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. 3-2-160

Issue Date: **August 10, 2012**
Expiration Date: **August 10, 2017**
Effective Date: **August 10, 2012**
Replaces Permit No.: **31-160**

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,

Green River Processing, LLC
(Amended August 8, 2014)
Blacks Fork Gas Plant and Compressor Station
Section 10, Township 18 North, Range 112 West
Uinta and Sweetwater Counties, 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.

_____ _____
Steven A. Dietrich, Administrator Date
Air Quality Division

_____ _____
John V. Corra, Director Date
Department of Environmental Quality

WAQSR CHAPTER 6, SECTION 3 OPERATING PERMIT

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

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GENERAL INFORMATION
(Amended August 8, 2014)

Company Name: ***Green River Processing, LLC***

Mailing Address: **1050 17th Street, Suite *800***

City: **Denver** State: **CO** Zip: **80265**

Plant Name: **Blacks Fork Gas Plant and Compressor Station**

Plant Location: **Section 10, Township 18 North, Range 112 West, Uinta and Sweetwater Counties, Wyoming (approximately 5 miles southwest of Granger, WY)**

Latitude / Longitude (WGS84): **41.5545 /-110.0482**

Plant Mailing Address: **P.O. Box 340**

City: **Granger** State: **WY** Zip: **82939**

Name of Owner: ***Green River Processing, LLC*** Phone: **(303) 672-6900**

Responsible Official: ***Reserved***

Plant Manager/Contact: **Jay Schofield** Phone: **(307) 922-5745**

DEQ Air Quality Contact: **District 5 Engineer**
510 Meadowview Drive
Lander, WY 82520 Phone: **(307) 332-6755**

SIC Code: **1321 – Extraction of natural gas liquids from natural field gas, fractionation of natural gas liquids and compression of natural gas.**

Description of Process: **Upon completion of modification authorized by WAQSR Ch 6 Sec 2 permit MD-11019A, the processing plant and compressor station will have a production capability of up to 1.0 billion standard cubic feet per day (BSCFD) of sweet natural gas. The inlet gas enters the plant at approximately 520 psig and is compressed to approximately 1100 psig for transmission to a sales pipeline. The plant produces ethane, propane, butane, gasoline, and natural gas for sales.**

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
ENG 1	Waukesha 7042GSI Compressor Engine[a,c,f]	1,034 hp	MD-11019A
ENG 6	Waukesha L7044GSI Compressor Engine[a,c]	1,680 hp	MD-11019A
ENG 7	Caterpillar G3616 SITA Compressor Engine[b,c]	3,930 hp	MD-11019A
ENG 8	Caterpillar 3608 TALE Compressor Engine[b]	2,142 hp	MD-11019A
ENG 9	Caterpillar 3612 TALE Compressor Engine[b]	2,934 hp	MD-11019A
BFC 1	Waukesha L7044GSI Compressor Engine[a,c]	1,680 hp	MD-11019A
GEN 2	Caterpillar G398TA Genset "B" Engine[a]	664 hp	MD-11019A
GEN 4	Caterpillar C175-16 Diesel Generator Engine[d]	4,376 hp	MD-11019A
EMGen	Caterpillar G3412DITA Diesel Fired Emergency Genset Engine	600 hp	MD-11019A
CT1	Solar Titan 130-20502S Turbine Engine	16,460 hp	MD-11019A
CT2	Solar Titan 130-20502S Turbine Engine	16,460 hp	MD-11019A
CT3	Solar Titan 130-20502S Turbine Engine[e]	16,460 hp	MD-11019A
CT4	Solar Titan 130-20502S Turbine Engine[e]	16,460 hp	MD-11019A
HTR 1	Heat Medium Heater	20.0 MMBtu/hr	MD-11019A
HTR 2	Dehy Regen Heater	6.3 MMBtu/hr	MD-11019A
HTR 4	EG Regen Heater	1.5 MMBtu/hr	MD-11019A
HTR 5	Condensate Heater	3.0 MMBtu/hr	MD-11019A
EG DEHY	Ethylene Glycol Dehydration Unit	100 MMSCFD	MD-11019A
F1	FLARE 1	5 MMBtu/hr	MD-11019A
F2	FLARE 2[e]	5 MMBtu/hr	MD-11019A
FUG	Fugitive VOCs	N/A	MD-11019A
SmBurn	Small burner used to burn glycol filters	N/A	MD-11019A

[a] Engine is 4-stroke rich burn equipped with air-fuel ratio control (AFRC) and non-selective catalytic reduction (NSCR) catalyst

[b] Engine is 4-stroke lean burn, equipped with oxidation catalyst

[c] Engine is subject to Compliance Assurance Monitoring (CAM) requirements

[d] Tier 2 certified engine with limited operating hours

[e] Sources are not installed as of March 30, 2012

[f] 1,480 hp ENG 1 will replace 1,034 hp ENG 1

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	Negligible
PM_{10} Particulate Matter	Negligible
Sulfur Dioxide (SO_2)	Negligible
Nitrogen Oxides (NO_X)	295
Carbon Monoxide (CO)	239
Volatile Organic Compounds (VOCs)	174
HAZARDOUS AIR POLLUTANT (HAP) EMISSIONS	11*

Emission estimates are from Ch 6, Sec 2 Waiver wv-13088.

* The largest single HAP emitted is reported to be formaldehyde at 8.4 TPY.

FACILITY-SPECIFIC PERMIT CONDITIONS

Facility-Wide Permit Conditions

(F1) FACILITY COMPRESSOR/GENERATOR REQUIREMENTS [WAQSR Ch 6, Sec 3(h)(i)(I); Ch 6, Sec 2 Permit MD-11019A]

(a) Upon completion of the modifications authorized by permit MD-11019A the engine configuration for the facility shall be limited to nine engines consisting of the following:

(i) One Waukesha 7042GSI engine (ENG 1) equipped with AFRC and NSCR catalyst. Existing 1,034 hp engine will be replaced with same type of 1,480 hp engine.

(ii) Two Waukesha L7044GSI engines (BFC 1 and ENG 6) equipped with AFRC and NSCR catalysts.

(iii) One Caterpillar G3616SITA engine (ENG 7) equipped with an oxidation catalyst.

(iv) One Caterpillar 3608TALE engine (ENG 8) equipped with an oxidation catalyst.

(v) One Caterpillar 3612TALE engine (ENG 9) equipped with an oxidation catalyst.

(vi) One Caterpillar G398TA engine (GEN 2) equipped with AFRC and NSCR catalysts.

(vii) One Caterpillar G3412DITA diesel fired emergency engine (EMGen).

(viii) One Caterpillar C175-16 Tier 2 certified diesel fired generator engine (GEN 4).

(b) Once an engine is 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 F7).

(c) That the stack heights for sources at the facility shall be at a minimum as follows:

Source ID	Source Description	Stack Height (meters)
ENG 1	Waukesha 7042GSI Compressor Engine	15.24
ENG 6	Waukesha L7044GSI Compressor Engine	15.24
ENG 7	Caterpillar G3616 SITA Compressor Engine	19.81
ENG 8	Caterpillar 3608TALE Compressor Engine	19.81
ENG 9	Caterpillar 3612TALE Compressor Engine	19.81
BFC 1	Waukesha L7044GSI Compressor Engine	15.85
GEN 2	Caterpillar G398TA Genset "B" Engine	15.24
GEN 4	Caterpillar C175-16 Diesel Generator Engine	7.32
CT1	Solar Titan 130-20502S Turbine Engine	11.43
CT2	Solar Titan 130-20502S Turbine Engine	11.43
CT3	Solar Titan 130-20502S Turbine Engine	11.43
CT4	Solar Titan 130-20502S Turbine Engine	11.43
HTR 1	Heat Medium Heater	15.24
HTR 2	Dehy Regen Heater	15.24
HTR 4	EG Regen Heater	15.24
HTR 5	Condensate Heater	15.24
F1	FLARE 1	18.29
F2	FLARE 2	18.29

(d) The permittee may expand the engine configuration beyond that described in paragraph (a) upon receipt of a construction or modification permit issued under Chapter 6, Section 2 of WAQSR that authorizes such change. The permittee must, however, submit an application to modify this operating permit within 12 months of commencement of operation for any engine not already included in this permit.

Source-Specific Permit Conditions

(F2) VISIBLE EMISSIONS [WAQSR Ch 3, Sec 2; Ch 3, Sec 6(b); Ch 6, Sec 2 Permit MD-11019A]

(a) The flares (F1 and F2) shall be operated and maintained to be smokeless per Ch 5, Sec 2(m) of the WAQSR, 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. Each 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 from the diesel fired engines, Caterpillar G3412 DITA (EMGen) and Caterpillar C175-16 (GEN 4) shall not exceed 30 percent opacity except for periods not exceeding ten consecutive seconds. This limitation shall not apply during a reasonable period of warm-up following a cold start or where undergoing repairs and adjustment following a malfunction.

(c) Visible emissions from the small burner (SmBurn), used to burn glycol filters, are limited to a shade or density equal to but not greater than 20 percent opacity as determined by a qualified observer.

(d) 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.

(F3) ENGINE EMISSIONS AND OTHER LIMITS [WAQSR Ch 3, Sec 2; Ch 6, Sec 2 Permit MD-11019A]

(a) NO_X, CO, VOC, and formaldehyde emissions from engines shall not exceed the limits in Table I.

(b) Compliance with the g/hp-hr limit, if so specified, 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 generator GEN 4, the operating limits in paragraph (f) of this condition.

Table I: NO_X, CO, VOC, and Formaldehyde Emission Limits

Compressor / Generator 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
Waukesha 7042GSI,* 1,034 hp (ENG 1)	1.0	2.3	10.0	1.0	2.3	10.0					
Waukesha 7042GSI, ** 1,480 hp (ENG 1)	0.7	2.3	10.0	0.7	2.3	10.0	0.21	0.7	3.0		
Waukesha L7044GSI (ENG 6, BFC 1)	1.0	3.7	16.2	1.0	3.7	16.2					
Caterpillar G3616 SITA (ENG 7)	0.7	6.1	26.6		2.2	9.5				0.26	1.10
Caterpillar 3608 TALE (ENG 8)***	0.7	3.3	14.5	0.3	1.4	6.2					
Caterpillar 3612 TALE (ENG 9)***	0.7	4.5	19.8	0.3	1.9	8.5					
Caterpillar G398TA Genset (GEN 2)	1.0	1.5	6.4	1.0	1.5	6.4					
Caterpillar C175-16 Generator (GEN 4)	5.14	49.6	13.3	3.5	33.8	9.1					

	NO_X		CO		VOC	
At ambient temperatures > 0°F	ppmvd @ 15% O_2	lb/hr	ppmvd @ 15% O_2	lb/hr	ppmvd @ 15% O_2	lb/hr
Solar Titan 130-20502S turbine engines (CT1-CT4)	15	7.5	25	7.6	5	0.9

* Limits per Ch 6, Sec 2 Permit MD-11019.

** 1, 034 hp engine will be replaced with the 1,480 hp engine.

*** Engine has VOC emission limits per 40 CFR 60 Subpart JJJJ.

(c) For catalyst controlled compressor engines (ENG 1, ENG 6, ENG 7, ENG 8, ENG 9 and BFC 1), the permittee shall operate and maintain each engine, air pollution control equipment, and monitoring equipment according to good air pollution control practices at all times, including startup, shutdown, and malfunction.

(d) Operation of the Caterpillar G3412 DITA diesel fired emergency generator (EMGen) shall not exceed 500 hours per calendar year.

(e) The permittee shall maintain documentation that the Caterpillar C175-16 diesel fired generator engine (GEN 4) is EPA Tier 2 certified. Documentation shall be made available upon request.

(f) The generator engine GEN 4 shall be limited to 536 hours of operation per year. The permittee shall install and maintain a non-resettable hour meter on the engine to demonstrate compliance with the hours limit in this condition.

(g) The small burner (SmBurn) is limited to 0.20 pounds of particulate per 100 pounds refuse charged.

(F4) FUEL BURNING EQUIPMENT [WAQSR Ch 6, Sec 2 Permit MD-11019A]

(a) NO_X emissions from the EG regen heater (HTR 4) and condensate heater (HTR 5) shall not exceed 0.20 lb/MMBtu heat input.

(b) NO_X and CO emissions from the heat medium and dehy regen heaters (HTR 1 and HTR 2) shall not exceed the limits specified in Table II.

Table II: NO_X and CO Emission Limits

Source Description	NO_X			CO		
	lb/MMBtu	lb/hr	TPY	lb/MMBtu	lb/hr	TPY
Heat Medium Heater (HTR 1)	0.08	1.6	7.0	0.04	0.8	3.5
Dehy Regen Heater (HTR 2)	0.1	0.6	2.8	0.084	0.5	2.3

(F5) EG DEHYDRATION UNIT CONTROL REQUIREMENTS [WAQSR Ch 6, Sec 2 Permit MD-11019A]

(a) VOC and HAP emissions associated with the overhead still vent for the ethylene glycol dehydration unit (EG DEHY) shall be controlled with a condenser, and the non-condensables routed to the flare (F1). Condensed liquids (water and hydrocarbons) shall be directed to pressurized storage tanks.

(b) The VOC and HAP emissions associated with the ethylene glycol dehydration unit flash tank shall be routed to the flare (F1).

(c) The permittee shall maintain and operate the condenser and flare (F1) during all periods of active operation of the EG dehydration unit such that the controls remain effective as viable emissions control devices.

(F6) OPERATIONS AND MAINTENANCE REQUIREMENTS [WAQSR Ch 6, Sec 2 Permit MD-11019A]

(a) Compressor blowdown emissions from the Waukesha 7042GSI engine (ENG 1) and from the Caterpillar G3616 SITA engine (ENG 7) shall be controlled with the flare (F1).

(b) Reserved.

(c) For the Caterpillar G398TA Genset "B" engine (GEN 2), the permittee shall operate and maintain the unit in accordance with the manufacturer's or supplier's recommendations so the NOx and CO emissions from the unit are minimized.

(d) The Solar Titan 130-20502S turbine engines (CT1-CT4) shall be maintained in accordance with the manufacturer's specifications and recommendations.

(e) The permittee shall operate and maintain the emergency diesel fired generator engine GEN 4, air pollution control equipment, and monitoring equipment according to good air pollution control practices at all times, including startup, shutdown, and malfunction.

(F7) TEMPORARY ENGINE REPLACEMENT [WAQSR Ch 6, Sec 3(h)(i)(I)]

(a) 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. Permanent replacement of an engine **must** be evaluated by the Division under Ch 6, Sec 2 of WAQSR to determine appropriate permitting action and evaluate the need for additional requirements resulting from the permanent replacement.

(b) The temporary replacement unit shall be identical or similar to the unit replaced with emission levels at or below those of the unit replaced.

(c) The permittee shall notify the Division in writing of such replacement within five working days, provide the date of startup of the replacement, and provide 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.

(F8) COMMENCEMENT OF CONSTRUCTION [WAQSR Ch 6, Sec 2 Permit MD-11019A; Waiver wv-13088] The date of commencement of construction for the units authorized by WAQSR Ch 6, Sec 2 permit actions shall be reported to the Administrator within 30 days of commencement. Approval to construct or modify shall become invalid if construction is not commenced within 24 months after receipt of such approval or if construction is discontinued for a period of 24 months or more. The Administrator may extend the period based on satisfactory justification of the requested extension.

Testing Requirements

(F9) EMISSIONS TESTING [W.S. 35-11-110; WAQSR Ch 6, Sec 2 Permit MD-11019A]

(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 flares (F1, F2), Method 22 shall be used.

(ii) For visible emissions from all other sources, Method 9 shall be used.

(iii) For any engines subject to the requirements of 40 CFR 60 Subpart JJJJ, testing for NO_X, CO and VOC emissions shall follow the requirements of §60.4244, except that §60.8 only applies to engines subject to 40 CFR 60 Subpart JJJJ.

(iv) For turbine engines subject to the requirements of 40 CFR 60 Subpart KKKK, testing for NO_X and SO_2 emissions shall follow the requirements of §60.4400.

(v) For VOC emissions from turbine engines, EPA Reference Methods 1-4, and 25, or other EPA Reference Methods as approved by the Division shall be used.

(vi) For other NO_X emission sources Methods 1-4 and 7E shall be used.

(vii) For other CO emission sources, Methods 1-4 and 10 shall be used.

(viii) For formaldehyde emissions, testing shall consist of at least one, 1-hour test following EPA reference methods and a Division approved formaldehyde test method. Formaldehyde emissions in terms of lb/hr shall be calculated using the methodology in Sections10.1.1 and 10.1.1.2 of the State of Wyoming's Portable Analyzer Protocol. The monitoring protocol is available from the Division upon request, or can be downloaded at *http://deq.state.wy.us/aqd/operating.asp*.

(ix) For alternative test methods, or methods used for other pollutants and/or other sources, 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).

(F10) INITIAL PERFORMANCE TESTING [W.S. 35-11-110; WAQSR Ch 6, Sec 2 Permit MD-11019A] In accordance with WAQSR Ch 6, Sec 2(j), performance tests shall be conducted on the 1,480 hp Waukesha 7042GSI engine (ENG 1) and the Solar Titan 130-20502S turbines (CT3 and CT4) within 30 days of achieving maximum design rate but not later than 90 days after initial start-up. If maximum design rate is not achieved within 90 days of start-up, the Administrator may require testing be done at the rate achieved and again when maximum rate is achieved. Prior to any performance testing required by this permit, a test protocol shall be submitted to the Division for approval, at least 30 days prior to testing.

(a) Testing for NO_X, CO and VOC emissions from ENG 1 shall follow the requirements of §60.4244, except that §60.8 only applies to engines subject to 40 CFR 60 Subpart JJJJ. For the initial performance test, testing shall not consist of Method 19 or ASTM Methods. The engine horsepower, inlet temperature to the catalyst, pressure drop across the catalyst, and other operating conditions shall be recorded during each test run and submitted with the test report required under condition F21.

(b) For each turbine engine (CT3 and CT4) initial performance testing shall be conducted as follows:

(i) NO_X emissions shall be tested using EPA Reference Methods 1-4, 7E, 20, and the requirements of 40 CFR 60, Subpart KKKK.

(ii) CO emissions shall be tested using EPA Reference Methods 1-4 and 10.

(iii) VOC emissions shall be tested using EPA Reference Methods 1-4 and 25.

(iv) Compliance with the lb/hr emission limits shall be determined with three (3) 1-hour tests conducted while the turbines are operating near full load.

(c) Unless otherwise specified, testing shall be conducted in accordance with WAQSR Ch 5, Sec 2(h).

Monitoring Requirements

(F11) VISIBLE EMISSIONS MONITORING [WAQSR Ch 6, Sec 3(h)(i)(C)(I)]

(a) Periodic monitoring for visible emissions from the compressor engines (ENG 1, ENG 6 – ENG 9, and BFC 1), generator engine (GEN 2), turbine engines (CT1-CT4) and heaters (HTR 1, HTR 2, HTR 4 and HTR 5) shall consist of monitoring the type of fuel used to ensure natural gas is the sole fuel source for these units.

(b) For visible emissions from the flares (F1 and F2), the permittee shall monitor and note the date, time and duration when the flare exhibits visible emissions for more than 5 minutes. If the unit is not utilized for an entire calendar quarter, that shall be noted.

(c) The permittee shall conduct observations of visible emissions from the emergency diesel-fired engines, Caterpillar G3412 DITA (EMGen) and the Caterpillar C175-16 (GEN 4), during periodic availability assurance tests of these sources, at least semi-annually, to assess compliance with the opacity limit under condition F2(b) and to identify maintenance needs. Observation of emissions in excess of the limit in condition F2(b) shall prompt corrective action.

(F12) FLARES OPERATION MONITORING [WAQSR Ch 6, Sec 2 Permit MD-11019A; Ch 6, Sec 3(h)(i)(C)(I)]

(a) The permittee shall monitor the presence of a pilot flame on flares (F1 and F2) using a thermocouple and continuous recording device or any other equivalent device to detect the presence of a flame.

(b) The permittee shall monitor for the dates and duration of times when the pilot flame on flare F1 is not present during active operation of the ethylene glycol dehydration unit (EG DEHY).

(F13) ENGINE EMISSIONS MONITORING [WAQSR Ch 6, Sec 3(h)(i)(C)(I); Ch 6, Sec 2 Permit MD-11019A]

(a) The permittee shall measure emissions from the compressor engines as follows, for comparison with the emission limits specified in condition F3.

(i) Prior to the replacement of ENG 1 authorized by MD-1019A, the permittee shall measure NO_X and CO emissions in accordance with conditions F9(a)(vi) and (vii) or the Division's portable analyzer monitoring protocol. Upon installation of the new ENG 1, the permittee shall measure NO_X, CO, and VOC emissions in accordance with condition F9(a)(iii).

(ii) The permittee shall measure NO_X and CO emissions from engines BFC 1, ENG 6, ENG 7, ENG 8, and ENG 9 in accordance with condition F9(a)(vi) and (vii) or the Division's portable analyzer monitoring protocol.

(A) For ENG 8 and ENG 9, compliance with the CO limit is considered verification that the formaldehyde emissions are controlled.

(iii) The permittee shall measure formaldehyde emissions from engine ENG 7 in accordance with condition F9(a)(viii).

(iv) The Division's portable analyzer monitoring protocol is available from the Division upon request, or can be downloaded at *http://deq.state.wy.us/aqd/operating.asp*.

(v) The permittee shall measure emissions, as specified in this sub-condition (a), at least annually.

(b) The permittee shall measure NO_X, CO and VOC emissions from each turbine engine (CT1-CT2 and CT3-CT4, upon installation) as follows, for comparison with the emission limits specified in condition F3.

(i) NO_X emissions shall be measured in accordance with 40 CFR 60, Subpart KKKK §60.4400. Testing for CO and VOC emissions shall be conducted concurrently with NO_X emissions testing using EPA Reference Methods specified in condition F9(a)(v) and (vii).

(ii) Emissions in terms of lb/hr shall be calculated using EPA Reference Method 19 and the fuel consumption recorded during testing.

(iii) The permittee shall measure emissions, as specified in this sub-condition (b), at least annually.

(c) The permittee shall measure NO_X, and CO emissions from engine GEN 4 as follows, for comparison with the emission limits specified in condition F3.

(i) The permittee shall measure emissions in accordance with condition F9(a)(vi) and (vii) or the Division's portable analyzer monitoring protocol. The monitoring protocol is available from the Division upon request, or can be downloaded at *http://deq.state.wy.us/aqd/operating.asp*.

(ii) The permittee shall measure emissions at least once every three years. Testing is required the third calendar year after completion of the initial performance tests.

(d) If any engine or turbine testing/monitoring shows operation outside the emission limits specified in condition F3, the permittee shall:
  (i) Notify the Division within 24-hours of completion of the test, and
  (ii) Repair the engine(s) no later than seven calendar days after such a testing/monitoring event, and shall repair and retest/monitor the affected engine to demonstrate the engine has been returned to operation within the limits in condition F3.
  (iii) Compliance with this condition regarding repair and retesting/monitoring 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.

(e) The permittee shall monitor the operating hours of the Caterpillar G3412DITA emergency genset engine (EMGen) and the Caterpillar C175-16 diesel fired generator engine (GEN 4) on a monthly basis.

(f) The permittee shall monitor ambient temperature at the facility to determine which days during the calendar year the ambient temperature is equal to or below zero degrees Fahrenheit when any of the Solar Titan 130-20502S turbine engines (CT1-CT4) are in operation.

(F14) CATALYST MONITORING AND MAINTENANCE [WAQSR Ch 6, Sec 2 Permit MD-11019A]
For the catalyst controlled compressor engines (ENG 1, ENG 6, ENG 7, ENG 8, ENG 9 and BFC 1), the permittee shall follow the monitoring and maintenance requirements as follows:

(a) The permittee shall monitor the inlet catalyst temperature for each engine, at a minimum, monthly. If the temperature is outside the range listed below, corrective action shall be taken.
  (i) NSCR Catalyst (Waukesha engines): 750°F to 1250°F
  (ii) Oxidation Catalyst (Caterpillar engines): 450°F to 1350°F

(b) Install, as applicable, operate and maintain a device to measure the pressure drop across the catalyst. The pressure drop across the catalyst shall be monitored and recorded at least monthly. If the pressure changes by more than two inches of water at one hundred percent load, plus or minus ten percent, from the reference pressure drop, corrective action shall be taken.
  (i) Reference pressure drop for each engine shall be established during the initial performance test.
  (ii) When a catalyst is replaced, the reference pressure drop shall be re-established for that engine during the first test required, in compliance with condition F13(a), which occurs after the catalyst replacement.

(c) Compliance with 40 CFR part 63, subpart ZZZZ §63.6605 and §63.6640 can be used in lieu of the monitoring and maintenance requirements in the above conditions (a) and (b).

(F15) COMPLIANCE ASSURANCE MONITORING (CAM)
[WAQSR Ch 6, Sec 3(h)(i)(C)(I); Ch 7, Sec 3(c)(ii); Ch 6, Sec 2 Permit MD-11019A]
The permittee shall adhere to the Compliance Assurance Monitoring (CAM) plans, attached as Appendix A of this permit, for NO_X and CO emissions from the engines ENG 6 and BFC 1; for CO emissions from the existing 1,034 hp ENG 1; and for formaldehyde emissions from the engine ENG 7, and shall conduct monitoring as follows:

(a) On days the engines are operated, the permittee shall operate the engines within the catalyst inlet temperature range and differential pressure range specified in the approved CAM plan.
  (i) The permittee shall monitor, at minimum once daily, the catalyst inlet temperature for each engine.
  (ii) The permittee shall monitor the pressure differential across the catalyst bed for each engine at least daily.
  (iii) When the catalyst is replaced, the reference pressure drop shall be reestablished during the annual testing required under condition F13(a).

(b) An excursion is defined as any temperature, measured at the inlet of the catalyst, which is outside the indicator range specified in the approved CAM plan; and/or any pressure differential, measured at the inlet and outlet of the catalyst, which is outside of the indicator range specified in the approved CAM plan.

(c) Operation outside of the ranges established in the approved CAM plan shall trigger immediate corrective action.

(d) The permittee shall monitor the CAM pollutants from engines listed above, and in the approved CAM plan. During each test specified in condition F13(a), the permittee shall also measure the CAM

indicators. 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.

(e) The permittee shall follow all other applicable requirements under conditions CAM-1 through CAM-5 of this permit.

(F16) FUEL BURNING EQUIPMENT MONITORING [WAQSR Ch 6, Sec 3(h)(i)(C)(I)]

(a) The permittee shall monitor NO_X and CO emissions from the heaters HTR 1 and HTR 2 at least once every five years for comparison with the emission limits specified in condition F3.

(b) The permittee shall measure NO_X and CO emissions from each heater using the Division's portable analyzer monitoring protocol, or the EPA reference methods described in condition F9. The monitoring protocol is available from the Division upon request, or can be downloaded at *http://deq.state.wy.us/aqd/operating.asp*.

Recordkeeping Requirements

(F17) TESTING AND MONITORING RECORDS
[WAQSR Ch 6, Sec 3(h)(i)(C)(II); Ch 6, Sec 2 Permit MD-11019A]

(a) For any testing or monitoring required under conditions F9, F10, F11(d), F13(a), (b), and (c), and F16, 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) any analyses were performed;
  (iii) The company, entity or person that performed the analyses or observations;
  (iv) The analytical or observational 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 sampling or measurement; and
  (vii) Any corrective actions taken.
  (viii) For the monitoring required by condition F13(b), the permittee shall also record the fuel consumption during the test and a representative gas analysis.
  (ix) For the testing specified in condition F15(d), the permittee shall also record the CAM parameters and evaluation of indicator ranges.

(b) For any Method 9 observations required by the Division under condition F9, the permittee shall keep field records in accordance with Section 2.2 of Method 9.

(c) For any Method 22 observations required by the Division under conditions F9, the permittee shall keep field records in accordance with Sections 11.2 and 11.5 of Method 22.

(d) For visible emissions monitoring from flares (F1 and F2), the permittee shall record the date, time and duration when a flare exhibits visible emissions for more than 5 minutes, and any corrective action taken. The permittee shall also note any calendar quarter when any of these units are not utilized.

(e) (i) The permittee shall continuously record the presence or absence of a flame on the flares (F1 and F2).
  (ii) The permittee shall record the date and duration of time during active operation of the dehydration unit (EG DEHY) when the pilot flame is not present on the flare (F1).

(f) The permittee shall keep records of the operating hours of the emergency genset engine (EMGen) and Caterpillar C175-16 diesel fired generator engine (GEN 4) monitored under condition F13(e).

(g) For the monitoring required under condition F13(f), the permittee shall keep records of the dates during the calendar year that any Solar Titan 130-20502S turbine engine (CT1-CT4) operates when the ambient temperature is equal to or below zero degrees Fahrenheit.

(h) The permittee shall retain on-site at the facility, the records of each test, measurement, or observation and support information for a period of at least five years from the date of the test, measurement or observation.

(F18) CAM AND CATALYST MONITORING RECORDS
[WAQSR Ch 6, Sec 3(h)(i)(C)(II) & Ch 7, Sec 3(i)(ii); Ch 6, Sec 2 Permit MD-11019A]

(a) For the monitoring required under condition F14, the permittee shall record the date and time of each measurement, the catalyst inlet temperature, pressure drop, the reference pressure drop for each

engine at the time of the pressure drop monitoring, and any maintenance or corrective actions taken. The permittee shall also record the dates of catalyst replacement for each engine.

(b) For the CAM required under condition F15, the permittee shall also record:
  (i) The date, time, and duration of any excursions as well as the CAM indicator value(s) during each excursion; and
  (ii) 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) The permittee shall retain on-site at the facility the records of each test, measurement, or observation and support information for a period of at least five years from the date of the test, measurement, or observation.

(F19) CERTIFICATION AND MAINTENANCE RECORDS
[WAQSR Ch 6, Sec 3(h)(i)(C)(II); Ch 6, Sec 2 Permit MD-11019A]

(a) As required under conditions F3(c) and F6(c), (d), and (e), the record of maintenance activities for engines ENG 1, ENG 6, ENG 7, ENG 8, ENG 9, BFC 1, GEN 2, GEN 4 and CT1-CT4 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 the manufacturer's or supplier's specifications and recommendations or good maintenance practices.
  (vi) The permittee shall retain on-site at the facility the records of each maintenance activity for a period of at least five years from the date of the activity.

(b) As required under condition F3(e), the permittee shall maintain documentation that the Caterpillar C175-16 diesel generator engine (GEN 4) is EPA Tier 2 certified. Documentation shall be kept for the life of the engine and made available upon request.

Reporting Requirements

(F20) NOTIFICATION OF START-UP, SHUTDOWN AND REMOVAL, AND TESTING
[WAQSR Ch 6, Sec 2 Permit MD-11019A; Waiver wv-13088]

(a) Written notification of the actual date of initial start-up for the 1,480 hp Waukesha 7042GSI engine (ENG 1) and Solar Titan 130-20502S turbine engines (CT3 and CT4) is required within 15 days of start-up in accordance with WAQSR Ch 6, Sec 2(i)(ii). Such notification shall be submitted on a complete Engine Installation/Removal form. The form can be downloaded from the Air Quality Division website http://deq.state.wy.us/aqd or obtained from the Air Quality Division. With the start-up notification for ENG 1, the permittee shall address the applicability of 40 CFR 60 Subpart JJJJ.

(b) For the new fractionation train authorized by waiver wv-13088, start-up notification shall be submitted to the Division within 15 days of actual date of start-up.

(c) For the testing required by conditions F10, F13 and F16, 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.
  (ii) For other units, notification of the test date shall be provided at least 15 days prior to testing.

(d) Upon shutdown and removal of an engine from the facility, written notification is required within 15 days of removal. Notification shall be submitted on a complete Engine Installation/Removal form.

(e) Written notifications shall reference this permit condition (F20), and shall be submitted to the Division in accordance with condition G4

(F21) TEST REPORTS [WAQSR Ch 6, Sec 3(h)(i)(C)(III); Ch 6, Sec 2 Permit MD-11019A]

(a) The permittee shall report the results of the emissions tests required under conditions F10, F13 and F16 and any additional testing required by the Division under condition F9, within 45 days of conducting 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 F13(d).

(ii) For the CAM pollutants, (NO_X and CO emissions from ENG 6 and BFC 1; CO emissions from the existing 1,034 hp ENG 1; NO_X and CO emissions from the new 1,480 hp ENG 1; and formaldehyde emissions from ENG 7), and testing required by condition F13(a), the permittee shall also submit the CAM evaluation required by condition F15(d).

(A) If the evaluation indicates the CAM range needs 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 conducting the test.

(b) The reports shall include the information specified under condition F17 of this permit and reference this permit condition (F21), and shall be submitted to the Division in accordance with condition G4.

(F22) MONITORING REPORTS

[WAQSR Ch 6, Sec 3(h)(i)(C)(III) and Ch 7, Sec 3 (i); Ch 6, Sec 2 Permit MD-11019A]

(a) The following shall be reported to the Division by January 31 and July 31 each year:

(i) Documentation that all emissions units specified in condition F11(a) are firing natural gas.

(ii) Summary results of the monitoring required under condition F12. 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 during operations of the EG DEHY, the permittee shall report the date(s) and duration of time during active operation when the pilot flame was not present.

(iii) The number, duration, and cause of excursions from the temperature and pressure drop range, as specified in condition F14, for each of the catalytically controlled compressor engines. The report shall include a summary of any maintenance and/or corrective actions taken; if no excursions occurred during the reporting period, this shall be stated in the report.

(iv) For the catalytically controlled compressor engines (ENG 1, ENG 6, ENG 7, and BFC 1), summary results of the CAM monitoring required under condition F15, and any corrective actions taken upon detection on non-compliance. Additionally, the results shall include the following:

(A) Summary 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;

(C) Whether the permittee has adhered to the maintenance and inspection activities described in the approved CAM plan for units ENG 1, ENG 6, ENG 7 and BFC 1. Any deviations from the maintenance and inspection activities described in the CAM plan must be clearly identified in each report; and

(D) 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.

(E) If no excursions occurred during the reporting period, this shall be stated in the report.

(b) The permittee shall report to the Division by January 31 each year, the operating hours for the Caterpillar G3412DITA emergency genset engine (EMGen) and Caterpillar C175-16 diesel fired generator engine (GEN 4) for the previous calendar year.

(c) All instances of deviations from the conditions of this permit must be clearly identified in each report.

(d) The reports shall reference this permit condition (F22) and shall be submitted in accordance with condition G4 of this permit.

(F23) 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 Part 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 Air Quality contact.

(F24) 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

(F25) ACCIDENTAL RELEASE PREVENTION REQUIREMENTS [40 CFR Part 68]

(a) The permittee shall meet all requirements of 40 CFR Part 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 Part 68, including the registration and submission of a Risk Management Plan.

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 compressor engines ENG 1, ENG 6, ENG 7 and BFC 1 as identified in condition F15. 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.

(CAM-5) CAM IMPLEMENTATION PLAN AND SCHEDULE [WAQSR Ch 7, Sec 3(d)(v)]

(a) The permittee shall perform initial performance testing as specified in condition F10(a), on the 1,480 hp ENG 1, and shall determine the CAM plan indicator ranges to be used as a parameter for assuring compliance with NO_X and CO emission limits.

(b) The permittee shall report the results of the emissions tests as required under condition F21(a). This report shall include the new proposed CAM plan for ENG 1 for Division approval of the CAM plan and indicator ranges proposed.

(c) The permittee shall apply their proposed CAM plan for the 1,480 hp ENG 1 upon submission of the plan to the Division.

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

SUBPART IIII REQUIREMENTS

[40 CFR 60 - Subparts A and IIII ; and WAQSR Ch 5, Sec 2; Ch 6, Sec 2 Permit MD-11019A]

As applicable, the permittee shall meet the requirements of 40 CFR 60 - Subparts A and IIII; and WAQSR Ch 5, Sec 2, as they apply to stationary compression ignition (CI) internal combustion engines (ICE), including the Caterpillar C175-16 diesel fired generator engine (GEN 4). For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator.

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; and WAQSR Ch 5, Sec 2; Ch 6, Sec 2 Permit MD-11019A]

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 of the date of issuance of this permit the engines ENG 8 and ENG 9 shall comply with the VOC requirements of 40 CFR Part 60, Subpart JJJJ. (As required by condition F7, 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.

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-11019A]

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 Blacks Fork Gas Plant and Compressor Station.

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

WAQSR CHAPTER 5, SECTION 2 NEW SOURCE PERFORMANCE STANDARDS (NSPS) AND 40 CFR 60 SUBPART KKKK REQUIREMENTS FOR STATIONARY COMBUSTION TURBINES

SUBPART KKKK REQUIREMENTS

[40 CFR 60 - Subparts A and KKKK; and WAQSR Ch 5, Sec 2; Ch 6, Sec 2 Permit MD-11019A]

The permittee shall meet all applicable requirements of 40 CFR Part 60 - Subparts A and KKKK; and WAQSR Ch 5, Sec 2 as they apply to stationary combustion turbines that commenced construction, modification or reconstruction after February 18, 2005, as defined under §60.4305 (except as indicated under §60.4310), including the Solar Titan 130-20502S turbine engines (CT1-CT4).

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; and WAQSR Ch 5, Sec 3; Ch 6, Sec 2 Permit MD-11019A]

The permittee shall meet all applicable requirements of 40 CFR 63 Subparts A and Subpart 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 F7(c), 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 an area source of HAP emissions. Affected sources at this facility include engines ENG 1, ENG 6, ENG 7, ENG 8, ENG 9, BFC 1, and generator engines GEN 2, GEN 4, and EMGen.

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

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 visible emissions, the permittee shall assess compliance with condition F2 by verifying natural gas was the sole fuel source used for the units listed in condition F11(a), and conducting the monitoring required by condition F11(b) and (c).

(ii) For NO_X, CO, VOC, and formaldehyde emissions from the engines, the permittee shall assess compliance with condition F3 by conducting the initial performance testing, as applicable, required by condition F10 and the monitoring required by conditions F13, F15 and CAM-1 through CAM-5 (for units ENG 1, ENG 7, ENG 6 and BFC 1).

(iii) For the operating hours limitation on the emergency genset engine EMGen and Caterpillar C175-16 diesel fired generator engine (GEN 4), the permittee shall assess compliance with condition F3(d) and (f) of this permit by conducting the monitoring required by condition F13(e).

(iv) For NO_X and CO emissions from the heat medium and dehy regen heaters (HTR 1 and HTR 2), the permittee shall assess compliance with condition F4 by conducting the monitoring required by condition F16.

(v) For the control requirements of conditions F5(a) and (b), the permittee shall verify that emissions and liquids from the ethylene glycol dehydration unit (EG DEHY) and associated condenser, and the ethylene glycol dehydration unit flash tank are routed as specified in conditions F5(a) and (b).

(vi) For the pilot flame on the flares (F1 and F2), the permittee shall assess compliance with requirements of conditions F5(c) by conducting the monitoring required by condition F12 and reviewing the records kept in accordance with condition F17(e).

(vii) For the control requirements of condition F6(a), the permittee shall verify that blowdown emissions from compressor engines ENG 1 and ENG 7 are controlled with Flare 1 (F1).

(viii) For the maintenance requirements of condition F3(c) and F6(c), (d) and (e), the permittee shall assess compliance by reviewing the records required by condition F19.

(ix) For the catalyst monitoring, the permittee shall assess compliance with condition F14 by reviewing the records required by condition F18(a) and submitting the reports required by condition F22(a)(iii).

(x) For greenhouse gas reporting, the permittee shall assess compliance with condition F23 by verifying that reports were submitted in accordance with condition F23(a) and (b).

(xi) For accidental release prevention, the permittee shall verify compliance with condition F25(a) by submitting the annual certification required by condition F25(b).

(xii) For the Caterpillar C175-16 diesel fired generator engine (GEN 4), subject to the requirements of 40 CFR 60 Subpart IIII, the permittee shall assess compliance with Subpart IIII by conducting any testing and monitoring required by §§60.4209, 60.4211, 60.4212 60.4213, and by reviewing the records required by §§60.4211 and 60.4214.

(xiii) For engines ENG 8 and ENG 9, subject to VOC requirements of 40 CFR Part 60, Subpart JJJJ, and if applicable, for 1,480 hp Waukesha 7042GSI engine (ENG 1), the permittee shall assess compliance with Subpart JJJJ by conducting any testing and monitoring required by §§60.4237, 60.4243, and 60.4244, and by reviewing the records required by §§60.4245 and 60.4246.

(xiv) For Blacks Fork Gas Plant and Compressor Station, subject to 40 CFR 60 Subpart KKK, the permittee shall assess compliance with Subpart KKK by reviewing the records required by §60.635.

(xv) For the Solar Titan 130-20502S turbine engines (CT1-CT4), subject to 40 CFR 60 Subpart KKKK, the permittee shall assess compliance with Subpart KKKK by conducting any testing and monitoring required by §§60.4340 through 60.4355, 60.4400 through 60.4410, and §§60.4360 through 60.4370, and 60.4415, and by reviewing the records required by §60.4365.

(xvi) 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.

(c) 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.

(d) 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.

(e) 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.

(f) 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 (8ENF-T)
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(l)]

(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(l)(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 fire fighting 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 SO_2 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:

POLLUTANT	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-hour average concentration	
Nitrogen dioxide	100 micrograms per cubic meter	annual arithmetic mean	3
Sulfur oxides	60 micrograms per cubic meter	annual arithmetic mean	4
	260 micrograms per cubic meter	max 24-hr concentration with not more than one exceedance per year	
	1300 micrograms per cubic meter	max 3-hr concentration with not more than one exceedance per 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	0.08 parts per million	daily maximum 8-hour average	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#: **ENG 1** Source Description: **1,034 HP Waukesha 7042GSI Compressor Engine**

Pollutant	Emissions Limit / Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	20 percent opacity [F2]	WAQSR Ch 3, Sec 2	Testing if required [F9]	Verification of natural gas firing [F11]	Record the results of any additional testing [F17]	Semiannually report type of fuel fired [F22] Report excess emissions and permit deviations [F24]
NO_X	1.0 g/hp-hr, 2.3 lb/hr, 10.0 TPY [F3] Conduct maintenance [F3]	WAQSR Ch 6, Sec 2 Permit MD-11019	Testing if required [F9]	Annual NO_X monitoring [F13] Equipment monitoring and maintenance [F14]	Record monitoring results [F17] Record equipment monitoring [F18] Record maintenance [F19]	15 days prior test notification [F20] Report test results 45 days after test [F21] Report monitoring [F22] Report excess emissions and permit deviations [F24]
CO	1.0 g/hp-hr, 2.3 lb/hr, 10.0 TPY [F3] Conduct maintenance [F3]	WAQSR Ch 7, Sec 3 and Ch 6, Sec 2 Permit MD-11019	Testing if required [F9]	Annual CO monitoring [F13] Equipment monitoring and maintenance [F14] CAM monitoring [F15]	Record monitoring results [F17] Record equipment and CAM monitoring [F18] Record maintenance [F19]	15 days prior test notification [F20] Report test results 45 days after test [F21] Report CAM monitoring results [F22] Report monitoring [F22] Report excess emissions and permit deviations [F24]
HAPs	Comply with all applicable requirements of 40 CFR Part 63 Subparts A & ZZZZ and WAQSR Ch 5 Sec 3					

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#: **ENG 1** Source Description: **1,480 HP Waukesha 7042GSI Compressor Engine**

Pollutant	Emissions Limit/Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	20 percent opacity [F2]	WAQSR Ch 3, Sec 2	Testing if required [F9]	Verification of natural gas firing [F11]	Record the results of any additional testing [F17]	Semiannually report type of fuel fired [F22] Report excess emissions and permit deviations [F24]
NO_X	0.7 g/hp-hr, 2.3 lb/hr, 10.0 TPY [F3] Conduct maintenance [F3]	WAQSR Ch 6, Sec 2 Permit MD-11019A	Testing if required [F9] Initial performance test [F10] CAM testing [CAM-5]	Measure emissions annually [F13] Equipment monitoring and maintenance [F14] CAM monitoring [CAM-5]	Record monitoring results [F17] Record equipment and CAM monitoring [F18] Record maintenance [F19]	15 days prior test notification [F20] Report test results 45 days after test [F21] Report CAM monitoring results [F22 & CAM-5] Report excess emissions and permit deviations [F24]
CO	0.7 g/hp-hr, 2.3 lb/hr, 10.0 TPY [F3] Conduct maintenance [F3]	WAQSR Ch 7, Sec 3 and Ch 6, Sec 2 Permit MD-11019A	Testing if required [F9] Initial performance test [F10] CAM testing [CAM-5]	Measure emissions annually [F13] Equipment monitoring and maintenance [F14] CAM monitoring [CAM-5]	Record monitoring results [F17] Record equipment and CAM monitoring [F18] Record maintenance [F19]	15 days prior test notification [F20] Report test results 45 days after test [F21] Report CAM monitoring results [F22 & CAM-5] Report excess emissions and permit deviations [F24]
VOC	0.21 g/hp-hr, 0.7 lb/hr, 3.0 TPY [F3] Conduct maintenance [F3]	WAQSR Ch 6, Sec 2 Permit MD-11019A	Testing if required [F9] Initial performance test [F10]	Measure emissions annually [F13]	Record monitoring results [F17] Record maintenance [F19]	15 days prior test notification [F20] Report test results 45 days after test [F21] Report excess emissions and permit deviations [F24]
Additional NO_X, CO, and VOC	If applicable, comply with all applicable requirements of 40 CFR Part 60 Subparts A & JJJJ and WAQSR Ch 5 Sec 2					
HAPs	Comply with all applicable requirements of 40 CFR Part 63 Subparts A & ZZZZ and WAQSR Ch 5 Sec 3					

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#: **ENG 6 and BFC 1** 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 [F2]	WAQSR Ch 3, Sec 2	Testing if required [F9]	Verification of natural gas firing [F11]	Record the results of any additional testing [F17]	Semiannually report type of fuel fired [F22] Report excess emissions and permit deviations [F24]
NO_X	1.0 g/hp-hr, 3.7 lb/hr, 16.2 TPY [F3] Conduct maintenance [F3]	WAQSR Ch 7, Sec 3 and Ch 6, Sec 2 Permit MD-11019A	Testing if required [F9]	Annual NO_X monitoring [F13] Equipment monitoring and maintenance [F14] CAM monitoring [F15]	Record monitoring results [F17] Record equipment and CAM monitoring [F18] Record maintenance [F19]	15 days prior test notification [F20] Report test results 45 days after test [F21] Report CAM monitoring results [F22] Report excess emissions and permit deviations [F24]
CO	1.0 g/hp-hr, 3.7 lb/hr, 16.2 TPY [F3] Conduct maintenance [F3]	WAQSR Ch 7, Sec 3 and Ch 6, Sec 2 Permit MD-11019A	Testing if required [F9]	Annual CO monitoring [F13] Equipment monitoring and maintenance [F14] CAM monitoring [F15]	Record monitoring results [F17] Record equipment and CAM monitoring [F18] Record maintenance [F19]	15 days prior test notification [F20] Report test results 45 days after test [F21] Report CAM monitoring results [F22] Report excess emissions and permit deviations [F24]
HAPs	Comply with all applicable requirements of 40 CFR Part 63 Subparts A & ZZZZ and WAQSR Ch 5 Sec 3					

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#: **ENG 7** Source Description: **Caterpillar G3616 SITA Compressor Engine**

Pollutant	Emissions Limit/Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	20 percent opacity [F2]	WAQSR Ch 3, Sec 2	Testing if required [F9]	Verification of natural gas firing [F11]	Record the results of any additional testing [F17]	Semiannually report type of fuel fired [F22] Report excess emissions and permit deviations [F24]
NO_X	0.7 g/hp-hr, 6.1 lb/hr, 26.6 TPY [F3] Conduct maintenance [F3]	WAQSR Ch 6, Sec 2 Permit MD-11019A	Testing if required [F9]	Annual NO_X monitoring [F13]	Record monitoring results [F17] Record maintenance [F19]	15 days prior test notification [F20] Report test results 45 days after test [F21] Report excess emissions and permit deviations [F24]
CO	2.2 lb/hr, 9.5 TPY [F3] Conduct maintenance [F3]	WAQSR Ch 6, Sec 2 Permit MD-11019A	Testing if required [F9]	Annual CO monitoring [F13] Equipment monitoring and maintenance [F14]	Record monitoring results [F17] Record equipment monitoring [F18] Record maintenance [F19]	15 days prior test notification [F20] Report test results 45 days after test [F21] Report monitoring [F22] Report excess emissions and permit deviations [F24]
Formaldehyde	0.26 lb/hr, 1.10 TPY [F3] Conduct maintenance [F3]	WAQSR Ch 7, Sec 3 and Ch 6, Sec 2 Permit MD-11019A	Testing if required [F9]	Annual Formaldehyde monitoring [F13] Equipment monitoring and maintenance [F14] CAM monitoring [F15]	Record monitoring results [F17] Record equipment and CAM monitoring [F18] Record maintenance [F19]	15 days prior test notification [F20] Report test results 45 days after test [F21] Report CAM monitoring results [F22] Report monitoring [F22] Report excess emissions and permit deviations [F24]
HAPs	Comply with all applicable requirements of 40 CFR Part 63 Subparts A & ZZZZ and WAQSR Ch 5 Sec 3					

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#: **ENG 8 and ENG 9** Source Description: **Caterpillar G3608 TALE and G3612 TALE Compressor Engines**

Pollutant	Emissions Limit/Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	20 percent opacity [F2]	WAQSR Ch 3, Sec 2	Testing if required [F9]	Verification of natural gas firing [F11]	Record the results of any additional testing [F17]	Semiannually report type of fuel fired [F22] Report excess emissions and permit deviations [F24]
NO_X	Limit for ENG 8: 0.7 g/hp-hr, 3.3 lb/hr, 14.5 TPY [F3] Limit for ENG 9: 0.7 g/hp-hr, 4.5 lb/hr, 19.8 TPY [F3] Conduct maintenance [F3]	WAQSR Ch 6, Sec 2 Permit MD-11019A	Testing if required [F9]	Annual NO_X monitoring [F13] Equipment monitoring and maintenance [F14]	Record monitoring results [F17] Record equipment monitoring [F18] Record maintenance [F19]	15 days prior test notification [F20] Report test results 45 days after test [F21] Report excess emissions and permit deviations [F24]
CO	Limit for ENG 8: 0.3 g/hp-hr, 1.4 lb/hr, 6.2 TPY [F3] Limit for ENG 9: 0.3 g/hp-hr, 1.9 lb/hr, 8.5 TPY [F3] Conduct maintenance [F3]	WAQSR Ch 6, Sec 2 Permit MD-11019A	Testing if required [F9]	Annual CO monitoring [F13] Equipment monitoring and maintenance [F14]	Record monitoring results [F17] Record equipment monitoring [F18] Record maintenance [F19]	15 days prior test notification [F20] Report test results 45 days after test [F21] Report monitoring [F22] Report excess emissions and permit deviations [F24]
VOCs	Comply with all applicable requirements of 40 CFR Part 60 Subparts A & JJJJ and WAQSR Ch 5 Sec 2					
HAPs	Comply with all applicable requirements of 40 CFR Part 63 Subparts A & ZZZZ and WAQSR Ch 5 Sec 3					

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#: **GEN 2** Source Description: **Caterpillar G398 Genset "B" stand by Generator Engine**

Pollutant	Emissions Limit/Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	20 percent opacity [F2]	WAQSR Ch 3, Sec 2	Testing if required [F9]	Verification of natural gas firing [F11]	Record the results of any additional testing [F17]	Semiannually report type of fuel fired [F22] Report excess emissions and permit deviations [F24]
NO_X	1.0 g/hp-hr, 1.5 lb/hr, 6.4 TPY [F3] Conduct maintenance [F6]	WAQSR Ch 6, Sec 2 Permit MD-11019A	Testing if required [F9]	None	Record the results of any additional testing [F17] Record maintenance [F19]	Report excess emissions and permit deviations [F24]
CO	1.0 g/hp-hr, 1.5 lb/hr, 6.4 TPY [F3] Conduct maintenance [F6]	WAQSR Ch 6, Sec 2 Permit MD-11019A	Testing if required [F9]	None	Record the results of any additional testing [F17] Record maintenance [F19]	Report excess emissions and permit deviations [F24]
HAPs	Comply with all applicable requirements of 40 CFR Part 63 Subparts A & ZZZZ and WAQSR Ch 5 Sec 3					

Source ID#:**EMGen** Source Description: **Caterpillar G3412DITA diesel fired emergency engine**

Pollutant	Emissions Limit/Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	30 percent opacity [F2]	WAQSR Ch 3, Sec 2	Testing if required [F9]	Semiannual observation [F11]	Record monitoring results and any additional testing [F17]	Report excess emissions and permit deviations [F24]
Other Emissions	Limit operation hours to 500 per year [F3]	WAQSR Ch 6, Sec 2 Permit MD-11019A	Testing if required [F9]	Monitor operating hours [F13]	Record monitoring results and any additional testing [F17]	Report monitoring results [F22] Report excess emissions and permit deviations [F24]
HAPs	Comply with all applicable requirements of 40 CFR Part 63 Subparts A & ZZZZ and WAQSR Ch 5 Sec 3					

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#: **GEN 4** Source Description: **EPA Tier 2 certified, Caterpillar C175-16 Diesel Generator Engine**

Pollutant	Emissions Limit/Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	30 percent opacity [F2]	WAQSR Ch 3, Sec 2	Testing if required [F9]	Semiannual observation [F11]	Record monitoring results and any additional testing [F17]	Report excess emissions and permit deviations [F24]
NO_X	5.14 g/hp-hr, 49.6 lb/hr, 13.3 TPY [F3] Limit operation hours to 536 per year [F3] Conduct maintenance [F6]	WAQSR Ch 6, Sec 2 Permit MD-11019A	Testing if required [F9]	NO_X monitoring once every three years [F13] Monitor operating hours [F13]	Record monitoring results [F17] Record maintenance [F19]	15 days prior test notification [F20] Report test results 45 days after test [F21] Report monitoring [F22] Report excess emissions and permit deviations [F24]
CO	3.5 g/hp-hr, 33.8 lb/hr, 9.1 TPY [F3] Limit operation hours to 536 per year [F3] Conduct maintenance [F6]	WAQSR Ch 6, Sec 2 Permit MD-11019A	Testing if required [F9]	CO monitoring once every three years [F13] Monitor operating hours [F13]	Record monitoring results [F17] Record maintenance [F19]	15 days prior test notification [F20] Report test results 45 days after test [F21] Report monitoring [F22] Report excess emissions and permit deviations [F24]
NO_X, CO, PM, HC	Comply with all applicable requirements of 40 CFR Part 60 Subparts A & IIII and WAQSR Ch 5 Sec 2					
HAPs	Comply with all applicable requirements of 40 CFR Part 63 Subparts A & ZZZZ and WAQSR Ch 5 Sec 3					

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#: **CT1-CT4** Source Description: **Solar Titan 130-20502S Turbine Engines**

Pollutant	Emissions Limit / Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	20 percent opacity [F2]	WAQSR Ch 3, Sec 2	Testing if required [F9]	Verification of natural gas firing [F11]	Record the results of any additional testing [F17]	Semiannually report type of fuel fired [F22] Report excess emissions and permit deviations [F24]
NO_X	15 ppmvd@ 15 % O_2 and 7.5 lb/hr at ambient temperature > 0 °F [F3] Conduct maintenance [F6]	WAQSR Ch 6, Sec 2 Permit MD-11019A	Testing if required [F9] For CT3 and CT4 Initial testing [F10]	Annual NO_X monitoring [F13] Ambient temperature monitoring [F13]	Record monitoring results and any additional testing [F17] Record temperature monitoring [F17] Record maintenance [F19]	15 days prior test notification [F20] Report test results 45 days after test [F21] Report excess emissions and permit deviations [F24]
CO	25 ppmvd@ 15 % O_2 and 7.6 lb/hr at ambient temperature > 0 °F [F3] Conduct maintenance [F6]	WAQSR Ch 6, Sec 2 Permit MD-11019A	Testing if required [F9] For CT3 and CT4 Initial testing [F10]	Annual CO monitoring [F13] Ambient temperature monitoring [F13]	Record monitoring results and any additional testing [F17] Record temperature monitoring [F17] Record maintenance [F19]	15 days prior test notification [F20] Report test results 45 days after test [F21] Report excess emissions and permit deviations [F24]
VOC	5 ppmvd@ 15 % O_2 and 0.9 lb/hr at ambient temperature > 0 °F [F3] Conduct maintenance [F6]	WAQSR Ch 6, Sec 2 Permit MD-11019A	Testing if required [F9] For CT3 and CT4 Initial testing [F10]	Annual VOC monitoring [F13] Ambient temperature monitoring [F13]	Record monitoring results and any additional testing [F17] Record temperature monitoring [F17] Record maintenance [F19]	15 days prior test notification [F20] Report test results 45 days after test [F21] Report excess emissions and permit deviations [F24]
SO_2	Comply with all applicable requirements of 40 CFR Part 60 Subparts A & KKKK and WAQSR Ch 5 Sec 2					

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#:**SmBurn** Source Description: **Glycol Filters Burner**

Pollutant	Emissions Limit/Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	20 percent opacity [F2] 0.20 lb particulate per 100 lb refuse [F3]	WAQSR Ch 3, Sec 2	Testing if required [F9]	None	Record the results of any additional testing [F17]	Report excess emissions and permit deviations [F24]

Source ID#: **HTR 1** 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 [F2]	WAQSR Ch 3, Sec 2	Testing if required [F9]	Verification of natural gas firing [F11]	Record the results of any additional testing [F17]	Semiannually report type of fuel fired [F22] Report excess emissions and permit deviations [F24]
NO_X	0.08 lb/MMBtu, 1.6 lb/hr, 7.0 TPY [F4]	WAQSR Ch 6, Sec 2 Permit MD-11019A	Testing if required [F9]	Performance test once every five years[F16]	Record the results of performance tests and any additional testing [F17]	15 days prior test notification [F20] Report test results 45 days after test [F21] Report excess emissions and permit deviations [F24]
CO	0.04 lb/MMBtu, 0.8 lb/hr, 3.5 TPY [F4]	WAQSR Ch 6, Sec 2 Permit MD-11019A	Testing if required [F9]	Performance test once every five years[F16]	Record the results of performance tests and any additional testing [F17]	15 days prior test notification [F20] Report test results 45 days after test [F21] Report excess emissions and permit deviations [F24]

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#: **HTR 2** Source Description: **Dehy Regen Heater**

Pollutant	Emissions Limit / Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	20 percent opacity [F2]	WAQSR Ch 3, Sec 2	Testing if required [F9]	Verification of natural gas firing [F11]	Record the results of any additional testing [F17]	Semiannually report type of fuel fired [F22] Report excess emissions and permit deviations [F24]
NO_X	0.1 lb/MMBtu, 0.6 lb/hr, 2.8 TPY [F4]	WAQSR Ch 6, Sec 2 Permit MD-11019A	Testing if required [F9]	Performance test once every five years[F16]	Record the results of performance test and any additional testing [F17]	15 days prior test notification [F20] Report test results 45 days after test [F21] Report excess emissions and permit deviations [F24]
CO	0.084 lb/MMBtu, 0.5 lb/hr, 2.3 TPY [F4]	WAQSR Ch 6, Sec 2 Permit MD-11019A	Testing if required [F9]	Performance test once every five years[F16]	Record the results of performance test and any additional testing [F17]	15 days prior test notification [F20] Report test results 45 days after test [F21] Report excess emissions and permit deviations [F24]

Source ID#: **HTR 4 and HTR 5** Source Description: **EG Regen Heater and Condensate Heater**

Pollutant	Emissions Limit / Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	20 percent opacity [F2]	WAQSR Ch 3, Sec 2	Testing if required [F9]	Verification of natural gas firing [F11]	Record the results of any additional testing [F17]	Semiannually report type of fuel fired [F22] Report excess emissions and permit deviations [F24]
NO_X	0.20 lb/MMBtu [F4]	WAQSR Ch 3, Sec 3	Testing if required [F9]	None	Record the results of any additional testing [F17]	Report excess emissions and permit deviations [F24]

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#: **EG DEHY** Source Description: **Ethylene Glycol Dehydration Unit**

Pollutant	Emissions Limit / Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
VOC and HAPs	Control with condenser and flare [F5]	WAQSR Ch 6, Sec 2 Permit MD-11019A	Testing if required [F9]	Monitor flare use during operation of dehydration units [F12]	Record monitoring and any testing results [F17]	Report monitoring results [F22] Report excess emissions and permit deviations [F24]

Source ID#: **F1 and F2** Source Description: **FLARE 1 and FLARE 2**

Pollutant	Emissions Limit/Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
VOC & HAP emissions from EG DEHY units; blowdown emissions from ENG 1 and ENG 7 [F5, F6]	Operate and maintain to be smokeless Automatic ignitor or continuous burning pilot No visible emissions except for five minutes in two consecutive hours [F2]	WAQSR Ch 3, Sec 6 Ch 6, Sec 2 Permit MD-11019A	Testing if required [F9]	Monitor date, duration of times when the flares exhibit visible emissions for more than 5 min [F11] Monitor date, duration of times when the pilot flame not present on F1 flare during DEHY units active operation [F12]	Record monitoring and any testing results [F17]	Report monitoring results [F22] Report excess emissions and permit deviations [F24]
VOCs	Comply with all applicable requirements of 40 CFR Part 60 Subparts A & KKK and VV, and WAQSR Ch 5 Sec 2					

Source ID#: **FUG** Source Description: **Fugitive VOCs from equipment leaks**

Pollutant	Emissions Limit / Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
VOCs		Ch 6, Sec 2 Permit MD-11019A				Report excess emissions and permit deviations [F24]
VOCs	Comply with all applicable requirements of 40 CFR Part 60 Subparts A & KKK and VV, and WAQSR Ch 5 Sec 2					

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.

ABBREVIATIONS

4SLB	4-Stroke Lean Burn
4SRB	4-Stroke Rich Burn
ACFM	Actual cubic feet per minute
AFRC	Air-Fuel Ratio Control
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
CI	Compression Ignition
CO	Carbon monoxide
DEQ	Wyoming Department of Environmental Quality
EPA	United States Environmental Protection Agency (see Definitions)
g/hp-hr	Gram(s) per horsepower hour
gal	Gallon(s)
gr	Grain(s)
H_2S	Hydrogen sulfide
HAP(s)	Hazardous air pollutant(s)
hp	Horsepower
hr	Hour(s)
ICE	Internal Combustion Engine
lb	Pound(s)
M	Thousand
MACT	Maximum available control technology (see Definitions)
mg	Milligram(s)
MM	Million
MVACs	Motor vehicle air conditioners
N/A	Not applicable
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
ppmvd	Parts per million (by volume, dry basis)
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)
SI	Spark Ignition
SIC	Standard Industrial Classification
SO_2	Sulfur dioxide
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

COMPLIANCE ASSURANCE MONITORING PLAN
CATALYTIC CONVERTER FOR CONTROL OF NOx AND CO

I. Background

A. Emissions Unit

Description: Rich burn natural gas compressor engine

Identification: ENG 1 ; 1034 hp

Facility: Blacks Fork Gas Plant & Compressor Station
Sweetwater/Uintah Counties, Wyoming

B. Applicable Regulation, Emission Limit, and Pre-CAM Monitoring Requirements

Regulation: Permit MD-1041A

CAM Emission limits: CO: 1.0 g/hp-hr

Pre-CAM monitoring requirements: Quarterly monitoring using the Division's Monitoring Protocol

C. Control Technology, Capture System, Bypass, PTE

Controls: Non-selective catalytic reduction

Capture System: N/A

Bypass: none

PTE before controls: CO: 126.36 TPY

PTE after controls: CO: 10.0 TPY

II. Monitoring Approach

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

	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 plan.
Measurement Approach	Exhaust gas temperature is monitored continuously using a thermocouple.	The pressure differential between the inlet and outlet of the catalyst is measured with a differential pressure gauge.	NO_x and CO are measured using the Division's portable monitoring protocol.	Inspection according to IPM 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 most recent NO_x and CO emission measurement that showed compliance with limits.	NO_x above 1.0 g/hp-hr or CO above 1.0 g/hp-hr.	N/A
III. Performance Criteria A. Data Representativeness[a]	Temperature is measured at the inlet of the catalyst by a thermocouple. The minimum accuracy is ±4 °F.	Pressure differential is measured at the inlet and outlet of the catalyst. The gauge has a minimum accuracy of 0.30 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. (including the air to fuel ratio controller, thermocouples, oxygen sensors, and over-temperature protection device).
B. QA/QC Practices and Criteria	Thermocouple calibrated per manufacturers specifications, at least quarterly.	The pressure gauge is calibrated per manufacturer's specifications, at least quarterly. Pressure taps are checked daily for plugging.	As stated in the Division's portable monitoring protocol.	Qualified personnel perform IPM.
C. Monitoring Frequency	Temperature is monitored continuously.	Pressure differential is monitored daily. No monitoring is required for days when engine is not operated.	Annual testing to verify compliance with permitted emission limits.	Daily, weekly, and annual inspection according to IPM 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 daily. A note will be made on days when engine is not operated.	As specified in the Division's portable monitoring protocol.	Records are maintained to document IPM, and any maintenance performed.
Averaging period	None.	None.	None.	N/A

JUSTIFICATION

I. Background

The monitoring approach outlined here applies to the three-way non-selective reduction catalyst system used on natural gas fired compressor engine ENG 1. 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 can 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.

Pressure differential across the catalyst can 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 IPM related to the operation of the engines and catalyst system provides assurance that they are in good repair and operating properly. Items on the daily IPM checklist include oxygen concentration at the engine exhaust, inspecting the fuel/air ratio controller, visual inspection of probes to detect clogging, and inspection of thermocouples.

Annual NO_x and CO emissions testing will demonstrate continued compliance with emission limits and the 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. 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.

Blacks Fork Gas Plant & Compressor Station
Preventative Maintenance Plan – ENG 1

The following is an inspection and preventative maintenance plan (IPM) for the natural gas fired compressor engine ENG 1. The plan is designed to ensure optimum operation of the non-selective catalytic reduction (NSCR) converter, avoid situations that could cause converter damage, and identify problems in a timely manner.

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

Preventative maintenance: The engine will be checked for proper operation at least weekly.

Over-temperature System: The NSCR converter is equipped with an over-temperature system that protects the catalyst from excessive temperature caused by engine misfires.

Preventative maintenance: At least annually, the over-temperature system will be tested to ensure that it is working.

Exhaust Temperature: For efficient converter operation, the exhaust gas from the engine must be maintained between 750 °F and 1250 °F.

Preventative maintenance: The exhaust temperature will be checked daily.

Air/Fuel Ratio Controller: The A/F ratio controller is used in conjunction with the NSCR converter to control emissions. The controller is set to control emissions at the allowable rates.

Preventative maintenance: The oxygen sensor will be replaced at least every 2500 hours of operation, consistent with manufacturer's recommendations. The A/F ratio set points will be checked and adjusted at that time. The controller will be checked at least weekly to ensure that it is operating.

Performance Monitoring: Engine emissions will be measured to monitor catalyst performance.

Preventative maintenance: On an annual basis, a portable analyzer will be used to measure NOx and CO emissions in the exhaust from the converter. The Division's protocol for portable analyzers will be used to conduct the tests.

COMPLIANCE ASSURANCE MONITORING PLAN
CATALYTIC CONVERTER FOR CONTROL OF NOx AND CO

I. Background

A. Emissions Unit

Description: Rich burn natural gas compressor engine

Identification: ENG 6

Facility: Blacks Fork Gas Plant & Compressor Station
Sweetwater/Uintah Counties, Wyoming

B. Applicable Regulation, Emission Limit, and Pre-CAM Monitoring Requirements

Regulation: Permit MD-1140 (Corrected) and Permit MD-1402

CAM Emission limits: NO_x: 1.0 g/hp-hr
CO: 1.0 g/hp-hr

Pre-CAM monitoring requirements: Annual NO_x and CO monitoring using the Division's Monitoring Protocol

C. Control Technology, Capture System, Bypass, PTE

Controls: Non-selective catalytic reduction

Capture System: N/A

Bypass: none

PTE before controls: NO_x: 212.5 TPY CO: 189.8 TPY

PTE after controls: NO_x: 16.2 TPY CO: 16.2 TPY

II. Monitoring Approach

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

	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 plan.
Measurement Approach	Exhaust gas temperature is monitored continuously using a thermocouple.	The pressure differential between the inlet and outlet of the catalyst is measured with a differential pressure gauge.	NO_x and CO are measured using the Division's portable monitoring protocol.	Inspection according to IPM 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 most recent NO_x and CO emission measurement that showed compliance with limits.	NO_x above 1.0 g/hp-hr or CO above 1.0 g/hp-hr.	N/A
III. Performance Criteria A. Data Representativeness[a]	Temperature is measured at the inlet of the catalyst by a thermocouple. The minimum accuracy is ±4 °F.	Pressure differential is measured at the inlet and outlet of the catalyst. The gauge has a minimum accuracy of 0.30 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. (including the air to fuel ratio controller, thermocouples, oxygen sensors, and over-temperature protection device).
B. QA/QC Practices and Criteria	Thermocouple calibrated per manufacturers specifications, at least quarterly.	The pressure gauge is calibrated per manufacturer's specifications, at least quarterly. Pressure taps are checked daily for plugging.	As stated in the Division's portable monitoring protocol.	Qualified personnel perform IPM.
C. Monitoring Frequency	Temperature is monitored continuously.	Pressure differential is monitored daily. No monitoring is required for days when engine is not operated.	Annual testing to verify compliance with permitted emission limits.	Daily, weekly, and annual inspection according to IPM 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 daily. A note will be made on days when engine is not operated.	As specified in the Division's portable monitoring protocol.	Records are maintained to document IPM, and any maintenance performed.
Averaging period	None.	None.	None.	N/A

JUSTIFICATION

I. Background

The monitoring approach outlined here applies to the three-way non-selective reduction catalyst system used on natural gas fired compressor engine ENG 6. 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 can 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.

Pressure differential across the catalyst can 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 IPM related to the operation of the engines and catalyst system provides assurance that they are in good repair and operating properly. Items on the daily IPM checklist include oxygen concentration at the engine exhaust, inspecting the fuel/air ratio controller, visual inspection of probes to detect clogging, and inspection of thermocouples.

Annual NO_x and CO emissions testing will demonstrate continued compliance with emission limits and the 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. 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.

Blacks Fork Gas Plant & Compressor Station
Preventative Maintenance Plan – ENG 6

The following is an inspection and preventative maintenance plan (IPM) for the natural gas fired compressor engine ENG 6. The plan is designed to ensure optimum operation of the non-selective catalytic reduction (NSCR) converter, avoid situations that could cause converter damage, and identify problems in a timely manner.

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

Preventative maintenance: The engine will be checked for proper operation at least weekly.

Over-temperature System: The NSCR converter is equipped with an over-temperature system that protects the catalyst from excessive temperature caused by engine misfires.

Preventative maintenance: At least annually, the over-temperature system will be tested to ensure that it is working.

Exhaust Temperature: For efficient converter operation, the exhaust gas from the engine must be maintained between 750 °F and 1250 °F.

Preventative maintenance: The exhaust temperature will be checked daily.

Air/Fuel Ratio Controller: The A/F ratio controller is used in conjunction with the NSCR converter to control emissions. The controller is set to control emissions at the allowable rates.

Preventative maintenance: The oxygen sensor will be replaced at least every 2500 hours of operation, consistent with manufacturer's recommendations. The A/F ratio set points will be checked and adjusted at that time. The controller will be checked at least weekly to ensure that it is operating.

Performance Monitoring: Engine emissions will be measured to monitor catalyst performance.

Preventative maintenance: On an annual basis, a portable analyzer will be used to measure NOx and CO emissions in the exhaust from the converter. The Division's protocol for portable analyzers will be used to conduct the tests.

COMPLIANCE ASSURANCE MONITORING PLAN
CATALYTIC CONVERTER FOR CONTROL OF NOx AND CO

I. Background

A. Emissions Unit

Description: Rich burn natural gas compressor engine

Identification: BFC I

Facility: Blacks Fork Gas Plant & Compressor Station
Sweetwater/Uintah Counties, Wyoming

B. Applicable Regulation, Emission Limit, and Pre-CAM Monitoring Requirements

Regulation: Permit MD-638

CAM Emission limits: NOx: 1.0 g/hp-hr
CO: 1.0 g/hp-hr

Pre-CAM monitoring requirements: Annual monitoring using the Division's Monitoring Protocol

C. Control Technology, Capture System, Bypass, PTE

Controls: Non-selective catalytic reduction

Capture System: N/A

Bypass: none

PTE before controls: NOx: 212.88 TPY
CO: 189.41 TPY

PTE after controls: NOx: 16.2 TPY
CO: 16.2 TPY

II. Monitoring Approach

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

	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 plan.
Measurement Approach	Exhaust gas temperature is monitored continuously using a thermocouple.	The pressure differential between the inlet and outlet of the catalyst is measured with a differential pressure gauge.	NO_x and CO are measured using the Division's portable monitoring protocol.	Inspection according to IPM 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 most recent NO_x and CO emission measurement that showed compliance with limits.	NO_x above 1.0 g/hp-hr or CO above 1.0 g/hp-hr.	N/A
III. Performance Criteria A. Data Representativeness[a]	Temperature is measured at the inlet of the catalyst by a thermocouple. The minimum accuracy is ±4 °F.	Pressure differential is measured at the inlet and outlet of the catalyst. The gauge has a minimum accuracy of 0.30 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. (including the air to fuel ratio controller, thermocouples, oxygen sensors, and over-temperature protection device).
B. QA/QC Practices and Criteria	Thermocouple calibrated per manufacturers specifications, at least quarterly.	The pressure gauge is calibrated per manufacturer's specifications, at least quarterly. Pressure taps are checked daily for plugging.	As stated in the Division's portable monitoring protocol.	Qualified personnel perform IPM.
C. Monitoring Frequency	Temperature is monitored continuously.	Pressure differential is monitored daily. No monitoring is required for days when engine is not operated.	Annual testing to verify compliance with permitted emission limits.	Daily, weekly, and annual inspection according to IPM 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 daily. A note will be made on days when engine is not operated.	As specified in the Division's portable monitoring protocol.	Records are maintained to document IPM, and any maintenance performed.
Averaging period	None.	None.	None.	N/A

JUSTIFICATION

I. Background

The monitoring approach outlined here applies to the three-way non-selective reduction catalyst system used on natural gas fired compressor engine BFC 1. 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 can 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.

Pressure differential across the catalyst can 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 IPM related to the operation of the engines and catalyst system provides assurance that they are in good repair and operating properly. Items on the daily IPM checklist include oxygen concentration at the engine exhaust, inspecting the fuel/air ratio controller, visual inspection of probes to detect clogging, and inspection of thermocouples.

Annual NO_x and CO emissions testing will demonstrate continued compliance with emission limits and the 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. 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.

Blacks Fork Gas Plant & Compressor Station
Preventative Maintenance Plan – BFC 1

The following is an inspection and preventative maintenance plan (IPM) for the natural gas fired compressor engine BFC 1. The plan is designed to ensure optimum operation of the non-selective catalytic reduction (NSCR) converter, avoid situations that could cause converter damage, and identify problems in a timely manner.

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

Preventative maintenance: The engine will be checked for proper operation at least weekly.

Over-temperature System: The NSCR converter is equipped with an over-temperature system that protects the catalyst from excessive temperature caused by engine misfires.

Preventative maintenance: At least annually, the over-temperature system will be tested to ensure that it is working.

Exhaust Temperature: For efficient converter operation, the exhaust gas from the engine must be maintained between 750 °F and 1250 °F.

Preventative maintenance: The exhaust temperature will be checked daily.

Air/Fuel Ratio Controller: The A/F ratio controller is used in conjunction with the NSCR converter to control emissions. The controller is set to control emissions at the allowable rates.

Preventative maintenance: The oxygen sensor will be replaced at least every 2500 hours of operation, consistent with manufacturer's recommendations. The A/F ratio set points will be checked and adjusted at that time. The controller will be checked at least weekly to ensure that it is operating.

Performance Monitoring: Engine emissions will be measured to monitor catalyst performance.

Preventative maintenance: On an annual basis, a portable analyzer will be used to measure NOx and CO emissions in the exhaust from the converter. The Division's protocol for portable analyzers will be used to conduct the tests.

COMPLIANCE ASSURANCE MONITORING PLAN
CATALYTIC CONVERTER FOR CONTROL OF FORMALDEHYDE

I. Background

A. Emissions Unit

Description: Lean burn natural gas compressor engine

Identification: ENG 7

Facility: Blacks Fork Gas Plant & Compressor Station
Sweetwater/Uintah Counties, Wyoming

B. Applicable Regulation, Emission Limit, and Pre-CAM Monitoring Requirements

Regulation: Permit MD-1402

CAM Emission limit: Formaldehyde: 0.26 lb/hr

Pre-CAM monitoring requirements: Annual formaldehyde monitoring consisting of at least one 1-hour test following EPA reference methods.

C. Control Technology, Capture System, Bypass, PTE

Controls: Catalytic oxidation

Capture System: N/A

Bypass: none

PTE before controls: Formaldehyde: 16.3 TPY

PTE after controls: Formaldehyde: 1.1 TPY

II. Monitoring Approach

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

	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.	Formaldehyde measurement.	Inspection/Preventative Maintenance (IPM) in accordance with plan.
Measurement Approach	Exhaust gas temperature is monitored continuously using a thermocouple.	The pressure differential between the inlet and outlet of the catalyst is measured with a differential pressure gauge.	Formaldehyde is measured using at least one 1-hour test following EPA Reference Methods.	Inspection according to IPM Plan. Maintenance performed as needed.
II. Indicator Range	Temperature at the inlet of the catalyst shall be maintained between 450°F and 1350°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 most recent NO_x and CO emission measurement that showed compliance with limits.	Formaldehyde above 0.26 lb/hr.	N/A
III. Performance Criteria A. Data Representativeness[a]	Temperature is measured at the inlet of the catalyst by a thermocouple. The minimum accuracy is ±4 °F.	Pressure differential is measured at the inlet and outlet of the catalyst. The gauge has a minimum accuracy of 0.30 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, (including the thermocouples and over-temperature protection device).
B. QA/QC Practices and Criteria	Thermocouple calibrated per manufacturers specifications, at least quarterly.	The pressure gauge is calibrated per manufacturer's specifications, at least quarterly. Pressure taps are checked daily for plugging.	As stated in the EPA's Reference Methods.	Qualified personnel perform IPM.
C. Monitoring Frequency	Temperature is monitored continuously.	Pressure differential is monitored daily. No monitoring is required for days when engine is not operated.	Annual testing to verify compliance with permitted emission limit.	Daily, weekly, and annual inspection according to IPM 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 daily. A note will be made on days when engine is not operated.	As stated in the EPA's Reference Methods.	Records are maintained to document IPM, and any maintenance performed.
Averaging period	None.	None.	None.	N/A

Blacks Fork Gas Plant & Compressor Station
Preventative Maintenance Plan – ENG 7

The following is an inspection and preventative maintenance plan (IPM) for the natural gas fired compressor engine ENG 7. The plan is designed to ensure optimum operation of the oxidation catalytic converter, avoid situations that could cause converter damage, and identify problems in a timely manner.

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

Preventative maintenance: The engine will be checked for proper operation at least weekly.

Over-temperature System: The NSCR converter is equipped with an over-temperature system that protects the catalyst from excessive temperature caused by engine misfires.

Preventative maintenance: At least annually, the over-temperature system will be tested to ensure that it is working.

Exhaust Temperature: For efficient converter operation, the exhaust gas from the engine must be maintained between 450 °F and 1350 °F.

Preventative maintenance: The exhaust temperature will be checked daily.

Performance Monitoring: Engine emissions will be measured to monitor catalyst performance.

Preventative maintenance: On an annual basis, formaldehyde emissions in the exhaust from the converter will be measured. Testing shall consist of at least one 1-hour test using EPA Reference Methods.

JUSTIFICATION

I. Background

The monitoring approach outlined here applies to the oxidation catalyst system used on natural gas fired compressor engine ENG 7. The catalyst system is a passive unit and does not have mechanical components.

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.

Pressure differential across the catalyst can 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 IPM Plan related to the operation of the engine and catalyst system provides assurance that they are in good repair and operating properly.

Annual formaldehyde emissions testing will demonstrate continued compliance with the emission limits and the link between the temperature indicator range, pressure differential, implementation of the IPM plan, and proper operation of the engine and catalyst.

III. Rationale for Selection of Indicator Ranges

An exhaust gas temperature range of 450°F to 1350°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 lean 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. This indicator range is also consistent with operating limitations in the RICE NESHAP. The IPM Plan was developed based on manufacturer's recommendations and the company's operating experience with similar units.