [W.S. 35-11-110]

- (G1) (a) The Administrator may require the owner or operator of any point source to complete plans and specifications for any application for a permit required by the Wyoming Environmental Quality Act or regulations made pursuant thereto and require the submission of such reports regarding actual or potential violations of the Wyoming Environmental Quality Act or regulations thereunder.
- (b) The Administrator may require the owner or operator of any point source to establish and maintain records; make reports; install, use and maintain monitoring equipment or methods; sample emissions, or provide such other information as may be reasonably required and specified.

Permit Renewal and Expiration: [WAQSR Ch 6, Sec 3(c)(i)(C), (d)(ii), (d)(iv)(B), and (h)(i)(B)] [W.S. 35-11-206(f)]

- (G2) This permit is issued for a fixed term of five years. Permit expiration terminates the permittee's right to operate unless a timely and complete renewal application is submitted at least six months prior to the date of permit expiration. If the permittee submits a timely and complete application for renewal, the permittee's failure to have an operating permit is not a violation of WAQSR Chapter 6, Section 3 until the Division takes final action on the renewal application. This protection shall cease to apply after a completeness determination if the applicant fails to submit by the deadline specified in writing by the Division any additional information identified as being needed to process the application.

Duty to Supplement: [WAQSR Ch 6, Sec 3(c)(iii)]

- (G3) The permittee, upon becoming aware that any relevant facts were omitted or incorrect information was submitted in the permit application, shall promptly submit such supplementary facts or corrected information. The permittee shall also provide additional information as necessary to address any requirements that become applicable to the facility after this permit is issued.

Submissions: [WAQSR Ch 6, Sec 3(c)(iv)] [W.S. 35-11-206(c)]

- (G4) Any document submitted shall be certified as being true, accurate, and complete by a responsible official.
- (a) Submissions to the Division.
- (i) Any submissions to the Division including reports, certifications, and emission inventories required under this permit shall be submitted as separate, stand-alone documents and shall be sent to:
Administrator, Air Quality Division
122 West 25th Street
Cheyenne, Wyoming 82002
- (ii) Unless otherwise noted elsewhere in this permit, a copy of each submission to the Administrator under paragraph (a)(i) of this condition shall be sent to the DEQ Air Quality Contact listed on page 3 of this permit.
- (b) Submissions to EPA.
- (i) Each certification required under condition C1 of this permit shall also be sent to:
Assistant Regional Administrator
Office of Enforcement, Compliance, and Environmental Justice (8ENFT)
U.S. EPA - Region VIII
1595 Wynkoop Street
Denver, CO 80202-1129.
- (ii) All other required submissions to EPA shall be sent to:
Office of Partnerships and Regulatory Assistance
Air and Radiation Program (8P-AR)
U.S. EPA - Region VIII
1595 Wynkoop Street
Denver, CO 80202-1129

Changes for Which No Permit Revision Is Required: [WAQSR Ch 6, Sec 3(d)(iii)]

- (G5) The permittee may change operations without a permit revision provided that:
- (a) The change is not a modification under any provision of title I of the Clean Air Act;
 - (b) The change has met the requirements of Chapter 6, Section 2 of the WAQSR and is not a modification under Chapter 5, Section 2 or Chapter 6, Section 4 of the WAQSR and the changes do not exceed the emissions allowed under the permit (whether expressed therein as a rate of emissions or in terms of total emissions); and
 - (c) The permittee provides EPA and the Division with written notification at least 14 days in advance of the proposed change. The permittee, EPA, and the Division shall attach such notice to their copy of the relevant permit. For each such change, the written notification required shall include a brief description of the change within the permitted facility, the date on which the change will occur, any change in emissions, and any permit term or condition that is no longer applicable as a result of the change. The permit shield, if one exists for this permit, shall not apply to any such change made.

Transfer of Ownership or Operation: [WAQSR Ch 6, Sec 3(d)(v)(A)(IV)]

- (G6) A change in ownership or operational control of this facility is treated as an administrative permit amendment if no other change in this permit is necessary and provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittee has been submitted to the Division.

Reopening for Cause: [WAQSR Ch 6, Sec 3(d)(vii)] [W.S. 35-11-206(f)(ii) and (iv)]

- (G7) The Division will reopen and revise this permit as necessary to remedy deficiencies in the following circumstances:
- (a) Additional applicable requirements under the Clean Air Act or the WAQSR that become applicable to this source if the remaining permit term is three or more years. Such reopening shall be completed not later than 18 months after promulgation of the applicable requirement. No reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions have been extended.
 - (b) Additional requirements (including excess emissions requirements) become applicable to an affected source under the acid rain program. Upon approval by EPA, excess emissions offset plans shall be deemed to be incorporated into the permit.
 - (c) The Division or EPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit.
 - (d) The Division or EPA determines that the permit must be revised or revoked to assure compliance with applicable requirements.

Annual Fee Payment: [WAQSR Ch 6, Sec 3(f)(i), (ii), and (vi)] [W.S. 35-11-211]

- (G8) The permittee shall, as a condition of continued operations, submit an annual fee to the Division as established in Chapter 6, Section 3 (f) of the WAQSR. The Division shall give written notice of the amount of fee to be assessed and the basis for such fee assessment annually. The assessed fee is due on receipt of the notice unless the fee assessment is appealed pursuant to W.S. 35-11-211(d). If any part of the fee assessment is not appealed it shall be paid to the Division on receipt of the written notice. Any remaining fee which may be due after completion of the appeal is immediately due and payable upon issuance of the Council's decision. Failure to pay fees owed the Division is a violation of Chapter 6, Section 3 (f) and W.S. 35-11-203 and may be cause for the revocation of this permit.

Annual Emissions Inventories: [WAQSR Ch 6, Sec 3(f)(v)(G)]

- (G9) The permittee shall submit an annual emission inventory for this facility to the Division for fee assessment and compliance determinations within 60 days following the end of the calendar year. The emissions inventory shall be in a format specified by the Division.

Severability Clause: [WAQSR Ch 6, Sec 3(h)(i)(E)]

- (G10) The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

Compliance: [WAQSR Ch 6, Sec 3(h)(i)(F)(I) and (II)] [W.S. 35-11-203(b)]

- (G11) The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Air Act, Article 2 of the Wyoming Environmental Quality Act, and the WAQSR and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

Permit Actions: [WAQSR Ch 6, Sec 3(h)(i)(F)(III)] [W.S. 35-11-206(f)]

- (G12) This permit may be modified, revoked, reopened, and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.

Property Rights: [WAQSR Ch 6, Sec 3(h)(i)(F)(IV)]

- (G13) This permit does not convey any property rights of any sort, or any exclusive privilege.

Duty to Provide Information: [WAQSR Ch 6, Sec 3(h)(i)(F)(V)]

- (G14) The permittee shall furnish to the Division, within a reasonable time, any information that the Division may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Division copies of records required to be kept by the permit, including information claimed and shown to be confidential under W.S. 35-11-1101 (a) of the Wyoming Environmental Quality Act. Upon request by the Division, the permittee shall also furnish confidential information directly to EPA along with a claim of confidentiality.

Emissions Trading: [WAQSR Ch 6, Sec 3(h)(i)(H)]

- (G15) No permit revision is required, under any approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes that are provided for in this permit.

Inspection and Entry: [WAQSR Ch 6, Sec 3(h)(iii)(B)] [W.S. 35-11-206(c)]

- (G16) Authorized representatives of the Division, upon presentation of credentials and other documents as may be required by law, shall be given permission to:
- (a) enter upon the permittee's premises where a source is located or emissions related activity is conducted, or where records must be kept under the conditions of this permit;
 - (b) have access to and copy at reasonable times any records that must be kept under the conditions of this permit;
 - (c) inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;
 - (d) sample or monitor any substances or parameters at any location, during operating hours, for the purpose of assuring compliance with this permit or applicable requirements.

Excess Emissions Due to an Emergency: [WAQSR Ch 6, Sec 3(I)]

- (G17) The permittee may seek to establish that noncompliance with a technology-based emission limitation under this permit was due to an emergency, as defined in Ch 6, Sec 3(I)(i) of the WAQSR. To do so, the permittee shall demonstrate the affirmative defense of emergency through properly signed, contemporaneous operating logs, or other relevant evidence that:
- (a) an emergency occurred and that the permittee can identify the cause(s) of the emergency;
 - (b) the permitted facility was, at the time, being properly operated;
 - (c) during the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards, or other requirements in this permit;

- (d) The permittee submitted notice of the emergency to the Division within one working day of the time when emission limitations were exceeded due to the emergency. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

Diluting and Concealing Emissions: [WAQSR Ch 1, Sec 4]

- (G18) No person shall cause or permit the installation or use of any device, contrivance, or operational schedule which, without resulting in reduction of the total amount of air contaminant released to the atmosphere, shall dilute or conceal an emission from a source. This condition shall not apply to the control of odors.

Unavoidable Equipment Malfunction: [WAQSR Ch 1, Sec 5]

- (G19) (a) Any source believing that any emissions in excess of established regulation limits or standards resulted from an unavoidable equipment malfunction, shall notify the Division within 24 hours of the incident via telephone, electronic mail, fax, or other similar method. A detailed description of the circumstances of the incident as described in paragraph 5(a)(i)(A) Chapter 1, including a corrective program directed at preventing future such incidents, must be submitted within 14 days of the onset of the incident. The Administrator may extend this 14-day time period for cause.
- (b) The burden of proof is on the owner or operator of the source to provide sufficient information to demonstrate that an unavoidable equipment malfunction occurred.

Fugitive Dust: [WAQSR Ch 3, Sec 2(f)]

- (G20) The permittee shall minimize fugitive dust in compliance with standards in Ch 3, Sec 2(f) of WAQSR for construction/demolition activities, handling and transportation of materials, and agricultural practices.

Carbon Monoxide: [WAQSR Ch 3, Sec 5]

- (G21) The emission of carbon monoxide in stack gases from any stationary source shall be limited as may be necessary to prevent ambient standards from being exceeded.

Asbestos: [WAQSR Ch 3, Sec 8]

- (G22) The permittee shall comply with emission standards for asbestos during abatement, demolition, renovation, manufacturing, spraying and fabricating activities.
- (a) No owner or operator shall build, erect, install, or use any article, machine, equipment, process, or method, the use of which conceals an emission which would otherwise constitute a violation of an applicable standard. Such concealment includes, but is not limited to, the use of gaseous dilutants to achieve compliance with a visible emissions standard, and the piecemeal carrying out of an operation to avoid coverage by a standard that applies only to operations larger than a specified size.
- (b) All owners and operators conducting an asbestos abatement project, including an abatement project on a residential building, shall be responsible for complying with Federal requirements and State standards for packaging, transportation, and delivery to an approved waste disposal facility as provided in paragraph (m) of Ch 3, Sec 8.
- (c) The permittee shall follow State and Federal standards for any demolition and renovation activities conducted at this facility, including:
- (i) A thorough inspection of the affected facility or part of the facility where the demolition or renovation activity will occur shall be conducted to determine the presence of asbestos, including Category I and Category II non-friable asbestos containing material. The results of the inspection will determine which notification and asbestos abatement procedures are applicable to the activity.
- (ii) The owner or operator shall follow the appropriate notification requirements of Ch 3, Sec 8(i)(ii).
- (iii) The owner or operator shall follow the appropriate procedures for asbestos emissions control, as specified in Chapter 3, Section 8(i)(iii).
- (d) No owner or operator of a facility may install or reinstall on a facility component any insulating materials that contain commercial asbestos if the materials are either molded and friable or wet-applied and friable after drying. The provisions of this paragraph do not apply to spray-applied insulating materials regulated under paragraph (j) of Ch 3, Sec 8.
- (e) The permittee shall comply with all other requirements of WAQSR Ch 3, Sec 8.

Open Burning Restrictions: [WAQSR Ch 10, Sec 2]

- (G23) The permittee conducting an open burn shall comply with all rules and regulations of the Wyoming Department of Environmental Quality, Division of Air Quality, and with the Wyoming Environmental Quality Act.
- (a) No person shall burn prohibited materials using an open burning method, except as may be authorized by permit. ***“Prohibited materials”*** means substances including, but not limited to; natural or synthetic rubber products, including tires; waste petroleum products, such as oil or used oil filters; insulated wire; plastic products, including polyvinyl chloride (“PVC”) pipe, tubing and connectors; tar, asphalt, asphalt shingles, or tar paper; railroad ties; wood, wood waste, or lumber that is painted or chemically treated; explosives or ammunition; batteries; hazardous waste products; asbestos or asbestos containing materials; or materials which cause dense smoke discharges, excluding refuse and flaring associated with oil and gas well testing, completions and well workovers.
 - (b) No person or organization shall conduct or cause or permit open burning for the disposal of trade wastes, for a salvage operation, for the destruction of fire hazards if so designated by a jurisdictional fire authority, or for firefighting training, except when it can be shown by a person or organization that such open burning is absolutely necessary and in the public interest. Any person or organization intending to engage in such open burning shall file a request to do so with the Division.

Sulfur Dioxide Emission Trading and Inventory Program [WAQSR Ch 14]

- (G24) Any BART (Best Available Retrofit Technology) eligible facility, or facility which has actual emissions of SO₂ greater than 100 tpy in calendar year 2000 or any subsequent year, shall comply with the applicable requirements of WAQSR Ch 14, Sections 1 through 3, with the exceptions described in sections 2(c) and 3(a).

Stratospheric Ozone Protection Requirements: [40 CFR Part 82]

- (G25) The permittee shall comply with all applicable Stratospheric Ozone Protection Requirements, including but not limited to:
- (a) *Standards for Appliances* [40 CFR Part 82, Subpart F]
The permittee shall comply with the standards for recycling and emission reduction pursuant to 40 CFR Part 82, Subpart F - Recycling and Emissions Reduction, except as provided for motor vehicle air conditioners (MVACs) in Subpart B:
 - (i) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to §82.156.
 - (ii) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to §82.158.
 - (iii) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to §82.161.
 - (iv) Persons disposing of small appliances, MVACs, and MVAC-like appliances must comply with record keeping requirements pursuant to §82.166. (“MVAC-like appliance” is defined at §82.152).
 - (v) Persons owning commercial or industrial process refrigeration equipment must comply with the leak repair requirements pursuant to §82.166.
 - (vi) Owners/operators of appliances normally containing 50 or more pounds of refrigerant must keep records of refrigerant purchased and added to such appliances pursuant to §82.166.
 - (vii) The permittee shall comply with all other requirements of Subpart F.
 - (b) *Standards for Motor Vehicle Air Conditioners* [40 CFR Part 82, Subpart B]
If the permittee performs a service on motor (fleet) vehicles when this service involves ozone-depleting substance refrigerant in the MVAC, the permittee is subject to all the applicable requirements as specified in 40 CFR Part 82, Subpart B, Servicing of Motor Vehicle Air Conditioners. The term “motor vehicle” as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed. The term “MVAC” as used in Subpart B does not include the air-tight sealed refrigeration system used as refrigerated cargo, or the system used on passenger buses using HCFC-22 refrigerant.

STATE ONLY PERMIT CONDITIONS

The conditions listed in this section are State only requirements and are not federally enforceable.

Ambient Standards

(S1) The permittee shall operate the emission units described in this permit such that the following ambient standards are not exceeded, in accordance with 40 CFR 50:

POBUTANT	STANDARD	CONDITION	WAQSR CH. 2, SEC
PM ₁₀ particulate matter	50 micrograms per cubic meter	annual arithmetic mean	2 (a)
	150 micrograms per cubic meter	24-hr average concentration with not more than one exceedance per year	
PM _{2.5} particulate matter	15 micrograms per cubic meter	annual arithmetic mean	2 (b)
	35 micrograms per cubic meter	98 th percentile 24-hr average concentration	
Nitrogen dioxide	53 parts per billion	annual average concentration	3
	100 parts per billion	three-year average of the annual 98 th percentile of the daily maximum 1-hr average concentration	
	0.053 parts per million	annual arithmetic mean	
Sulfur dioxide	75 parts per billion	three-year average of the annual (99 th percentile) of the daily max 1-hr average	4
	0.5 parts per million	3-hr blocks not to be exceeded more than once per calendar year	
Carbon monoxide	10 milligrams per cubic meter	max 8-hr concentration with not more than one exceedance per year	5
	40 milligrams per cubic meter	max 1-hr concentration with not more than one exceedance per year	
Ozone	0.075 parts per million	three-year average of the annual fourth-highest daily maximum 8-hr average concentration	6
Hydrogen sulfide	70 micrograms per cubic meter	½ hour average not to be exceeded more than two times per year	7
	40 micrograms per cubic meter	½ hour average not to be exceeded more than two times in any five consecutive days	
Suspended sulfate	0.25 milligrams SO ₃ per 100 square centimeters per day	maximum annual average	8
	0.50 milligrams SO ₃ per 100 square centimeters per day	maximum 30-day value	
Lead and its compounds	0.15 micrograms per cubic meter	maximum arithmetic 3-month mean concentration for a 3-year period	10

Hydrogen Sulfide: [WAQSR Ch 3, Sec 7]

- (S2) Any exit process gas stream containing hydrogen sulfide which is discharged to the atmosphere from any source shall be vented, incinerated, flared or otherwise disposed of in such a manner that ambient sulfur dioxide and hydrogen sulfide standards are not exceeded.

Odors: [WAQSR Ch 2, Sec 11]

- (S3) (a) The ambient air standard for odors from any source shall be limited to an odor emission at the property line which is undetectable at seven dilutions with odor free air as determined by a scentometer as manufactured by the Barnebey-Cheney Company or any other instrument, device, or technique designated by the Division as producing equivalent results. The occurrence of odors shall be measured so that at least two measurements can be made within a period of one hour, these determinations being separated by at least 15 minutes.
- (b) Odor producing materials shall be stored, transported, and handled in a manner that odors produced from such materials are confined and that accumulation of such materials resulting from spillage or other escape is prevented.

SUMMARY OF SOURCE EMISSION LIMITS AND REQUIREMENTS

Source ID#: **2** Source Description: **Worthington SUTC 8 Compressor Engine**

Pollutant	Emissions Limit/Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	20 percent opacity [F1]	WAQSR Ch 3, Sec 2	Testing if required [F6]	Verification of natural gas firing [F7]	Record the results of any additional testing [F14]	Semiannual: report type of fuel fired [F18] Report excess emissions and permit deviations [F21]
NO _x	11.0 g/hp-hr, 48.5 lb/hr and 212.2 TPY [F2] Hours limit [F2]	WAQSR Ch 6, Sec 2 Permit MD-378A and MD-10680A	Testing if required [F6]	Semiannual test [F8] Monitor operating hours [F10]	Record testing and monitoring results [F14]	30 days: report test results [F17] Semiannual: report monitoring [F18] Report excess emissions and permit deviations [F21]
CO	11.0 g/hp-hr, 48.5 lb/hr and 212.2 TPY [F2] Hours limit [F2]	WAQSR Ch 6, Sec 2 Permit MD-378A and MD-10680A	Testing if required [F6]	Semiannual test [F8] Monitor operating hours [F10]	Record testing and monitoring results [F14]	30 days: report test results [F17] Semiannual: report monitoring [F18] Report excess emissions and permit deviations [F21]
HAPs	WAQSR Ch 5, Sec 3 and 40 CFR 63 Subparts A & ZZZZ					

Source ID#: **10 and 11** Source Description: **Cooper GMW A-8 Compressor Engines**

Pollutant	Emissions Limit/Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	20 percent opacity [F1]	WAQSR Ch 3, Sec 2	Testing if required [F6]	Verification of natural gas firing [F7]	Record the results of any additional testing [F14]	Semiannual: report type of fuel fired [F18] Report excess emissions and permit deviations [F21]
NO _x	11 g/hp-hr [F2]	WAQSR Ch 6, Sec 2 Permit MD-124	Testing if required [F6]	Semi-annual test [F8]	Record testing and monitoring results [F14]	30 days: report test results [F17] Report excess emissions and permit deviations [F21]
CO	1.4 g/hp-hr [F2]	WAQSR Ch 6, Sec 2 Permit MD-124	Testing if required [F6]	None	Record the results of any additional testing [F14]	Report excess emissions and permit deviations [F21]
HAPs	WAQSR Ch 5, Sec 3 and 40 CFR 63 Subparts A & ZZZZ					

These tables are intended only to highlight and summarize applicable requirements for each source. The corresponding permit conditions, listed in brackets, contain detailed descriptions of the compliance requirements. Compliance with the summary conditions in these tables may not be sufficient to meet permit requirements. These tables may not reflect all emission sources at this facility.

Source ID#: 16 through 19 Source Description: Waukesha L7042GSI Compressor Engines

Pollutant	Emissions Limit/Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	20 percent opacity [F1]	WAQSR Ch 3, Sec 2	Testing if required [F6]	Verification of natural gas firing [F7]	Record the results of any additional testing [F14]	Semiannual: report type of fuel fired [F18] Report excess emissions and permit deviations [F21]
NO _x	0.7 g/hp-hr, 2.3 lb/hr and 10.1 TPY [F2]	WAQSR Ch 6, Sec 2 Permit MD-10680A	Testing if required [F6]	Annual test and compliance assurance monitoring [F8, CAM-1 through 4]	Record testing and monitoring results [F14]	30 days: report test results [F17] Semiannual: report monitoring [F18] Report excess emissions and permit deviations [F21]
CO	2.0 g/hp-hr, 6.6 lb/hr and 29.0 TPY [F2]	WAQSR Ch 6, Sec 2 Permit MD-10680A	Testing if required [F6]	Annual test and compliance assurance monitoring [F8, CAM-1 through 4]	Record testing and monitoring results [F14]	30 days: report test results [F17] Semiannual: report monitoring [F18] Report excess emissions and permit deviations [F21]
VOC	0.7 g/hp-hr, 2.3 lb/hr and 10.1 TPY [F2]	WAQSR Ch 6, Sec 2 Permit MD-10680A	Testing if required [F6]	Annual test [F8]	Record testing and monitoring results [F14]	30 days: report test results [F17] Report excess emissions and permit deviations [F21]
Formaldehyde	0.04 lb/hr and 0.16 TPY [F2] 40 CFR 63 Subpart ZZZZ limitations [F2]	WAQSR Ch 6, Sec 2 Permit MD-10680A	Testing if required [F6]	Test in accordance with 40 CFR Part 63 §63.6615 [F8]	Record testing and monitoring results [F14]	30 days: report test results [F17] Report excess emissions and permit deviations [F21]
HAPs	WAQSR Ch 5, Sec 3 and 40 CFR 63 Subparts A & ZZZZ					

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Source ID#: 25 through 29 Source Description: Waukesha 7042 GU Generator Engines

Pollutant	Emissions Limit/Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	20 percent opacity [F1]	WAQSR Ch 3, Sec 2	Testing if required [F6]	Verification of natural gas firing [F7]	Record the results of any additional testing [F14]	Semiannual: report type of fuel fired [F18] Report excess emissions and permit deviations [F21]
NO _x	2 g/hp-hr [F2]	WAQSR Ch 6, Sec 2 Permit MD-124	Testing if required [F6]	Annual test [F8]	Record testing and monitoring results [F14]	30 days: report test results [F17] Report excess emissions and permit deviations [F21]
CO	2 g/hp-hr [F2]	WAQSR Ch 6, Sec 2 Permit MD-124	Testing if required [F6]	Annual test [F8]	Record testing and monitoring results [F14]	30 days: report test results [F17] Report excess emissions and permit deviations [F21]
HAPs	WAQSR Ch 5, Sec 3 and 40 CFR 63 Subparts A & ZZZZ					

Source ID#: 51 and 52 Source Description: Waukesha L7042GSI Compressor Engines

Pollutant	Emissions Limit/Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	20 percent opacity [F1]	WAQSR Ch 3, Sec 2	Testing if required [F6]	Verification of natural gas firing [F7]	Record the results of any additional testing [F14]	Semiannual: report type of fuel fired [F18] Report excess emissions and permit deviations [F21]
NO _x	2.0 g/hp-hr, 6.6 lb/hr and 28.9 TPY [F2] Operate and maintain according to manufacturer's instructions [F2]	WAQSR Ch 6, Sec 2 Permit MD-378A	Testing if required [F6]	Annual test and compliance assurance monitoring [F8, CAM-1 through 4]	Record testing and monitoring results [F14] Record maintenance activities [F15]	30 days: report test results [F17] Semiannual: report monitoring [F18] Report excess emissions and permit deviations [F21]
CO	2.0 g/hp-hr, 6.6 lb/hr and 28.9 TPY [F2] Operate and maintain according to manufacturer's instructions [F2]	WAQSR Ch 6, Sec 2 Permit MD-378A	Testing if required [F6]	Annual test and compliance assurance monitoring [F8, CAM-1 through 4]	Record testing and monitoring results [F14] Record maintenance activities [F15]	30 days: report test results [F17] Semiannual: report monitoring [F18] Report excess emissions and permit deviations [F21]
HAPs	WAQSR Ch 5, Sec 3 and 40 CFR 63 Subparts A & ZZZZ					

These tables are intended only to highlight and summarize applicable requirements for each source. The corresponding permit conditions, listed in brackets, contain detailed descriptions of the compliance requirements. Compliance with the summary conditions in these tables may not be sufficient to meet permit requirements. These tables may not reflect all emission sources at this facility.

Source ID#: **53 and 54** Source Description: **Waukesha L7044GSI Compressor Engines**

Pollutant	Emissions Limit/Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	20 percent opacity [F1]	WAQSR Ch 3, Sec 2	Testing if required [F6]	Verification of natural gas firing [F7]	Record the results of any additional testing [F14]	Semiannual: report type of fuel fired [F18] Report excess emissions and permit deviations [F21]
NO _x	1.0 g/hp-hr, 3.6 lb/hr and 15.9 TPY [F2] Operate and maintain according to manufacturer's instructions [F2]	WAQSR Ch 6, Sec 2 Permit MD-378A	Testing if required [F6]	Annual test and compliance assurance monitoring [F8, CAM-1 through 4]	Record testing and monitoring results [F14] Record maintenance activities [F15]	30 days: report test results [F17] Semiannual: report monitoring [F18] Report excess emissions and permit deviations [F21]
CO	2.0 g/hp-hr, 7.3 lb/hr and 31.9 TPY [F2] Operate and maintain according to manufacturer's instructions [F2]	WAQSR Ch 6, Sec 2 Permit MD-378A	Testing if required [F6]	Annual test and compliance assurance monitoring [F8, CAM-1 through 4]	Record testing and monitoring results [F14] Record maintenance activities [F15]	30 days: report test results [F17] Semiannual: report monitoring [F18] Report excess emissions and permit deviations [F21]
HAPs	WAQSR Ch 5, Sec 3 and 40 CFR 63 Subparts A & ZZZZ					

Source ID#: **Genset** Source Description: **Generac GH-410 Emergency Generator Engine**

Pollutant	Emissions Limit/Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	20 percent opacity [F1]	WAQSR Ch 3, Sec 2	Testing if required [F6]	Verification of natural gas firing [F7]	Record the results of any additional testing [F14]	Semiannual: report type of fuel fired [F18] Report excess emissions and permit deviations [F21]
NO _x , CO, and VOC	Hours limit [F2] Operate and maintain according to good air pollution control practices [F2]	WAQSR Ch 6, Sec 2 Waiver wv-13971	Testing if required [F6]	Monitor operating hours [F10]	Record monitoring results [F14] Record maintenance activities [F15]	Semiannual: report monitoring [F18] Report excess emissions and permit deviations [F21]
Additional NO _x , CO, and VOC	WAQSR Ch 5, Sec 2 and 40 CFR 60 Subparts A & JJJJ					
HAPs	WAQSR Ch 5, Sec 3 and 40 CFR 63 Subparts A & ZZZZ					

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Source ID#: **H100** Source Description: **Heater Treater**

Pollutant	Emissions Limit/Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	20 percent opacity [F1]	WAQSR Ch 3, Sec 2	Testing if required [F6]	Verification of natural gas firing [F7]	Record the results of any additional testing [F14]	Semiannual: report type of fuel fired [F18] Report excess emissions and permit deviations [F21]
NO _x	0.23 lb/MMBtu [F3]	WAQSR Ch 3, Sec 3	Testing if required [F6]	None	Record the results of any additional testing [F14]	Report excess emissions and permit deviations [F21]
HAPs	WAQSR Ch 5, Sec 3 and 40 CFR 63 Subparts A & DDDDD					

Source ID#: **H110a/b and H120** Source Description: **Hot Oil Heaters**

Pollutant	Emissions Limit/Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	20 percent opacity [F1]	WAQSR Ch 3, Sec 2	Testing if required [F6]	Verification of natural gas firing [F7]	Record the results of any additional testing [F14]	Semiannual: report type of fuel fired [F18] Report excess emissions and permit deviations [F21]
NO _x	0.23 lb/MMBtu [F3]	WAQSR Ch 3, Sec 3	Testing if required [F6]	Test once every two years [F11]	Record testing and monitoring results [F14]	30 days: report test results [F17] Report excess emissions and permit deviations [F21]
HAPs	WAQSR Ch 5, Sec 3 and 40 CFR 63 Subparts A & DDDDD					

These tables are intended only to highlight and summarize applicable requirements for each source. The corresponding permit conditions, listed in brackets, contain detailed descriptions of the compliance requirements. Compliance with the summary conditions in these tables may not be sufficient to meet permit requirements. These tables may not reflect all emission sources at this facility.

Source ID#: **H130a/b** Source Description: **Heat Medium Heater**

Pollutant	Emissions Limit/Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	20 percent opacity [F1]	WAQSR Ch 3, Sec 2	Testing if required [F6]	Verification of natural gas firing [F7]	Record the results of any additional testing [F14]	Semiannual: report type of fuel fired [F18] Report excess emissions and permit deviations [F21]
NO _x	7.1 lb/hr [F3]	WAQSR Ch 6, Sec 2 Permit MD-124	Testing if required [F6]	Annual test and weekly visual inspections [F11]	Record testing and monitoring [F14]	30 days: report test results [F17] Semiannual: report monitoring [F18] Report excess emissions and permit deviations [F21]
CO	3.5 lb/hr [F3]	WAQSR Ch 6, Sec 2 Permit MD-124	Testing if required [F6]	Weekly visual inspections [F11]	Record monitoring [F14]	Semiannual: report monitoring [F18] Report excess emissions and permit deviations [F21]
Particulate and SO ₂	WAQSR Ch 5, Sec 2 and 40 CFR 60 Subparts A & Dc					
HAPs	WAQSR Ch 5, Sec 3 and 40 CFR 63 Subparts A & DDDDD					

Source ID#: **H140** Source Description: **Hydrogen Plant Heater**

Pollutant	Emissions Limit/Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	20 percent opacity [F1]	WAQSR Ch 3, Sec 2	Testing if required [F6]	Verification of natural gas firing [F7]	Record the results of any additional testing [F14]	Semiannual: report type of fuel fired [F18] Report excess emissions and permit deviations [F21]
NO _x	0.24 lb/hr [F3]	WAQSR Ch 6, Sec 2 Permit MD-124	Testing if required [F6]	Weekly visual inspections [F11]	Record monitoring [F14]	Semiannual: report monitoring [F18] Report excess emissions and permit deviations [F21]
CO	0.12 lb/hr [F3]	WAQSR Ch 6, Sec 2 Permit MD-124	Testing if required [F6]	Weekly visual inspections [F11]	Record monitoring [F14]	Semiannual: report monitoring [F18] Report excess emissions and permit deviations [F21]
HAPs	WAQSR Ch 5, Sec 3 and 40 CFR 63 Subparts A & DDDDD					

These tables are intended only to highlight and summarize applicable requirements for each source. The corresponding permit conditions, listed in brackets, contain detailed descriptions of the compliance requirements. Compliance with the summary conditions in these tables may not be sufficient to meet permit requirements. These tables may not reflect all emission sources at this facility.

Source ID#: **P1EG and P2EG** Source Description: **Plant 1 and Plant 2 Ethylene Glycol Dehydration Systems**

Pollutant	Emissions Limit/Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Benzene						
WAQSR Ch 5, Sec 3; 40 CFR 63 Subpart HH						

Source ID#: **FLARE** Source Description: **Emergency Flare**

Pollutant	Emissions Limit/Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
VOC	Smokeless [F1]	WAQSR Ch 3, Sec 6(b)(i); Ch 6, Sec 2 Permit MD-124	Testing if required [F6]	Monitor for the presence of a pilot flame [F9]	Record monitoring results [F14]	Semiannual: report monitoring [F18] Report excess emissions and permit deviations [F21]
Other VOC						
WAQSR Ch 5, Sec 2 and 40 CFR 60 Subparts A & KKK						

Source ID#: **FUG** Source Description: **Fugitive Emissions from Equipment Leaks**

Pollutant	Emissions Limit/Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
VOC						
WAQSR Ch 5, Sec 2 and 40 CFR 60 Subparts A & KKK						

Source ID#: **TK-31 through TK-34** Source Description: **Condensate Storage Tanks**

Pollutant	Emissions Limit/Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
VOC and HAPs	Maintain specific gravity of stored condensate between 0.600 and 0.800 at 60/60° F [F4]	WAQSR Ch 6, Sec 2 Waiver wv-11304	Testing if required [F6]	Daily stored condensate monitoring [F12]	Record monitoring results [F14]	Semiannual: report monitoring [F18] Report excess emissions and permit deviations [F21]

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ABBREVIATIONS

ACFM	Actual cubic feet per minute
AFRC	Air-fuel ratio controls
AQD	Air Quality Division
BACT	Best available control technology (see Definitions)
Btu	British thermal unit
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
C.F.R.	Code of Federal Regulations
CO	Carbon monoxide
CO ₂ e	Carbon dioxide equivalent
DEQ	Wyoming Department of Environmental Quality
EPA	United States Environmental Protection Agency (see Definitions)
ESP	Electrostatic Precipitator
g/hp-hr	Gram(s) per horsepower hour
gal	Gallon(s)
gr	Grain(s)
H ₂ S	Hydrogen sulfide
HAP(s)	Hazardous air pollutant(s)
hp	Horsepower
hr	Hour(s)
lb	Pound(s)
M	Thousand
MACT	Maximum available control technology (see Definitions)
mfr	Manufacturer
mg	Milligram(s)
MM	Million
MVACs	Motor vehicle air conditioners
NMHC(s)	Non-methane hydrocarbon(s)
NO _x	Oxides of nitrogen
NSCR	Non-selective catalytic reduction
O ₂	Oxygen
PM	Particulate matter
PM ₁₀	Particulate matter less than or equal to a nominal diameter of 10 micrometers
ppmv	Parts per million (by volume)
ppmw	Parts per million (by weight)
QIP	Quality Improvement Plan
RICE	Reciprocating internal combustion engine
SCF	Standard cubic foot (feet)
SCFD	Standard cubic foot (feet) per day
SCM	Standard cubic meter(s)
SIC	Standard Industrial Classification
SO ₂	Sulfur dioxide
SO _x	Oxides of sulfur
TBD	To be determined
TPD	Ton(s) per day
TPH	Ton(s) per hour
TPY	Tons per year
U.S.C.	United States Code
µg	Microgram(s)
VOC(s)	Volatile organic compound(s)
W.S.	Wyoming Statute
WAQSR	Wyoming Air Quality Standards & Regulations (see Definitions)

DEFINITIONS

"Act" means the Clean Air Act, as amended, 42 U.S.C. 7401, *et seq.*

"Administrator" means Administrator of the Air Quality Division, Wyoming Department of Environmental Quality.

"Applicable requirement" means all of the following as they apply to emissions units at a source subject to Chapter 6, Section 3 of the WAQSR (including requirements with future effective compliance dates that have been promulgated or approved by the EPA or the State through rulemaking at the time of issuance of the operating permit):

- (a) Any standard or other requirement provided for in the Wyoming implementation plan approved or promulgated by EPA under title I of the Act that implements the relevant requirements of the Act, including any revisions to the plan promulgated in 40 C.F.R. Part 52;
- (b) Any standards or requirements in the WAQSR which are not a part of the approved Wyoming implementation plan and are not federally enforceable;
- (c) Any term or condition of any preconstruction permits issued pursuant to regulations approved or promulgated through rulemaking under title I, including parts C or D of the Act and including Chapter 5, Section 2 and Chapter 6, Sections 2 and 4 of the WAQSR;
- (d) Any standard or other requirement promulgated under Section 111 of the Act, including Section 111(d) and Chapter 5, Section 2 of the WAQSR;
- (e) Any standard or other requirement under Section 112 of the Act, including any requirement concerning accident prevention under Section 112(r)(7) of the Act and including any regulations promulgated by EPA and the State pursuant to Section 112 of the Act;
- (f) Any standard or other requirement of the acid rain program under title IV of the Act or the regulations promulgated thereunder;
- (g) Any requirements established pursuant to Section 504(b) or Section 114(a)(3) of the Act concerning enhanced monitoring and compliance certifications;
- (h) Any standard or other requirement governing solid waste incineration, under Section 129 of the Act;
- (i) Any standard or other requirement for consumer and commercial products, under Section 183(e) of the Act (having to do with the release of volatile organic compounds under ozone control requirements);
- (j) Any standard or other requirement of the regulations promulgated to protect stratospheric ozone under title VI of the Act, unless the EPA has determined that such requirements need not be contained in a title V permit;
- (k) Any national ambient air quality standard or increment or visibility requirement under part C of title I of the Act, but only as it would apply to temporary sources permitted pursuant to Section 504(e) of the Act; and
- (l) Any state ambient air quality standard or increment or visibility requirement of the WAQSR.
- (m) Nothing under paragraphs (A) through (L) above shall be construed as affecting the allowance program and Phase II compliance schedule under the acid rain provision of Title IV of the Act.

"BACT" or "Best available control technology" means an emission limitation (including a visible emission standard) based on the maximum degree of reduction of each pollutant subject to regulation under the WAQSR or regulation under the Federal Clean Air Act, which would be emitted from or which results for any proposed major emitting facility or major modification which the Administrator, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application or production processes and available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant. If the Administrator determines that technological or economic limitations on the application of measurement methodology to a particular class of sources would make the imposition of an emission standard infeasible, he may instead prescribe a design, equipment, work practice or operational standard or combination thereof to satisfy the requirement of Best Available Control Technology. Such standard shall, to the degree possible, set forth the emission reduction achievable by implementation of such design, equipment, work practice, or operation and shall provide for compliance by means which achieve equivalent results. Application of BACT shall not result in emissions in excess of those allowed under Chapter 5, Section 2 of the WAQSR and any other new source performance standard or national emission standards for hazardous air pollutants promulgated by EPA but not yet adopted by the state.

"Department" means the Wyoming Department of Environmental Quality or its Director.

"Director" means the Director of the Wyoming Department of Environmental Quality.

"Division" means the Air Quality Division of the Wyoming Department of Environmental Quality or its Administrator.

"Emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

"EPA" means the Administrator of the U.S. Environmental Protection Agency or the Administrator's designee.

"Fuel-burning equipment" means any furnace, boiler apparatus, stack, or appurtenances thereto used in the process of burning fuel or other combustible material for the purpose of producing heat or power by indirect heat transfer.

"Fugitive emissions" means those emissions which could not reasonably pass through a stack chimney, vent, or other functionally equivalent opening.

"Insignificant activities" means those activities which are incidental to the facility's primary business activity and which result in emissions of less than one ton per year of a regulated pollutant not included in the Section 112 (b) list of hazardous air pollutants or emissions less than 1000 pounds per year of a pollutant regulated pursuant to listing under Section 112 (b) of the Act provided, however, such emission levels of hazardous air pollutants do not exceed exemptions based on insignificant emission levels established by EPA through rulemaking for modification under Section 112 (g) of the Act.

"MACT" or "Maximum achievable control technology" means the maximum degree of reduction in emissions that is deemed achievable for new sources in a category or subcategory that shall not be less stringent than the emission control that is achieved in practice by the best controlled similar source, as determined by the Administrator. Emission standards promulgated for existing sources in a category or subcategory may be less stringent than standards for new sources in the same category or subcategory but shall not be less stringent, and may be more stringent than:

- (a) the average emission limitation achieved by the best performing 12 percent of the existing sources (for which the Administrator has emission information), excluding those sources that have, within 18 months before the emission standard is proposed or within 30 months before such standard is promulgated, whichever is later, first achieved a level of emission rate or emission reduction which complies, or would comply if the source is not subject to such standard, with the lowest achievable emission rate applicable to the source category and prevailing at the time, in the category or subcategory for categories and subcategories with 30 or more sources, or
- (b) the average emission limitation achieved by the best performing five sources (for which the Administrator has or could reasonably obtain emissions information) in the category or subcategory for categories or subcategories with fewer than 30 sources.

"Modification" means any physical change in, or change in the method of operation of, an affected facility which increases the amount of any air pollutant (to which any state standards applies) emitted by such facility or which results in the emission of any such air pollutant not previously emitted.

"Permittee" means the person or entity to whom a Chapter 6, Section 3 permit is issued.

"Potential to emit" means the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its design if the limitation is enforceable by EPA and the Division. This term does not alter or affect the use of this term for any other purposes under the Act, or the term "capacity factor" as used in title IV of the Act or the regulations promulgated thereunder.

"Regulated air pollutant" means the following:

- (a) Nitrogen oxides (NO_x) or any volatile organic compound;
- (b) Any pollutant for which a national ambient air quality standard has been promulgated;

- (c) Any pollutant that is subject to any standard established in Chapter 5, Section 2 of the WAQSR or Section 111 of the Act;
- (d) Any Class I or II substance subject to a standard promulgated under or established by title VI of the Act; or
- (e) Any pollutant subject to a standard promulgated under Section 112 or other requirements established under Section 112 of the Act, including Sections 112(g), (j), and (r) of the Act, including the following:
 - (i) Any pollutant subject to requirements under Section 112(j) of the Act. If EPA fails to promulgate a standard by the date established pursuant to Section 112(e) of the Act, any pollutant for which a subject source would be major shall be considered to be regulated on the date 18 months after the applicable date established pursuant to Section 112(e) of the Act; and
 - (ii) Any pollutant for which the requirements of Section 112(g)(2) of the Act have been met, but only with respect to the individual source subject to Section 112(g)(2) requirement.
- (f) Pollutants regulated solely under Section 112(r) of the Act are to be regulated only with respect to the requirements of Section 112(r) for permits issued under this Chapter 6, Section 3 of the WAQSR.

"Renewal" means the process by which a permit is reissued at the end of its term.

"Responsible official" means one of the following:

- (a) For a corporation:
 - (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or
 - (ii) A duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either:
 - (A) the facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars); or
 - (B) the delegation of authority to such representative is approved in advance by the Division;
- (b) For a partnership or sole proprietorship: a general partner or the proprietor, respectively;
- (c) For a municipality, State, Federal, or other public agency: Either a principal executive officer or ranking elected official. For the purposes of this part, a principal executive officer of a federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency; or
- (d) For affected sources:
 - (i) The designated representative or alternate designated representative in so far as actions, standards, requirements, or prohibitions under title IV of the Act or the regulations promulgated thereunder are concerned; and
 - (ii) The designated representative, alternate designated representative, or responsible official under Chapter 6, Section 3 (b)(xxvi) of the WAQSR for all other purposes under this section.

"WAQSR" means the Wyoming Air Quality Standards and Regulations promulgated under the Wyoming Environmental Quality Act, W.S. §35-11-101, *et seq.*

APPENDIX A
COMPLIANCE ASSURANCE MONITORING (CAM) PLAN

WGR OPERATING, LP

COMPLIANCE ASSURANCE MONITORING PLAN:
RICH BURN NATURAL GAS FIRED COMPRESSOR ENGINES EQUIPPED WITH CATALYTIC
CONVERTERS FOR CONTROL OF NO_x AND CO

HILIGHT – RENO JUNCTION GAS PLANT

I. Background

A. Emissions Unit

Description: Rich burn natural gas compressor engines
Identification: Units: #16, 17, 18, 19, 51, 52, 53, and 54
Facility: Hilight – Reno Junction Gas Plant

B. Applicable Regulation, Emission Limit, and Monitoring Requirements

Regulation: Permits MD-124, MD-378A (Corrected), MD-10680A

CAM Emission limits: 16, 17, 18, 19 (Waukesha L7042GSI)

NO_x: 0.7 g/hp-hr, 2.3 lb/hr, 10.1 tpy

CO: 2.0 g/hp-hr, 6.6 lb/hr, 29.0 tpy

51, 52(Waukesha L7042GSI)

NO_x: 2.0 g/hp-hr, 6.6 lb/hr, 28.9 tpy

CO: 2.0 g/hp-hr, 6.6 lb/hr, 28.9 tpy

53, 54(Waukesha L7044GSI)

NO_x: 1.0 g/hp-hr, 3.6 lb/hr, 15.9 tpy

CO: 2.0 g/hp-hr, 7.3 lb/hr, 31.9 tpy

Monitoring requirements: The key elements of the monitoring approach are presented in Table 1.

C. Control Technology, Capture System, Bypass, PTE

Controls: Non-selective catalytic reduction

Capture System: N/A

Bypass: none

PTE after controls: 16, 17, 18, 19 (Waukesha L7042GSI)

NO_x: 10.1 tpy, CO: 29.0 tpy

51, 52(Waukesha L7042GSI)

NO_x: 28.9 tpy, CO: 28.9 tpy

53, 54(Waukesha L7044GSI)

NO_x: 15.9 tpy, CO: 31.9 tpy

(Based on manufacturer's stated removal efficiency and original design specifications.)

II. Monitoring Approach

The key elements of the monitoring approach are presented in the attached table.

III. Response to Excursion

- A. Excursions of the inlet temperature range, pressure differential across the catalyst, or NO_x or CO levels during emission testing, will trigger a prompt inspection, corrective action, and reporting. If needed, maintenance personnel will inspect the engines and make needed repairs as soon as practicable. Operation will return to normal upon completed corrective action.
- B. Quality Improvement Plan (QIP) Threshold: Any excursion of NO_x or CO levels during emission testing, while inlet temperature or pressure differential are within the ranges of this plan, shall trigger a QIP. (Note: Proposing a QIP threshold in the CAM submittal is not required.)

MONITORING APPROACH: Hiliguit - Reno Junction Gas Plant

	Indicator No. 1	Indicator No. 2	Indicator No. 3	Indicator No. 4
I. Indicator	Temperature of exhaust gas into the catalyst.	Pressure differential across the catalyst.	NO _x and CO measurement.	Inspection/Preventative Maintenance (IPM) in accordance with PM Plan (see attached PM Plan).
Measurement Approach	Exhaust gas temperature into the catalyst is monitored continuously using in-line thermocouples.	The pressure of the inlet catalyst is measured with a pressure gauge. The outlet catalyst pressure is assumed to be atmospheric.	NO _x and CO are measured using either the Division's portable monitoring protocol or Reference Methods. NO _x and CO emissions shall be measured as specified in the Title V Permit.	Inspections according to the PM Plan. Maintenance performed as needed.
II. Indicator Range	Temperature at the inlet of the catalyst shall be maintained between 750°F and 1250°F.	An excursion is defined as a pressure differential change of more than 2 inches of water as compared to the pressure differential measured during the initial performance test. If the catalyst is replaced, the reference pressure drop will be reestablished during the next annual testing required by the permit and an excursion is defined as a pressure differential change of more than 2 inches of water as compared to this reestablished pressure differential.	NO _x and CO above permitted values.	N/A
III. Performance Criteria				
A. Data Representativeness	Temperature is measured at the inlet of the catalyst by a thermocouple. The minimum accuracy of the temperature gauge between the indicator range (750°F and 1250°F) is +/-19°F.	The pressure of the inlet catalyst is measured with a pressure gauge The gauge has a minimum accuracy of 0.25 inches of water.	Gases are measured at the exhaust of the catalyst under normal operating conditions.	IPM is performed on the engine and catalyst system (engine operations, over temperature system, exhaust temperature (thermocouples), air/ fuel ratio controller, oxygen sensors, and emissions monitoring).
B. QA/QC Practices and Criteria	Proper measurement of the thermocouple scanner or other end device is validated at least annually.	Proper measurement of the pressure gauge is validated at least annually. Potential plugging of inlet catalyst down tubes are checked during monthly pressure measurements.	As stated in reference method and portable monitoring protocols.	Qualified personnel perform IPM.
C. Monitoring Frequency	Temperature is monitored continuously. Compliance with temperature indicator range is demonstrated from daily inlet catalyst temperature records.	Pressure differential is monitored at least once per calendar month. No monitoring is required for months when engine is not operated.	Emission testing (frequency specified in the TV permit) to verify compliance with permitted emission limits.	Inspections according to the PM Plan.
Data Collection Procedures	Temperature data will be recorded once per day. No observation required for days when engine is not operated.	Pressure differential data will be recorded at least once per month. A note will be made on months when engine is not operated.	As specified in method and portable monitoring protocols.	Records are maintained to document IPM inspections, and any maintenance performed.
Averaging period	None.	None.	None.	N/A

Revised March 2013

JUSTIFICATION

I. Background

The monitoring approach outlined here applies to the three-way non-selective reduction catalyst system used on the natural gas fired compressor engines. The catalyst system is a passive unit and does not have mechanical components. The reduction reaction does not take place properly if the temperature of the engine exhaust gas into the catalyst system is too low or too high. A significant change in pressure drop across the catalyst may indicate damage or fouling to the catalyst.

II. Rationale for Selection of Performance Indicators

Temperature into the catalyst unit is measured because temperature excursions can indicate problems with engine operation that can prevent the chemical reaction from taking place in the catalyst bed. Too low of an exhaust gas temperature reduces the activity of the intended chemical/catalyst reaction. Too high of an exhaust gas temperature can indicate engine problems which can damage the catalyst unit. Daily monitoring of inlet gas temperature to the catalyst will help assure proper operation of the catalyst. Compliance with the temperature indicator range is demonstrated from daily inlet catalyst temperature records.

Pressure differential across the catalyst may indicate if the catalyst unit is damaged, resulting in channeling or other problems, or if there is fouling/plugging in the catalyst. Both conditions would result in reduced catalyst performance.

Implementation of the Inspection/Preventative Maintenance (IPM) Plan related to the operation of the engines and catalyst system provides assurance that they are in good repair and operating properly. Items on the IPM checklist include checking engine operation for proper operation, testing of the over temperature system, checking the temperature of the exhaust (the thermocouples are stable instruments and are to be validated annually), inspecting the fuel/air ratio controller and oxygen sensors, and testing of emissions of the engine exhaust.

NO_x and CO emissions testing (frequency specified in the TV permit) will demonstrate continued compliance with emission limits and the possible link between the temperature indicator range, pressure differential, implementation of the IPM plan, and proper operation of the engines and catalyst.

III. Rationale for Selection of Indicator Ranges

An exhaust gas temperature range of 750°F to 1250°F has been selected based upon the catalyst manufacturer's suggested operating parameters for optimal chemical reaction and this company's field experience. This is also the temperature range that is a required operating limitation for rich burn, catalytically controlled engines subject to the reciprocating internal combustion engine (RICE) NESHAP. A pressure differential change of more than 2 inches of water is based on information from the catalyst vendor which indicated that such a change should trigger catalyst inspection for damage or fouling. (The load during the monthly pressure measurement and the most recent emissions test must be similar in order to make an excursion determination.) This indicator range is also consistent with operating limitations in the RICE NESHAP. The IPM checklist was developed based on manufacturer's recommendations and the company's operating experience with similar units.

ANADARKO PETROLEUM CORPORATION

RICH BURN NATURAL GAS FIRED ENGINES WITH CATALYTIC CONVERTERS PREVENTATIVE MAINTENANCE PLAN - WYOMING

(Revised October 2009)

The following is a Preventative Maintenance (PM) plan for all rich burn, natural gas fired compressor engines equipped with catalytic converters in Wyoming. The PM plan will ensure optimum operations of the converters, avoid situations that could cause converter damage, and identify problems in a timely manner.

ENGINE OPERATIONS

Proper engine operation is critical to the performance of catalytic converters. If an engine misfires, it produces high catalyst temperatures because the unburned air/fuel mixture burns when it contacts the catalyst. Several misfiring cylinders can produce enough heat to cause permanent damage to the catalyst.

Preventative Maintenance: Each engine will be checked weekly for proper operations.

OVER TEMPERATURE SYSTEM

Each converter is equipped with an over temperature system which protects the catalyst from excessive temperature conditions caused by misfires.

Preventative Maintenance: The catalyst over temperature system will be tested annually to ensure it is working. This consists of grounding the switch and creating an alarm on the control panel.

EXHAUST TEMPERATURE

For efficient converter operations, the exhaust gas must be above 750° F at all times, with a maximum of 1250° F.

Preventative Maintenance: The temperature of the exhaust gas will be checked after every 2190 hours of operation.

AIR/FUEL RATIO CONTROLLER

The air/fuel ratio controllers are used in conjunction with catalytic converters to control emissions. The air/fuel ratio controllers are set to control emissions at the allowable rates.

Preventative Maintenance: The air/fuel ratio set points will be checked annually and adjusted accordingly. The controller will be checked weekly to ensure it is operating, and that there are no alarms of the engine exceeding the limits of the controller. Oxygen sensors that are located in the exhaust manifold will be replaced every 2190 hours of operation. Oxygen sensors that are not located in the exhaust manifold will be replaced on an annual basis, or as needed.

PERFORMANCE MONITORING

To track performance of the converters and to detect early signs of converter problems NO_x and CO emissions will be monitored in the exhaust stream.

Preventative Maintenance: Following the applicable State/Federal protocol for portable analyzers, a portable analyzer test will be performed annually (or at the frequency indicated in the air permit) to determine NO_x and CO emission rates in the exhaust gas.

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